Ratification of the Kyoto Protocol: A Citizen's Guide to the Canadian Climate Change Policy Process

September 21, 2002

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Glossary

AIRG	Adaptation and Impacts Research Group
BC	British Columbia
BCNI	Business Council on National Issues (now the Canadian Council of Chief Executives)
C	Carbon
CAPP	Canadian Association of Petroleum Producers
CCAF	Climate Change Action Fund
CCCMA	Canadian Centre for Climate Modeling and Analysis
C-CIARN	Canadian Climate Impacts and Adaptation Research Network
CCCE	Canadian Council of Chief Executives
CCRM	Climate Monitoring and Data Interpretation Division
CCRP	Climate Processes and Earth Observation Division
CEA	Canadian Electricity Association
CETC	CANMET Energy Technology Centre
CFS	Canadian Forestry Service
CH_4	Methane
CICC	*Le Comité interministériel sur les changements climatiques*
CME	Canadian Manufacturers and Exporters
CO_2	Carbon Dioxide
CoP	Convention of Parties
CPEQ	*Centre patronal de l'environnement du Québec*
CPPI	Canadian Petroleum Producers Association
CVMA	Canadian Vehicle Manufacturers Association
EPES	Emissions Performance Equivalent Standard
ETAD	Environmental Technology Advancement Directorate
EU	European Union
EUB	Alberta Energy and Utilities Board
FCM	Federation of Canadian Municipalities
GDP	Gross Domestic Product
GERT	Greenhouse Gas Emissions Trading pilot programme in Alberta
GHG	Greenhouse Gases
GPEAR	Gas Plant Energy Efficiency Assistance Regulation
GSC	Geological Survey of Canada
GW-h	Gigawatt-hours (one billion watt-hours)
ICLEI	International Council for Local Environmental Initiatives
IERD	Industry Energy Research and Development
IPCC	Intergovernmental Panel on Climate Change
JMM	Joint Meeting of Ministers
LAP	Location Action Plans
LULUCF	Land use, land use change and forestry
MP	Member of Parliament
MPP	Member of Provincial Parliament
Mt	Megatonne (one million metric tonnes)
MW-h	Megawatt-hours (one million watt-hours)
NAICC-CC	National Air Issues Co-ordinating Committee - Climate Change

NAPCC	National Action Plan on Climate Change
NCCP	National Climate Change Process
NDP	National Democratic Party
NRCan	Natural Resources Canada
OECD	Organization for Economic Co-operation and Development
OEE	Office of Energy Efficiency
OERD	Office of Energy Research and Development
OMAFRA	Ontario Ministry of Agriculture and Food
OPEC	Organization of Petroleum Exporting Countries
PM	Prime Minister
PMO	Prime Minister's Office
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SEM	Saskatchewan Energy and Mines
SERM	Saskatchewan Environment and Resource Management
TEAM	Technology Early Action Measures
UN	United Nations
UNEP	United Nations Environment Program
UNFCCC	Untied Nations Framework Convention on Climate Change
VCR	Voluntary Challenge and Registry

1. Introduction

1.1. Overview

We wrote this document for Canadians who wish to participate in the process of deciding what our country will do about climate change. We believe a guide such as this is needed because that process is complicated. There are, in fact, two inter-related policy-making processes: (1) the process Canada and other countries have been following to negotiate and implement an international agreement since they first signed the United Nations Framework Convention on Climate Change in 1992 (UNFCCC – for a listing of all relevant acronyms, see the glossary above); and, (2) the equally complex framework used by Canadian federal and provincial government, in consultation with business, environmentalists and many other relevant stakeholders, to develop and implement Canada's climate change policy. The connection between the two processes is symbolized by the questions now being debated loudly in the news media – should Canada ratify the Protocol to the Convention, signed at Kyoto, Japan in December 1997? Or should it instead opt out of the international process and join the United States in a North American climate change policy? If Canada does indeed ratify, how should we go about implementing that decision?

The decision now facing Canada is significant. It is also an agonizing one, because it raises all of the regional and continental aspirations and conflicts that have plagued the Canadian federation since 1867. To date, however, it has been discussed almost exclusively by relevant government officials, business interests who have a stake in the outcome and environmentalists. This document is intended to give others access to that dialogue, by providing the information they need as a point of entry. Although we present a basic scientific understanding of the issue, that is not our primary purpose. Instead, we wish to present clearly for an interested but non-expert reader the process by which our federal and provincial governments are deciding what actions they will take on the issue. To do that, we present three things:

- the federal, provincial, business and environmental actors participating in the debate and the positions each is advocating;
- the policy process within which those actors are negotiating; and,
- the policy decisions which have been made by the federal and provincial governments up to September 2002.

Part 3 of the Guide then provides detailed bibliographic and contact information to help the reader who wishes to join the national debate.

1.2. THE POLICY OBJECTIVE

The first piece of information needed is an understanding of the policy challenge facing Canadian governments as they decide whether or not to ratify the Kyoto Protocol. This is the necessity of closing what is termed the "Kyoto gap" - defined as the difference between the anticipated level of Canadian greenhouse gas emissions in the year 2010 if no new policy measures are adopted beyond those in already in place in the year 2002 and the level of emissions in that year to which Canada made a commitment at the Kyoto meeting in 1997 - 6% reduction from 1990 levels. The basic unit of measurement is one "megatonne" (one million metric tonnes - written as 1 Mt) of "carbon dioxide equivalent." The latter, as described in section 2 below, refers to the six gases which cause climate change and which are covered by the Kyoto agreement. Some have much greater effects than others, so for purposes of simplicity they are referred to collectively, by converting those various effects to that of the climate change caused by one unit of the most prevalent greenhouse gas, carbon dioxide.

The May 2002 *Government of Canada Discussion Paper on Canada's Contribution to Addressing Climate Change* sets out the Kyoto gap as follows:

Anticipated Canadian emissions in 2010		**809**	**megatonnes of CO_2**
Less Kyoto target	–	571	megatonnes of CO_2
"Kyoto gap", in approximate numbers		**240**	**megatonnes of CO_2**

How can we close the gap - that is, over the next eight years reduce our emissions of carbon dioxide equivalent by 240 Mt, while both the population and economy grow? The Discussion Paper states that policies already adopted, which are itemized in section 11 below, will account for some 50 Mt. Another 24 Mt is accounted for by the fact that the international community has agreed to give Canada credit for the carbon dioxide stored in "sinks" of forests or soils (essentially, allowing us to reduce our Kyoto objective by that amount and still be in compliance - discussed below). This will reduce the gap to 166 Mt.

Gap between Kyoto target and estimated 2010 emissions		**240**	**megatonnes of CO_2**
Less reductions from existing policy	–	50	megatonnes of CO_2
Less credits for sinks	–	24	megatonnes of CO_2
Remaining gap		**166**	**megatonnes of CO_2**

Canada is now asking other countries to give it a further credit for 70 Mt, due to the fact that we export natural gas, which emits less carbon dioxide when burned than oil, to the United States, thus reducing American emissions by that amount.

Remaining gap		**166**	**megatonnes of CO_2**
less, export credits (if granted)	–	70	megatonnes of CO_2
Final gap		**96**	**megatonnes of CO_2**

Environmentalists are opposed to Canada's search for a 70 Mt "clean energy export" credit. Furthermore, they feel a 6% reduction below 1990 levels is only a first step, since by itself the Kyoto agreement will not solve the global problem. Business, on the other hand, feels 6% by approximately 2010 is far too much.

1.3. COST OF MEETING THE KYOTO OBJECTIVE

Throughout 2002, business representatives have made statements in the press respecting financial cost and job losses associated with Kyoto. The issue of costs (and the related issue of costs in the form of environmental damage if nations do not curtail greenhouse gas emissions) is beyond the scope of this document and is only set out here briefly. The major Canadian studies on cost are:

- Alliance of Manufacturers and Exporters of Canada (2002). *Pain without Gain: Canada's Kyoto Challenge.* Alliance of Manufacturers and Exporters of Canada: Ottawa, ON. Available at: http://www.cme-mec.ca/kyoto/
- Canadian Chamber of Commerce (2002). *The Economics of the Kyoto Protocol.* Canadian Chamber of Commerce: Ottawa, ON. Available at: http://www.chamber.ca/public_info/2002/economicsofkyoto.pdf
- Caton, Robert, and S. Constable (2000). *Clearing the Air.* David Suzuki Foundation: Vancouver, BC.
- David Suzuki Foundation (2002). *The Bottom Line on Kyoto: Economic Benefits of Canadian Action.* Policy Briefing Paper. David Suzuki Foundation: Vancouver, BC. Available at: http://www.davidsuzuki.org/files/PolicyBriefingEng.pdf.
- Environment Canada (2002). *Costs of Kyoto: What We Know.* Environment Canada: Ottawa, ON.

- Government of Canada (2002). *A Discussion Paper on Canada's Contribution to Addressing Climate Change.* Government of Canada: Ottawa, ON.
- Jaccard, Mark, John Nyboer, and Bryn Sadownik (2002). The Cost of Climate Policy. Vancouver: UBC Press.
- National Climate Change Process (2000). *An Assessment of the Economic and Environmental Implications for Canada of the Kyoto Protocol.* Analysis and Modeling Group: Ottawa, ON.
- Tellus Institute and MRG & Associates (2002). *The Bottom Line on Kyoto: Economic Benefits of Canadian Action.* The David Suzuki Foundation and The World Wildlife Fund: Vancouver, BC. Available at: http://davidsuzuki.org/files/kyotoreport.pdf
- Wigle, Randall (2001). *Sectoral Impacts of Kyoto Compliance.* Industry Canada Working Paper No. 34.

The issue of costs with respect to action on climate change can be divided into two broad categories: indirect costs and direct costs. Direct costs are the investments required to implement GHG abatement strategies whereas indirect costs are the potential and projected long-term economic losses (or gains) associated with various emission reduction strategies. While some analysis shows that ratifying the Kyoto Protocol will negatively impact the Canadian economy, other analysis suggests that Canada will experience increased economic growth.

The studies listed have spurred an intense and confusing debate over what the actual cost of meeting the Kyoto commitment would be. Studies published by business have emphasized the high costs associated with ratification of the Protocol, while those published by environmentalists have suggested that costs will be low, or that there may in fact be a net benefit associated with energy savings and technological advancement.

There is no one certain understanding of what cost of meeting the Kyoto Protocol would be. Each study can only provide estimates and projections that vary depending on the methodology employed. Results are based on various economic models that were used to forecast energy prices and changes in the Canadian economy over the next ten years. Findings vary depending on the economic model used, the abatement strategies employed and the assumptions made about the economy such as market forces, innovation, changes in production costs, global market competitiveness and national and international spending.

The most recent estimates by the Analysis and Modeling Group based on policy approaches developed by the NCCP suggest that the impact on GDP is between 0% to 2%. This means that without emission abatement measures Canada's GDP in 2012 is estimated to be 31% greater than in 2000. If various abatement measures are taken Canada's GDP in 2012 is estimated to be between 29% and 31% greater than in 2000 (Government of Canada, 2002:16).

It is important to note that:

- The highly publicized worst-case scenario of a 3% loss of GDP is based on Canada being the only country to ratify the Kyoto protocol. "This would never be the case in reality as Kyoto can only be brought into force when a minimum of 55 countries ratify it (Environment Canada, 2002:3)".
- Excluded from these studies are the potential costs of inaction. According to Environment Canada, the drought in 2001 cost the prairie economy $1.5 billion and the Canadian economy $5 billion. Also, the cost of the 1998 ice storm to the eastern Canadian economy is estimated at $6 billion (Environment Canada, 2002:7).

For a more detailed treatment of the cost issue, see Jacard et al, *The Cost of Climate Policy*, 2002.

1.4. ORGANIZATION OF THIS DOCUMENT

Although some reference is made to events prior to the 1997 Kyoto meeting, the Guide is devoted primarily to the efforts since then to develop a Canadian policy to meet our Kyoto commitment. It captures events up to mid-September 2002.

The document is divided into three parts. Part 1 (sections 2 and 3) sets out the context within which that process is taking place. Section 2 provides an overview of the nature of the issue, including sources and quantities of greenhouse gases. Section 3 describes the international UNFCCC process, including the question of whether other countries will allow Canada to count as part of its Kyoto effort carbon dioxide stored in soil or trees (sinks) and the amount of carbon dioxide not emitted by burning coal in the United States because that country bought our natural gas (clean export credits). Those credits, and the challenge to trade competitiveness posed by the fact that our largest foreign buyer of goods and services, the United States, has decided not to ratify Kyoto, are critical factors influencing Canadian climate change policy.

Part 2 (sections 4 through 11) sets out the formal process used to decide what Canadian "national" policy will be. (National policy is the term used here to refer to what the federal and provincial governments have collectively agreed each will do, within its respective sphere of jurisdiction, on climate change. The term "federal policy" is referred to actions taken by the government of Canada alone). The Canadian constitution gives both levels of government the formal right to govern and is interpreted to mean that resources such as oil are owned by the provinces, while environmental protection is a shared responsibility. In addition, the basic political fact of regionalism means the country must periodically deal with the issue of separatism – at different times since confederation, Nova Scotia, Alberta and Québec have all threatened to secede. This means the federal government cannot simply agree with other countries on what Canada will do and then come back home and tell the provinces to do it. Instead, it must try to broker agreements amongst the provinces in a manner very similar to negotiating international agreements amongst sovereign states. The government of Canada can unilaterally ratify an international agreement such as Kyoto. Implementation of such an agreement, however, requires that the provinces also act.

The backbone of the national climate change policy process described in Part 2 is the series of meetings of federal and provincial environment and energy ministers, at which they consider recommendations developed by a number of federal-provincial bodies, made up of civil servants from both levels of government. The ribs extending from that backbone are the consultations with non-government stakeholders.

That federal-provincial backbone is described in sections 4, 5 and 6. Sections 4 and 5 perform two functions. They first provide basic information on the relevant federal and provincial government departments. Rather than including all ten provinces, we present this information for the five - British Columbia, Alberta, Saskatchewan, Ontario and Québec - which together account for approximately 80% of total Canadian emissions. Secondly, they provide a picture of the varying policy positions taken by these governments, as they can be gleaned from their own writings and the news media. Section 6 then lays out the system by which their activity is co-ordinated. The next three sections then describe three sets of relevant stakeholders – municipalities, business and environmentalists. Particularly for the latter two, we set out the policy positions advocated as they give advice to governments. Section 12 then briefly describes the formal consultative process whereby these federal and provincial government officials, business people, environmentalists and others have worked to develop Canadian policy over the past four and-a-half years since the Kyoto Protocol was signed.

The policy-making process described in those sections has been in operation since the spring of 1998. What policy has it produced? At the end of the day, when the environment and energy ministers have reported back to their respective cabinets, what policy decisions have the federal and provincial governments made in the four years since the Kyoto meeting? Although the question is straightforward, it is a very difficult one to answer (which is one of the major reasons we felt this *Citizens' Guide* was needed). For understandable reasons, our governments want to put the best face on their actions to date, despite the fact that Canada failed to achieve its original objective of stabilizing emissions at 1990 levels by the 2000 and that by 2002 emissions were in fact 19.7% greater than in 1990 (Canada, 2002). A document such as the *2001 National Climate Change Process Progress Report* lists hundreds of government programs and policy, existing and planned, ranging from the trivial to the significant. It is impossible for an interested Canadian citizen to know which is which (NCCP, 2001).

In section 11 we attempt to address that difficulty. Drawing upon academic policy analysis, we set out a system for classifying the "policy instruments" (the means used to achieve a given objective) potentially available to Canadian governments for bringing about emission reductions. We then list the instruments used to date by the federal government and five provinces, presented in four categories. This analysis makes clear that to date governments have relied overwhelmingly on programs to encourage voluntary action, but have made almost no use of law, financial incentives, or programs to directly deliver energy-efficient services such as urban transit.

Do you want to urge your MP or MPP to put in place more effective policy measures? Part 3 of the *Citizens' Guide* provides information needed to participate in the process described in Part 2. We provide two kinds of data. Section 12 provides listings of all the relevant documents (other than speeches and press releases) which have been generated by the participants. The section also provides a listing of other relevant literature. Section 13 then gives contact information so that Canadians may communicate directly with these government officials, business people and environmentalists.

The primary research method used to generate this Guide was a review of the publicly available documents that have been generated by the actors discussed here since 1998. That was supplemented by review of the available academic secondary literature and a review of all news stories carried in the *Globe and Mail*, *National Post* and *Calgary Herald* since 1998. A limited number of interviews were conducted, primarily with business and environmental representatives.

The members of the research team that produced this *Citizens' Guide* are listed on the cover page. As can be seen, the team includes faculty and students at the University of Toronto and staff of the

Toronto Environmental Alliance. We have been working since the fall of 2000 as part of a larger research effort, titled Sustainable Toronto, which is intended to strengthen the research and action links between the university and the community. Sustainable Toronto is funded by the Social Sciences and Humanities Research Council, the University of Toronto and York University.

As part of a scholarly enterprise, we intend this document to be as objective, accurate and precise as possible. Inevitably, however, we share views on our subject matter, which move beyond the realm of what Canada *is* doing about climate change into the realm of what our country *should* be doing. Our view can be stated succinctly. We are convinced the current and potential dangers posed by climate change are real and significant. Canadian governments should do far more than they have to date to bring about a reduction in Canadian emissions. As a first step, Canada should immediately ratify the Kyoto Protocol. We have written this document because we know many other Canadians share that belief. The information provided here will help them as they make their views known to Canadian decision-makers. We thus hope to serve the interests of both effective climate change policy and Canadian democracy.

PART 1: The context for national policy-making

2. The Issue of Climate Change

What causes global climate change? Why exactly is climate change important? This section will give a brief outline of these topics. Readers seeking more detailed information should refer to the websites and publications listed in section 12..

2.1. THE GREENHOUSE EFFECT

The energy from the Sun drives the climate and weather here on Earth, and is responsible for the survival of life. The radiant energy that is not reflected from the atmosphere or the Earth itself heats up the surface of the planet: the land, the oceans, the ice, the atmosphere, and so on. This maintains the temperature of the Earth at a level that allows life to flourish.

However, the amount of heat energy that is directly absorbed is not enough to maintain the temperature of the planet at the levels that we currently experience. In fact, if the Earth were wholly dependent on direct solar energy to maintain its temperature, the planetary average temperature would be cooler by 33°C. But when the surface of the Earth receives radiant energy from the Sun, it emits part of this energy out in longer wavelengths. Gases in the atmosphere trap this energy, and re-radiate the heat back to the Earth's surface. This "greenhouse effect" effectively insulates the Earth, and increases the temperature above what would be expected. As a result, the temperature of the Earth is dependent in part on the concentrations of these "greenhouse gases" in the atmosphere. (UNFCCC, 2001; UNEP, 1999)

2.2. GREENHOUSE GASES

There are several compounds that have been released as a result of human activities that can be considered "greenhouse gases". (USEPA, 2002)

Carbon dioxide (CO_2). Carbon dioxide is, by far, the most common of all greenhouse gases. This chemical is an important element of the carbon cycle, and is essential for photosynthesis in plants. It is also produced by the combustion of fuels, which is the most significant artificial source of CO_2 emissions.

Methane (CH_4). Methane is a gas emitted as a product of the decomposition of organic material; landfills are a significant source of these emissions. Methane is present in the subsurface as well, and is often released into the atmosphere as a result of coal mining, petroleum exploration and recovery, and incomplete combustion. Livestock can also be a source of methane emissions due to enteric fermentation and the decomposition of manure.

Nitrous oxide (N_2O). Also known as "laughing gas", nitrous oxide is often used as an anaesthetic and as a propellant in spray cans. It can be released from agricultural soils, especially those that use synthetic or manure fertilizers. It can also be produced during nylon and nitric acid production, and as a byproduct of combustion.

Sulphur Hexafluoride (SF_6). This compound is completely man-made, with no sources in nature. It is commonly used in electricity transmission and distribution systems.

Perfluorocarbons (PFCs). These compounds are also not found in nature, and are typically produced as a byproduct of aluminum and magnesium production.

Chlorofluorocarbons (CFCs), Hydrochlorofluorocarbons (HCFCs) and Hydrofluorocarbons (HFCs). These compounds are commonly used as solvents, propellants and refrigerants. In addition to being greenhouse gases, CFCs and HCFCs are also ozone-depleting chemicals. The Montreal Protocol on Substances that Deplete the Ozone Layer and follow-up agreements, implemented by countries by means of their own domestic law, regulate these compounds, which are being phased-out over time. As a result, the Kyoto Protocol does not address CFCs and HCFCs. HFCs, however, do not deplete atmospheric ozone, and have been used to replace CFCs and HCFCs in many applications.

Although all of these compounds are "greenhouse gases", the contribution of a unit volume of these chemicals to the overall greenhouse effect varies widely. This is due to two factors: the net warming effect of the compound and its expected lifetime in the atmosphere. The lifetimes of these compounds can vary significantly: certain types of hydrofluorocarbons may remain in the atmosphere for less than four months, while releases of certain types of perfluorocarbons can have effects for up to 50,000 years. (USEPA, 2002)

Because each of these compounds has different properties, they are often expressed in terms of global warming potential, or the net warming effect over their lifetime and the lifetime of any resulting byproducts. This global warming potential is usually related in terms of "tonnes of carbon dioxide

equivalents", where the unit quantity is considered to be the amount of energy re-radiated during a given period by a metric tonne of carbon dioxide in the atmosphere. In the case of emissions by country, megatonnes, or one million tonnes, is also used. Accordingly, the current policy dialogue is centered on the concept of megatonnes (referred to by the abbreviation Mt) of carbon dioxide equivalent. We use that term throughout this Guide, as was seen by the discussion of the "Kyoto Gap", above.

While this measure can be calculated for different lengths of time, a 100-year time horizon is typically used for applications related to the Kyoto Protocol. Under this calculation, nitrous oxide is considered to be almost 300 times as powerful of a greenhouse gas as carbon dioxide, and sulfur hexafluoride about 22,000 times more powerful. (IPCC, 2001) As explained in Harvey (1993) though, there is no single number that accurately compares the global warming effect of CO_2 and any other gas, and indeed, the use of GWPs is an awkward attempt to make the complexities of nature fit the demands of policy makers.

Table 2.1 gives a list of the lifetimes and relative impacts of the greenhouse gases covered under the Kyoto Protocol, as determined by the *Third Assessment Report of the Intergovernmental Panel on Climate Change* (2001).

Table 2.1. Greenhouse Gas Lifetimes and Global Warming Potentials.
(Source: IPCC, 2001)

Gas	Lifetime (years)	Global Warming Potential (100-year)
Carbon dioxide (CO_2)	5-200	1
Methane (CH_4)	8.4	23
Nitrous oxide (N_2O)	120	296
Hydrofluorocarbons		
HFC-23	260	12,000
HFC-32	5.0	550
HFC-41	2.6	97
HFC-125	29	3,400
HFC-134	9.6	1,100
HFC-134a	13.8	1,300
HFC-143	3.4	330
HFC-143a	52	4,300
HFC-152a	1.4	120
HFC-227ea	33.0	3,500
HFC-236fa	220	9,400
HFC-245ca	5.9	640
HFC-4310mee	15	1,500
Iodocarbons		
FIC-1311	0.005	1
Sulfur hexafluoride (SF_6)	3,200	22,000
Perfluorocarbons		
CF_4	50,000	5,700
C_2F_6	10,000	11,900
C_3F_8	2,600	8,600
C_4F_{10}	2,600	8,600
c-C_4F_8	3,200	10,000
C_5F_{12}	4,100	8,900
C_6F_{14}	3,200	9,000

2.3. GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE

Although the presence of naturally-occurring greenhouse gases helps to regulate the temperature of the planet, artificial emissions have the potential to disturb this balance and influence climate on a global scale. Since the Industrial Revolution, when the combustion of coal became a common method to generate power, significant volumes of greenhouse gases have been emitted into the atmosphere as byproducts of human activities.

It has been observed that the concentrations of many of these gases are increasing at a very rapid rate. Scientists have analyzed samples of air taken from polar ice cores to determine atmospheric

concentrations of specific greenhouse gases over approximately half a million years. Direct measurements of certain greenhouse gases have also been made, with records available since 1958 for carbon dioxide and since 1976 for methane. Figure 2.1 shows the variation in CO_2 and CH_4 levels during the past half million years, using both sets of data.

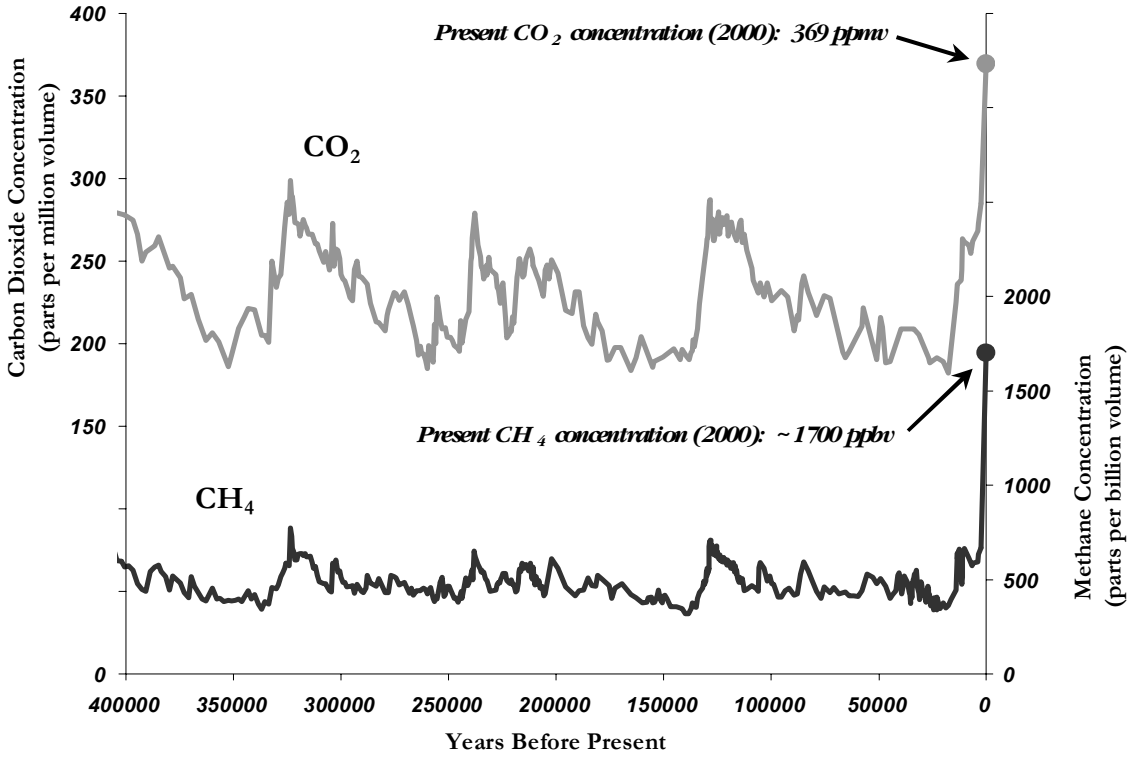

Figure 2.1. Historical Variations in Atmospheric CO_2 and CH_4 Concentrations.
(Source: Carbon Dioxide Analysis and Information Centre, Oak Ridge, Tennessee, website http://cdiac.esd.ornl.gov)

The historical data from ice cores reveal that there have been natural variations in the concentrations of these two gases. The recent increase in these gases, however, is much more rapid than past natural changes, and far exceeds the bounds of natural variability over the prior to the industrial revolution.

The global average surface or near-surface temperature since 1856 is given in Figure 2.2:

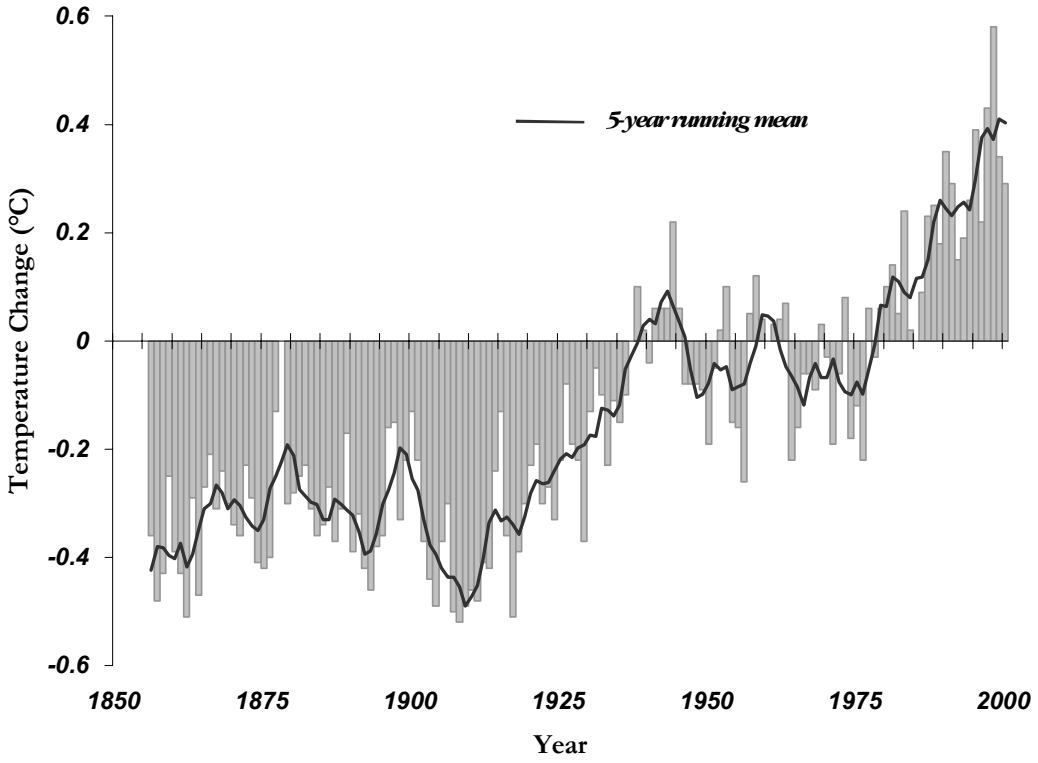

Figure 2.2. Historical Variations in Global Temperatures (Direct Measures).
(Source data: UK Meteorological Office Website, http://www.meto.gov.uk)

These data, a composite of sea surface temperatures and land-based surface-air temperatures, show that there has been a warming of about 0.7°C over the past century.

Indirect indicators, such as tree ring width, the isotopic composition of annual layers in ice cores, and the isotopic variation in annual growth bands in coral reefs, provide a means for estimating temperature variations further into the past. Figure 2.3 shows the most comprehensive reconstruction to date of the variation of average Northern Hemisphere temperature, and includes the global average temperatures shown in Figure 2.2.

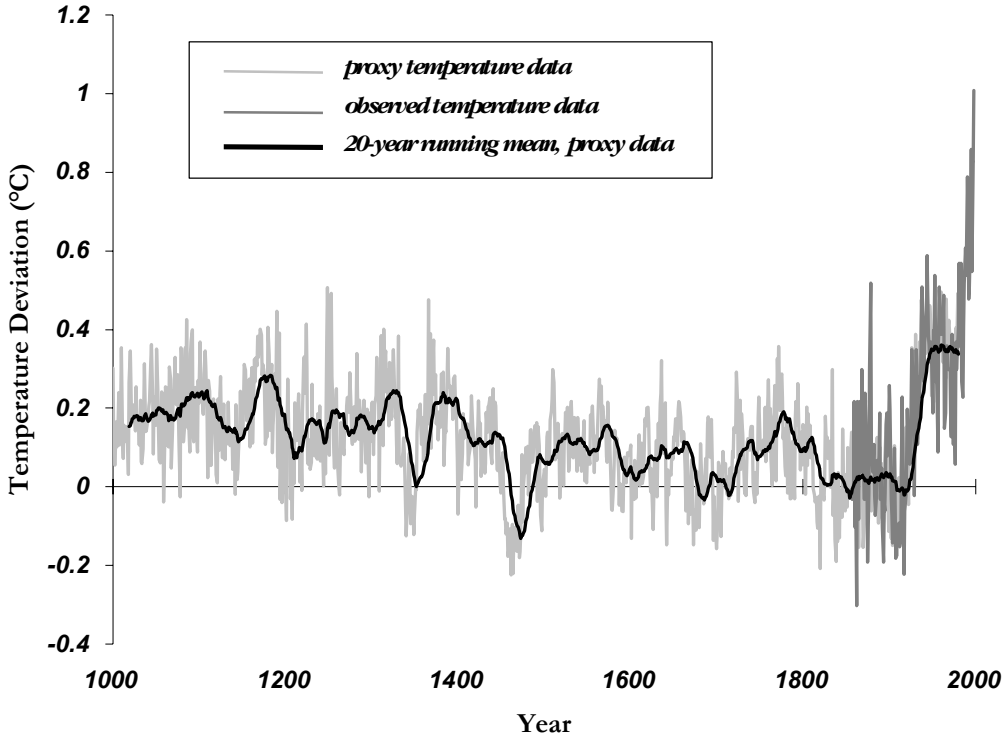

Figure 2.3. Historical Variation in Global Temperature (Direct and Indirect Measures).
(Source data: Mann et al. (1999), available from the U.S. National Oceanographic and Atmospheric Administration (NOAA) website, http://www.ngdc.noaa.gov/paleo.)

From this graph, the warming of the last 100 years stands out as highly unusual. Many researchers have linked this change in global temperatures to the significant increases in greenhouse gases over the past 200 years. This conclusion suggests that further increases in concentrations of greenhouse gases in the atmosphere could elevate the average global temperature even further, which could result in severe changes in the Earth's climate.

2.4. MODELING CLIMATE CHANGE

Scientists have worked to develop computer models to analyze expected changes in greenhouse gas concentrations, and predict the impacts on global climate from these changes. As there are a number of different variables and assumptions that are involved with this type of approach, a range of results have been reached from different models.

However, most of these models have predicted that a business-as-usual scenario where emissions of greenhouse gases will increase unchecked will result in significant increases in global temperatures.

Figure 2.4 shows the high and low global temperature changes to the year 2100 for climate models, along with the smoothing proxy data prior to 1900.

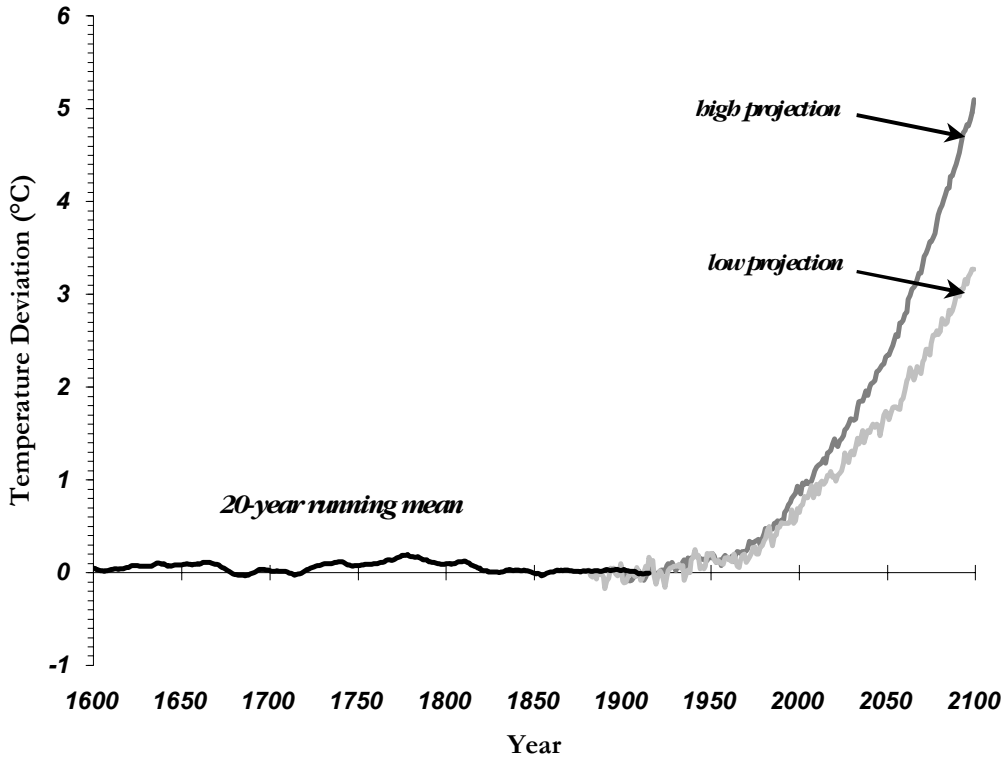

Figure 2.4. Predicted Changes in Global Temperature.
(Source data: IPCC Data Distribution Centre website, http://ipcc-ddc.cru.uea.ac.uk/)

These models suggest that by the end of this century, the global average temperature could be as much as 2 to 5ºC warmer than the present average temperature. The upper end of this range in particular is very large, being comparable to the difference between the climate during the last ice age and the present. However, this change would occur over the space of a mere century.

2.5. GLOBAL EFFECTS OF CLIMATE CHANGE

On a global scale, the potential effects of climate change are dramatic. The Intergovernmental Panel on Climate Change has described numerous impacts that could result from increases in global temperatures. These include (IPCC, 2001):

- Stress on various species, possibly resulting in extinction if these shifts are too extreme and the species are unable to adapt or migrate to appropriate conditions.

- The collapse of entire ecosystems, including areas such as fisheries which are economically productive.
- An increase in the risk of drought or heat stress on agricultural production, especially in tropical and subtropical areas.
- An increase in the risk of flooding and other extreme weather events in certain areas.
- Changes in the availability of drinking water in some regions.
- Variations in the ranges of certain infectious diseases.
- A rise in global ocean levels, which could result in severe impacts to island and coastal communities.

Other, more beneficial impacts are also possible from increases in greenhouse gas concentrations and the corresponding changes in climate. These include:

- Longer growing seasons and expanded agriculture in higher latitudes.
- General increases in agricultural productivity due to increases in carbon dioxide concentrations.
- Lower demands for heating in colder climates.
- Thinning and the eventual disappearance of multi-year Arctic sea ice, which would allow navigation and shipping through currently inaccessible areas (although species such as polar bears, that spend much of the year living on the ice, could be driven to extinction).

2.6. *CANADIAN EFFECTS*

As stated, it is not our intention to provide detailed information here on potential effects. Instead we will simply list and provide brief examples of the possible effects cited by the federal Environment Minister, David Anderson, in a speech delivered April 3, 2002. They include (Anderson, April 3, 2002):

Table 2.2. Impacts of Climate Change in Canada.

Vegetation change	• More frequent and severe forest fires, shorter growth periods between fires, proportionally younger stands, and a decrease in the carbon storage of northern Canadian forests. • Northward movement of the timberline and a decrease in the extent of glaciers, icefields, winter snowpack and permafrost. • Insects and diseases could migrate north, adding stress to Canadian forests.

Biodiversity impacts	• Warmer ocean temperatures would affect the distribution and makeup of fish populations. Some fish species could disappear or migrate elsewhere. • A doubled atmospheric concentration of CO_2 may virtually eliminate salmon habitat from the Pacific Ocean.
Melting permafrost	• Gradual melting of the permafrost would change the structure of the land, affecting water drainage, roads, pipelines and buildings.
Lower inland water levels	• Warmer summers could increase the amount of evaporation from land and lakes causing water levels in the Great Lakes to fall by ½ to 1 metre. • The amount of water flowing out of the Gulf of St. Lawrence could fall by 20 percent. • Increase flood and river erosion hazards would impact the use and value of rivers for recreation, habitat, fisheries, water supply, and transportation.
Drought	• Higher temperatures and changes in the timing and amount of precipitation could lead to an increased risk of droughts. The southern Prairies have the greatest sensitivity. The central Prairies, the southernmost regions of Ontario, northern Saskatchewan, Manitoba, Québec and portions of the Maritimes are also very sensitive to these drought conditions.
Impacts on agriculture	• A warmer climate could lengthen growing seasons and expand agriculture northward. (Poorer northern soils would limit the crops that could be produced, however.)
Rising sea levels on the coasts	• Sea levels could rise by an average of 5 cm per decade over the next 100 years. Some estimates suggest that sea levels could rise by almost a full metre by the year 2100. • Rising sea levels would threaten low-lying coastal lands, with possible flooding and erosion as well as landslides and floods. • Of particular concern are the areas near the Bay of Fundy, the Beaufort Sea including the community of Tuktoyaktuk, the Fraser Delta near Vancouver and the Queen Charlotte Islands
Increased impacts of heat waves on cities	• Increasing frequency and severity of heat waves could lead to an increase in illness and death, especially among the very young, the elderly and the ill. • Respiratory disorders and allergy problems may worsen as a result of increased heat and humidity, and declining air quality in urban areas.
More smog days in cities	• Longer and more intense heat waves could aggravate the effects of air pollution in larger urban areas.
More extreme weather events	• Extreme temperatures, precipitation, and winds could be detrimental to ecosystems and human societies that are generally ill-equipped to cope with such events.

2.7. SOURCES OF GREENHOUSE GASES IN CANADA

Many types of human activity result in generation of greenhouse gases. For our purposes - understanding the Canadian policy process - these can most usefully be divided into two categories. The first is based in geography, more specifically the varying total and per capital emissions from each

province. This is important, since the basic interest of each province with respect to Canadian policy is determined by the extent to which it contributes to the total annual Canadian emissions and, therefore, the cost it may have to incur for Canada to achieve the Kyoto target. The second method of categorization is by activity - transportation, heating or cooling buildings and so on. Again, this is directly relevant to the policy debate since the large-scale emitters are those most likely to have an incentive to oppose Canadian action.

2.7.1. Provinces

Table 2.3 lists the emissions of greenhouse gases by Canadian province in 1999. Figure 2.5 presents the percentage of total emissions released from each province and Figure 2.6 shows greenhouse gas emissions per capita by province.

Table 2.3. Greenhouse Gas Emissions (by Province).
(Source: Environment Canada, 2002)

Province	GHG Emissions (Mt CO_2 eq)	Per Capita Emissions (tonnes CO_2 eq)	% of Canada Total
Alberta	214	72.5	30.8%
Ontario	195	17.0	28.0%
Québec	88.4	12.0	12.7%
British Columbia	63.9	15.9	9.2%
Saskatchewan	61.3	59.8	8.8%
Manitoba	20.9	18.3	3.0%
New Brunswick	19.1	25.3	2.7%
Nova Scotia	20.3	21.6	2.9%
Newfoundland	8.96	16.6	1.3%
Yukon, NWT and Nunavut	2.07	20.9	0.3%
PEI *	2.00	14.5	0.3%

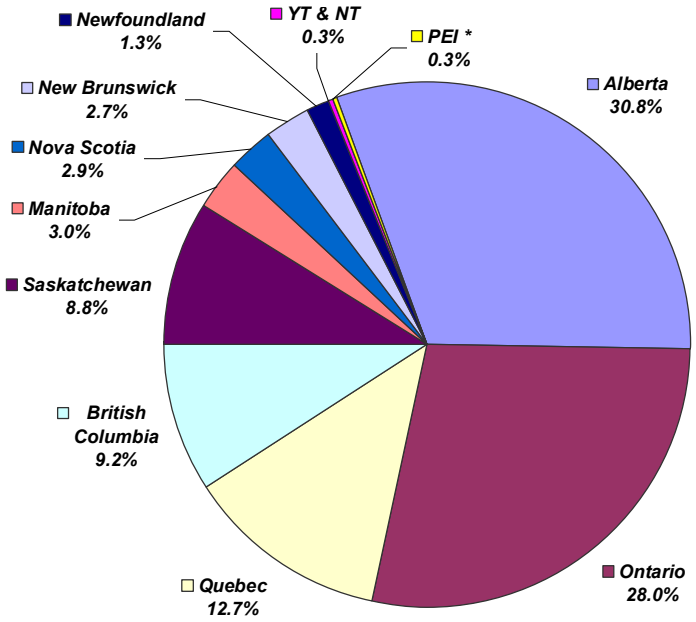

Figure 2.5. 1999 Greenhouse Gas Emissions (by Province).
(Source data: Environment Canada, 2002)

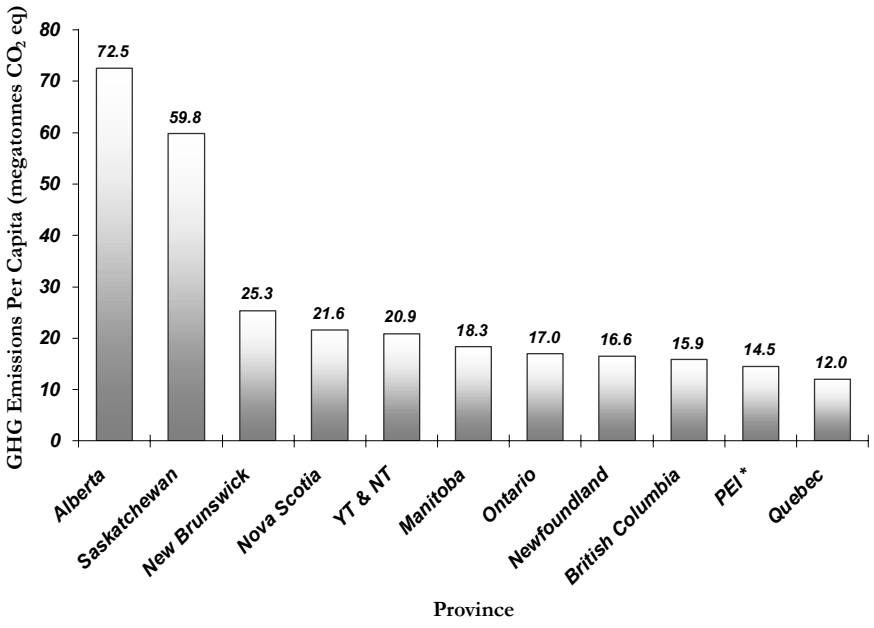

Figure 2.6. 1999 Per Capita Greenhouse Gas Emissions (by Province).
(Source data: Environment Canada, 2002)

Although greenhouse gas emissions have increased across Canada since 1990, these increases have not been uniform. Figure 2.7 describes the changes in greenhouse gas emissions from 1990 to 1999 by province:

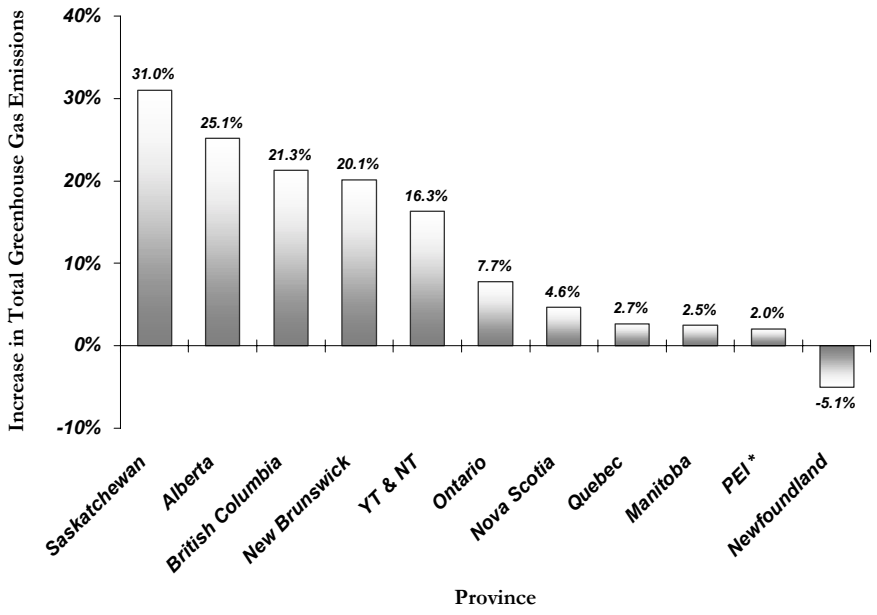

Figure 2.7. Increases in Total Greenhouse Gas Emissions, 1990-1999 (by Province).
(Source data: Environment Canada, 2002)

This data demonstrates that the level of greenhouse gas emissions and rates of emissions increases are not constant from province to province. Alberta and Saskatchewan have high per capita greenhouse gas emissions, and greenhouse gas emissions from these provinces have increased significantly between 1990 and 1999. On the other hand, Québec has the lowest per capita greenhouse gas emissions in Canada, and the emissions from Newfoundland have actually decreased during the 1990 to 1999 period.

2.7.2. Sectoral sources

The specific sources of greenhouse gases in Canada by sector are given in Table 2.4.

Table 2.4. 1999 Greenhouse Gas Emissions (UNFCCC classification).
(Source: Environment Canada, 2002)

Source and Sinks	Emissions (in kt CO_2 eq)						
	CO_2	CH_4	N_2O	HFCs	PFCs	SF_6	Total
Fuel Combustion							
Fossil Fuel Industries	62,600	2,400	410	-	-	-	65,400
Electricity & Heat Generation	121,000	81	700	-	-	-	121,000
Mining	7,390	3.1	54	-	-	-	7,450
Manufacturing	52,400	36	370	-	-	-	52,800
Construction	1,160	0.4	10	-	-	-	1,170
Transport	179,000	720	9,100	-	-	-	189,000
Residential	40,500	2,000	520	-	-	-	43,000
Commercial and Institutional	28,700	11	190	-	-	-	28,900
Other	2,670	0.8	18	-	-	-	2,690
Fugitive							
Solid Fuels	-	0.8	-	-	-	-	1,100
Oil and Gas	14,000	37,000	-	-	-	-	52,000
Industrial							
Non Metallic Mineral Production	9,100	-	-	-	-	-	9,100
Ammonia, Adipic Acid & Nitric Acid Production	6,850	-	2,500	-	-	-	9,400
Ferrous Metal Production	8,500	-	-	-	-	-	8,500
Aluminum & Magnesium Production	3,920	-	-	-	6,000	1,700	12,000
Undifferentiated Production and Product Use	12,000	-	-	900	80	-	13,000
Solvents & Other Product Use	**-**	**-**	**460**	**-**	**-**	**-**	**500**
Agriculture							
Enteric Fermentation	-	18,000	-	-	-	-	18,000
Manure Management	-	5,100	4,300	-	-	-	9,400
Agricultural Soils	200	-	30,000	-	-	-	30,000
Land Use Change and Forestry	-	**1,000**	**1,000**	**-**	**-**	**-**	**2,000**
Waste							
Solid Waste Disposal on Land	-	22,000	-	-	-	-	22,000
Wastewater Handling	-	400	950	-	-	-	1,300
Waste Incineration	280	6.9	59	-	-	-	350
Total	***550,000***	***90,000***	***54,000***	***900***	***6,000***	***1,700***	***703,000***

This information is categorized according to a standardized UNFCCC auditing designation for greenhouse gas emissions, and is consistent among all of the parties to the Protocol.

Another picture of Canadian emissions, using the same data grouped in different categories, is shown in Figure 2.8:

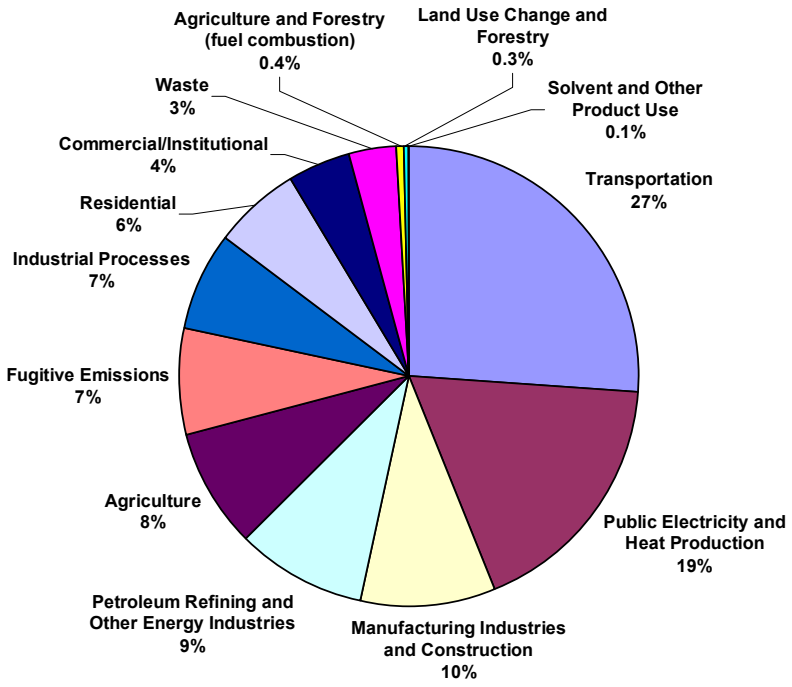

Figure 2.8. 2000 Greenhouse Gas Emissions (by sector).
(Source data: Environment Canada, 2002)

2.8. GLOBAL AND CANADIAN EMISSIONS

Figure 2.8 compares the total emissions of greenhouse gases from Canada to that of the rest of the Annex I parties (OECD nations, plus "economies in transition" such as Russia) to the Kyoto Protocol:

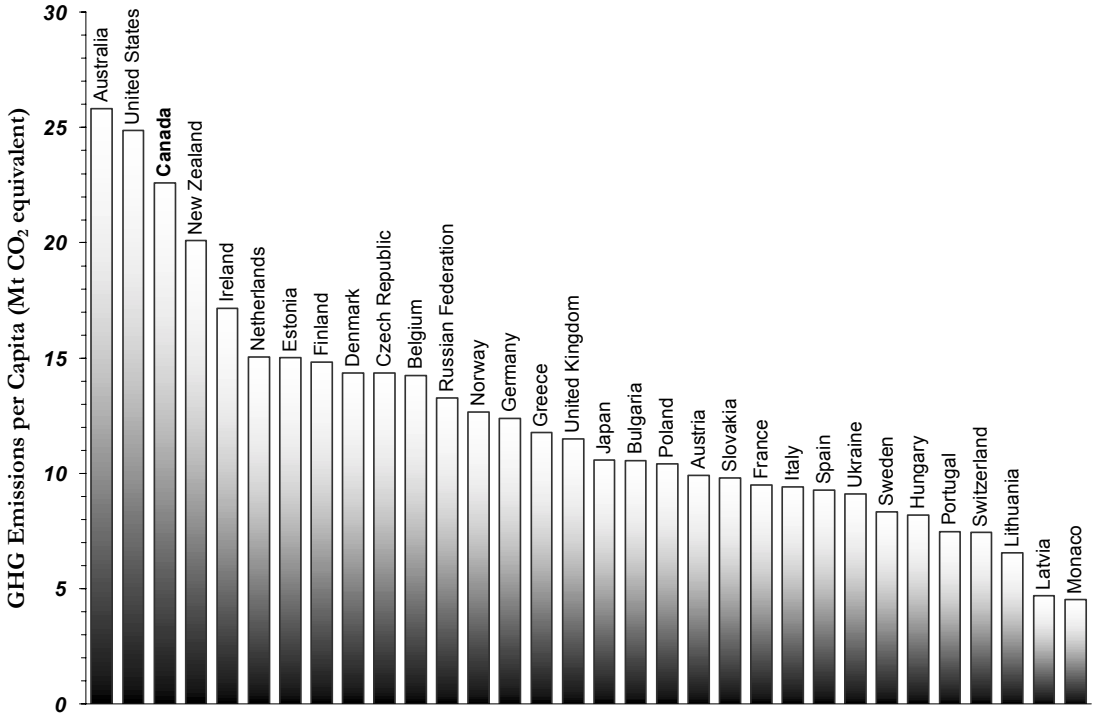

Figure 2.9. 1998 Greenhouse Gas Emissions per Capita (by Country).
(source: UNFCCC, 2001b)

The growth of greenhouse gases from the base year of 1990 among Annex I countries is given in Figure 2.9:

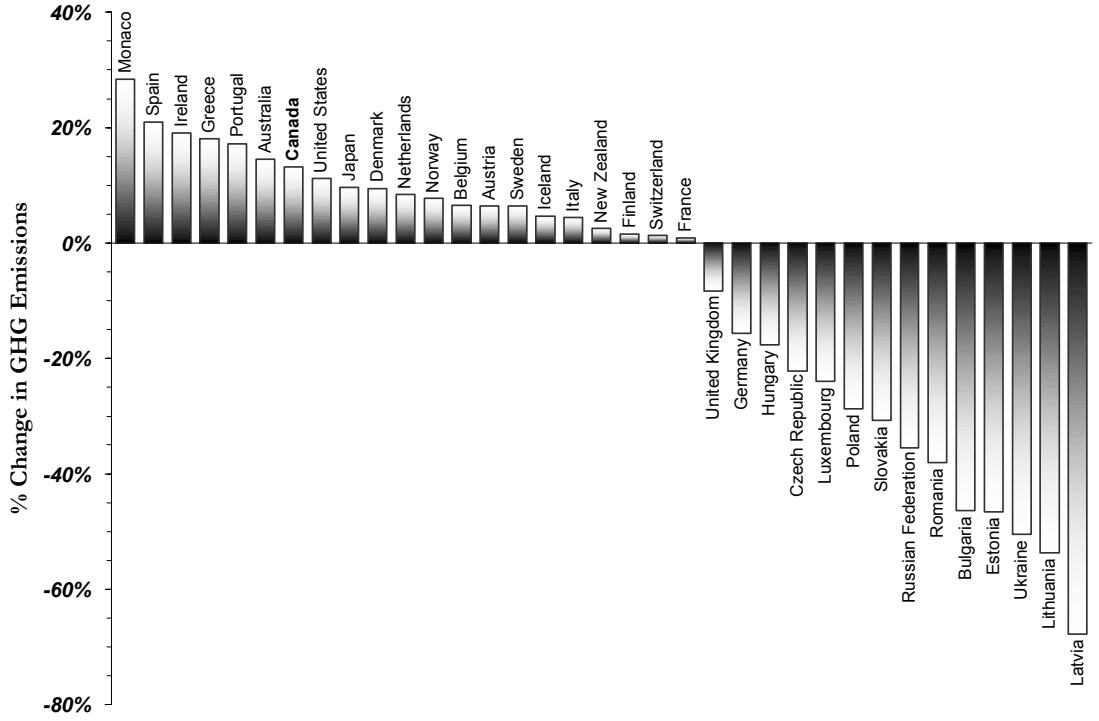

Figure 2.9. Change in Greenhouse Gas Emissions, 1990-1998 (by Country).
(source: UNFCCC, 2001b)

This figure does reveal some interesting aspects of greenhouse gas emissions from sources in Annex I countries. The most remarkable element of this information, of course, is the significant reduction in greenhouse gases in many eastern European countries between 1990 and 1998. This is due to the collapse of industry in Eastern Bloc countries, promoted by the fall of communism and associated economic restructuring that took place in the early 1990s.

Another interesting note is that some western European countries, specifically Spain, Greece, Ireland and Portugal, have had significant increases in emissions during the 1990s, even greater than the increases in Canada, Australia and the United States, on a relative basis. While this may seem to be unusual, especially since these countries officially ratified the Kyoto Protocol on 31 May 2001, the European Union has negotiated reductions under the Protocol as a bloc, allowing some EU countries to increase emissions, while other must decrease. More drastic reductions in other EU countries such as France, the United Kingdom and Germany will offset these increases to provide for an overall bloc reduction in emissions across the 15 EU member states.

As a result of these differences, the attitudes of these governments regarding the Kyoto Protocol vary significantly. Since the countries of the European Union are negotiating as a unit, individual targets are almost a secondary issue. However, countries such as the United States and Australia, which are heavily dependent upon fossil fuel and related industries, are less enthusiastic about the treaty. Offsetting predicted increases in emissions would undoubtedly require the purchase of a significant number of emissions credits on the international market. Furthermore, emerging market economies in Eastern Europe could use emissions credits as a source of income. There is a fear in these countries, though, that reliance on the income from these credits could restrain economic growth dependent on activities that release greenhouse gases.

3. The International Context

The Canadian policy process described here is being carried out as part of the larger international effort to address climate change, carried out under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC). Canadians who wish to participate in development and implementation of our policy here in Canada must understand that international process for two reasons. First, they must understand the role Canada is playing on the international stage – in particular, whether it is one of the nations pressing for global action or one of the group working to delay it. Armed with that information, they can then tell their elected representatives what role they think Canada should play. Secondly, the international process is significant because it directly influences Canada's own domestic policy. Climate policy adopted by the government of Canada results in part from pressure exerted by provinces, environmentalists or business associations, but also because of opportunities and pressures existing outside Canada's borders.

Accordingly, this section describes the actors and institutions that make up the international policy process, as it has evolved since adoption of the Framework Convention in 1992. It then sets out the international positions Canada has taken during that period and, for those who wish to make their views, known, the ways in which the government of Canada decides its position. Section 3 then decides the three aspects of the international regime which are most significant for Canada:

- the opportunities it provides to achieve the Canadian policy goal by buying credits or financing emission reductions in other countries, in addition to taking action at home;
- the agreement by other parties to the UNFCCC to give Canada credit (in effect, reducing the total emission reduction required) for carbon stored in "sinks" such as soil and trees; and,
- the effort by Canada to also be given credit for "clean" energy exports (such as natural gas, which has a lower ratio of carbon for each unit of energy output than oil or coal) to the United States.

Finally, we set out the unilateral climate policy announced by the Bush administration in February 2002, the year after the U.S. withdrew from the UNFCCC process.

3.1. THE UNFCCC PROCESS

Climate change is a truly global environmental problem, in that no one country can prevent the future damage it may suffer simply by acting alone to reduce emissions within its own borders. Local air pollution problems can be solved in that manner. International air pollution issues, such as acid rain, in which science can establish a direct causal connection between damage caused in one location and pollutants emitted in another, can be solved by bargaining amongst the nations involved. In the case of climate change, however, we cannot see a direct connection between fossil fuels combusted in, for instance, Denmark, and severe weather effects in Saskatchewan. To solve Saskatchewan's problem, we must see a reduction in total fossil fuel combustion, all over the world. There is no global government, however, which can pass a law requiring those reductions.

Within their borders, national governments can legitimately coerce citizens and organizations, requiring them to change their behaviour in ways that will help meet national goals such as environmental protection. At the global scale, however, no governing body holds such moral authority. The United Nations can co-ordinate the activity of states, but the concept of state sovereignty prevents it from being deemed as holding the same right of coercion as a national government. As a result, global environmental problems such as protection of the stratospheric ozone layer and climate change, which cannot be solved by any one country alone, must be addressed by agreements amongst states. In essence, each says to the others: "I will take action on this global problem in my country, provided that you do the same in yours."

Under the protocols of international diplomacy, there is an established procedure for negotiating such international environmental agreements. The usual first step, often co-ordinated by the United Nations Environment Program, is for representatives of national governments to meet on a regular basis to exchange scientific and technical information. That process is then formalized and a general objective set when nations come together to sign a Convention. More specific objectives and means of achieving them are then laid out when those nations which are party to a convention come together to reach agreement on a Protocol to the Convention. Both the convention and protocol are initially signed by diplomatic representatives of the nations involved, but must then be ratified by the national governments. They are not considered to be binding upon nations involved until they have been ratified by a pre-determined number of nations.

Once such an international agreement comes into force, who enforces it, making sure that countries actually do what they have said they will do? As stated, the concept of state sovereignty means there is

no global government with the power to enforce international agreements by imposing fines or other sanctions. To the extent they have staffing resources available, international bodies such as UNEP can report on non-compliance. Domestic actors within the country, such as environmentalists hoping to pressure their government, can perform the same function. Alternatively, one or more nations might take it upon themselves to enforce an international agreement, by threatening or imposing trade sanctions. Relative to national law, however, enforcement of international environmental agreements is weak.

International environmental agreements result from a process of conflict and negotiation amongst states, which, of course, are pursuing widely varying interests as they engage in that process. Porter and Brown have classified the roles played by different states during negotiation and implementation of international environmental agreements as follows:

- **lead state**, defined as one pressing for an agreement;
- **supporting state**;
- **swing state**, defined as one which bargains for changes to the proposed agreement in exchange for support; and,
- **veto or blocking state**, defined as one which "opposes a proposed environmental regime outright or tries to weaken it to the point that it cannot be effective."

As discussed below, in the case of climate change, the Alliance of Small Island States has consistently played the role of a lead state, while Saudi Arabia has played the role of blocking state. This indicates the first of the three factors which, according to Porter and Brown, determine the role played by a given state as it negotiates development of a potential environmental regime. Those factors are (Porter and Brown: 1996, 33):

- **direct self-interest** (the state's calculation of the costs it will have to pay if the regime is established, relative to benefits it will receive);
- **domestic factors**, basically the relative political strength of internal groups supporting or opposing the regime; and,
- "**international political consequences**, including increased prestige or damage to the country's image worldwide."

The way in which these factors have influenced the international role played by Canada is discussed in section 3.2 below. What follows immediately is a very brief review of the way in which this general process has played out in the specific case of climate change since the issue was first formally discussed by the international community in 1988.

Co-ordinated international scientific study of the issue was initiated in the mid-1980s and then given an institutional home, when the World Meteorological Organization and UN Environment Programme established the Intergovernmental Panel on Climate Change (IPCC) in 1988. The Panel formed sub-committees on science, impacts and possible responses, each made up of representatives of ten or twelve states. The Panel issued its first report in August 1990, stating that climate change did pose a significant threat (Porter and Brown: 1996, 94; Grubb et al: 1999, 5-7).

In response, the United Nations adopted a resolution in December 1990, which established a committee with a mandate to negotiate a convention. The committee completed its work by May 1992 and the Framework Convention was formally presented for signature at the June 1992 Rio Convention. Sufficient nations had signed by March 21, 1994, that it came into effect. Today, 186 nations are parties to the convention (UNFCCC, Climate Change Secretariat, 2002).

By signing the 1992 Convention, nations committed themselves only to a very general goal of stabilization of emissions as a level that would prevent "dangerous" effects. No specific tonnages or timetables are referred to. European countries had pressed for specific targets but the United States, playing the role of swing state, said it would only sign the Convention if such precise obligations were excluded (Porter and Brown: 1996, 95-96). The Convention does, however, set forth both the general principle of the need for precautionary action, combined with recognition that the rich, industrialized north must bear a greater portion of the total cost than the developing south. Twenty-four such nations, generally defined as members of the Organization for Economic Co-operation and Development (OECD) plus 17 "Economies in Transition" (including Russia, Poland and other eastern European countries) are listed in Annex I. All other nations, 145 in total, that are party to the Treaty are referred to as "non-Annex I nations".

As signatories to the Convention, all parties are required to prepare and regularly update climate policies, including adaptation initiatives (such as revising building codes to make buildings better able to withstand severe weather events), and measures to reduce emissions and protect sinks. "The FCCC commits Canada and other countries to, among other things, implement policies and measures to mitigate climate change; adopt policies and measures to facilitate adaptation to climate change;

promote and co-operate in the exchange of information related to climate change; and develop and implement educational and public awareness programs on climate change. These commitments are to take into account national and regional priorities of the countries." (Commissioner of Environment: 1998, 3-16). Annex I countries must work toward the non-binding goal of stabilization of emissions at 1990 levels by the year 2000. OECD nations must also provide financial assistance to developing nations to assist them meet their obligations under the Convention.

The first meeting of parties to the Convention (termed CoP 1) was held in Berlin in from March 28 to April 7, 1995. It was agreed that specific objectives, measured in tonnes, would be established and that the international regime to be negotiated would include "joint implementation", counting reductions financed in another country as part of the financing country's total effort. At the end of that year, the *Second Assessment Report* of the IPCC was completed. Published in 1996, this report found that "the balance of evidence suggests a discernible human influence on global climate ... significant 'no regrets' opportunities [such as energy conservation which is justified solely on the basis of cost savings, regardless of climate change implications] are available in most countries ... [and] the potential risk of damage from climate change is enough to justify action beyond such 'no regrets' measures." (Grubb, 1999: 8).

CoP 2 was held at Geneva, July 8-19, 1996. Progress was made, in that the U.S. moved to accept specific targets, provided that the regime being negotiated allowed use of financial instruments.

The third meeting of parties was held in Kyoto, Japan, December 1 to 10, 1997. There, for the first time, parties agreed to specific emission targets that will become binding under international law if the Kyoto Protocol is ratified. The Protocol will take such legal effect once it is ratified (defined as formal approval by the national government) by 55 countries, representing 55% of total Annex I emissions. (As of September 2002, that number will be reached provided that Russia and either Canada or Poland ratify the treaty.) The overall target set out in the 1997 Protocol is a 5% reduction of total Annex I emissions, measured against 1990 levels. That must be achieved within the period 2008-2012. (As noted above, that five-year period was chosen rather than a specific year to take into account fluctuations in emissions caused by such things as economic upswing or recession. Discussions of policy typically use a target year of 2010 for convenience.) Individual targets vary. Australia, for instance, is allowed to increase emissions by 8%, while Canada, Hungary, Japan and Poland must reduce by 6%. The Protocol applies to the six greenhouse gases discussed in section 2 above.

In the years leading up to the Kyoto meeting, the United States and Canada insisted that any agreement must include economic instruments, which would allow them meet their commitments at the lowest possible cost. These include "joint implementation" and "clean development" measures – defined as funding by an Annex I state of emission-reduction activities in, respectively, another Annex I or developing nation. The third, emission trading, is discussed below.

The parties then met again in Buenos Aires in November 1998 (CoP 4) but did nothing more than confirm the need to negotiate the details necessary for implementation of the Protocol. The next meeting (CoP 5) was held at Bonn, Germany, October 25 to November 5, 1999, with, again, little substantive progress made. CoP 6 was held at The Hague, November 13 to 24, 2000. The disagreements between the United States and the European Union over issues such as credits for sinks, extent to which countries should be allowed to use the three economic instruments rather than take action at home and the role of developing nations were too fundamental to allow agreement to be reached. On March 28 of the following year, 2001, the U.S. announced it would no longer participate.

The CoP 6 meeting was then reconvened at Bonn from in July 2001, this time without formal U.S. participation. Compromises were made and unlike the failure at The Hague the previous November, agreement was reached on outstanding issues. Procedures for use of the economic instruments of trading, joint implementation and the clean development mechanism were agreed to and institutions established to oversee their use. Definitions of "sinks" programs, such as forest management and agricultural re-vegetation, were decided. Three additional funds for assistance to developing countries, operated by the Global Environmental Facility, were established. Finally, procedures to give incentives for compliance were established. For instance: "If a country fails to meet its undertaking to reduce greenhouse gas emissions, it must 'repay' the shortfall, augmented by 30%, in the next target period (e.g. 2013-2017)" (International Energy Agency, undated). The next meeting of Parties, CoP 7, was held at Marrakech, Morocco, October 29 to November 29, 2001. It resulted in agreement upon a legal text setting forth the agreements reached at Bonn earlier that year. CoP 8 will be held in New Delhi, India, from October 23 to November 1, 2002.

The international climate change regime, as it has evolved to 2002, consists of the following international organizations.

- **The Conference of Parties.** This is the "supreme decision-making body of the Convention" which "meets every year to review the implementation of the Convention, adopt decisions to

develop the Convention's rulebook, and negotiate substantive new commitments." (UNFCCC Secretariat, 2002: 12)

- Two bodies which meet regularly to negotiate elements to be considered by the Conference of Parties: the **Subsidiary Body for Scientific and Technological Advice** (SBSTA) and the **Subsidiary Body for Implementation** (SBI).
- **The Climate Change Secretariat.** The secretariat consists of some 150 staff, situated in Bonn, Germany. It carries out the administrative functions of the CoP, SBSTA and SBI.
- **The Global Environment Facility**, the international agency responsible for funding environmental projects in developing nations.
- **The Intergovernmental Panel on Climate Change** (IPCC).

Using Porter and Brown's categories, listed above, the participating states can be divided into the following groups.

- **Lead states.** The countries most interested in seeing a regime implemented are the Alliance of Small Island States, Germany, the Netherlands, Denmark, Norway and Finland (Newell, 2000:, 13 - 14). The latter states operate as part of the European Union during international negotiations. In general terms, the northern European nations are more in favour of an accord than are the southern nations.
- **Supporting states.** As noted, other EU nations are generally in support, as is Russia, which sees an opportunity to sell is unused emission credits, since its economy is now operating well below capacity. Argentina is also a supporting state, albeit a non-Annex I one (Newell, p. 18). Most of the developing nations support the accord, provided it applies only to the Annex I countries and not to them. Japan was traditionally allied with the U.S. and Australia as a blocking state, but in the summer of 2002 ratified the Protocol.
- **Swing states.** Canada, which is negotiating for concessions on clean energy exports, is a state that will only support the regime if it is modified. Far more significant, in terms of total emissions, are China, India and Brazil. They are under pressure to accept specific emission targets and in exchange are negotiating for increased financial assistance.
- **Blocking states.** The principle blocking states, or states that consistently attempt to stall or delay negotiations, are those belong to the Organization of Petroleum Exporting Countries (OPEC), such as Saudi Arabia and Kuwait. The U.S. had functioned as a swing state from the start, negotiating first to avoid specific target and then for economic instruments, and then

moved to the role of blocking state at the last meeting of parties in November 2000, before it withdrew.

3.2. CANADIAN PARTICIPATION IN THE UNFCCC PROCESS

It is impossible to draw a completely clear line between those actions taken by the federal government as it negotiates internationally at meetings of parties and other FCCC bodies and those taken at home, as it negotiates with the provinces. Accordingly, this section should be read in conjunction with 4.2 below.

In the late 1980s, when popular support for environmental protection was high and issues such as acid rain had been successfully addressed, the Canadian government played the role of lead state, pressing for international action. It convened one of the first international meetings on the issue, in 1988 and then, like a number of other nations, in 1990 unilaterally adopted the goal of stabilization. It supported the Convention at Rio and, unlike the U.S., pressed for targets and timetables (Samson, 2002: 202). It then took action in Parliament shortly afterward to formally approve the Convention. Samson, citing a federal government document, says that Canada had three objectives as it went into the Rio negotiations: "(1) to preserve Canada's competitiveness; (2) to provide opportunities for Canadian business; and (3) to involve as many countries as possible using a common approach that allows differentiated action among countries." (Samson, 2002: 203) Samson says Canada pursued these basic objectives through to CoP 6 at The Hague, in November 2000.

As required by the Convention, Canada provided as further documentation of Canadian action its first national report, dated 1994. It then tabled at the first meeting of parties in Berlin, in March 1995 the federal-provincial National Action Program on Climate Change (NAPCC). At the next two meetings, Canada supported the U.S. demand for use of economic instruments. During that period, Canada was allied with the U.S., Japan, Australia and New Zealand, in seeking a weaker agreement than the one advocated by the European Union. As discussed below, Canada's internal position was divided immediately before Kyoto, but the Canadian delegation did agree to a 6% reduction at that meeting. Since then, it has consistently worked to effectively reduce that commitment, by asking other parties to give it credit for sinks and clean energy exports.

Samson gives this picture of the Canadian negotiating objectives at CoP 5 in Bonn. "Canada's stated approach was founded on three principal objectives that echoed back to Rio: 1) to meet its Kyoto targets at the lowest cost; 2) to ensure a level playing field with other major economies and

competitors; and 3) maximize opportunities for Canadian business." (Samson, 2002:. 207) In terms of the latter, Canada sought in the years after Kyoto to help Atomic Energy Control Limited efforts to market abroad the CANDU nuclear reactor, as one means of meeting the Kyoto target (Doern et al, 2001:22). The federal government did not, however, list nuclear energy as an option to be considered in its May 2002 Discussion Paper.

Since foreign policy clearly falls within its constitutional mandate, the federal government, more specifically prime minister and cabinet, decide the position Canada will take in international negotiations. Inevitably, however, given the fact that international commitments are at the end of the day implemented by provincial governments and private firms, the federal government must ensure that its international position is not at odds with the current national position, brokered by federal-provincial and multi-stakeholder consultation. As discussed below, the one exception to that rule has been the differing positions taken by the JMM and the cabinet in December 1997 immediately prior to the Kyoto meeting.

What follows is a listing of members of the Canadian delegations at the UNFCCC meetings.

Table 3.1. Composition of Canadian Delegations to the Conferences of Parties.

Meeting	Head of delegation	Official delegation
CoP 1 Berlin (March/April 1995)	Ms. Sheila Copps, Minister of the Environment	
CoP 2 Geneva (July 1996)	Mr. Sergio Marchi, Minister of the Environment	• Environment Canada (10) • Dept. of Foreign Affairs and International Trade (4) • Natural Resources Canada (3) • Business Council on National Issues (1) • Canadian Electricity Association (1) • Sierra Club of Canada (1)
CoP 3 Kyoto (December 1997)	Ms. Christine Stewart, Minister of the Environment	
CoP 4 Buenos Aires (November 1998)	Ms. Christine Stewart, Minister of the Environment	• Environment Canada (9) • Dept. of Foreign Affairs and International Trade (6) • Natural Resources Canada (5) • Industry Canada (1) • Dept. of Finance (1) • Canadian International Development Agency (1)

		• Agriculture and Agri-food Canada (2) • Climate Change Secretariat (1) • Government of Ontario (3) • Government of Québec (3) • Government of Alberta (2) • BC JI Pilot Programme (1) • Federation of Canadian Municipalities (1) • Pembina Institute (1) • West Coast Environmental Law Association (1) • Business Council on National Issues (1) • Suncor Alberta (1)
CoP 5 Bonn (October/November 1999)	Mr. David Anderson, Minister of the Environment	• Environment Canada (8) • Department of Foreign Affairs and International Trade (5) • Parliament of Canada (2) • Agriculture and Agri-Food Canada (2) • Canadian International Development Agency (3) • Industry Canada (1) • Natural Resources Canada (5) • Government of Alberta (3) • Government of Québec (3) • Government of Ontario (1) • Federation of Canadian Municipalities (1) • Inuit Circumpolar Conference (1) • Business Council on National Issues (1) • Canadian Electricity Association (1) • West Coast Environmental Law Association (1) • Sierra Club - Washington (1) • Youth Representative (1)
CoP 6 The Hague (November 2000)	Mr. Lloyd Axworthy, Privy Councilor	• Environment Canada (15) • Natural Resources Canada (13) • Agriculture and Agri-Food Canada (3) • Canadian International Development Agency (6) • Department of Foreign Affairs and International Trade (8) • Industry Canada (2) • Department of Finance (1) • Government of Alberta (4) • Government of British Columbia (4) • Government of Newfoundland and Labrador (1) • Government of Nova Scotia (3)

		• Government of Ontario (6) • Government of Québec (6) • Government of the Yukon Territory (2) • Government of the Northwest Territories (1) • Federation of Canadian Municipalities (1) • Assembly of First Nations of the Yukon (1) • Youth Representatives (2)
CoP 6, Part 2 Bonn (July 2001)	Mr. Herb Gray, Deputy Prime Minister	
CoP 7 Marrakech (November 2001)	Mr. David Anderson, Minister of the Environment	• Environment Canada (14) • Department of Foreign Affairs and International Trade (9) • Parliament of Canada (1) • Agriculture and Agri-Food Canada (1) • Ambassador to Morocco (2) • Canadian International Development Agency (1) • Natural Resources Canada (5) • Industry Canada (1) • Climate Change Communications (1) • National Internation Climate Change (1) • Government of British Columbia (2) • Government of Québec (3) • Business Council of National Issues (1) • Clean Air Nova Scotia (1) • Grand Chief Council of Yukon First Nations (1)

3.3. EMISSIONS TRADING, SINKS AND EXPORT CREDITS

We discuss here three mechanisms of the international regime which are of particular significance for the Canadian domestic program.

3.3.1. Emissions trading

The basic purpose of a trading system is to lower total emissions of a given substance to a specified level at the lowest possible total cost. The Kyoto regime is the first attempt to use trading on a global basis (prior to that, the most significant use was within one country, the U.S. which as part of its acid rain control program allows trading in sulphur dioxide emissions). The most significant issue debated

internationally has been the extent to which a country could use purchase of international permits to achieve its reduction target. At the Bonn CoP 6 meeting, that limit was set at 10% of total emissions. International purchases are potentially an escape clause for the federal government, since it could achieve the Canadian target without forcing actions by the provinces, at least up to the 10% limit of the Bonn agreement. The May 2002 Discussion Paper, however, makes no reference to a 10% limit. Instead it says the "majority of effort" should be domestic action. It also says Canada "may need to consider" such international purchases and the related issue of whether the selling country would then use that money for its own environmental protection purposes. The attractiveness of international purchases, relative to emissions reductions in this country, will be decided by their market price, once a global trading scheme is established. As discussed in section 4.2 below, a trading system within Canada, is almost certain to be part of the Kyoto plan to be released by the federal government in the fall of 2002.

3.3.2. Sinks

As noted, the term "sinks" refers to the fact that plants can draw carbon dioxide out of the atmosphere and convert it into biomass, which can influence the net balance of greenhouse gases. Therefore, activities that promote plant growth, such as tree planting or cropland management techniques, can capture carbon in the atmosphere and reduce the net impacts of greenhouse gas emissions. Conversely, cutting down forests for development can reduce the uptake of carbon dioxide and increase effective emissions from man-made sources.

Collectively, land use, land use change and forestry (or LULUCF) can be considered as either a "sink" or as a source for atmospheric carbon, and can be accounted for as either a greenhouse gas emissions debit or credit. Under the Kyoto Protocol, naturally occurring plant growth is not considered; only the effects of human activities on carbon uptake are evaluated. This is usually expressed in terms of Mt of carbon (C). Increases in soil carbon and carbon in vegetation require CO_2 from the atmosphere. The decay of forest litter and other organic material, and the destruction of plants can result in the release of both CO_2 and methane. The release or uptake of carbon as carbon dioxide is equal to 3.67 Mt CO_2 per Mt of carbon, and releases of carbon as methane are equal to 28 Mt CO_2 eq per Mt of carbon.

Effective emissions and removals are accounted for under the following seven categories:

- **afforestation,** the direct, human-induced conversion of land that has not been forested for at least 50 years to forested land;

- **reforestation,** the direct, human-induced conversion of land that has been deforested within the last 50 years, but before the greenhouse gas emissions baseline was established in 1990;
- **deforestation,** the direct, human-induced conversion of forested land to non-forested land for development or other uses;
- **revegetation,** direct, human-induced activities to establish vegetation to increase carbon stocks, in ways not covered under other definitions;
- **forest management,** the system of practices for the stewardship and sustainable use of forested lands;
- **cropland management,** the system of practices on land where crops are grown and other land is set aside that is temporarily not being used for production; and
- **grazing land management,** the system of practices on land used for livestock production that can influence relevant characteristics of vegetation and livestock.

These activities could potentially provide a significant and cost-effective means to reduce the greenhouse gas concentrations in the atmosphere. However, the main focus of the Kyoto Protocol is to promote direct reductions of industrial emissions from man-made sources. Therefore, there have been several restrictions put into place by the UNFCCC parties on the use of carbon sinks.

- If afforestation, reforestation and deforestation collectively result in a net source of emissions through reduced carbon uptake, there net emissions may be offset with forest management practices. Up to 9 Mt of carbon uptake per year can be credited through these activities.
- Additional forestry management programs can be used to offset greenhouse gas emissions, up to an assigned cap; for Canada, this limit is 13 Mt of carbon per year. This cap includes joint implementation projects that involve forestry management.
- Emissions and removals from revegetation, cropland management and grazing land management are calculated on a net-net basis: net changes in carbon stocks in 1990 are subtracted from the net changes in carbon stocks during an accounting period for overall accounting purposes.
- Only afforestation and reforestation activities are eligible under the clean development mechanism, and may only be used for credits equal to 1% of the 1990 baseline emissions (6 Mt CO_2 eq for Canada).

- Emissions credits from carbon sinks must be accompanied by greater removals or reductions in other areas.

Under the preliminary framework described in the 2002 Discussion Paper, the Canadian government expects that credits equal to 24 Mt CO_2 eq will be earned from these activities in Canada. It should be noted that this use of sinks is less effective than a decision to forego the burning of fossil fuels which would release 24 Mt of carbon dioxide equivalent. Carbon stored in trees or soil may be released by natural processes, while carbon in oil or natural gas underground will stay underground if we do not exploit these resources. Therefore, by promoting sinks within this treaty, Canada is not only seeking credit for "business as usual" practices, but is also proposing a policy measure that will be much less effective.

In addition to capturing CO_2 from the atmosphere through forestry and land use practices, carbon dioxide may also be captured with pollution control equipment, and stored in geological formations: oil and gas reservoirs, coal formations and deep saline aquifers. According to the Kyoto Protocol, this type of carbon sequestration is not classified as a "sink". As this approach captures and removes carbon dioxide from point emissions sources, it can be used to reduce overall emissions and gain credit for the mitigation. As it is considered to be a pollution control measure, it is not considered a sink under the Protocol, nor is it subject to the same limitations.

This could be an effective approach for Canada to use in meeting the goals of the Kyoto Protocol. Alberta and Saskatchewan have greenhouse gas emissions that are higher per capita than anywhere else in Canada, due to their reliance on coal-fired electricity generation and the importance of oil and gas production to their economy. However, there is also an abundance of geological reservoirs in this area that could be used to store carbon dioxide. In addition, CO_2 is often pumped into oil and gas fields to increase their yield, which could be combined with storage methods to sequester greenhouse gases. There are some significant technical obstacles to using carbon storage at a large commercial scale, and at this point it is not economically feasible.

3.3.3. Clean energy exports

The withdrawal of the United States from the Kyoto Protocol poses difficulties for Canada, which is now the only Annex I country located in the Americas - although Mexico and many Central and South American countries are Parties to the Convention, as non-Annex I countries they are not bound by requirements for greenhouse gas emissions reductions. In addition, the economy of Canada is also

heavily integrated with that of the United States, with approximately 85% of Canada's exports going to the U.S.

The proportion of energy commodities going from Canada to the United States is even higher than this, with trade with the U.S. accounting for 95% of all energy exports. It has been estimated that these exports produce net global environmental benefits, as some of these commodities are less greenhouse gas intensive. Canada is second only to Russia in natural gas exports, and supplied about 3.5 trillion cubic feet of natural gas to the United States in 2000 (about 15% of total natural gas use). Only about 7% of the total electricity in Canada is exported, but 93% of exported electricity is generated with hydropower, which produces far less greenhouse gases. Without these energy sources, demand in the U.S. would be met through the increased use of alternative sources, potentially through more greenhouse gas intensive fuels such as coal and fuel oil.

Recognizing these conditions, the Canadian delegation has submitted a proposal to include the consideration of credits for the export of clean energy, specifically hydroelectricity and natural gas, to the United States. Under this proposed system, the export of these commodities to the U.S. during the first five-year commitment period (2008-2012) would be assessed by a review panel, and credits would be granted based on the total estimated greenhouse gases displaced. These credits would be capped at 70 Mt CO_2 eq, based on an estimated 24 Mt emissions reduction from hydroelectricity exports and 45 Mt emissions reduction from the export of natural gas to the United States. This would also only apply to Canada; other Annex I countries would not gain credits for energy exports to the United States.

Proponents of this approach have stated that credits for these exports would be an effective means to promote the use of "clean energy" as defined at CoP 6. Although this clean energy would be utilized in a non-Party country, it has been argued that it would provide for a net decrease in global emissions, which would keep with the intent of the Treaty. In addition, it would allow Canada to draw some benefit out of the production of clean energy. Certain European Annex I countries such as Russia, the Netherlands and Norway produce significant amounts of natural gas for export, but are in a much better position to benefit from their use under the Treaty given their geographical proximity to other Parties to the Convention.

However, this plan has faced significant opposition from other countries. The most notable argument against these clean energy export credits is that it essentially rewards Canada for doing nothing. As opposed to providing credits for efforts to develop innovative technology or lower greenhouse gas

emissions through regulation, this would reduce emissions reduction goals by about 30% merely based on the "business-as-usual" changes in natural gas exports. Given that 95 Mt of greenhouse gas emissions in Canada resulted from coal-fired electricity generation, the upgrade of these plants would be a more appropriate action for credits under the Protocol. In addition, the methodology used to determine the credits received for these exports is not completely developed, and would take significant negotiation and research to establish.

3.4. IMPLICATIONS OF U.S. CLIMATE CHANGE POLICY FOR CANADA

Arguing that mandatory limits under the international accord would result in "billions of dollars in industry losses and the elimination of nearly 5 million U.S. jobs", the United States launched its own global warming policy in February 2002, independent of the Kyoto Protocol (Pianinin, 2002). This plan consists of the following elements:

- A goal to reduce "greenhouse gas emissions intensity" (emissions per dollar of gross domestic product) 18% by 2012;
- $3 billion allocated in FY 2003 for climate change research and research on sequestration techniques;
- $7.1 billion allocated over the next 10 years for tax credits to businesses for cogeneration, renewable energy and new technology;
- Development and expansion of emissions registries to ensure that early action can be considered in future programs and regulations;
- A focus on voluntary emissions reductions by industry through government initiatives; and
- Research on future policy actions, which could include market-based incentives such as emissions credit trading.

As a result of the U.S. government's position on climate change, a scenario now exists where the world's largest economy and leading producer of greenhouse gases will embark on a market-based, incentive-based, voluntary approach to reducing greenhouse gas emissions independent of an international emission reduction system. In effect, for an indefinite period of time there will be two models operating: the Kyoto system and the U.S. policy model. Many U.S. states are, however, implementing significant reduction measures independent of the federal government.

A noticeable, yet expected division emerged between environmental groups and industrial organizations following the U.S. announcement. Similarly, reactions to the U.S. position from other countries was also divided with a line roughly drawn between the EU and developing countries on one side, and countries that had previously shared a similar negotiating position as the U.S. on the other. Western European countries have argued that the U.S. proposal will do little to cut emissions given its non-binding character, and developing countries have argued that the U.S. needs to take the lead internationally. Meanwhile, countries like Canada, Australia and Japan have made cautious yet conciliatory statements on the U.S. policy, while acknowledging that they wish the U.S. had remained within the Kyoto framework. Examples include the recent Australia-U.S. Climate Action Partnership that aims to build research and technology partnerships relating to climate change. In March 2002, Canada and the United States signed a comparable agreement to co-ordinate the climate measures of both countries.

American policy is of enormous significance to Canada because of the closely integrated economies of the two countries. This has led business representatives to argue that Canada should follow the U.S. lead, rather than participate in the Kyoto process. Their view is not surprising, given the discrepancy which would exist between the American objective and the one Canada would assume if Kyoto is ratified. The 2002 Discussion Paper describes that difference in these terms: "There is a considerable gap between Canada's target of -6% under the Kyoto Protocol and the goal for the U.S., recently announced by the Administration, of reducing GHG intensity of the U.S. economy by 18 per cent over the next ten years. This will result in about a 30 per cent increase in emissions above 1990 levels instead of the U.S. Kyoto target of -7 per cent." (Canada, 2002: 9) In this situation, Canada has to choose between participating in an international regime and following the ongoing process of integrating its economy and energy and environmental policies with those of the U.S.

PART 2: National actors and process

As described in the Introduction, the purpose of this second part of the Guide is to describe the governmental and non-governmental organizations involved with development of Canadian climate policy and the process within which they interact. The final section of Part 2 sets out the federal and provincial policy decisions that have resulted from that process.

4. Government of Canada

The Chretien government is working to develop and implement climate policy in three distinct fora:

- as a participant with other nations in the UNFCCC process;
- developing and implementing its own climate policy (reducing emissions from its own operations); and,
- most importantly, given the realities of Canadian regionalism and federalism, co-ordinating federal-provincial national policy.

The following two sub-sections address the policy positions taken by the government of Canada since it signed the Kyoto Protocol, while the third describes the relevant federal actors, both elected and appointed.

4.1. FACTORS DETERMINING FEDERAL GOVERNMENT POLICY STANCE

Global climate change is a classic collective-action problem, since no one country can solve its own environmental problem solely by acting alone (unlike environmental problems contained within a nation's own borders). Global co-operation is essential, but it is difficult to achieve, because all nations face the temptation to act as a free rider, getting the benefit of collective action without participating themselves. Furthermore, as noted, climate change poses different threats and opportunities for different nations. Small island states face significant risks, while northern nations face some benefits, such as an extended growing season. Oil-exporting nations face a distinct economic threat, not shared by those that import oil. Beyond these geographical and economic factors, the positions taken by nations with respect to global action on climate are influenced by their broader objectives as they function within the global political economy. Southern nations, for instance, see climate within the larger context of their problems with debt and trade imbalance. Northern nations like Canada view the issue in terms of its impact upon their export competitiveness. Perhaps an even more important factor that determines the position each country takes on the issue is the relative political power of the various domestic actors working to exert influence on their national government. The relative political power of the oil lobby or environmentalists to influence their government's policy is a significant factor (Paterson, 1996).

How do such factors influence Canadian international and domestic policy? Putting the question another way, how can we explain the fact, recognized by all analysts, that Canada has gone from being an international leader on the issue in the late 1980s to being a "veto state" more recently? (Macdonald and Smith, 1999). Samson points to four factors which influence Canadian policy: (1) a "decentralized national policy system"; (2) the economic importance of energy exports; (3) "a national sense of belonging to the land"; and, (4) a "tradition of leadership and brokering in international affairs." (Samson, 2001) Certainly his first two are relevant. Canadian national environmental policy is heavily influenced by provincial interest and staples export is the basis of the Canadian economy. Since the Free Trade Agreement of 1988, the Canadian economy has become increasingly integrated with the American, which is directly relevant for climate policy. The third is more problematic. A special relationship with nature is part of the Canadian mythic identity, but this has not translated into a particularly strong record of environmental protection - many analysts would place the Nordic and northern European nations, Japan and possibly the U.S. well ahead of Canada (Dryzek, 1997). Canada's international role is also part of our image, and as discussed below, may well have influenced Canadian climate policy.

These caveats mean that we suggest Canadian climate policy is influenced primarily by the following factors

- **geographic position**, which results in heavy energy use and a relatively low perception of risk from climate change (although severe weather events such as the 1998 Québec ice storm or 2002 western drought may be working to change that perception);
- the **economic importance of energy exports**, and corresponding political power of the fossil-fuel industry;
- **regionalism**, which gives rise to differing provincial interests, as discussed below;
- **federalism**, which significantly weakens the ability of the government of Canada to make and implement policy by itself; and
- the **environmental deregulatory agenda** of the Chretien government, which has had a markedly worse record on environmental protection than did the Mulroney government before it (Juillet and Toner, 1998):.

4.2. POSITIONS TAKEN BY FEDERAL GOVERNMENT ON NATIONAL POLICY

As described above, in the international arena Canada has gone from a lead state pressing for action to a swing state, willing to participate in the international regime only if it receives concessions which will reduce the amount of action it will be required to take. We turn our attention here, briefly, to the other side of the coin - the public statements, which have been made by the Prime Minister, and relevant cabinet ministers respecting what Canada's domestic climate policy, in their view, should be. Section 5.3 below provides a comparable picture of the positions publicly advocated by each of the five provinces considered here.

Immediately prior to Kyoto meeting in December 1997, Prime Minister Chretien became personally involved in the issue, urging the federal cabinet to adopt a reductions target more stringent than that of the U.S. Bernstein and Gore state that the Prime Minister had been "previously unengaged" but was the subject of personal lobbying by other leaders at the G-8 meeting in Denver in June 1997 (Bernstein and Gore: 2001, 31). Samson suggests the PM's position may have been arranged with U.S. President Clinton as a means of gaining international support for the credits for sinks (Samson: 2001, 205). For whatever reason, the federal government, at the cabinet meeting of December 3, 1997, took a position that differed from that agreed to the previous month by the JMM. This is one of the few times that a Canadian cabinet has publicly disavowed an environmental policy resulting from the national federal-provincial process. That conflict with the provinces seems to have been resolved, however, at the First Ministers meeting in December 1997. During the next three years there was little public disagreement between the federal position and that of the provinces.

That changed by the year 2001, as Canada moved closer to a decision on ratification. After the U.S. pulled out of the UNFCCC process in the spring of that year, the Prime Minister indicated Canada still intended to consider ratification, subject to receiving credit for sinks and exports (McCarthy, April 4, 2001). When the Canadian international strategy of seeking credits for sinks proved successful at the Bonn meeting in July 2001, the Prime Minister stated this "open[s] the way for its [the Protocol] ratification by Canada in 2002." (Prime Minister's website, July 26, 2001) Both Chretien and Environment Minister Anderson indicated, in the fall of 2001, that Canada might ratify by June 1, 2002. This gave rise to the lobbying campaign by business that is discussed below. Perhaps as a result of that pressure, talk of that deadline was replaced by a more indefinite timetable, including extensive additional consultation.

By the spring of 2002, it had become obvious from press reports that cabinet ministers did not agree on the question of ratification. True to their portfolios, the Environment Minister was the strongest advocate, while the Industry Minister, first Brian Tobin and then Alan Rock, was among those with serious reservations (*National Post,* November 21, 2001 and April 3, 2002). As of June 2002, it appeared that the federal government position was that it would only ratify if the other UNFCCC parties gave it the export credits it had been seeking for the past year. The May 2002 Discussion Paper makes clear two aspects of the federal position on domestic policy, if Canada ratifies . First, the federal government has moved for the first time to publicly consider the use of law-based regulation as a policy instrument to supplement voluntarism. Secondly, the government is planning on using expenditures on international emissions credits as a significant part of the Canadian policy instrument package.

The Discussion Paper puts forth four possible approaches to emissions reduction, as follows.

- **Option 1: Broad as practical domestic emissions trading.** Under this option, permits would be issued to upstream suppliers of fossil fuels, such as refiners, importers and coal mines, thus putting a cap on total annual sales. This would cover 80% of Canadian emissions and, it is predicted, would result in an increased price for oil and gas. Permits, accordingly, would be sold at auction, rather than issued free, to ensure the upstream suppliers do not receive a windfall profit from the price increase. That sale of permits would generate $4.5 billion annual revenue at a price of $10 per tonne of CO_2 equivalent. Presumably those revenues would flow to both the federal and provincial governments, although no reference is made the manner in which they would be shared. It is assumed private sector actors would buy 128 Mt of international credits, and governments 0 to 30 Mt.

- **Option 2: All targeted measures.** The term "targeted measures" is used to refer to a variety of policy instruments, including law, program delivery and financial incentives, to be used by all three levels of government. It is stated that because this option does not include domestic emissions trading, it is the most expensive of the four. These measures would achieve 104 Mt of reduction and governments would purchase another 62 Mt on the international market.

- **Option 3: Mixed approach - large final emitter domestic emissions trading.** In this case, permits would be sold to "major industrial emitters" such as electrical utilities, oil and gas operations, cement, chemical and other sectors, rather than the upstream providers as in Option 1, above. These might include some 400 to 500 firms, which account for approximately 40% of emissions. Permits would be given away, rather than auctioned.

- **Option 4: Adjusted mixed approach.** This is similar to Option 3, but firms could buy offsets from other firms outside the system. It would involve both domestic emissions trading and targeted measures.

It is essential to note that all of the options involve the federal government buying international emission credits, as follows.

- **Option 1:** 0 - 30 Mt
- **Option 2:** 62 Mt
- **Option 3:** 42 Mt
- **Option 4:** 16 Mt

These represent a significant portion of the total reduction which must be achieved (presuming Canada is given the 70 Mt clean energy export credit) of 96 Mt.

On September 2, 2002, in a speech at Johannesburg, Prime Minister Chretien stated that: "we are finalizing a plan of implementation that will permit us to achieve the objectives of the Kyoto Accord. When the consultations have concluded, and before the end of the year, the Canadian Parliament will be asked to vote on the ratification of the Kyoto Accord. (Prime Minister Jean Chrétien, Sept. 2, 2002) He did not say explicitly that his government would use its majority in the House of Commons to ensure ratification, suggesting that when the vote is taken he may only support ratification if the 70 Mt clean energy exports has previously been approved at the CoP 8 meeting in late October. Since then, press reports have given a confusing picture with respect to the way in which the government will treat the 70 Mt credit. As of late September 2002, in advance of the release of a federal government plan for implementing Kyoto, only one thing is certain – Parliament will vote on ratification before it rises for the Christmas break.

4.3. FEDERAL ACTORS

4.3.1. Elected officials

In Canada, authority to govern rests with the Governor-General representing the Crown, and Parliament, which includes the House of Commons and Senate. Since 1993, the Liberal Party of Canada, led by Jean Chretien, has held a majority in the House of Commons and thus formed the

government. Because it is both an environment and energy issue, the two Ministers in Prime Minister Chretien's cabinet who have the primary mandate for climate change policy are the Minister of Environment and Minister of Natural Resources (Commissioner of Environment, 2001:6). The work of those departments, and others, is described in the next section. Since there has been no new legislation developed to address the issue, federal elected officials, other than individual ministers managing their departments, have devoted little time to climate change policy. What follows is a listing of the extent to which elected bodies at the federal level have turned their minds to climate policy.

In the fall of 1997, prior to the Kyoto meeting of Parties, two committees of the House of Commons considered the issue – the Standing Committee on Environment and Sustainable Development and the Standing Committee on Natural Resources and Government Operations. No parliamentary committee has considered the issue since.

As noted, a decision on the Canadian international position was made by the federal cabinet at its meeting of December 3, 1997. It would appear from a review of press reports that the Chretien cabinet has only made a decision on the issue one time since then – in the fall of 2000, when it approved the Action Plan. Cabinet will consider the issue again in October 2002 when it will have before it the government plan for Kyoto implementation. Although it may not have formally appeared on a cabinet agenda, in the spring of 2002, as Canada came closer to making a decision on ratification of Kyoto, an ad hoc committee of cabinet ministers was created to provide an opportunity for ministers to discuss the issue. The issue has also been discussed by Liberal MPs on the backbenches. In a letter sent in August 2002, to the Prime Minister, 97 MPs in the National Liberal Caucus to assure him there was "widespread support for ratification of the Kyoto protocol within the Liberal Caucus."

In his 1998 report, the Commissioner of Environment and Sustainable Development stated that departmental reporting to the elected level was contained only in "isolated segments scattered throughout several documents." (3-34) The Commissioner stated that this "fragmented and piecemeal" reporting "makes it difficult for Parliament to oversee the climate change sectoral activity." (Ibid.) The Commissioner recommended that one lead department take responsibility for reporting to Parliament. As discussed below, the federal government has since created a co-ordinating body, the Climate Change Secretariat, but has not assigned responsibility to a single lead department.

In 2001, the Commissioner of the Environment and Sustainable Development again reported on results of an audit of federal climate policy making. The Commissioner stated that:

> there is a large amount of information on climate change that is reported to Parliament by federal entities. However, it continues to be reported in isolated segments scattered in several places throughout several documents. … We continue to believe that to facilitate Parliament's oversight, it is important that the federal government periodically provide Parliament with meaningful and complete summary-level information on the federal government's and Canada's response to climate change, and that this be co-ordinated by a lead department. (Commissioner of Environment, 2001:23)

During the period under consideration in this document, January 1998 to September 2002, while it has undoubtedly been addressed during Question Period, to the best of our knowledge it has never been the subject of major debate in either the House of Commons or Senate. The major involvement of MPs with the issue has been through budgetary approval of climate change expenditures, documented below. The House of Commons, as noted, will for the first time vote on the issue in the fall of 2002.

4.3.2. Appointed officials

The 2001 report of the Environmental Commissioner provides an overview of the organizational structure which had been put in place by that time for federal government climate change policy. The two lead departments were Environment Canada and Natural Resources Canada. In a joint response to the Environmental Commissioner's 1998 audit, published in that report, the two departments stated the manner in which they shared that leadership responsibility: NRCan would "take the lead in developing and co-ordinating Canada's domestic implementation strategy" while Environment "will lead the development of Canada's international climate change agenda." Since then, however, it has become clear from press reports that the minister taking the lead on the fundamental domestic issue of ratification is Environment Minister Anderson.

Beyond Environment and NRCan, the 2001 Commissioner's report lists these federal departments as being involved with the issue:

- Agriculture and Agri-Food Canada;
- Canadian International Development Agency;
- Department of Finance;
- Department of Foreign Affairs and International Trade;
- Department of Justice;
- Department of Fisheries and Oceans;
- Health Canada;
- Industry and Northern Affairs Canada;

- Industry Canada;
- National Defence;
- Public Works and Government Services Canada; and
- Transport Canada.

Three other bodies, which are not line departments but instead co-ordinating bodies, are also listed: the Federal Climate Change Secretariat; Privy Council Office; and the Treasury Board Secretariat (Commissioner of Environment, 2001:23). By 2002, four federal departments had emerged as the ones most directly involved with the issue – Environment, Natural Resources, Finance and Privy Council Office.

What follows is a brief description of each of these two lead departments, setting out mandate of each with respect to climate change and the way in which it is organized to fulfil that mandate. This is followed in section 4.4 by a description of the mechanisms used by the federal government for inter-departmental co-ordination.

4.3.3. Environment Canada

Within Environment Canada, there are several sub-units that are responsible for elements of the department's climate change policy and programs. It should also be noted that regional offices of Environment Canada, which are not listed here, conduct area-specific research on the impacts of climate change.

Climate Change Bureau

The Climate Change Bureau is the lead unit for developing climate change policy decisions for Environment Canada. It is the Department's primary liaison to the Climate Change Secretariat, other government departments, international governments, provincial authorities, business interests and the public with regards to climate change. It co-ordinates Environment Canada's input into the National Implementation Strategy, the Join Energy and Environment Ministers meetings, the National Air Issues Steering Committee, National Air Issues Co-ordinating Committee on Climate Change. Within the Bureau, there are three divisions that are responsible for different aspects of climate change policy.

- **The Climate Change Action Fund** is a source of funding dedicated to the support of actions to reduce greenhouse gas emissions and evaluate the costs and benefits of the implementation of the Kyoto Protocol.

- **Climate Change Communications** is in charge of co-ordinating public communication related to the Kyoto Protocol and climate change policy efforts at the federal level.
- **International Affairs** co-ordinates activities of the Climate Change Bureau with international negotiations and communications.

International Relations Directorate, Policy and Communications

The International Relations Directorate co-ordinates department activities to ensure that domestic and international policies and programs are consistent. It supports Environment Canada's involvement with the United Nations and other international environmental bodies, and manages bilateral relations on the environment. In partnership with the Department of Foreign Affairs and Trade, it is responsible for the development of Canada's international climate change strategy and for international climate change policy negotiations.

Adaptation and Impacts Research Group
Atmospheric and Climate Science Directorate, Meteorological Service of Canada

The Adaptation and Impacts Research Group (AIRG) provides the public and policymakers in Canada with information regarding the environmental, economic and social impacts of climate change, as well as the adaptive responses necessary to manage these effects. The AIRG also works to improve the capacity of research communities to assess these issues.

Environmental Technology Advancement Directorate,
Environmental Protection Service

The Environmental Technology Advancement Directorate (ETAD) provides science and technology support to Environment Canada initiatives, assesses technology options for environmental protection and provides expertise to promote research and development in priority areas of research. Within the Directorate, the Technology and Industry Branch manages and directs technology related activities, including support for the Technology Early Action Measures (TEAM) program under the Climate Change Action Fund, and international technology transfer activities. The Technology Transfer Branch is responsible for protecting and commercializing the intellectual property of Environment Canada.

Economic Issues Branch,
Economic and Regulatory Affairs Directorate, Policy and Communications

This branch is responsible for a wide range of analyses on the economic effects of environmental regulations. This includes the effects of government climate change initiatives on the competitiveness of industry.

Aquatic Ecosystem Impacts Research Branch
National Water Research Institute, Environmental Conservation Service

This branch is currently conducting research on the hydrological and ecological impacts of climate change, and the possible adaptation strategies that could be used to protect aquatic ecosystems. This includes developing response indicators, predicting trends in ecosystems, modeling effects on natural processes, and investigation carbon cycling.

Climate Research Branch
Atmospheric and Climate Science Directorate, Meteorological Service of Canada

The Climate Research Branch is responsible for providing models of future climate conditions to understand potential impacts and provide information to other departments for the development of adaptation strategies. The branch conducts research in the modeling of climate trends through three divisions: the Canadian Centre for Climate Modeling and Analysis (CCCma), the Climate Monitoring and Data Interpretation Division (CCRM) and the Climate Processes and Earth Observation Division (CCRP).

4.3.4. Natural Resources Canada (NRCan)

As noted, NRCan, at least in a formal sense, is the other lead federal department for climate policy. The department has traditionally been responsible for supporting the fossil-fuel industry as it contributes to Canadian economic growth, and is now being asked to change gears in a significant manner, as it works to develop support for renewable and alternative energy sources (Doern and Gattinger, 2001). What follows is a listing of sub-units within in NRCan involved with climate policy.

Climate Change Adaptation Liaison Office
Terrain Sciences Division, Geological Survey of Canada (GSC) - Sedimentary and Marine Geoscience Branch, Earth Sciences Sector

The Terrain Sciences Division provides geographical and geological data on natural and human-induced geological processes and hazards. It also collects baseline information to model, explain and assess potential global changes, including changes in climate. The Climate Change Adaptation Liaison Office co-ordinates a cross-disciplinary program called the Canadian Climate Impacts and Adaptation Research Network (C-CIARN). This Network, sponsored by the Climate Change Action Fund, is comprised of six regional bodies (British Columbia, Prairies, Ontario, Québec, Atlantic, and North) and seven sectoral bodies (Health, Water Resources, Coastal Zone, Forest, Agriculture, Landscape Hazards and Fisheries). The goal of the organization is to sponsor research on Canada's vulnerabilities to climate change, methods to mitigate negative effects of possible future impacts and approaches to take advantage of possible benefits to climate change. To this end, it manages and advises researchers, promotes research priorities and aids in national and provincial impact and adaptation assessments.

Renewable and Electrical Energy Division, Energy Resources Branch, Energy Sector

This sub-unit is in charge of promoting the use of sustainable forms of energy: wind, biomass, solar (active and passive), landfill methane combustion and certain forms of hydroelectric power. To accomplish this, the Division implements green power market development projects, involving interdepartmental procurement policies, tax incentives for construction and use of facilities, information dissemination and support of research. It administers the Renewable Energy Deployment Initiative, a $24 million program designed to develop demand for renewable systems for heating and cooling, as well as the Wind Power Production Initiative, designed to stimulate the construction of wind farms for electricity production. In addition, it manages the Market Incentive Program for Distributors of Emerging Renewable Electricity Sources, a $25 million program created to encourage electricity producers to increase the market share of green power.

Office of Energy Efficiency, Energy Sector

The OEE was formed in April 1998 as a direct response to the need to address energy efficiency to meet the requirements of the Kyoto Protocol. It is charged with identifying opportunities for energy efficiency in the residential, commercial, industrial and transportation sectors. It does so through 17 separate programs, including: Auto$mart, EnerGuide, the Energy Innovators Initiative, FleetSmart,

the Future Fuels Program, the Motor Vehicle Fuel Efficiency Initiative, the Natural Gas for Vehicles Program, and the R-2000 Program.

CANMET Energy Technology Centre (CETC), Energy Sector

The CANMET Energy Technology Centre is the primary research arm of Natural Resources Canada. It conducts research in ten areas related to energy: Advanced Combustion Technologies, Buildings, Characterization Laboratory, Community Energy Systems, Energy Technologies for High Temperature Processes, Federal Industrial Boiler Program, Industry Energy Research and Development (IERD), Processing and Environmental Catalysis, Renewable Energy Technologies Program, Transportation Energy Technologies. Projects within each program are concerned with the mitigation of greenhouse gas emissions and the emissions of other air pollutants, and include the development of technologies such as wind power, energy efficient residential buildings, carbon dioxide sequestration and hydrogen fuel cells. Their efforts not only include basic research and development, but also field trials, development of technical and safety standards, dissemination of information and promotion of these technologies in the electricity sector. CANMET is based in three locations: Devon, Alberta (formerly the CANMET Western Research Centre); Varennes, Québec (formerly the CANMET Energy Diversification Research Laboratory); and Ottawa, Ontario.

Office of Energy Research and Development (OERD), Energy Sector

The OERD co-ordinates energy research and development activities in partnership with other organizations in NRCan, other government organizations (federal and provincial), business and academia. It administers funding for interdepartmental research and development programs, and addresses the priorities for science and technology research addressed in the Energy Priority Framework of the Energy Sector.

Regional Forestry Centres, Canadian Forestry Service

The regional forestry centres of the Canadian Forestry Service conduct research on the effects of climate change on Canada's forests, as well as supporting research for the use of forests as carbon sinks under the Kyoto Protocol. This organization also provides policy advice on climate change related policies, disseminates information relating to climate change and forestry, defines research priorities and co-ordinates activities with other government organizations, business and academia. Research is primarily conducted at CFS facilities in Victoria, Edmonton, Sault Ste. Marie, Sainte-Foy,

Fredericton, and Corner Brook, and the Pacific and Northern Forestry Centres have specific units dealing with the issue of climate change.

4.4. INTERDEPARTMENTAL CO-ORDINATION

The primary body responsible for co-ordinating federal government activity is the Climate Change Secretariat, created in February 1998. A sub-unit within that body, the National Secretariat is responsible for federal-provincial relations, as described below. The Secretariat and National Secretariat are two distinct bodies, in that the first was created by the government of Canada and the second by the JMM, in April 1998 (Environmental Commissioner, 2001:8-9). "The head of this Federal Secretariat reports to the deputy ministers of Environment Canada and Natural Resources Canada (NRCan), as the ministers of these two departments continue to co-manage the federal response to climate change." (Ibid.:11)

The Secretariat, has a staff of approximately 35 people seconded from a number of federal departments. Under existing funding arrangements, the Secretariat has a mandate to operate until the end of March 2004 (Meloch, May 7, 2002).

The Secretariat co-ordinates policy development by means of an interdepartmental committee of assistant deputy ministers, drawn from the ten or more relevant federal departments listed above. That body reports to an ad hoc committee of deputies from those departments. Deputies from the four departments noted above - Environment, NRCan, Finance and PCO - play a primary role. Policy measures then move up from there to the elected level.

5. Provinces

We here set out the positions publicly advocated by the five provinces under consideration with respect to Canadian national policy.

5.1. FACTORS DETERMINING PROVINCIAL POLICY STANCES

Like global states, the positions taken by Canadian provincial governments are determined largely by economic interest. Those who feel they will pay the largest price, in particular Alberta, argue against ratification. In February 2002, at a press conference in Moscow, Alberta Premier Ralph Klein presented Prime Minister Jean Chretien with a letter purportedly from the premiers of all of the provinces save for Québec (the letter was only signed, however, by Premier Campbell of B.C.). The letter expressed concern about the potential costs of Kyoto Protocol to Canada, and the lack of a publicly disclosed national plan to achieve the emissions reductions necessary to comply with the treaty. It stated that climate change policies had the potential to have a negative impact on "competitiveness and, in turn, employment, economic growth and investment opportunities across Canada." (*National Post*, 16 February 2002, A1) (By September 2002, when it had become apparent that ratification was indeed likely, the tone of the Alberta Premier's remarks had become considerably more heated.)

When Premier Klein submitted this letter to the Prime Minister, he did point out that the position of the Canadian government on the issue was "not consistent with the position of all the premiers and the territorial leaders." (*Calgary Herald*, 16 February 2002, A1). Although the governments of British Columbia, Ontario and Alberta were strongly supportive, other provinces backed away from dismissing the Protocol completely. Manitoba Premier Gary Doer was quick to distance his government from that message, stating a few days later that the Manitoba government "supports the principles of the Kyoto Accord, subject to the negotiation of appropriate credits for renewable energy production and export." (*National Post*, 20 February 2002, A9) Saskatchewan Premier Lorne Calvert said that the letter was signed by certain premiers because "there was a sense of consensus that what we could not undertake was rapid ratification of the Kyoto Protocol without a wide range of issues being settled, one of them being credits." (*National Post*, 21 February 2002, A13) Prince Edward Island premier Pat Binns also expressed his dissatisfaction that the letter from the premiers was being used as a public instrument to subvert the ratification of the Kyoto Protocol in Canada.

As illustrated by this event, there is a wide range of positions that provincial governments have taken on the Kyoto Protocol. These perspectives are based in part on political philosophies: British Columbia, for instance, became distinctly more hostile to ratification after the Liberal government of Gordon Campbell replaced the NDP government in May 2001. Tory administrations in Ontario and Alberta are some of the most ardent foes of the Protocol, while NDP governments in Manitoba and Saskatchewan have comparatively provided much less resistance to ratification.

While ideology of the governing party influences provincial stances on the Protocol, basic economics are more important. Alberta's opposition is based on its own revenues from exploitation of oil and gas resources, the extent to which that activity contributes to the provincial economy and because the province relies mainly on coal- and gas-fired plants for electricity generation. On the other hand, Québec relies on hydropower to generate its electricity, which results in very low greenhouse gas emissions. This, in part, can explain why the Québec government has supported the position of the federal government, even going so far as to break away from the other provinces on this issue.

5.2. POSITIONS TAKEN BY PROVINCES ON CANADIAN NATIONAL POLICY

What follows is a brief review of the positions taken by each of the five provinces since 1998.

5.2.1. British Columbia

The stance of the government of British Columbia on the Kyoto Protocol and climate change policy, as well as many other political issues, has taken a dramatic turn over the past year. With the election of the Liberal government under Premier Gordon Campbell, funding for greenhouse gas mitigation activities has been severely reduced. The overall budget for the Ministry of Water, Land and Air Protection has been downsized by 24%, with a net loss of about 1/3 of the staff. Additionally, funding for the Green Economy initiative was cut and its duties transferred to the Ministry of Water, Land and Air Protection, as well as money for the Climate Change Business Plan promised by the previous NDP government. Details regarding an overall climate change strategy under the Campbell government are not yet known, however. The Ministry of Water, Land and Air Protection Service Plan states that a climate change plan will be developed by the end of 2002.

However the BC Liberal government clearly opposes the Protocol, as indicated by the public statements made by Premier Campbell. He was the author of the letter sent by the Premiers to the Prime Minister in February 2002, and clearly expressed his opposition to the Protocol at that time. In

April 2002, he stated, "I think we should be pretty clear about what the impacts of the [Kyoto] program are going to be on climate change and I think there is a real question as to whether there will be any." (*National Post*, 6 April 2002) Overall, the political stance of the government of British Columbia on the Kyoto Treaty is that the required emissions reductions and mitigation measure would be costly for the country as a whole, and would have a significant and negative influence on economic competitiveness.

5.2.2. Alberta

Alberta remains the most outspoken provincial opponent to the Protocol. Premier Ralph Klein, while on a mission to promote trade with the western Provinces, stated succinctly, "We cannot agree to the Kyoto Protocol as it now stands." (*National Post*, 28 November 2001, A10) Throughout the entire process, the Alberta government has raised concerns about the costs of emissions reductions and the allocation of these costs among the provinces. Because of these objections, officials from Alberta have publicly urged the federal government to withdraw from the treaty. In March 2002, it was reported that Alberta Environment Minister Lorne Taylor requested that Justice Minister Dave Hancock research the possibility of taking the federal government to court if they ratified the Protocol unilaterally, over the objections of the provinces. (*National Post*, 19 March 2002, FP6) In September, the Premier publicly mused about a Supreme Court challenge to Ottawa's unilateral ratification.

There are two primary factors that are involved with this policy position. First, a significant fraction of the provincial economy is based on sectors directly related to greenhouse gas emissions. The exploration and exploitation of fossil fuels such as coal, natural gas and light crude oil is a booming business in Alberta. However, costs to the oil and gas sector are expected to increase significantly under the Kyoto Protocol. This may affect the competitiveness of these industries against those in the United States, Mexico and the OECD countries, as none of them are expected to be included as Annex I signatories to the Treaty. Agricultural activities in the province, which comprise an important part of the regional economy, are also a significant source of greenhouse gases, and may also require increases in investment or operating expenses.

In addition, Alberta does not have abundant hydroelectric resources available for use within the province. Most of the electricity within the province is generated by coal-fired power plants, and two new facilities are currently under construction in Alberta. The costs involved in switching to green power, or even in converting these plants to use natural gas would be large. Therefore, any emissions

reduction requirements would represent significant capital investment in these facilities, and high costs to the province.

Altogether, the Alberta government has estimated that the Protocol would cost $5.5 billion in reduced yearly provincial GDP, and result in 70,000 lost jobs. (Government of Alberta, 2002) Although the methodology behind this analysis has been attacked, as it does not factor in the benefits from emissions trading and energy efficiency, this assessment has given the provincial government a reason to declare that the Kyoto Protocol should not be ratified. (*Calgary Herald*, 23 February 2002, A7)

As opposed to a system driven by regulatory action and strict caps on greenhouse gas emissions, Alberta has pushed for a system that would incorporate voluntary reductions by industry and a focus on research and development of technology to reduce or mitigate emissions. This has been incorporated in the province's own efforts within its jurisdiction to control greenhouse gas emissions. On the national stage, the Alberta government has advocated a "made-in-Canada" alternative to the Kyoto Protocol, which would be modeled after the U.S. climate change program (Alberta Environment, 2002). This framework would reduce emissions goals more gradually over time, allowing industries more time to adapt and to develop technology-based solutions to address climate change.

As this type of approach is at odds with the federal government's stance on the ratification of the Kyoto Protocol, it has been difficult for the Alberta government to bring up this plan in formal federal-provincial meetings for debate. Although climate change policy was one subject addressed at the Joint Ministers' Meeting for environment and energy ministers in May 2002, Alberta's plan was not even discussed as an alternative. In response, the government of Alberta withdrew as co-chair of the National Air Issues Co-ordinating Committee - Climate Change, and refused to take part in future consultations. (*National Post*, 22 May 2002) Since that meeting, however, Alberta has been actively promoting this plan among other provincial leaders, most notably at the Western Premiers' Conference in June 2002. It is believed that several provinces and territories will support Alberta's efforts to put their plan on the table in future federal-provincial meetings. (*National Post*, 4 June 2002)

5.2.3. Saskatchewan

Although the government of Saskatchewan is controlled by a New Democratic Party administration, and has made some concessions to green interests over the past several years, greenhouse gas emissions reductions under the Kyoto Protocol are not strongly supported by the province. Saskatchewan Premier Lorne Calvert has not explicitly stated his position on the Protocol to date. He

distanced the Saskatchewan government from a complete dismissal of the agreement after the Premiers' letter was submitted to the Prime Minister (*National Post*, 21 February 2002, A13). The government of Saskatchewan also did not support Alberta's attempts to bring forth an alternate greenhouse gas management strategy at the Joint Ministers' Meeting in Charlottetown in May. (*National Post*, 22 May 2002) The province has stated, however, that it is willing to consider the plan in consultations with the other provinces, however.

While the similarities between Saskatchewan and Alberta would appear to promote outright opposition to the Kyoto Protocol, any proposed emissions reductions programs contain both potential advantages and disadvantages to the province. Policies are influenced by the effects on three key industrial sectors in the province: electricity generation, agriculture and oil and gas.

The economy of Saskatchewan is dependent upon activities which are greenhouse gas intensive, and greenhouse gas emissions per capita (58.1 tonnes CO_2 equivalent in 1998) are second only to Alberta (68.8 Mt CO_2 eq in 1998) in the country. (Environment Canada, 2001) The generation of electricity in Saskatchewan, like Alberta, is heavily dependent on fossil fuels; about 88% of electricity in the province is generated with conventional thermal plants, primarily coal-fired facilities. (Statistics Canada, 2001)

The disposition of the oil and gas industry is also an important consideration in Saskatchewan. However, the composition of the industry in the province is significantly different than in Alberta, and would not function in the same way under an emissions control program. Unlike its neighbour to the west, the primary product of the oil and gas sector in Saskatchewan is medium and heavy crude oil, which comprised over 77% of all provincial oil production in 2001. (Statistics Canada, 2002) If a nationwide framework was imposed to reduce greenhouse gas emissions, the production of heavy and medium crude would be impacted the most, as heavier oil releases more carbon dioxide from combustion. In addition, as natural gas production in Saskatchewan was 8.2 billion cubic meters in 2001, or only 12% of the production of natural gas in Alberta (Statistics Canada, 2002), it is unlikely that proposed provisions for clean energy exports or increases in demand for natural gas would have as much benefit in Saskatchewan. And, as this industry is responsible for approximately 10% of government revenue and 26% of all exports from Saskatchewan, any initiative to control climate change has the potential to have severe impacts on the provincial economy.

The impacts of climate change policies on the agriculture sector could provide some potential benefits to the provincial economy, though. The agricultural sector comprises 9.5% of the gross domestic

product in the province, and employs about 11% of the workforce. Although there have been losses in agricultural jobs, this industry forms an integral part of the economy. To reduce carbon dioxide emissions from vehicles, the province, in collaboration with Manitoba, has developed plans to promote the use of ethanol as an additive for gasoline sold in Saskatchewan, through the *Greenprint on Ethanol Production*. (Government of Saskatchewan, 2002) Greater use of ethanol on a Canada-wide basis would be an opportunity for grain producers in the province.

5.2.4. Ontario

The government of Ontario is generally seen as providing opposition to the ratification of the Kyoto Protocol, although not to the extent of Alberta. Ontario refused to sign on to the final version of the National Implementation Strategy at the Joint Ministers Meeting in October 2000; representatives stated that further economic analysis of policy options was needed before the government would agree. (*National Post*, 3 April 2002, A11) Premier Mike Harris supported the Premiers' letter to the Prime Minister in February 2002. The Ontario government has also given support to Alberta's attempts to bring up an alternative to the Kyoto Protocol in consultation sessions. In May 2002, Environment and Energy Minister Chris Stockwell said, "Why not talk about it? Nothing is etched in stone, these are four options and Alberta has got one. I think talking about other ideas is never a bad thing." (*National Post*, 23 May 2002)

Premier Harris has also written two letters to the Prime Minister regarding his opposition to the ratification of the Protocol. Although he stated that the Ontario government "has always supported the principles of the Kyoto Treaty," he expressed significant concerns regarding the economic costs involved with achieving these goals. In the first letter, sent in March 2002, he focused on the prospect of losing jobs as a result of the Protocol, stating that Canada would "play 50-minute hockey" when other countries would be playing a "60-minute game". (*National Post*, 4 March 2002, A1) His second letter, sent in April 2002, brought up the possibility of aligning national climate change policies with those of the U.S. "If concerns that the Kyoto Accord favours European, Asian and other developing countries cannot be overcome, perhaps we should explore the possibility of a North American emissions treaty that features emissions controls that are equal to or even stricter than the Kyoto Accord but are implemented in a way that is more acceptable to our major trading partners." (*National Post*, 6 April 2002)

In addition to the environmental deregulatory agenda pursued by the Harris government since it was elected in 1995, this resistance is presumably due primarily to concerns about the effects of the

implementation of the Protocol on competitiveness in key industrial sectors. Manufacturing is a key part of the provincial economy, in areas such as automotive parts fabrication and assembly, chemicals manufacturing and metals production. Many of these products are manufactured specifically for export to the rest of North America. Given the importance of continental trade and competition under the North American Free Trade Agreement, and the fact that the United States and Mexico are not participating as Annex I countries, firms in Ontario and Canada as a whole could be at a disadvantage if the control of greenhouse gases will require significant increases in capital or operating costs.

Resistance to the Kyoto Protocol also stems from concerns about the effects that the Protocol could have on electricity generation in the province. Ontario's emissions per person are lower than many of the other provinces, as indicated in section 2 above. The mix of generation sources in the province also means that coal-fired plants do not supply an overwhelming percentage of the total electricity used in the province: only about one-third of power in the province is provided by conventional thermal plants, with the remainder provided by nuclear or hydroelectric sources. However, Ontario relies upon large coal-fired plants for electricity supply, the largest of which, the Nanticoke Generation Station, is the largest point source of air pollutant emissions in Canada. The costs to retrofit these stations to use natural gas instead of coal would be significant; not only would equipment be taken out of service before its service life had ended, but natural gas is more expensive than coal and would increase the price of generation even further. The corresponding costs to energy-intensive manufacturing sectors would increase as well, and could reduce competitiveness compared to firms in other countries not faced with similar restrictions. (The Ontario Environment Minister has recently stated coal-fired plants will not operate after 2015.)

Because of this dynamic, the Ontario government has pushed for a coordinated system at both the national and continental levels on numerous occasions. The province has stated specifically that any national climate change policies should be harmonized between the provinces and with the United States to ensure that industries in Ontario are not placed at a competitive disadvantage.

5.2.5. Québec

Unlike many of the provincial governments in Canada, Québec has maintained a consistent level of support for the Kyoto Protocol. This position is not dependent upon any further considerations under the Protocol, and the provincial government has maintained that a sovereign Québec would have ratified the Treaty as early as possible. In fact, the National Assembly unanimously passed a

motion in April 2001 urging the federal government to ratify as soon as possible. (Government of Québec, 2001) The Environment Minister André Boisclair has also criticized attempts to soften the framework with the incorporation of credits for clean energy exports. (*Montreal Gazette*, 19 February 2002, A6)

One of the reasons why the government of Québec supports the Protocol is because of the low cost of achieving emissions reduction goals relative to the other provinces. Québec has the lowest greenhouse gas emissions per capita in Canada: 12.0 tonnes CO_2 equivalent per person in 1999, which is comparable to many European countries. (Government of Canada, 2001) This is due, in part, to the fact that almost all of the electricity in Québec is generated by hydropower. Homes and buildings in the province are typically heated by electric heating systems, as well, and are generally more energy-efficient due to higher heating costs. High fuel costs have also encouraged the use of smaller vehicles in Québec, although it should be noted that emissions from vehicles have been increasing significantly over the past several years. (Government of Québec, 2000)

In addition, the implementation of the Kyoto Protocol would provide a means for Québec to reduce its reliance on imported fossil fuels, and to improve the competitiveness of businesses in the province. Firms in Québec that would be required to curb emissions through energy efficiency initiatives or similar measures would not face the same expenses as comparable businesses in Alberta or Ontario, for example. (Government of Québec, 2000) This could result in some attraction of industry to the province, and improve the trade balance and economic health of Québec relative to the other Canadian provinces. Beyond that, it is likely that Québec sees an opportunity for increased exports of hydro-electricity as neighbouring jurisdictions phase out their use of fossil-fuel plants.

However, the stance of the Québec government differs from the federal government's approach in one key area: the allocation of costs among the provinces. Given that per capita emissions from Québec are the lowest in the country, provincial representatives have argued that Québec should not be required to make additional reductions that are equivalent to the reductions made by other provinces. In the House of Commons, MP Bernard Bigras stated, "It should be the polluter that pays and the efforts made in the past should be rewarded." (*National Post*, 23 February 2001, A10) Environment Minister Boisclair stated that "Quebecers will not finance the economic development of Western Canada." (*Montreal Gazette*, 19 February 2002, A6) And at the Joint Ministers Meeting in May 2002, Energy Minister Rita Dionne-Marsolais stated that provinces that rely on fossil fuels should take responsibility for emissions, and that the federal government should recognize cuts to emissions made since 1997. (*National Post*, 21 May 2002)

This has provided an additional obstacle to the ratification debate. At the JMM meeting in October 2000, former Québec Environment Minister Paul Begin walked out in protest, stating that the other provincial ministers were providing roadblocks to ratification. However, it was widely speculated that a clash with Newfoundland energy minister Paul Dicks regarding the treatment of hydroelectricity in Québec under a climate change plan precipitated this protest. (*Montreal Gazette*, 29 March 2000, A7) Federal environment minister David Anderson also disagreed with the Québec position on this issue. "It would, for example, mean that the aluminum industry in B.C. and Québec have the same standards to meet," Anderson said. "Otherwise, they could face different standards based on provincial targets." (*Montreal Gazette*, 29 March 2000, A7)

5.3. PROVINCIAL ACTORS

Although each province has a separate structure, there are certain ministries in each government that have to consider climate change issues because of their overall mandate. As these ministries have important roles to play in climate change policy, many of them have developed distinct administrative units to deal with this issue.

Environmental ministries, by their very nature, play a role in climate change. However, provincial environmental agencies in Canada have typically been limited to dealing with voluntary emissions reductions programs, because the emission of carbon dioxide is not directly regulated. Provincial participation in the national Voluntary Challenge and Registry (VCR) program, monitoring and reporting initiatives, research programs and information dissemination are examples of the programs supported by these bodies.

Energy ministries also play an important role in climate change policy. The production of electricity from coal, natural gas or other fossil fuels comprises a very significant source of carbon dioxide emissions, and refits of existing power generation facilities can provide considerable reductions of greenhouse gases. Energy ministries may also sponsor research into "green power" and control emissions of methane through the regulation of landfill sites.

Agricultural ministries are also important for the success of greenhouse gas emissions reduction strategies. Farming and livestock management can result in emissions of carbon dioxide, methane and nitrous oxide, and certain techniques such as no-till farming or planting of buffer strips can provide a means to reduce the net releases of greenhouse gases from these operations.

Natural resource management ministries are also important. Mining, petroleum extraction and forestry management activities can be sources of greenhouse gases, and managed woodlands can be utilized as carbon sinks under the Protocol.

Other provincial ministries can also play minor roles in the formation of climate change policy. These ministries may be involved with provincially-based roundtables to address greenhouse gas emissions, and programs promoted by these ministries may be put forth in press releases and public reports as examples of climate change mitigation strategies. As vehicles are a significant source of greenhouse gases, **transportation ministries** can be involved in initiatives to control emissions. **Municipal affairs and housing ministries** can help to control greenhouse gases indirectly, by encouraging energy-efficient building construction that reduce electricity demands. **Industry and economic development ministries** do not often have specific units devoted to climate change policy, but these ministries can influence policies based on the costs of these initiatives to businesses and the effects on economic competitiveness in the province. **Intergovernmental affairs ministries** manage the negotiations with other provinces and the federal government, which includes discussions regarding the Kyoto Protocol.

5.3.1. British Columbia

The following units of the government of British Columbia are directly involved with climate change policies and programs.

5.3.1.1. Ministry of Water, Land and Air Protection

Climate Change Section
Water, Air and Climate Change Branch, Environmental Protection

This branch provides leadership, expertise, and resource-management tools to address local, regional, provincial, national and international air and water quality issues. Their mandate includes such topics as climate change, smog, vehicles and industrial emissions. They provide policy support, technical and scientific expertise, data management and reporting, education, auditing and impact assessment to accomplish these goals.

Strategic Planning, Policy and Intergovernmental Relations Branch
Planning, Innovation and Enforcement

This branch supports initiatives across the entire ministry. As a result, the role of the Strategic Policy Branch can cover several different elements of climate change policy. It can facilitate greenhouse gas control and mitigation within provincial activities, plan long-range policy solutions to address climate change, assess the impacts of policies, manage new regulations and legislation, and assess the overall effects of ministry activities. This ministry also manages and assesses interprovincial and international activities that affect ministry affairs, including trade agreements and global organizations and treaties.

5.3.2. Alberta

The following units of the Alberta government are directly involved with climate change policies and programs.

5.3.2.1. Climate Change Central

The centerpiece of climate change policy in Alberta is, undoubtedly, "Climate Change Central". This is a public-private partnership formed by the government in 1999. The Board of Directors includes representatives from business interests, municipalities, the provincial government, academia and environmental public interest groups. A core staff of seven experts in related fields provides support for various activities.

According to their Business Plan, Climate Change Central serves as a:

- broker and door-opener for stakeholders to advance solutions and projects;
- clearinghouse for information on best practices, activities underway, and opportunities available;
- accelerator and incubator in identifying potential partners and funding;
- barrier-busting advocate to overcome economic, regulatory, market, or technology constraints; and
- communicator/marketer of Alberta's climate change accomplishments and our products and services available

5.3.2.2. Ministry of the Environment

Bureau of Climate Change
Strategic Directions Division

The Bureau of Climate Change is the unit within the Alberta Ministry of the Environment responsible for the oversight of government activities in climate change policy. These responsibilities were transferred from Alberta Resource Development in December 1999. The duties of the Bureau include the support of government policy and program development, and coordination of emissions reduction and mitigation activities among provincial ministries. The Bureau also coordinates government participation with Climate Change Central.

5.3.2.3. Ministry of Agriculture, Food and Rural Development

Conservation and Development Branch
Resource Management and Irrigation Division

This organization is dedicated to promoting environmental stewardship and the sustainable use of air and water resources for agricultural activities. This is accomplished through planning, policy development, education, technology transfer, and research. The Branch is also responsible for the oversight of the Alberta Environmentally Sustainable Agriculture Council.

5.3.3. Saskatchewan

Within the government of Saskatchewan, the following units are directly involved with climate change policies and programs.

5.3.3.1. Saskatchewan Stakeholder Advisory Committee

The Stakeholder Advisory Committee was formed in 1998 to provide a forum for exchange of concerns about climate change policy, and to gather information for the formation of a provincial climate change strategy. This Committee is co-chaired by Saskatchewan Energy and Mines (SEM), and Saskatchewan Environment and Resource Management (SERM), and includes representatives from the provincial government, industry groups, and environmental organizations.

5.3.3.2. Saskatchewan Industry and Resources

Energy Development and Climate Change
Resource Development

In addition to providing support for policies and management of resources and energy in the province, this division also develops climate change policy for the ministry.

Economic Development, Programs Division

This department ensures that climate change issues are adequately addressed within the context of the overall mandate of Saskatchewan Environment. It is also concerned with issues of water management and overall business development in the province.

5.3.3.3. Saskatchewan Environment

Policy and Legislation, Policy Assessment Division

This unit coordinates and manages the development of environmental policies, strategies and legislation, and public involvement in these actions.

5.3.4. Ontario

The following units of the government or Ontario are directly involved with climate change policies and programs.

5.3.4.1. Ministry of Agriculture and Food

OMAFRA Climate Change Working Group

This interdisciplinary group was formed in 1999 to provide policy options for issues relating to climate change in the ministry, and to provide the ministry with the ability to take part in provincial and national discussions regarding climate change. Members of this working group include officials from crop and livestock technology, resource management, innovation and technology and communications.

Policy Analysis Unit
Policy and Programs Branch, Policy and Farm Finance Division

This administrative unit deals specifically with the policies surrounding the agri-food industry. This includes climate change issues, such as those involving carbon sequestration or best practices in agriculture.

5.3.4.2. Ministry of Environment and Energy

Energy Policy Branch
Energy Division

This branch provides the ministry with financial and economic analyses and policy recommendations regarding regulatory issues, including those related to environmental issues, climate change policy and intergovernmental relations. The branch also provides information and support to the Ministry of the Environment on environmental economics issues related to the energy sector in Ontario.

Air Policy and Climate Change Branch
Integrated Environmental Planning Division

This branch is responsible for policies regarding air pollution in Ontario. It is divided into the "Global Air Issues" and "Regional Air Issues" sections, and has responsibility for not only greenhouse gas emissions policy and related activities, but also for other policies relating to air pollution, including emissions of contaminants related to the formation of smog and acid rain.

Environmental Liaison Office
Integrated Environmental Planning Division

This office is responsible for the coordination of interjurisdictional environmental programs, including those with municipal, provincial, federal and aboriginal governments, and agencies of the United States. The Environmental Liaison Office also coordinates with other provincial ministries and offices as well, and it will be involved with the negotiation and administration of any interprovincial or international climate change policy or program.

5.3.5. Québec

The following units of the government of Québec are directly involved with climate change policies and programs.

5.3.5.1. Le Comité interministériel sur les changements climatiques (CICC)

The Interministerial Committee on Climate Change (CICC) is a working committee that consists of 14 government departments and bodies:

- Ministère de l'Environnement;
- Ministère des Ressources naturelles;
- Ministère de l'Agriculture, des Pêcheries et de l'Alimentation;
- Ministère des Forêts;
- Ministère des Transports;
- Ministère des Affaires municipales et de la Métropole;
- Ministère de l'Industrie et du Commerce;
- Ministère des Relations internationales;
- Ministère de la Santé et des Services sociaux;
- Ministère de la Sécurité publique;
- Ministère de l'Éducation;
- Ministère des Finances;
- Secrétariat aux Affaires intergouvernementales canadiennes; and
- Agence de l'efficacité énergétique.

This Committee heads the efforts of the Québec government to control and mitigate greenhouse gas emissions. The CICC has set up 11 sectoral groups to provide advice on different aspects of climate change policy, including transport, agriculture and industry, and involves a range of stakeholders.

5.3.5.2. Ministère des Ressources naturelles

Direction de la planification et de la recherche
l'Énergie et aux changements climatiques

This unit is in charge of developing and implementing energy policies for the province. It coordinates the regional and intergovernmental elements of these programs, and manages the environmental

aspects of energy projects. The section is also in charge of coordinating climate change policies for the Ministère des Ressources naturelles.

Agence de l'efficacité énergétique

This agency is charged with promoting energy efficiency initiatives in Québec. It was created in 1997 to administer the *Loi sur l'efficacité énergétique d'appareils fonctionnant à l'électricité ou aux hydrocarbures* and *Loi sur l'économie d'énergie dans le bâtiment*, legislation directed at improving the efficiency of products that use electricity or fossil fuels, and the energy efficiency of buildings, respectively.

5.3.5.3. Ministère de l'Environnement

Le Bureau d'audiences publiques sur l'environnement

This office is responsible for informing and consulting the public on environmental issues in the province. To this end, it administers public consultation sessions, investigations and mediations.

Direction des changements climatiques
Direction générale du milieu industriel, des changements climatiques et du développement durable

This unit is responsible for the climate change programs within Ministère de l'Environnement. It also administers the ÉcoGESte program, which registers reductions of greenhouse gas emissions by industry.

6. Federal-Provincial Co-ordination

Here we set out the organizational systems used by the federal and provincial actors listed above to co-ordinate their work in developing and implementing national policy.

6.1. First Ministers

The Canadian Prime Minister and Provincial Premiers meet periodically to discuss issues of national importance. The first ministers do not constitute a decision-making body, per se since legislative or other policy action agreed to at such a meeting has to be then approved by the House of Commons and provincial legislatures. These meetings do, however, provide an opportunity to co-ordinate policy. The first ministers discussed climate change at their meeting on December 11-12, 1997, immediately after Canada signed the Kyoto Protocol in Japan. At that meeting they agreed to launch the consultative policy process described in section 10 below. They also adopted the guiding principle that "no region is asked to bear an unreasonable share of the burden" of meeting the Kyoto commitment (Environmental Commissioner, 1998: 3-10). We are not aware of any other occasion when a First Ministers' meeting has formally had the issue on the agenda although, as illustrated by the Moscow letter, they have obviously discussed climate policy at other gatherings.

6.2. Joint Meeting of Ministers of Environment and Energy

In all policy fields such as health, education or environment, federal and provincial ministers meet regularly to co-ordinate their activities. In some fields, those meetings are co-ordinated by a secretariat, which is a permanent body of officials who work with their counterparts in the relevant federal and provincial departments of government. In the case of environment, that secretariat is named the Canadian Council of Ministers of the Environment (CCME). Because climate change is an energy issue with implications for environment, federal and provincial environment ministers have met regularly since the early 1990s with energy ministers. Energy ministers co-ordinate their activities through the Council of Energy Ministers. Since 1993, the Canadian Council of Ministers of the Environment have met jointly with the Council of Energy Ministers to discuss climate change policy. Those meetings are referred to as Joint Meeting of Ministers of Environment and Energy (JMM). Those joint meetings of ministers are not intended to result in specific policy decisions. Like meetings of first ministers, they are instead intended to simply set out agreements on general lines that the specific policy measures of

federal and provincial governments should take. A listing of JMM meetings and decisions made there is provided below.

The periodic meetings of Joint Ministers are the culmination of a process of co-ordinated policy development by federal and provincial civil servants. At its meeting in November 1993, the JMM agreed to a Comprehensive Air Quality Management Framework for Canada (Environmental Commissioner, 1998: 3-40). That agreement included all air pollution issues, of which climate change was only one. At the same time, the JMM established the National Air Issues Steering Committee, made up of federal and provincial deputy ministers of environment and energy and, reporting to the Steering Committee, a National Air Issues Co-ordinating Committee, made up of assistant-deputy ministers from those same federal and provincial departments.

The 1995 National Action Programme on Climate Change, described in section 13.2.1 below, was developed by the Steering and Co-ordinating Committees and approved by the Joint Meeting of Ministers.

Since then, another federal-provincial body of civil servants has been created with a specific mandate for climate change, within the over-all co-ordinating process for air quality, described above. That is the National Air Issues Co-ordinating Committee - Climate Change. The NAICC-CC, made up of officials from energy, environment and other relevant federal and provincial departments, reports to the JMM. The NAICC-CC originally established seven working groups, as follows:

- Analysis and Modeling
- Domestic Emissions Trading
- Electricity Covenants Group
- Emission Allocation and Burden Sharing
- Impacts and Adaptation
- Climate Change Technology
- Targeted Measures Coordination Group

Unlike the Issues Tables, described in section 12 below, membership of these working groups is limited to government officials. The Analysis and Modeling Group generated the November 2000 report titled An Assessment of the Economic and Environmental Implications for Canada of the Kyoto Protocol and since then did the economic analysis which lead to the cost estimates contained in the May 2002 Government of Canada Discussion Paper. The Targeted Measures Coordination Group developed the listing of potential policy measures set out in the Discussion Paper.

The other relevant federal-provincial co-ordinating body is the National Climate Change Secretariat, housed within the Climate Change Secretariat, described above. The National Secretariat co-ordinated the work of the Issues Tables, the vehicle used for multi-stakeholder consultation, described below. Those Tables have now completed their reports, listed in section 12 below and no longer exist. The primary current function of the National Secretariat is co-ordinate development of federal-provincial policy, reporting to the JMM.

While the JMM and its supporting system of federal-provincial committees and working groups is limited to government officials, it does receive periodic input from societal actors. The vehicle for that is The Integrative Group, which made up of the heads of the former Tables. It is a purely advisory body, which meets periodically to review and comment upon the process of Canadian policy development.

What follows is a listing of the meetings of the joint ministers since 1998.

- **Toronto, April 23-24, 1998**

As instructed by the First Ministers meeting of December 1997, the Joint Ministers at this meeting endorsed the consultative process that led later that year to creation of the Issues Tables. Following creation of the Climate Change Secretariat by the federal government in February 1998, the JMM at this meeting created the National Secretariat (Environmental Commissioner, 1998: 9) The communiqué resulting from the media referred to the decision to "move forward on ... strengthening voluntary action." No other policy instrument is mentioned, indicating that despite the failure of voluntarism to date, federal and provincial governments at that time were not willing to consider alternatives. It was agreed that giving credit for early action was an important part of the voluntary approach. Essentially this means that if regulatory requirements for emission reductions are ever imposed, they will take into account previous action taken voluntarily by a given source.

- **Halifax, October 19-20, 1998**

The ministers received reports on progress of the Tables process and discussed a variety of measures for encouraging voluntary action.

- **Vancouver, March 27-28, 2000**

At this meeting, the ministers agreed to the basic strategy of evolving national policy, based on annual "business" plans as a means of coping with the uncertainty that will hold until Canada makes a decision on ratification. It was agreed these business plans would be based on the reports of the Tables. "Ministers also instructed their officials to develop the first business plan of specific actions based on five priority areas: enhancing awareness and understanding, promoting technology development and innovation, investing in knowledge/building the foundation, governments leading by example and encouraging action by all Canadians and across all sectors of the economy." (NCCP Communiqué, March 28, 2000). Encouragement of voluntary action was still the only policy instrument being considered. Québec refused to sign the communiqué and walked out of the meeting, to protest the lack of action and refusal of the federal government to consider allocation of specific reduction targets for each province. Québec was interested in ensuring that not all provinces would be required to reduce by the same amount, arguing that the large polluters, such as Alberta, should bear a larger share of the cost of reductions (MacKinnon, March 29, 2000).

Ministers also instructed their staff to negotiate a "framework agreement". As of September 2002, no such agreement has been put in place. The purpose and function of such an agreement are not clear from publicly available documents.

- **Québec City, October 16-17, 2000**

At this meeting, the joint ministers approved the national policy developed to that point, in the form of the National Implementation Strategy and Business Plan. The credit for early action program, referred to as the Baseline Protection Initiative, was approved for use in the VCR and ÉcoGeste programs. It was agreed the draft framework agreement on climate change, referred to above, would be sent to the federal and provincial cabinets for approval, and then ratified at the next JMM meeting (Environmental Commissioner, 2001:13). As noted, that has not yet happened.

Québec participated in the final communiqué of this meeting, but Ontario did not. Ontario called upon the federal and other provincial governments to implement legally binding standards such as

"national vehicle emission-control standards, building codes and mandatory monitoring and reporting processes for industries." (Séguin, Oct. 17, 2000). It was reported Ontario took this pro-regulatory stance in order to demonstrate it was not the "environmental demon" at JMM meetings (Ibid). The next day, at the conclusion of the meeting, Ontario refused to sign.

- **Winnipeg, September 24, 2001**

Progress on the business plan process was discussed, but no further decisions were made.

- **February 25, 2002**

The joint ministers met on this date, but did not issue the normal press statement.

- **Charlottetown, May 21, 2002**

Ministers at this meeting released the document *Canada's National Climate Change Business Plan 2002*, following on the first such plan, released at the October 2000 meeting. They also discussed the federal government Discussion Paper and the further multistakeholder consulations to be held between June 7 and 24, 2002. Alberta pressed to have the "Alberta plan" (discussed above) included, with the federal document, as the basis for consultations. Other provinces refused, saying it could be put forward in Alberta consultations only, and in consequence Alberta refused to sign the communiqué. In addition, as noted above, the Alberta Environment Minister withdrew as co-chair of the NAICC -CC.

In summary, we see that between the meetings of April 1998 and May 2002 the joint ministers have presided over a national consultative process which resulted in the collection of policy initiatives set forth in two business plans, first issued in October 2000 and then updated. The substance of those policy decisions is discussed in section 11 below. The meetings were characterized by conflicts that resulted in three provinces each refusing to sign one of the official communiqués.

7. Local governments

Like the federal and provincial governments described above, municipalities have available to them a number of actions for reducing emission of greenhouse gases within their boundaries. These include regulatory actions, such as anti-idling by-laws; spending decisions in such areas as mass-transit and the energy-efficiency of their own buildings and vehicles; and the land-use policies they implement, which have direct bearing on transportation efficiency.

In 1998, the Federation of Canadian Municipalities (FCM) 20% Club merged with the International Council for Local Environmental Initiatives' (ICLEI) "Cities for Climate Protection-Canada" program. The merger created the "Partners for Climate Protection" (PCP) program. Today, there are more than 70 municipal governments participating in the program to reduce emissions at the municipal level, through the creation of Location Action Plans (LAPs). Each participant commits to achieving a 20 percent reduction in greenhouse gas emissions from municipal operations within 10 years of joining the program.

Municipalities participated in the JMM multi-stakeholder consultation process, described below, which was initiated in 1998. One of the fourteen Issues Tables launched during this process was the Municipalities Table, with a mandate to "coordinate development and analysis of options for the reduction of greenhouse gases in the municipal sector for consideration in the national implementation strategy." The Municipalities Table consisted of technical and political representatives from municipalities, representatives of energy services, renewable energy and utility sectors, as well as representatives from federal and provincial government departments. A direct outcome of the Municipalities Table was the production of an Options Paper, which suggested several ways that that municipalities, and municipalities in concert with provincial and federal support could mitigate climate change. In response to the Municipalities Table, the 2000 federal budget established a $125 million Green Municipal Fund, which is managed by FCM. In addition, the recently created national Infrastructure Canada Program has places strong emphasis on 'green infrastructure' addressing a number of the recommendations identified by the Municipalities Table.

As well as taking action themselves to reduce emissions, municipalities have been active participants in the policy dialogue. In 2001 the FCM Board of Directors adopted a resolution calling upon the federal government to ratify the Protocol. That resolution was then circulated to member municipalities and adopted by 250 of them. Another 35 decided not to adopt the resolution. In addition, as indicated

above, municipalities have been active in international negotiations through direct representation by FCM on the Canadian delegation at meetings of UNFCCC parties.

8. Business

The primary purpose of this section is to identify the business sectors, trade associations and individual firms which have publicly participated in the Canadian policy process and to set forth the policy positions they have advocated as they did so. Section 9 following provides comparable information for the other major societal actor engaged in the debate, the environmental movement.

The firms and trade associations which have participated in the process since the Kyoto Protocol was signed in December 1997 have been identified here in three ways. First, a list of participants in the "tables" process (described in section 12.1) was reviewed. A listing of "business organizations active in the climate change policy debated", provided in the Pembina Institute Resource Book for Journalists (Bramley, 2000), was also examined. Finally, the signatories to two interventions in the debate – a collective letter sent to the Minister of Natural Resources Herb Dhaliwal February 19, 2002 and a full-page advertisement which appeared in the *Globe and Mail* on September 6, 2002 – were added to this list. A distinction is made here between broad-based organizations that represent the interests of business as a whole, such as the Canadian Chamber of Commerce and sectoral trade associations, such as the Canadian Pulp and Paper Association, which speak only for firms operating in one type of business. The distinction is important because sectoral trade associations represent different interests with respect to fossil-fuel emissions. For instance, Kyoto ratification is an economic threat to the oil industry but a potential boon to the nuclear industry. Sectoral trade associations may, for that reason, take policy positions that are in conflict with those of other business interests (Brooks and Stritch, 1991, pp. 10-13).

Approximately 455 actors, including government departments, business firms, trade associations, environmental organizations, municipalities and others participated in the national policy process initiated in 1998. That process, which stretched over eighteen months, culminated in the three policy documents released by the government of Canada and the JMM in October 2000 (Gore et al, March 29, 2001). The vast majority of those only participated in one table or workshop event. Thirty-six of them, however, each participated in four or more events. They are listed here:

Table 8.1. Frequency of Actor Participation.

Actor	Frequency
Environment Canada	23
Natural Resources Canada	16
National Climate Change Secretariat	15
Pembina Institute	11
Alberta Department of Resource Development	8
Alcan	8
Industry Canada	8
Imperial Oil	7
Québec Ministere des Resource Naturelles	7
Nova Scotia Power	6
Pollution Probe	6
Alliance of Manufacturers and Exporters Canada	5
BC Ministry Environment Lands and Parks	5
Canadian Association of Petroleum Producers	5
Canadian Petroleum Producers Institute	5
Federation of Canadian Municipalities	5
Gaz Métropolitain	5
International Council for Local Environmental Initiatives	5
NOVA Chemicals Inc.	5
Ontario Ministry of the Environment	5
Sunoco Inc. (Suncor Energy)	5
TransAlta	5
BC Hydro	4
Business Council on National Issues	4
Canadian Energy Pipeline Association	4
City of Toronto	4
Dofasco	4
General Motors	4
Hydro Québec	4
International Institute for Sustainable Development	4
Ontario Ministry of Energy Science and Technology	4
Saskatchewan Energy	4
Sierra Club	4
Transport Canada	4
University of Alberta	4
Alberta Environment	4

Of those, the following 16 were business firms or trade associations:

- Alcan
- Imperial Oil

- Nova Scotia Power
- Alliance of Manufacturers and Exporters Canada
- Canadian Association of Petroleum Producers
- Canadian Petroleum Producers Institute
- Gaz Métropolitain
- Nova Chemicals Inc.
- Sunoco Inc. (Suncor Energy)
- TransAlta
- BC Hydro
- Business Council on National Issues (now Canadian Council of Chief Executives)
- Canadian Energy Pipeline Association
- Dofasco
- General Motors
- Hydro Québec

Other business actors, however, have publicly participated in other ways.

The Pembina report lists 30 participants, of which three are broad-based organizations:

- The Alliance of Manufacturers and Exporters of Canada;
- The Business Council on National Issues (now named the Canadian Council of Chief Executives); and
- The Centre patronal de l'environnement du Québec (which Pembina describes in English, citing the Centre's bilingual website, as a "broad business organization that endeavours to 'promote the interests of industry and business in environmental matters'").

In addition, it lists two other organizations that are not sectoral trade associations:

- GEMCo (a "consortium of major Canadian greenhouse gas emitters focussed on the development of 'offset' projects to reduce emissions or enhance sinks outside their normal operations") and
- the Voluntary Challenge and Registry, described below.

Of the remaining 25 trade associations, five might be expected to take positions in favour of Canadian ratification of Protocol, because a decrease in fossil fuel use will likely increase their share of the energy market or otherwise help their profit objectives. Those are:

- Canadian Association of Energy Service Companies (which sell products and services to increase energy efficiency of buildings)
- Canadian Nuclear Association; the Canadian Solar Industries Association
- Canadian Wind Energy Association
- Solar Energy Society of Canada.

The remaining 20 trade associations can be divided into three sectoral business interests, follows.

Extraction and sale of fossil fuels	• Canadian Association of Petroleum Producers • Canadian Energy Pipeline Association • Canadian Gas Association (natural gas producers and distributors) • Canadian Petroleum Products Institute • Coal Association of Canada • Energy Council of Canada)
Transportation	• Canadian Association of Petroleum Producers • Canadian Energy Pipeline Association • Canadian Gas Association (natural gas producers and distributors) • Canadian Petroleum Products Institute • Coal Association of Canada • Energy Council of Canada)

Resource and manufacturing

- Aluminum Association of Canada
- Canadian Chemical Producers Association
- Canadian Federation of Agriculture
- Canadian Fertilizer Institute
- Canadian Steel Producers Association
- Mining Association of Canada
- Canadian Home Builders Association
- Québec Forest Industries Association.

Finally, the list includes the Canadian Electricity Association.

Signatories to the letter of Feb. 19, 2002 referred to above are three broad-based organizations (Canadian Council of Chief Executives; Canadian Manufacturers and Exporters; Canadian Chamber of Commerce) and 18 sectoral trade associations, most of which were listed by Pembina. Those not in the Pembina list, in addition to the Chamber of Commerce, are: Business Council of British Columbia; Canadian Lime Institute; Canadian Plastics Industry Association; Canadian Wood Council; Cement Association of Canada; Forest Products Association of Canada.

The September 6, 2002 advertisement appeared over the following names:

- Business Council of British Columbia;
- Canadian Association of Petroleum Producers;
- Canadian Chemical Producers' Association;
- Canadian Manufacturers and Exporters;
- Canadian Plastics Industry Association;
- Canadian Taxpayers Federation (which does not quite meet the definition of a business association set out above and accordingly is not considered here);

- Canadian Steel Producers Association;
- the Coal Association of Canada; and
- CPEQ (Centre patronal de l'environnement du Québec).

Putting this all together, we have identified the following 43 business participants in the Canadian policy dialogue, listed in alphabetical order, with all names shown as current (eg, Canadian Council of Chief Executives, rather than Business Council on National Issues).

Table 8.2. Business participants in the policy dialogue.

- Alcan
- Aluminum Association of Canada
- Air Transport Association of Canada
- BC Hydro
- Business Council of British Columbia
- Canadian Association of Energy Service Companies
- Canadian Association of Petroleum Producers
- Canadian Chemical Producers' Association
- Canadian Council of Chief Executives
- Canadian Electricity Association
- Canadian Energy Pipeline Association
- Canadian Federation of Agriculture
- Canadian Gas Association
- Canadian Home Builders Association
- Canadian Lime Institute
- Canadian Manufacturers and Exporters
- Canadian Nuclear Association
- Canadian Petroleum Producers Institute
- Canadian Plastics Industry Association
- Canadian Shipowners Association
- Canadian Steel Producers Association
- Canadian Solar Industries Association
- Canadian Vehicle Manufacturers Association
- Canadian Wind Energy Association
- Canadian Wood Council
- Centre patronal de l'environnement du Québec
- Cement Association of Canada
- Coal Association of Canada
- Dofasco
- Energy Council of Canada
- Forest Products Association of Canada
- Gaz Métropolitain
- General Motors
- Hydro Québec
- Imperial Oil
- Mining Association of Canada
- Nova Chemicals Inc.
- Nova Scotia Power
- Québec Forest Industries Association
- Railway Association of Canada
- Solar Energy Society of Canada
- Sunoco Inc. (Suncor Energy)
- TransAlta

The remainder of this section, accordingly, discusses the following business interests:

- the three national trade associations referred to immediately above;
- the fossil-fuel industry;
- the transportation industry;
- the variety of sectors which are collectively referred to as manufacturing and resource industries;
- electricity generators, which are being transformed as governments in Alberta and Ontario move to deregulation and privatization; and
- providers of nuclear or renewable energy who, because they do not generate greenhouse gases, have an economic interest favourable to Canadian ratification of the Kyoto Protocol.

8.1. NATIONAL BUSINESS ASSOCIATIONS

As noted, national associations work to promote the interests of business as a whole, rather than a particular sector. Brooks and Stritch state that they work to protect:

"… the interests of capital. … [which includes] protection for those fundamental principles of the capitalist economic system … [such as]: the private ownership of property, the social respectability and economic importance of private profits, and the market as the chief mechanism for allocating the economy's resources. In addition, capital has an objective interest in the maintenance of social order." (Brooks and Stritch, 1991:11). Brooks and Strich also give examples of national policy issues of concern to such organizations: "taxation; monetary policy; social programs; industrial relations; national trade policy" (Ibid.: 11). Judged by their participation in the climate debate of the past four years, energy and environment issues must be added to that list. What follows is a listing of the climate policy positions advocated by the three business associations.

8.1.1. Canadian Council of Chief Executives

Recommendations made by the Canadian Council of Chief Executives in 1998 for a Canadian response to climate change included: increased consensus building by all stakeholders; programs to improve public understanding of the science and economics of climate change; strengthened voluntary emissions reduction strategies via credits, market-based instruments such as emissions trading, and other incentives; intensified search for renewable and low-carbon energy forms; and development of energy efficient technologies (d'Aquino, 1998:24). Essentially, the Council was saying at that time that Canada should proceed cautiously, using only the policy instrument of voluntarism.

On January 24, 2000, *the Globe and Mail* reported that the Council (then the BCNI) was leading the effort to draft an industry report calling on the federal government to go slow on ratification of Kyoto. The draft report said individual citizens, more than industry, were responsible for Canadian emissions (Mittlestaedt, January 24, 2000).

Two years later, in a speech given during the Canadian Council of Chief Executives' annual general meeting on January 15, 2002, Thomas d'Aquino, Council President and Chief Executive stated, "we in the Council always have had strong reservations about the feasibility of the target Canada accepted during the Kyoto negotiations. These concerns were compounded by the decision by the United States last year not to ratify the Protocol. The Council consistently has adopted the position that Canada should not ratify until there is a clear understanding on the part of all Canadians about how its target would be achieved and who would pay the price. (d'Aquino, 2002:3)." The central concern of the Council is that ratification of the Protocol would threaten Canada's ability to remain competitive in major markets. The Council takes the position that the Kyoto timeline is unrealistic and believes that ratification would result in undue and significant economic costs. Presumably as part of the search for public support of its position, Council representatives stress the impact that the Kyoto target will have upon individual's use of motor vehicles (Dillon, June 20, 2002).

In June 2002, the Council responded to the Government of Canada Discussion Paper by releasing a document titled *The Kyoto Protocol Revised.* (CCCE, 2002). In it, the Council argued that the Kyoto Protocol was ineffective environmentally and would also "undermine Canada's ability to meet its social and economic priorities." Following is a list of the major arguments were made against Canadian ratification:

- closing the Kyoto gap of a 240 Mt reduction is an "insurmountable challenge";
- Canadian industry would be put to an "immediate and significant" competitive disadvantage relative to U.S. industry;
- individual Canadians would also be significantly affected;
- foreign investment and credit ratings would suffer if "Canada has consciously limited its growth prospects";
- Canada might be forced to limit immigration as one part of the emission-reduction effort and ratification might limit aboriginal economic development.

Borrowing the imagery used by Marx some century and a half earlier, the Council goes on to argue for "casting off the shackles of the Kyoto Protocol" and instead adopting a "made-in Canada" policy. That policy would include these main elements:

- increased public debate;
- government use of regulatory and spending instruments to increase energy efficiency;
- greater voluntary effort by industry;
- increased scientific research;
- more effort to adapt to climate change; and
- increased government spending on public transit.

The Council cautioned that any increased government spending on climate policy must be balanced by reductions elsewhere. Although arguing that Canada itself should not participate in the Kyoto regime, the Council says "major emitters such as China and India" must be brought "into the global effort to reduce emissions". (CCCE, 2002).

8.1.2. Canadian Manufacturers and Exporters

The Canadian Manufacturers and Exporters (CME) association website states that it represents 75% of Canada's manufacturing output and 90% of its exports. CME participated with other business associations in a statement sent to then NRCan Minister Ralph Goodale, calling upon Ottawa to do more study before acting on Kyoto. (Alan Toulin, "Go slow on Kyoto pact, Ottawa told," *National Post*, November 12, 2001) On February 7, 2002, the CME adopted a resolution again saying more study was needed before Kyoto could be adopted. In that same month, CME released a report titled Pain Without Gain: Canada and the Kyoto Protocol that stated that Kyoto ratification would result in the loss of 450,000 jobs. In April 2002, the CME wrote to its 2,500 business members urging them to sign a form letter opposing Kyoto ratification and send it to their local Member of Parliament (*National Post*, April 8, 2002).

8.1.3. Canadian Chamber of Commerce

In two documents released in early 2002, the Canadian Chamber of Commerce stated it does not support the Kyoto Protocol as the most effective solution to climate change and recommended that

the Canadian government, in conjunction with provincial and territorial governments, develop its own longer-term action plan. The Chamber argued the Protocol will lead to unnecessary economic costs because it does not provide the necessary timeline for process changes, the turnover of capital stock, and the development and deployment new and more efficient technologies (Canadian Chamber of Commerce, 2002). Like all other business participants, the Chamber pointed to the competitive disadvantage in the U.S. market resulting from Canadian ratification.

In these public interventions, the Canadian Chamber of Commerce makes nine recommendation to the federal government that include: continued support and development of voluntary and non-regulatory measures; encouragement of developing countries' efforts to reduce GHG emissions; a guarantee that international commitments involve long-term time frames; continued support of research into the science and economics of climate change; and a commitment to "work with the United States to develop a bilateral agreement and measures to combat climate changes and greenhouse gases, ensuring that Canada's competitiveness is maintained (Canadian Chamber of Commerce, 2002)."

On June 27, 2002, in a response to the May Discussion Paper, the Chamber set forth its basic position: "While the Canadian Chamber supports cost-effective actions to mitigate climate change or adapt to its effects, we do not support ratification of the Kyoto Protocol." (Canadian Chamber of Commerce, June 27, 2002: 2). The Chamber went on to recommend that the federal government:

- continue to rely on voluntary action rather than use regulation;
- enter into a bilateral agreement with the U.S. on climate policy, as an alternative to the multilateral Kyoto regime; and
- generally, continue to develop cautious policy over the longer term.

Putting a positive face on their opposition to Kyoto ratification, the Chamber ran a full-page ad in *the Globe and Mail* on September 10, 2002, calling on Canadians to support a "made-in-Canada plan" to address climate change (Canadian Chamber of Commerce, September 10, 2002). The plan would include such things as "a more realistic time frame" and would "factor in our trade relationships with the United States."

8.2. OIL INDUSTRY

The oil industry operates on a global basis, organized into transnational corporations. Those companies have organized an international organization, the Global Climate Coalition, to represent their interests as it participates in the international FCCC process (Legett, 1999; Levy and Eagan, 1998). The basic objective of the Global Climate Coalition has been to delay implementation of the international Kyoto regime. Not all firms, however, have responded in precisely the same way. It is generally recognized that Exxon, the parent of the Canadian firm Imperial, has been more intransigent in its opposition to an international agreement than has BP, which has publicly stated that climate change is a significant problem (Rowlands, 2002). Within Canada, the industry participates in the policy process by means of two trade associations, the Canadian Association of Petroleum Producers (CAPP) and Canadian Petroleum Producers Association (CPPI), as well as the national trade associations described above.

8.2.1. Canadian Association of Petroleum Producers

The Canadian Association of Petroleum Producers (CAPP) is a trade association representing the "upstream" oil industry, primarily the extractors of oil. As indicated by the CAPP publications listed in section 14.2.1 below, the association has not taken the position that nothing should be done about climate change in Canada. However, it advocates a longer time frame than that provided by the Kyoto regime, and continued reliance on voluntarism rather than regulatory or economic instruments.

8.2.2. Canadian Petroleum Producers Institute

The Canadian Petroleum Producers Association (CPPI) represents those "downstream" firms who refine crude oil to make other products, such as gasoline. CPPI has generated fewer documents on Canadian climate policy than CAPP. Generally speaking, however, it advances the same position.

8.3. TRANSPORTATION INDUSTRY

In this sector, two trade associations have taken conflicting views on what Canada should do. Any move to significantly reduce Canadian emissions (moving closer to a 50% reduction from 1990 levels) will require increased land-use densities to make movement of people and goods by rail or mass transit economically efficient. This poses an economic threat to the manufacturers of motor vehicles, represented in Canada by the Canadian Vehicle Manufacturers Association (CVMA). Although CVMA

has not published a document specifically on climate policy, a review of its website makes clear that it takes the same position as the three broad-based business associations discussed above. The Railway Association of Canada, on the other hand, provides on its website documents pointing to the economic benefits which would flow from ratification of Kyoto (listed in section 12.2.1, below). The association has called upon governments to make rail transport an integral part of Canadian climate policy.

8.4. MANUFACTURING AND RESOURCE INDUSTRIES

We reviewed websites of the sectoral trade associations and major firms listed above as participants in the debate. Documents they have generated which are referenced on those websites are listed in section 12.2.1 below. Generally speaking, it would appear that most of these industries have allowed the three broad-based associations to speak for them. As noted, some such as the Canadian Chemical Producer's Association, Canadian Plastics Industry Association and Canadian Steel Producers Association participated, with other business organizations, in a September 6, 2002 full-page newspaper ad arguing against ratification. The ad made the arguments that the government of Canada was rushing to approve an agreement that would directly hurt individual Canadians, without any prior consultation and without any attempt to instead develop a "made-in-Canada" plan.

8.5. ELECTRICITY

According to the NCCP's Analysis and Modeling Group, the electricity sector provides the greatest opportunity for meeting Canada's GHG reduction target under the Kyoto Protocol. The modeling suggests that the electricity sector could be responsible for up to 40% to 60% of the total emissions reduction required to meet the target and that the majority of emissions reduction in the electricity sector could be achieved by replacing coal-fired generating plants with natural gas and new hydro (Canadian Electricity Association, 2002: 3). Accordingly, this section sets out the policy position advanced by the industry trade association, followed by discussion of deregulation in Alberta and Ontario.

8.5.1. Canadian Electricity Association

In October 1999, the Canadian Electricity Association (CEA) proposed to Canadian federal and provincial governments an Emissions Performance Equivalent Standard (EPES) to limit emissions of

greenhouse gases from Canada's electricity sector. The EPES is a voluntary industry program designed to limit emissions per unit of production. For example companies could employ alternative renewable generating technologies, find new technologies to reduce emissions of existing plants or invest in recognized domestic or international offsets. In exchange the government would agree to provide investor certainty for the duration of the commitment. The CEA estimates that by the year 2010, EPES would reduce emissions 10 to 12 Mt of CO_2 or about 10 percent of 2000 emissions (Canadian Electricity Association, 1999: 4).

A paper published by the CEA in 2002 suggests that the NCCP analysis does not take into account important constraints to reducing the emissions of the electricity industry such as: growth in electricity demand; industry restructuring; the importance and need for low-cost electricity; long lead times for capital replacement and technology development; diverse regional circumstances; and, growing integration with the U.S. economy (Canadian Electricity Association, 2002: 3) Due to these constraints the CEA argues that near-term emissions reduction within the Kyoto time frame is not only limited but would result in significant economic costs for Canada and the electricity industry especially if the United States does not take similar action.

The CEA suggests that a realistic transformation of the electricity sector in order to achieve significant GHG emissions would require a minimum of 20 years. Therefore the association recommends a longer-term approach that would embrace and seek to improve all electricity generating technologies instead of forcing any one out of the market. The CEA maintains that coal is too cost effective and abundant to be phased out and that the premature termination of coal powered plants would result in great capital losses. The association also states that it would be impossible to exclude the use of nuclear power generation from the discussion of carbon emission reduction strategies.

8.5.2. Deregulation of Canadian electricity markets

It is expected that, in order to meet with domestic demand alone, Canada's electricity supply will need to increase by 35% between 2000 and 2020. Growth in domestic electricity demand is projected at 1.5% per year through to 2020 (CEA, 2002). By 2010, GHG emissions from the electricity sector are expected to be 25% above 1990 levels, accounting for approximately 16% of Canada's total emissions (Canada, 2001).

The level of GHG emissions from electricity generation depends on how much electricity is generated and how it is generated. The amount and source of generation depends on a variety of factors such as:

the demand for electricity including foreign markets; energy efficiency measures; the availability, cost and deployment of renewable technologies; market and investment forces; and provincial and federal policy measures. Therefore the current restructuring of some electricity sectors in Canada has the potential to greatly impact national GHG emission levels and Canada's ability to meet its Kyoto target.

8.5.2.1. Changes to the Canadian Electricity Sector

The Canadian electricity industry is undergoing major restructuring and the responsibility of generation, transmission, distribution and markets falls within the jurisdiction of the provinces. In 1996, Alberta began the process of deregulating their electricity market and on January 1, 2001 all customers in the province had the option of buying electricity from an alternate supplier; in 1997 Manitoba modified their *Hydro Act* leading to open access to the transmission system of Manitoba Hydro on a wholesale basis and the establishment a formal deregulation process; and on May 1st 2002, the Ontario government opened its electricity market for competition.

Opponents of deregulation are concerned that under a privatized system, electricity producers and retailers will disregard efficiency measures and seek to increase revenues through market expansion and through the maximization of the least expensive means of electricity output – coal generation. This would mean running existing coal plants at maximum capacity thereby increasing GHG emissions. For example coal plants in Ontario are currently run at approximately 50% capacity.

In particular, since deregulation is intended to support increased trade in electricity, environmentalists fear that Canadian companies will increase their fossil fuel emissions in order to sell electricity into the U.S. market. (Stewart, TEA, April 30, 2002)

8.6. ALTERNATIVE ENERGY

Those sectors that produce energy from sources other than fossil-fuel combustion have an obvious economic interest in seeing Canada ratify. Presumably because they have fewer financial or staffing resources to devote to the effort, they have been less vocal participants in the debate than the business interests listed above. The results of our review of their websites are given in section 12.2.1 below.

The most controversial alternative energy is nuclear. While it does not result in greenhouse gas emissions, nuclear waste poses environmental problems sufficient that this option has not been endorsed by environmentalists or governments. The industry itself, however, hopes the climate issue

will work in its favour. "Nuclear plants do not emit acid or greenhouse gas, and in the decades to come this should offer them an increasingly important competitive advantage, in terms of both local air quality issues and climate change strategies. Some in the nuclear industry hope that will be enough to turn the tide away from fossil fuels in favour of nuclear energy." (Morrison, 2001: 44) In 1999, then Natural Resources Minister Goodale stated that nuclear energy should be considered as part of the Canadian response to climate change. (Goodale, 1999) Since then, however, the federal government has made no move in that direction. Increased use of nuclear energy is not included in the list of options reviewed in the May 2002 Discussion Paper.

In September 2002, the Canadian Nuclear Association ran a series of newspaper ads under the heading "Clean air is important to all of us - Nuclear energy is helping to make it happen."

9. Environmentalists

We now turn our attention to the other set of actors that is actively working to influence Canadian policy: environmental non-governmental organizations.

9.1. CANADIAN CLIMATE ACTION NETWORK (CANET)

CANet, or the Canadian Climate Action Network, is the Canadian component of the international Climate Action Network (CAN). CAN is a global network of over 287 non-governmental organizations whose goal is "to promote government and individual action to limit human-induced climate change to ecologically sustainable levels" (Climate Action Network, 2002). CAN was established in March 1989 and currently has seven regional coordinating offices which operate in Africa, Central and Eastern Europe, Europe, Latin America, North America, South Asia, and Southwest Asia. CAN's purpose it to play a global liaison role for environmentalists concerned with the issue. Only non-profit public interest organizations active on global warming issues are permitted to be a member of CAN. Membership is not open to those organizations representing business or government.

CANet is based in Ottawa. The Director of CANet, John Bennett, is also Director of Atmosphere and Energy for the Sierra Club of Canada. The following groups, from among the approximately one hundred members of CANet, are listed on the Sierra Club climate change website:

- BC Environmental Network
- Greenhouse Gas Emission Reduction Trading Pilot
- Green Economics
- Campaign for Nuclear Phaseout
- Canadian Coalition for Nuclear Responsibility
- Canadian Environmental Law Association
- Coalition for a Green Economic Recovery
- Compass Resource Management
- Conservation Council of New Brunswick
- Energy Research Group at Simon Fraser University
- David Suzuki Foundation
- Green Communities Association

- Greenest City
- Greenpeace
- Ontario Environment Network
- Pembina Institute
- Pollution Probe
- Regroupement pour la Surveillance du Nucleaire
- Reseau Québécois des groupes ecologistes
- Saskatchewan Environmental Society
- Science for Peace
- Sierra Club Canada
- Toxic Watch Society of Alberta
- United Churches of Canada

Members of CANet attend the occasional collective meeting, but more often discuss their ideas, opinions, advocacy strategies and information on climate change issues via conference calls. The primary function of CANet is liaison and networking, rather than direct lobbying.

9.2. DAVID SUZUKI FOUNDATION

The David Suzuki Foundation, established in September 1990, is based in Vancouver, British Columbia. The Foundation focuses on two main themes; climate change and pacific salmon forests. With respect to climate change, the David Suzuki Foundation would like to see the Canadian government ratify the Kyoto Protocol immediately. The organization believes that the world has to go far beyond the Protocol in order to combat global warming, but argues that Kyoto is a critical first step in the right direction. Suzuki offers various suggestions on how Canada can meet its Kyoto commitments:

- Improve mandatory fuel economy standards;
- Phase in increases on taxes on gasoline and diesel and use this revenue to support transportation alternatives such as efficient transit and allow reductions in other taxes such as sales, payroll or income taxes;
- Strengthen support for public transit, car pool programs, and cycling infrastructure;

- Establish a mandatory renewable energy content of 5 per cent, such as fuel ethanol, to replace some of the gasoline Canadians use;
- Lower and enforce speed limits to reduce fuel consumption;
- Encourage the movements of freight by rail rather than by road;
- Implement net metering to allow individuals and businesses using small-scale, renewable power sources to feed power into the grid when they generate more than they use, and draw from the grid when they need more power;
- Remove royalty structures, capital cost subsidies and lax emission standards that favour coal-fired plants in order to level the playing field for low carbon energy sources; and
- Mandate that 10 per cent of our electricity be generated from renewable sources – wind, solar, biomass, geothermal, tidal – by the year 2010. Remove unfair competitive advantages to fossil fuels, especially coal, by leveling the playing field for low carbon energy sources.

The David Suzuki Foundation is involved in several coalitions such as the Physicians of British Columbia, Ontario and Québec, the Canadian Institute of Environmental Law and Policy, the Toronto Renewable Energy Cooperative, World Wildlife Fund, the University of Victoria Eco-Research Chair, the Toronto Environmental Alliance, the North-West Climate Coalition and is a member of the Canadian Climate Action Network (CANet).

The David Suzuki Foundation uses several strategies in order to advance its climate position. It works primarily on educating the public about climate change via reports on their website, broadcast media and Internet media. Due to limited funds, the organization limits its government advocacy and does not generally attend any international or national climate change meetings.

9.3. WEST COAST ENVIRONMENTAL LAW

West Coast Environmental Law, founded in 1974 is also based in Vancouver. The WCEL mandate is threefold:

- Law Reform: WCEL strives to establish and shape environmental legislative initiatives in B.C. and on the national level.
- Legal Education: WCEL attempts to educate the public and other environmental organizations on environmental issues.

- Legal Research: WCEL will research environmental issues from a legal perspective.

WCEL supports Kyoto ratification (Rolfe, 2002). WCEL believes that the Kyoto Protocol is a good start to reduce greenhouse gas emissions, but argues that much stricter reductions will be needed once the Kyoto Protocol is fulfilled. Kyoto is a good beginning, however, due to the fact that it quantifies the amount of greenhouse gases that needs to be reduced and establishes an emissions trading system.

WCEL believes that the most cost-effective way to reach the Kyoto Protocol is through carbon taxes and emissions trading (i.e. market tools) (Rolfe, 2002). WCEL maintains that the emissions trading system should be upstream based - applied to the amount of fossil fuels industries can extract and sell, rather than applied to their downstream users. (Both types of systems are canvassed in the May 2002 Government of Canada Discussion Paper.)

Not surprisingly, WCEL has been critical of the federal government attempts to negotiate international reductions in the Canadian target and to maximize the usage of sinks. WCEL is also critical of the current B.C. government, which has initiated many projects which are incompatible with the Kyoto Protocol, such as encouraging coal based energy production (Rolfe, 2002). .

WCEL has carried out climate policy research on behalf of the federal government and, in that capacity, played an active part during the negotiation of the rules for Kyoto from 1999 to 2001. WCEL lobbies governments through the media and through direct contact, such as briefs sent to members of the Liberal Caucus. Also, WCEL regularly sends a representative to international climate change meetings. Finally, WCEL also practices advocacy in the form of public education. A listing of documents generated by the NGO is provided in section 12.2.2 below. WCEL is also a member of the Canadian Climate Action Network (CANet) and the Northwest Climate Response.

9.4. PEMBINA INSTITUTE

The Pembina Institute, founded in 1985, operates on a national basis, with offices in Ottawa, Calgary, Drayton Valley, Alberta and Edmonton. It describes itself as an independent, citizen-based think tank, an activist public interest organization and a non-profit consulting group. Like the other environmental NGOs, the Pembina Institute supports ratification of the Kyoto Protocol on the basis that it is a "small, but essential first step to address climate change" (Hornung, 2002). Ultimately, Pembina argues, there must be a reduction of 60% in the world's greenhouse gas emissions (Hornung, 2002)

Pembina sees a viable Canadian climate strategy as having two main elements. The first is increased energy efficiency, which will come about not through new technology, but as a result of government policy. The second element is renewable energy (Hornung, 2002). While Pembina does not believe that renewable energy will play a large role in helping Canada reach its Kyoto commitment, they see it playing a major role in reducing greenhouse gases in the future, once the 6% reduction target is achieved. Investing in renewable energy now will yield significant dividends in the future.

Pembina does not support the use of voluntary measures to reduce greenhouse gases (Hornung, 2002). They believe that for drastic greenhouse gas reductions to take place, governments agencies must provide regulations and financial incentives for reductions in greenhouse gases. Pembina supports an emissions trading system, and is not opposed to the inclusion of sinks into a greenhouse gas reduction strategy. What they do oppose is the abuse of sinks: using scientifically unsound sinks and getting credit for sink activity above the business as usual scenario (i.e. letting forests grow and getting credit for reduction in greenhouse gases).

On a political level, Pembina believes that the key issue to be resolved is how responsibility for greenhouse gas reduction is shared among the federal and provincial governments (Hornung, 2002). They also believe that the federal government must play a leadership role in the resolution of this issue. Though, in Pembina's opinion, the acceptance of this responsibility has been late in coming, the Pembina Institute is happy with the recent leadership role taken by the federal government. In the future, Pembina hopes the federal government will continue in its leadership role. It also advises the federal government that not everything can be negotiated before ratification of the Kyoto Protocol.

To achieve the previously mentioned objectives and goals toward climate change, the Pembina Institute uses four main strategies - research, advocacy, public education and consulting.

Pembina is also a part of various climate change coalitions. These coalitions are: Clean Energy Coalition, Canada's Clean Air Renewable Energy Coalition, Canada's Climate Change Action Network (CANet) and the Green Budget Coalition.

9.5. GREENPEACE CANADA

Greenpeace Canada, one part of the international organizations, like its counterparts in the environmental movement wishes to see immediate Canadian ratification of the Kyoto Protocol. Of all the Canadian environmental organizations, Greenpeace Canada makes greatest use of direct action as a

technique for gaining media exposure and thereby influencing policy. . In July 2001, activists scaled the CN Tower in Toronto and hung a banner reading "Canada and Bush – Climate Killers." They repeated that technique in March 2002, when they climbed to the top of the Vancouver Convention and Exhibition Centre and hung a banner reading "Keep Kyoto. No offshore drilling." The next month, Greenpeace activists installed solar panels on the roof of Alberta's Premier Ralph Klein's house. Greenpeace Canada also performs heavy political lobbying, sending representatives to almost every international environmental convention in the world. Greenpeace produces scientific and political reports, background briefings and fact sheets each year on climate change in order to educate the public. The NGO also holds teach-ins, circulate petitions and engage the public in campaigns on the street, on the Internet, over the phone and through the mail. Additionally, Greenpeace in cooperation with the World Wildlife Fund has produced polls, dealing with climate change and Kyoto, in which the thoughts and opinions of the Canadian public are expressed.

9.6. SIERRA CLUB CANADA

The Sierra Club, founded in the U.S. in 1892, is a provincial, national, and international non-governmental organization (NGO). The organization's mandate is to "develop a diverse, well-trained grassroots network working to protect the integrity of the global ecosystems" (Sierra Club, 2002). The Sierra Club has four chapters in Canada: the British Columbia Chapter, Prairie Chapter, Eastern Canada Chapter and the Atlantic Canada Chapter. The national office is located in Ottawa.

The Sierra Club would like to see immediate action by the Canadian government on ratification of the Kyoto Protocol. The NGO sees Kyoto as a small but necessary step towards combating climate change. Ratification of Kyoto would build momentum that could lead to far greater and more significant gains within the climate change framework. Sierra Club wishes to see the total elimination of the use of fossil fuels in Canada, but does not foresee this happening within the timeframe of Kyoto. Regarding the use of emissions trading as a tool for meeting Kyoto commitments, the Sierra Club believes that it is difficult to state a position until there are rules and guidelines developed.

9.7. TORONTO ENVIRONMENTAL ALLIANCE

The Toronto Environmental Alliance mandate is to promote a greener Toronto. TEA was created in 1988 in order to "provide an activist voice to local Toronto issues" (Toronto Environmental Alliance, n.d., About TEA). TEA works with concerned individuals, public health agencies, local governments and grassroots organizations in a variety of environmental issues, including climate change.

With respect to climate change, TEA's primary goal is to ensure Canada's fulfillment of the FCCC's commitment of stabilizing greenhouse gases at non-dangerous levels (Stewart, 2002). The consensus is that this would require a reduction of greenhouse gases of 50 % - 60 % from present levels. While the Kyoto commitment of a reduction of 6 % of greenhouse gas emissions obvious does not meet this commitment, TEA sees ratification of the Kyoto Protocol as a "small but necessary first step" (Stewart, 2002) and therefore supports its ratification.

While TEA does support the ratification of the Kyoto Protocol, and is happy that the Federal government is supporting its ratification (Stewart, 2002), it is critical of "loopholes", such as sinks, that Canada has pressed to have included in the Kyoto regime. (They are also unsure of the usefulness of emissions trading since they believe that there is a lot of room for abuse. On the provincial level, TEA is very critical of Ontario's position toward the Kyoto Protocol and toward climate change in general. According to TEA, while the Ontario provincial government seems to agree in principle with the Kyoto Protocol and the problems of climate change, their actions indicate otherwise. They point out how the Ontario provincial government has increased the amount of time that coal fired electricity plants run in the province. TEA supports a reduction in vehicle emissions (through such things as public transit and car pooling), limits in urban sprawl and the use of clean, green energy (Stewart, 2002).

Their main strategy seems to be public education. They use public meetings, television shows, etc. to educate the public about climate change, the Kyoto Protocol and TEA's position with respect to these two issues. While TEA themselves do not publish many of their own reports on climate change, they have developed a junior level curriculum unit for Toronto's elementary school called, *Our Changing Climate: Learning How to Take Charge of Climate Change at School, Home and in the Community*. They have also supported many local programs such as the Black Creek Regional Transportation Management Association's carpooling program and corporate fleet anti-idling programs

In addition to the public education initiatives mentioned above, TEA uses advocacy as a means of getting their message across. They contact elected officials directly about climate change-related issues and make their views known on a regular basis through the media. Finally, TEA does a lot of networking with other NGOs within the country. They have worked with such organization as the David Suzuki Foundation, the University of Toronto and TEA is a member of CANet.

10. National Consultative Process

This section sets out in chronological order the process used for dialogue amongst all the government, business and environmental actors described above.

In 1993 and 1994, the federal and provincial governments engaged in a relatively informal consultative process which culminated in adoption by the joint ministers, on February 20, 1995, of the National Action Plan on Climate Change (NAPCC). The months before that had seen a conflict between two federal cabinet ministers, Sheila Copps, then Environment Minister and Ann McLellan, Minister of Natural Resources and principal representative of Alberta in cabinet. Copps had advocated use of the policy instrument of regulation, while McLellan fought for voluntarism. The latter won, and the NAPCC relied almost completely on measures to promote voluntary action (Macdonald and Smith, 1999-2000:111-112). Principal amongst those was the Voluntary Challenge Registry, a system whereby industries and institutions are invited to develop plans to reduce their emissions and then "register" them for public viewing. It has since been established as private company, funded and managed by federal and provincial governments. A comparable body, ÉcoGeste, has been established in Québec.

In April 1997, a Pembina Institute study found that of the 587 plans registered by that time only 73 met the basic criteria of including both an inventory of current emissions and at least one planned measure to reduce them (Hornung, 1999). The Institute concluded that "most companies have simply used the VCR to catalogue past actions in normal business practices that also happened to reduce greenhouse gas emissions." (Ibid.) The Pembina analysis of VCR plans released in October 2000 led to the conclusion that "the VCR has utterly failed to bring about the kinds of emissions reductions that Canada will need to meet it Kyoto commitment." (Bramley, October 2000:1.)

As discussed above, the decision to launch a consultative dialogue on the means of achieving the Canadian Kyoto commitment was made by the First Ministers at their meeting of December 11-12, 1997. The process of consultation was then initiated by the JMM in April 1998. Sixteen Issues Tables were created - each made up of government, industry, environmental and other representatives involved with a particular aspect of climate change policy. Those Tables were:

- Agriculture and Agri-Food Table;
- Buildings Table;
- Credit for Early Action Table;

- Electricity Table;
- Enhanced Voluntary Action Table;
- Forest Sector Table;
- Industry Table;
- Kyoto Mechanisms Table;
- Municipalities Table;
- Public Education and Outreach Table;
- Science, Impacts and Adaptation Group;
- Transportation Table;
- Tradable Permits Working Group;
- Technology Table;
- Sinks Table; and
- Analysis and Modeling Group.

During the course of the next two years, each Table developed and released an options paper, listed in section 12.1.3 below. The reports of the Issues Tables then provided the basis for a series of thirteen stakeholder sessions, held in all parts of the country, during the period of May to July, 2000. Those discussions then formed the basis for the national program approved by the JMM, with the exception of Ontario, at its October 2000 meeting, as described above.

After the Tables ceased to function, by 2000, the chairs of each, plus others, were brought together into an advisory body termed the Integrative Group. It meets on a regular basis to receive information and provide comment on the development of the national program, but is not a forum for multi-stakeholder negotiation, as were the Tables.

Other consultative policy development was done by the National Roundtable on Environment and Economy, which in 1998 established National Forum on Climate Change. At the same time, the federal government has devoted considerable time and effort to making the public aware of the issue.

After release of the National Implementation Strategy, no formal consultation beyond the ongoing work of the Integrative Group took place in 2001. In the spring of 2002, a series of public information sessions on emissions trading were hosted by the National Round Table on Environment and Economy in Canadian cities, at the request of the federal government. Presumably these were held because by then federal officials had decided that if Kyoto were ratified emission trading would be

used as a policy instrument. The federal minister, David Anderson, then went on a speaking tour of Canadian cities in the spring of 2002. At about that time, as noted above, the target date of June 2002 for a decision on ratification was abandoned. Instead, the federal government published its Discussion Paper and then launched yet more consultations, to get reaction to the options set forth. Consultations were held in 14 cities. 619 people participated, of which 230 represented business and 90 the environmental movement (Marbek and Stratos, August 2002). It is not clear whether formal consultation or multi-stakeholder negotiations will be held after release of the government of Canada plan for a Kyoto program and before the final vote on ratification in the House of Commons.

11. Policy Decisions to Date

How could our federal and provincial governments bring about reductions in greenhouse gas emissions? Various prescriptions exist. Environmentalists, for instance, have advanced detailed plans for achieving reductions far greater than the Kyoto commitment (Torrie and Parfett, Spring 2000). The Government of Canada Discussion Paper sets out four different options, summarized above. It will likely release a more detailed plan in October 2002. Business organizations, as discussed, have set out yet another vision - a "made-in Canada" alternative to the international Kyoto programme. Our purpose here is different. We do not set out yet another blueprint for future Canadian climate policy. Instead, we attempt in this section to answer a seemingly simple question: what policy measures have Canadian governments taken between 1998 and September 2002?

Although the answer can be found in government documents, it is not readily apparent. Documents such as the 2000 and 2002 *Business Plans* and *2001 National Climate Process Status Report* do not give a simple, clear picture of current national climate policy. There are two reasons for this. First, they indiscriminately mix government and private actions. This allows a listing of many actions, but no attempt is made to determine the relationship between the two - that is, the extent to which private action has been stimulated by government policy. Secondly, they present all actions as equally significant, with no discussion of effectiveness or priorities. The one thing we do know is that climate policy has, to date, failed. Since Canada in 1990 adopted the objective of stabilizing emissions at that year's level, we have seen an increase in emissions of 19.6%. The hundreds of policy initiatives listed in NCCP progress reports are not achieving their intended purpose. It is almost impossible, however, to determine from government documents alone why that is the case.

Our purpose, accordingly, is to untangle for the reader exactly what our federal and provincial governments are and are not doing. We do that by using the concept of a "policy instrument" - a term used by academic policy analysts to refer to the means by which governments achieve their policy objectives. For instance, a government which has decided it wants all citizens to be educated to a certain minimal level has available to it different means of achieving that goal. It could, for instance, simply pass and then rigorously enforce a law requiring school attendance without taking any other action. Such use of the policy instrument of law would then create a demand for schools, which would then be met by the market. Alternatively, governments could instead operate schools themselves (the policy instrument of program delivery). They might then rely on the wisdom of parents to make sure they were used (the policy instrument of voluntarism), without using the coercive force of law.

We use the concept of policy instruments here because it is a good means of shedding light on the difficult subject of what exactly governments have or have not done about the issue of climate change. In particular, we have worked to identify the extent to which Canadian governments have used the instrument of voluntarism, with very little accompanying framework of government services or strong incentives to reduce fossil-fuel emissions, since we suspect that is the reason Canadian policy has failed so completely to date.

To that end, this section does three things. It first sets out in generic terms the categories of policy instruments used by academic policy analysts. It then gives categories of instruments available for achieving environmental policy objectives and, more specifically, the particular goal of reducing greenhouse gas emissions. Thirdly, it ranks, in very crude terms, the relative effectiveness of those potential climate instruments - basically pointing out that reliance on voluntary action is likely to be less effective than compelling action by law, or providing a strong financial incentive for action. Using those categories of instruments allows us to then give a clearer picture of the means used to date by Canadian governments to achieve the Kyoto target than can be obtained from government sources themselves.

11.1. CATEGORIZING POLICY INSTRUMENTS

Essentially, to achieve a given policy objective a government must use one or more different means of influencing the behaviour of actors such as individual citizens, business firms, institutions, or other governments. Pal tells us: "The modern state has a bewildering variety of instruments at its disposal to give effect to its policies: taxes, expenditures, regulations, advertisements, punishments, and crown corporations." (Pal, 1992: 138). Doern and Phidd paint a similar picture: "Governments make and implement policy through a set of instruments – exhortation, expenditure, taxation, regulation and public enterprise…" (Doern and Phidd, 1992:95). Another current Canadian policy text gives this listing of instruments, ranging from least to greatest level of state involvement: relying on private action by family and community, voluntary organizations or markets; providing information and actively encouraging private action; giving positive financial incentives (subsidies); auctioning property rights (discussed below as emissions trading); giving negative financial incentives, in the form of taxes or user charges; creating crown corporations to perform a given business function; or, finally itself directly providing the desired good or service, rather than inducing others to do so (Howlett and Ramesh, 1995: 80-100).

In the environmental policy field, a recent article takes such categories and modifies them for the specific policy objective of protecting ecological health. That results in four major types of instruments (Macdonald, 2001):

- spending on government programs which directly provide an environmental service such as treatment of drinking water, curbside recycling or waste disposal;
- various means used to encourage voluntary action;
- use of tax, user fees or subsidies to provide positive or negative financial incentives; and,
- use of law, such as the *Canadian Environmental Protection Act*, and the more specific regulations that govern polluting behaviour implemented pursuant to the authority of that law.

We use those four categories, modified to fit the particular policy challenge considered here.

11.2. CLIMATE CHANGE POLICY INSTRUMENTS

Some of the greenhouse gases listed above, such as methane emitted from solid waste landfills, are not directly related to energy use. The great bulk of the problem, though, stems from carbon dioxide emitted during combustion of fossil fuels. This means that governments must use policy instruments primarily to induce behaviour change in the form of increased energy conservation or displacement of fossil-fuel energy by other forms of energy, either renewable or nuclear (although Canadian governments do not publicly advocate the latter). Two other policy objectives, adaptation to climate change and scientific research, are beyond the scope of this report, since it is focussed upon the Kyoto commitment to stabilize emissions.

11.2.1. Categories of instruments

Two recent Canadian studies have implicitly presented categories of climate change policy instruments. Torrie and Parfett (2000) discuss the following:

- land-use planning to decrease transportation by motor vehicle;
- improved vehicle fuel efficiency;
- improved energy-efficiency of buildings;
- greater use of alternative forms of energy; and,

- changes in methods of generating electricity.

The 2001 Pembina Institute report, Provincial Government Performance on Climate Change, used these categories:

- land-use planning;
- electricity generation;
- building energy efficiency;
- energy efficiency of industrial operations;
- emissions trading;
- government's own operations;
- addressing other sources, such as landfill emissions of methane;
- technology development; and
- enhanced awareness and understanding.

The four categories of instruments listed below encompass those two sets of potential climate policy actions.

What follows, then, are a listing of potentially available instruments for achieving the objectives of reducing greenhouse gas emissions, particularly of carbon dioxide from burning fossil fuels, using the four categories of environmental policy instruments listed above – program delivery; encouraging voluntary action; financial incentives; and, law.

- **Program delivery.** The term is not used here to include programs that use one of the other three instruments. Instead, we refer to direct provision by governments of energy-related services. Governments could establish crown corporations, as was done with PetroCanada, to extract oil and natural gas. They could also do far more to own and operate energy-efficient transportation services, such as rail and urban transit systems, or to own and rent commercial or residential buildings. Rather than trying to influence the energy efficiency of private actors, this would allow them to themselves directly provide goods and services that used less fossil fuel. "Nationalization" is a term no longer heard in the policy discourse, however and for the last twenty years the tide has been running decidedly in the opposite direction. Governments are privatizing, rather than expanding, the direct delivery of services.

- **Encouraging voluntary action.** Essentially, voluntary action on climate change can be encouraged in three ways. First, by providing individuals or organizations with information on the need for such action and ways in which it can most effectively be taken. Secondly, providing structured programs that recognize and reward such action. The most notable of the latter type is the Voluntary Challenge and Registry, established in 1995, which was discussed briefly above. A third means of encouraging voluntary action is to "lead by example." This means improving government's own energy efficiency, referred to in government documents as "own house in order." Improving the energy efficiency of vehicles, buildings and machines used by governments themselves gives two benefits. It both sets an example and, because government is a large purchaser, can provide a market incentive for development and sale of energy-efficient goods.

- **Financial incentives.** Governments can provide a variety of positive financial incentives for increased energy conservation. Federal or provincial subsidy of urban transit, for instance, could lower ticket prices and thus lure drivers out of cars, just as increased rail subsidy would decrease shipment of goods by truck. In the same way, subsidy for research and development of energy-efficient technologies can be an effective policy instrument. A negative incentive, in the form of increased taxation of fossil fuels, would make renewable energy a more attractive option. Such a proposal in the form of a "carbon tax" has been advocated by environmentalists for years, as have additional taxes on heavy, less fuel-efficient cars.

- **Law.** Law can be used in a variety of ways to implement climate policy. Legislation governing appliance or vehicle manufacture can require that machines or buildings be made more energy-efficient. Laws, which apply directly to oil and natural gas extraction, can be made more stringent, such as those governing gas flaring. A different type of law, planning legislation that sets the rules for municipal planning operations, can be used to increase land-use densities, thus making mass transit more viable.

As noted, emissions trading, one form of the law instrument, has come to be accepted as a viable means of achieving an over-all pollution emission reduction at the lowest possible cost. If a country wanted to reduce by 50% its total annual pollution of a substance such as sulphur dioxide which causes acid rain, it could simply pass a law requiring that all of its polluters reduce their emissions by that same amount. Those polluters, however, face very different per-tonne costs for reducing emissions. An older source can cut its emissions significantly by adding relatively cheap pollution-control equipment, while a newer or recently upgraded source, operating with state-of-the art equipment, must pay much more per tonne to bring emissions down from their already low levels. Under trading

systems, such a firm can instead pay the older source to make the cheap reductions, thus achieving the same over-all reduction at a lower combined cost. Although it is sometimes referred to as a "market instrument", governments still play a vital role. They set a legally binding cap on over-all emissions, thus giving the newer source an incentive to purchase reductions. Just as important, they allocate the existing pollution rights, either by auction or on the basis of existing pollution levels (OECD, 1991). International policy leading toward a global emissions trading system was discussed in section 3 above.

11.2.2. Effectiveness of instruments

We suggest here that some of these potential climate policy instruments are inherently more effective than others. During the past thirty-odd years, environmental policy analysts have focussed more upon the question of whether some are more cost-effective, that is, able to achieve the same result at a lower cost to both regulated industry and governments. For years, economists argued that financial incentives and trading could achieve a given objective at a lower total societal cost than could law which requires all polluters to reduce emissions by the same amount, regardless of variations in their per-unit cost of doing so (Canada, 1992). That argument is now largely accepted and, as discussed below, emissions trading is central to the current climate policy debate. Cost-effectiveness is not, however, the subject considered here. Instead, we are interested only in simple effectiveness - defined as the ability of a given instrument to achieve the objective for which it is used.

That subject too has been the subject of debate in the environmental policy world, which has taken the form of attacks upon the effectiveness of law, referred to pejoratively as "command and control" regulation. Since the late 1980s, many have argued that law is inherently limited, since it provides no incentive to go "beyond compliance" - that is, to achieve a level of environmental performance superior to that mandated by law. Business representatives argue that instead of using law or financial incentives to influence the behaviour of polluting firms governments should encourage voluntary action, albeit within the context of other instruments (Harrison, 2001).

There are many factors which influence the effectiveness of policy instruments, including such things as resources provided to the government department using them, perceived legitimacy of the policy goal sought and other factors influencing the motivations of the regulated industry. It is impossible to say that one instrument will always prove more effective than another will. We do not intend here to enter that debate. Instead, we make one claim, which is that encouragement of voluntary action is inherently a less effective instrument than law, program delivery or financial incentive.

Certainly that was the position taken by Commissioner Dennis O'Connor in his recommendations for Ontario drinking water policy when he stated that because it was literally a matter of life and death, governments had to use the instrument of law: "rules that are clear, easily ascertained, and strictly enforced." (O'Connor, 2002). The other evidence we point to is the relationship between two facts. First, as illustrated in this section, Canadian governments to date have relied primarily upon the instrument of voluntarism to reduce greenhouse gas emissions; and those emissions have increased, not declined.

11.2.3. Policy objectives and principles

Before listing the climate policy instruments used to date, we shall briefly present the policy objectives which have been stated by either the government of Canada or the federal and provincial governments together, as enunciated by the JMM, and the principles which governments have said should guide the policy process.

In 1990 the Mulroney government stated in its *Green Plan* document that the policy objective was to "stabilize emissions of CO_2 and other greenhouse gases, not covered under the Montreal Protocol, at 1990 levels by the year 2000." (quoted in Smith, 1998:11). Accordingly, Canada was easily able to support the 1992 Framework Convention, since it set forth the same objective of stabilization by the end of the century. Samson, relying on government of Canada documentation, has said that at Rio, in addition to supporting stabilization, Canada had three goals: "(1) to preserve Canada's competitiveness; (2) to provide opportunities for Canadian business; and (3) to involve as many countries as possible using a common approach that allows differentiated action among countries." (Samson, 1992).

The Liberal Party ran on a platform of committing Canada to a 20% reduction from 1988 levels by the year 2005, but once elected the Chrétien government never stated that to be its policy objective. Instead, stabilization by 2000 remained the policy objective until 1997, when, in the lead-up to Kyoto, Canada, like all other parties to the FCCC, had to face that fact that it could not be achieved. The Joint Ministers, at a meeting on November 12, 1997, stated a new objective of stabilization at 1990 levels by approximately 2010. The federal government, however, at a cabinet meeting on December 3, 1997, immediately prior to the Kyoto talks, adopted an objective of a 3% reduction from 1990 levels by approximately 2010. A few days later, at Kyoto, Canadian representatives signed on to the objective of a 6% reduction by that date. That has remained the formal Canadian policy objective ever since. Nevertheless, the de facto objective has changed. By seeking credit for sinks and exports, the government of Canada has, in effect, changed the policy objective. 1990 emissions are estimated to

have been approximately 607 Mt. A 6% reduction would mean emissions could be no more than 571 Mt in the period 2008 - 2012. If Canada gains credit for exports, emission levels in 2010 would be 641 Mt (571 + 70), which is an increase of 5.6% above 1990 levels. The credit for sinks, already granted, allows that level to rise to 665 Mt, almost 10% above 1990 levels. (Sinks, which require some policy effort, are not as completely a business-as-usual category and arguably might not be considered a change in the objective.)

To some extent, a policy principle, such as human rights, is synonymous with a policy objective. It is also however, a statement of the way in which a given objective will be achieved (cost-effectiveness is one of the most oft-cited policy principles). To the best of our knowledge, Canadian governments did not formally state any climate policy principles as part of the 1995 program. The 1998 report of the Commissioner of Environment and Sustainable Development states that "the federal government has endorsed the precautionary principle" with respect to climate change (the principle states that scientific uncertainty should not preclude action) but does not cite any specific government documents to support that statement (3-15).

A clearer statement of principles was given by the Prime Minister in a speech given in Ottawa on November 3, 1997. In it, he laid out "some of the principles that are guiding us in crafting this position." First, he said Canadian climate policy must be "fair to all regions, provinces and sectors across Canada" so that no one region or industry would be unduly penalized. Secondly "we want to have reasonable targets we can meet, step by step." Thirdly, he said Canada should get international credit for export of goods or services which reduce emissions elsewhere: "For example, we should get credit when we export natural gas to the United States, or when we export CANDU reactors to China, because it helps to reduce coal consumption in both those countries." (Prime Minister, November 3, 1997).

Some of these principles were then adopted by the First Ministers at their meeting on December 11-12, 1997. They said that (Environmental Commissioner, 1998: 3-10):

- Canada must contribute to addressing this important global problem;
- "we must do so in such a way that no region is asked to bear an unreasonable share of the burden;
- the costs and impacts of ratification must be fully understood;

- the provinces must be fully involved with the process to examine costs and impacts before the ratification decision is made; and
- the federal and provincial energy and environment ministers must work together to "consider jointly the appropriate courses of action."

The 2002 Discussion Paper lists six "policy objectives" which are analogous to principles. They are:

- the "majority of effort" must be domestic action;
- reducing emissions must be done in a way which helps Canada stay "competitive in the global marketplace, especially vis-à-vis the United States;";
- no region must be asked to "bear an unreasonable burden";
- the effort must be cost effective;
- the polluter pay principle should be followed; and,
- climate policy must be consistent with other policy goals, "including promoting cleaner air, fostering innovation and developing a competitive advantage in the knowledge economy."

We now set out policy decisions up to September 2002 made by the government of Canada and five provinces.

11.3. CANADA

As discussed, the categories used here are imprecise. In particular, technology development programs that include financial contributions might just as easily be listed under financial incentives. Federal spending to support scientific research, adaptation or the policy development process itself is not included here. Nor is any attempt made to give a picture of net government activity - for instance, by comparing total spending on emissions reductions with total spending, including tax expenditures, on new oil and natural gas discovery and extraction.

To orient the reader, what follows is a chronological listing of the policy pronouncements on climate made by the government of Canada since 1998.

- **1998 Budget:** establishment of Climate Change Action Fund, providing for $150 million to be spent over three years in four areas: public education, policy development, science and technology development.
- **2000 Budget:** $625 million spending, which provided for renewal of the CCAF with another $150 million to be spent over three years beginning April 2001; establishment of the Sustainable Development Technology Fund ($100 million); establishment of the Canadian Foundation for Climate and Atmospheric Services; and funding for municipal initiatives.
- **October 2000 Action Plan:** $500 million spending, categorized by sector; plus federal participation in the federal-provincial national business plan and implementation strategy.
- **December 2001 Budget:** provided additional municipal initiative funding and energy efficiency projects.
- **May 2002 Canada's National Climate Change Business Plan:** listed actions by Canada, the provinces and societal actors.

The May 2002 Discussion Paper, discussed above, does not list any specific actions but instead sets out potential future policy decisions.

Program delivery

In concert with other agencies, the government of Canada has developed a number of programs for technology development in such areas as clean energy, building and vehicle design. $56 million was included in the 1998 Climate Change Action Fund for this purpose (Government of Canada, 2001). The Sustainable Development Technology Fund was initiated with $100 million in the 2000 budget.

Encouraging voluntary action

The 1998 CCAF included $30 million for public education on the issue. In addition, a number of programs have been developed targeted at specialized audiences, such as information provided to business procurement officers on energy-efficient appliances.

Under the category of "own house in order", the government of Canada established the first program to reduce its own emissions in 1995. Some time after that it submitted its action plan to the VCR. A second program was then developed for Action Plan 2000. The Environmental Commissioner in 2001 noted that federal crown corporations were not included in this program.

Financial incentives

The federal government has not introduced any negative financial incentives, such as taxes or user fees, which would have the effect of discouraging combustion of fossil fuel. These have been considered, and have been explicitly rejected as a possible policy instrument. The National Transportation Table considered a possible tax which would double the price of gasoline and reduce its consumption by 28% (*National Post*, July 8, 1999). Both Prime Minister Chretien and Environment Minister Anderson have said such taxes will not be used (*National Post*, August 5, 1999).

Instead, the government has relied upon positive financial incentives. In addition to the technology development referred to above, this has included, in the 2000 budget, $100 million for reductions in developing countries and a contribution of $15 million for that same purpose to the World Bank's Prototype Carbon Fund. Similar funding has been provided for municipal and community projects in Canada.

Law

- The 1992 federal *Energy Efficiency Act* sets efficiency standards for refrigerators, lights and some motors which, collectively, account for 10% of total Canadian emissions. That is the only use of law to date by the government of Canada (Boyd, 2002: 24-25).
- The National Energy Code for Buildings, although not legally binding, is a set of standards potentially available for implementation by provinces.

11.4. PROVINCES

Typically, provincial programs utilize voluntary reductions from businesses, reductions in emissions from government operations, public education, and research and development to achieve reduction goals. Many of these actions also achieve emissions benefits as a co-benefit, however, and are initiated primarily to accomplish these other goals.

11.4.1. British Columbia

Details regarding an overall provincial climate change strategy under the Campbell government is not yet known. Although a framework was developed by the previous NDP administration, this has been

under review by the current Liberal government. The Ministry of Water, Land and Air Protection Service Plan has stated that a climate change plan will be developed and publicized by the end of 2002.

Program delivery

- A total of $100,000 was provided to BC housing in spring 2001 to retrofit social housing with ground source or air source heat pumps to reduce the need for energy for heat.
- In the fall of 2001, BC Hydro put out a call for proposals for independent power producers that could provide green power to the utility. This process was completed in February 2002, and approximately 800 GW/h of electricity was purchased from 18 facilities. These generation facilities were primarily small hydro projects, but two biomass projects and a landfill gas cogeneration facility were also included. A second call for proposals will be distributed in October 2002.
- Urban transit is supported by transfer to municipalities of a portion of gasoline taxes.

Encouraging voluntary action

- Demand-side management activities by BC Hydro are attempting to reduce energy consumption within the province through the "PowerSmart" program. This is due, in part, to the fact that British Columbia is a net importer of electricity. Activities include upgrades to traffic lights, technical assistance for energy efficiency, information dissemination to the public. The BC government has implemented a number of small public education programs.
- "Own house in order" measures include, as detailed under its Voluntary Challenge Registry report, an attempt to encourage government departments to utilize smaller and more fuel-efficient vehicles. In addition, the BC government purchased green power from West Kootenay Power in the 2001/2002 fiscal year. This offset 1.4 kt of greenhouse gas emissions.

Financial incentives

- Sales tax rebates are provided for alternative fuel vehicles and fuels.

Law

- Regulatory controls on new, large landfills require methane recovery.

- In terms of emissions trading, BC Hydro has stated that it will attempt to purchase up to 5.5 Mt of emissions credits from international sources, to offset increases in emissions from their own operations. (*Vancouver Sun*, January 11, 2002)

11.4.2. Alberta

Program delivery

- The City of Calgary has procured green power for use by the C-Train transit system. Under an agreement with Vision Quest Windelectric, Inc., 21000 MW-h of electricity per year is purchased from wind power facilities in the province.
- Through a new allocation of provincial fuel tax revenue, municipalities are provided with additional funding for maintaining and expanding bus lines and light rail systems.

Encouraging voluntary action

- According to the Voluntary Challenge Registry program, the government of Alberta is a "gold-level" reporter.
- The Alberta government has made significant reductions in greenhouse gas emissions from its own operations. By the end of 2000, the government had reduced total emissions by 22% below 1990 levels.
- The government of Alberta has worked with the Pembina Institute to distribute information to small and medium sized enterprises about climate change, and demonstrate the business case for reducing emissions.
- A number of educational activities have been sponsored by Climate Change Central and the Alberta government to educate students and the public about climate change and reducing greenhouse gas emissions. ClimateWise is a public outreach program designed to inform the public about personal actions that can be taken to reduce greenhouse gas emissions. Destination Conservation is a program sponsored by the government and private industry to promote conservation at home and school.
- The Alberta government has been working to conduct energy audits on all provincial facilities over 1000 square feet. It has performed several energy retrofits to decrease electricity consumption, and will continue to retrofit facilities in the future.

- The province has also worked to decrease emissions from its vehicle fleet, by encouraging its employees to take a fuel efficient driving course, and working with leasing agents to ensure that the most fuel-efficient vehicles within a class are selected.
- Standards have been developed to require energy efficiency in schools, and promote the retrofit of existing schools to improve environmental performance.

Financial incentives

- Under the e-Mission program, Natural Resources Canada and Climate Change Central have agreed to provide grants of up to $2000 to offset the costs of retrofitting more than 60 passenger vehicles in Banff National Park to use natural gas.
- Under a program developed by the Clean Air Strategic Alliance, some residents of Calgary are eligible to receive a one-year transit pass or a $500 credit for retiring cars built before 1988.
- Alberta Energy has developed the Gas Plant Energy Efficiency Assistance Regulation (GPEAR), a short-term program to provide royalty credit to gas processing plants that develop cogeneration facilities.
- The government of Alberta has made a commitment to invest $150,000 to the Alberta Energy Research Institute to the IEA Weyburn CO_2 Monitoring and Storage Project. It has sponsored other research activities as well, including research into the development of clean coal technology, carbon dioxide sequestration methods and flue scrubbing equipment.

Law

- The Alberta Energy and Utilities Board (EUB) has developed stringent performance standards on flaring. At the end of 2000, flaring was reduced by about 38% below 1996 levels.
- Alberta has conducted several activities related to the development of an emissions credit trading system. They have participated in the nationwide Greenhouse Gas Emissions Trading (GERT) pilot, and Climate Change Central sponsored an emissions trading simulation in late 2001. Climate Change Central has also sponsored several workshops regarding emissions trading.

11.4.3. Saskatchewan

Provincial climate change policy in Saskatchewan is not well developed. Although Saskatchewan faces potential impacts similar to Alberta's, the available budget for climate change activities in Saskatchewan is not nearly as great. As a result, policies tend to be less proactive, and focused on projects with co-benefits in other areas of provincial interest.

Program delivery

- A $140 million upgrade to the Queen Elizabeth Power Station will be completed during the summer of 2002, which will capture heat from exhaust gases to generate electricity and improve overall efficiency.
- SaskPower reached an agreement with Saskatchewan Environment and Resource Management in late 1999 to plant an additional five million seedlings in the northern forests over four years. These "Forest Carbon Reserves" are meant to offset carbon dioxide emissions from SaskPower operations, and could potentially be used as a source of offset credits under a future climate change control framework. This program also included provisions for monitoring and research to improve the measurement of carbon uptake from forests.

Encouraging voluntary action

- The University of Regina is the host for Climate Change Saskatchewan, a pilot program to distribute information about climate change to students, industry and the general public.
- The exploitation of wind power is being explored in the province. The $20 million SunBridge Wind Power Project, a 17 turbine, 11 megawatt wind farm located southwest of Gull Lake, will begin generation in August 2002, and the 5.9 megawatt Cypress Wind Power Project is expected to be in service by September 2002. This initiative has been supported by green power procurement policies at both the provincial and federal levels. The provincial government has committed to a 10 year, $5 million purchase of wind power for government facilities, and the Canadian government has pledged $12.4 million over 10 years to supply 50% of the electricity demand from federal facilities in the province with green power by 2002.
- The Short-line Railway Advisory Program has been instituted to promote the use of short-line railways for freight transport to reduce transportation volumes and related vehicle emissions.

- The Saskatchewan Property Management Corporation has pledged to increase overall energy efficiency in public buildings by 20% through retrofitting.

Financial incentives

- To reduce carbon dioxide emissions from vehicles, the province has developed plans to promote the use of ethanol as an additive for gasoline sold in Saskatchewan. Under the *Greenprint for Ethanol Production*, released in April 2002, the province proposed several measures to develop an ethanol industry in the province. This includes support for infrastructure investment in the production, wholesaling and distribution of ethanol. This program is being conducted in conjunction with the government of Manitoba.

- The Saskatchewan government supports the International Test Centre for CO_2 capture, and provides funding to the Weyburn CO_2 Injection Monitoring Project and the Saskatchewan Petroleum Initiative.

- The University of Saskatchewan is conducting four projects under the Climate Change Funding Initiative in Agriculture to study the measurement and possible reduction of greenhouse gas emissions from agricultural activities.

- The Natural Gas for Vehicles is a locally administered program to promote the use of natural gas vehicles by the public.

- The Conservation Cover Program is a six-year, $26-million initiative that provides farmers with funding for converting marginal farmlands into perennial forage cover. This program was developed in August 2001, and offers farmers a payment of $7.50 per acre up to a maximum of 50 acres (minimum 5 acres) of cropland converted to perennial cover in 2002. This can increase carbon sequestration in soils, and can conserve topsoil and help to protect local water resources.

- Through the Solar or Wind-Powered Livestock Water Pumping Incentive Program, SaskPower offers a grant equal to 50 per cent of costs above $500, to a maximum of $500, toward the purchase and installation of livestock watering equipment powered with solar or wind power.

- The provincial government and SaskPower have budgeted $7.5 million over a ten-year period to support the development of windpower in Saskatchewan.

Law

- The government of Saskatchewan is investigating the possibility of requiring ethanol as an additive in gasoline in the province, and requesting the federal government institute a mandatory nationwide blending of ethanol in gasoline.

11.4.4. Ontario

Climate change policy in Ontario has been linked with other provincial initiatives dealing with smog and air pollution. This is very evident given that the most recent status report on climate change initiatives in the province, *Air Quality and Climate Change: Moving Forward*, which was released in September 2001, addressed overall topics of air pollution instead of directed provincial goals to reduce greenhouse gas emissions. Most policies for greenhouse gas emissions reductions in the province contain provisions for the reduction or mitigation of other aspects of air pollution as well.

Program delivery

- Funding from the Ontario SuperBuild program has been allocated to improve transit infrastructure, under the provincial "Smart Growth" strategy. A total of $250 million over the next 10 years has been allocated to projects within the Greater Toronto Area.

Encouraging voluntary action

- The Ministry of Environment and Energy developed the Awards of Excellence to recognize businesses and individuals that have undertaken notable greenhouse gas reduction projects.
- Industrial guidelines have been developed for Ontario businesses to provide advice on how to include greenhouse gas mitigation in ISO 14000 environmental management systems.
- The government of Ontario has expanded the Partners in Air program, a hands-on classroom initiative, to include lesson plans for high school students about climate change issues.

Financial incentives

- In 2000, the Ontario government created the $10-million Climate Change Fund to promote activities that address climate change. This is similar to the Climate Change Action Fund at the federal level, and supports research, education and outreach activities. It is not clear how this

money is being spent. The Ontario government has refused a request for such information submitted by TEA.

Law

- Under the mandatory air emissions reporting framework, certain types of electricity generation, industrial, commercial and institutional facilities are required to itemize their emissions of carbon dioxide and other greenhouse gases in a publicly available report.
- Under provincial regulations, landfills are required to develop methane gas capture and treatment systems to reduce emissions to the atmosphere.
- Energy efficiency standards have been instituted for certain consumer products under the *Energy Efficiency Act*.
- There have been direct and indirect reductions in greenhouse gases from cars and trucks through the Drive Clean and Smog Patrol vehicle inspection programs. These programs control levels of smog-producing compounds that are emitted in vehicle exhaust, including hydrocarbons, particulate matter and nitrogen oxides.
- The *Ontario Shortline Railways Act* has promoted the use of rail for freight transportation by businesses.
- There have been some initial steps toward emissions trading in the province. The Ontario government is part of the Pilot Emissions Reduction Trading program. A "cap-and-trade" system of emissions trading for sulfur dioxide and nitric oxide has also been developed for electricity generation and industrial facilities. Provincial authorities have suggested that this type of system could be extended in the future to include greenhouse gases.

11.4.5. Québec

As mentioned previously, per capita emissions from the province of Québec are the lowest in the country, due primarily to reliance of hydro-electricity and higher fuel costs. This means that, in effect, initiatives by the provincial government to reduce emissions are somewhat constrained by their successes in the past. Significant emissions reductions are not possible through power plant retrofitting and upgrading, and as many energy-intensive industries rely upon hydropower, efforts to reduce indirect emissions from electricity use are not as effective as they are in other provinces. It

should be noted, however, that although the government of Québec has publicly supported the goals of the Kyoto Protocol and actively advocates ratification, provincial authorities have not proposed strict regulatory limits on emissions from industries.

A particular focus of climate change initiatives in Québec is emissions from transportation, specifically from cars and trucks. Although fuel consumption and vehicle emissions have typically been lower in Québec than in other areas of Canada, this category of emissions has experienced rapid growth within the past several years.

Program delivery

- Significant investments have been made in public transit in Québec. Within the Greater Montréal area and the National Capital region, $244 million in investment from the Ministère des Transports was allocated for the 2000-2002 period to extend subway lines, build terminals and parking lots, improve service, develop plans for a light rail service and maintain existing infrastructure.
- Québec's Marine and River Transportation Policy supports the expansion of the St. Lawrence River system for marine shipping, as well as investment and support for intermodal road-river shipping facilities.

Encouraging voluntary action

- The government of Québec created the ÉcoGESte program in 1996 to recognize voluntary greenhouse gas emissions reductions made by businesses within the province. This program is comparable to the national Voluntary Challenge Registry program at the federal level.
- The Programme de protection du niveau de référence (Baseline Protection Initiative) is a program instituted by the provincial government to ensure that businesses that reduce greenhouse gas emissions are granted credit under future regulatory initiatives. Companies that have made verifiable emission reductions since 1 January 1990 are allowed to register them through this program.
- The provincial government is in the process of negotiating voluntary agreements with various sectors and businesses to achieve greenhouse gas emissions reductions in key areas.
- The province provided $1.3 million in funding to nonprofit organizations to support public outreach and information programs related to climate change and greenhouse gas emissions.

- The government of Québec is attempting to mitigate the emissions from its own activities. Energy efficiency in public buildings will be improved by 20% by the year 2008, and the efficiency of the provincial vehicle fleet will be improved by 20% by the end of 2005.
- Pilot projects have been developed to encourage government employees to use public transit. Employees in Longueuil, Québec City and the Outaouais region will be provided with discounts to regular public transit commuters and annual transit passes will be made available by way of salary deductions.
- In the *Plan d'action québécois 2000-2002 sur les changements climatiques* (*Québec Climate Change Action Plan 2000-2002*), the government of Québec pledged to reduce emissions from public facilities to 20% below 1990 levels and emissions from its vehicle fleet to 20% below 1990 levels by 2005.

Financial incentives

- The government of Québec is considering a royalty and discount system to promote the purchase of lightweight vehicles.
- The Programme d'aide à l'amélioration des infrastructures de transport ferroviaire has provided $2.3 million in assistance to develop railways of local interest and support intermodal transportation networks. At least 17,000 additional railway car-trips per year are expected to be generated.
- The Société générale de financement and Société ACI have developed a $100 million investment plan for the construction of an ethanol production plant in Varennes.
- The Québec government has invested $160 million in the wind power facility in Le Nordais, and has provided subsidies for additional wind power facilities.
- The Agence de l'efficacité énergétique provides grants to agencies responsible for institutional buildings to support energy audits and feasibility studies for retrofitting. The Agency also provides funding for programs that provide energy efficiency advice to low-income households.

Law

- Recent amendments to the *Loi sur la qualité de l'environnement* (*Environmental Quality Act*) have permitted the Ministry of the Environment to explore the use of emissions trading in Québec.

- A recent directive within the Règlement sur les déchets solides (Solid Waste Regulation) requires that new landfill sites construct methane gas interception and treatment systems to prevent methane emissions to the atmosphere.

11.5. CONCLUSION

What can we learn from this categorization of instruments used to date? As can be seen, very little use has been made of law, nor have any significant financial incentives been put in place, other than support for technological development. No significant program delivery in such areas as rail or urban transit has taken place. The primary action used to date has been encouragement of voluntary action.

If Canada does ratify Kyoto, all levels of government will have to use instruments which have so far been ignored in order to achieve the 6% reduction goal.

PART 3: How to get involved

We hope that Canadians will use the information provided in this Guide to become participants in national debate. What follows are some quick suggestions on how to start. Sections 12 and 13 then provide bibliographic and contact information.

Contacting your Member of Parliament

As members of the public, you elected a member of the House of Commons who would be sensitive to your needs. These people need to hear from their constituents so that they can act in your interests and represent you at the National level. To do this, one can easily call or write to your MP, who will have an office in your area so that they can address issues with local residents. If you don't know who your MP is, the government of Canada has an easy web search programme dedicated to helping you locate your MP.

http://canada.gc.ca/directories/direct_e.html

Once you know who your MP is, you can see where they stand on the issue of ratifying Kyoto. This is important, because if your MP is a supporter of Kyoto, don't send them letters saying they should ratify, instead gear your letter to suggest support of their stance.

Writing that letter

Before you write the letter, make sure you have your facts right. Reviewing the information in this document, and then following up with some of the texts in our bibliography can help you with this. Once you have some basic facts you can set out by writing a simple letter stating your views (directly is best). Using facts and figures will give your argument more weight and will show your MP that you care enough about the issue to do a little basic research.

Follow up

Once the letter has been sent, there are two things that you can do. First, encourage your friends and neighbours to do the same. The more an MP hears on an issue, the more likely they are to take action. Give your friends help securing resources, just as this document and maybe even slip them your MP's

contact information. Secondly, you can contact your MP's office directly to see what they are doing on climate change, like seminars or public meetings.

Obtaining Information from the Government of Canada

This is a long hard process, but can be very rewarding, as there are many government documents, which are free to the public with information pertaining to Canada's stance on Kyoto and the economic implications of ratification. The best place to start is:

1-800-O CANADA General Government Information Line

This help line will offer you the Government's Climate Change package, which is a nice place to start with information, but is not a complete list of everything the government knows.

From here, the trail to obtaining documents becomes littered with obstacles. You need to identify the exact documents that you want, and if possible the publishing department of the government. There are many departments which produce documents pertaining to Climate Change, and often it is hard to know who wrote what. A good place to move onto is:

1-800-668-6767 Environment Canada's Inquiry Centre

They will be able to give you more specific information about the documents that you want to obtain. Often they will give you more phone numbers or e-mail addresses of people to contact, which makes it a frustrating process, but the operators are always helpful and often will call back to follow up on your search. The key here is not to get frustrated or give up, the documents are there, you just have to find them.

Another route to go when looking for documents is via the government's web sites. Often there will be an electronic version of the document you are looking for, these can be downloaded and printed by you immediately. Again, you should know what department the documents you want were published by. Each of these sites will have numerous links to other sites and will also have lists of publications. Useful sites by the government include:

http://www.climatechange.gc.ca Canadian government's climate change web site

http://oee.nrcan.gc.ca	Natural Resources Canada's web site
http://www.ec.gc.ca	Environment Canada's web site

Get involved with local government

It is important to make sure that federal and provincial politicians recognize that they have an crucial role in Canada's Climate Change stance, but it is also important to realize that much of the actual implementation will occur at the local level. Thus, writing to local representatives like the Mayor or your city, country, or township council member also helps make the local community aware of the issues at hand. Many local communities have set up their own groups to encourage government at all levels to ratify Kyoto. To find out more about the ones in your neighbourhood you can either call your City Hall or you can go to:

http://www.fcm.ca	Federation of Canadian Municipalities

Get involved in a local environmental organization

We have outlined what some of the major environmental organizations are doing both in Canada and globally to support the Kyoto movement. By becoming a member of an environmental organization, you are showing that you support what they do and the principles they stand for, but you can take this one step further by actually volunteering with these organizations.

We recommend that you look for the organization that you most agree with and who has a local chapter in your area. (Or you can always contact them and see about setting up a local chapter!) The seven environmental organizations we discussed in this document all have pro-Kyoto commitments and are always looking for volunteers to help canvas and increase public knowledge of the fact behind the situation. You can get in contact with these environmental organizations through their web sites or by contacting their main office directly.

12. Getting Information

The Climate Change issue is being debated at many levels and today there is a plethora of literature on what the impacts of both potential temperature increases and the economic ramifications of ratifying Kyoto are. Our document has laid out what various players are saying and why they pursue certain policy options. For further information on any one aspect of our paper, there are numerous further documents and this section aims to lay them out. This section contains a bibliographic listing for documents that the major players in the Canadian climate change policy process have released, updated to the end of June 2002, with a few major exceptions when an important document was released after this date. It is organized in the same format as the main document with Federal publications listed in alphabetical order by author (or department when no author was obvious) followed by Provincial Government documents in alphabetical order by Province. The Business sector actors are in the same order as they appear in the main document and finally Environmental Organizations, in alphabetical order.

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12.1.3. Issue Table reports

There were 16 Issues Tables that met between 1998-2000 to discuss the implications of climate change and economic impacts as relevant to each of the sectors identified. Not only were government departments represented, but also key business, environmentalists' and citizens participated. Below is a listing of the 16 papers that resulted from those consultations.

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12.2. BIBLIOGRAPHY OF OTHER ACTOR DOCUMENTS

To understand the position taken by other actors, one can read their publications. The following is only an idea of the type of information that is available, there are many organizations that will have published Climate Change documents and who participate in the Climate Change Process at different levels.

12.2.1. The International Process

There are an unlimited number of documents pertaining to the International Climate Change Process on the UNFCCC web site (http://www.unfccc.int). From this site, it is possible to access all official documents that have resulted in the CoP meetings as well as technical documents and the SBI, SBSTA, AGBM, AGB and SB meetings.

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once, this is because numerous companies sponsored the authorship of the study conducted and are therefore listing it in their web site as information pertinent to climate change and the economy. Finally, we have noted when a web site for a particular company does not have any information directly relating to climate change listed.

12.2.2.1. National Trade Associations

Canadian Council of Chief Executives

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Imperial Oil

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Gaz Métropolitain

There is a link with information on Gaz Metropolitain's opinion on Climate Change, but there is no actual listing of documents on their web site.

Sunoco Inc. (Suncor Energy)

Sunoco Inc. has nothing on their web site pertaining to Climate Change.

12.2.2.3. Transportation industry

Air Transport Association of Canada

The Air Transport Association of Canada has nothing on their web site pertaining to Climate Change.

Canadian Vehicle Manufacturers Association

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Canadian Federation of Agriculture

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Canadian Plastics Industry Association

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Cement Association of Canada

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12.2.2.6. Renewable Energy

Canadian Association of Energy Service Companies

The Canadian Association of Energy Service Companies has nothing pertaining to Climate Change on their web site. (Their web site has not been updated since 1999 and therefore record of their participation may be incomplete.)

The Canadian Solar Industries Association

The Canadian Solar Industries Association has nothing pertaining to Climate Change on their web site.

Canadian Wind Energy Association (CanWEA)

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12.2.3. Environmentalists

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12.3. BIBLIOGRAPHY OF RELEVANT SECONDARY LITERATURE

What follows here is a listing of works on the international and Canadian climate policy processes other than those generated by the Canadian actors, which are provided in the two sections above. Since they are referenced in the text, a number of the works listed here are also listed in the section titled "Works Cited," below. Other secondary literature, which is not referenced but which the reader may find helpful, is also listed here. The newspaper clippings which are referenced in the text are only found in "Works Cited" and are not listed here.

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13. Making Your Views Known

In the following section we have laid out contact information for the players which have been examined in this document. The aim of this is to help you, the reader, contact participants in the Climate Change Policy Process and make your views known. The section is laid out in the same order as the main document with Federal government first, followed by Provincial governments, business and then environmental players. The information in this section is accurate to August 2002, and contains information readily available through various directories. Every effort has been made to make sure that the type of information contained for each contact is as complete as possible.

There are numerous ways to get in contact with the significant players in the climate change process and make your views known. Below are some of the easiest ways to contact each of the organizations or bodies that have been mentioned in the document.

13.1. FEDERAL GOVERNMENT

The government of Canada is a complicated body that is often hard to negotiate. If you have specific documents that you want the best place to start is either the Government Information Line or Environment Canada's Inquiry Centre:

- **General Government Information Line:** 1-800-O CANADA
- **Environment Canada's Inquiry Centre:** 1-800- 668-6767
- **NRCan's Publication Department:** 1-800- 387-2000

Obtaining documents from the government can be frustrating and often you will be sent from department to department, none of whom will have heard of the documents you seek. By using the listing of documents above, you will be able to provide specific information about the publishing information, which will help. The government has some very friendly people who will try to help, but it might take a while. Keep a note of who sent you where so that if necessary, you can back track.

There are also numerous web sites that will link you to on line documents and information:

- **Canadian government's climate change web site:** http://www.climatechange.gc.ca

- **Natural Resources Canada's web site:** http://oee.nrcan.gc.ca
- **Environment Canada's web site:** http://www.ec.gc.ca
- **National Climate Change Process web site:** http:// www.nccp.ca
- **Federation of Canadian Municipalities:** http://www.fcm.ca
- **The Canadian Centre for Climate Modeling and Analysis:** http://www.cccma.bc.ec.gc.ca

The government also provides a specific web site where you can check who your Member of Parliament is and how to get in contact with them: http://canada.gc.ca/directories/direct_e.html

To check on the status of electricity deregulation, Canelect has set up the following web link: http://www.canelect.ca/connections_online/this_week/canada/provincial_update

To check on the status of ratification of the Kyoto Protocol: http://unfccc.int/resources/kpstats.pdf

There are lots of web sites dedicated to the climate change issue, some are specifically Canadian, and others look at the International ramifications of climate change and the ratification of the Kyoto Protocol. Here are a few interesting ones:

- **Environment Canada's Green Lane:** http://www.doe.ca
- **Global Climate Coalition (GCC):** http://www.globalclimate.org
- **Greening Earth Society:** http://www.greeningearthsociety.org
- **Center for the Study of Carbon Dioxide and Global Change:** http://www.co2science.org

Federal Contact Information

Governor General
The Rt Hon Adrienne Clarkson
Governor General's Office
1 Sussex Drive
Ottawa, Ontario, K1A 0A1
Tel: (613) 993-8200
Fax: (613) 993-1967

House of Commons
The Honourable Peter Millikin, M.P., Speaker
House of Commons
Parliament Buildings
Ottawa, Ontario
K1A 0A6

Prime Minister
Jean Chretien
Prime Minister's Office
Langevin Block 80 Wellington Street
Ottawa, Ontario, K1A 0A2
Tel: (613) 992-4211
Fax: (613) 941-6900
E-mail: pm@pm.gc.ca

Senate
The Honourable Dan Hays, Speaker
The Senate of Canada,
Ottawa, Ontario
K1A 0A4

Ministers and Ministries Contact Information

In this section we have laid out general contact information for each Ministry that we feel has participated in the process. Direct contact information for the Minister of each department is also provided so that, as a voting member of the public, you can get directly in contact with the Ministers whom you feel are doing or not doing their part in the Climate Change Policy Process. Some Ministries have contact information for particular departments while other Ministries had more generic information available. Natural Resources Canada was the only Ministry that provided contact information for specific people within a department.

Agriculture and Agri-Food Canada
Sir John Carling Building
930 Carling Ave
Ottawa, Ontario
K1A 0C5
Tel.: (613) 759-1000
Fax: (613) 759-6726
E-mail: PIRS@agr.gc.ca
Web site: http://www.agr.ca

Lyle Vanclief
Minister of Agriculture and Agri-Food Canada
Sir John Carling Building
930 Carling Avenue
Ottawa, Ontario K1A 0C5
Tel: (613) 992-5321
Fax: (613) 996-8652

Environment Canada
351 St. Joseph Boulevard
Hull, Québec K1A 0H3
Telephone: (819) 997-2800 or 1-800-668-6767
Fax: (819) 953-2225
E-mail: enviroinfo@ec.gc.ca
Web-site: http://www.ec.gc.ca

David Anderson
Minister of the Environment,
Les Terrasses de la Chaudiere
10 Wellington St., 28th Floor
Hull, Québec,
K1A 0H3
Tel: (819) 997-1441
Fax: (819) 953-3457
E-mail: david.anderson@ec.gc.ca

Department of Foreign Affairs and International Trade
Information Services (SXCI)
125 Sussex Drive
Ottawa, Ontario K1A 0G2
Tel: (613) 944-4000 or 1-800-267-8376
Fax: (613) 996-9709
E-mail: enqserv@dfait-maeci.gc.ca
Web site: http://www.dfait-maeci.gc.ca

Bill Graham
Minister of Foreign Affairs and International Trade,
Office of the Minister of Foreign Affairs
125 Sussex Drive
Ottawa, Ontario, K1A 0G2
Tel: (613) 995-1851
Fax: (613) 996-3443

Natural Resources Canada (NRCan)
Climate Change
Françoise Pelletier
20th Floor, Section C5
580 Booth Street
Ottawa, Ontario, K1A 0E4
Tel: (613) 947-6815
Web-site: http://www.nrcan-rncan.gc.ca

Herb Dhaliwal,
Minister of Natural Resources Canada,
580 Booth Street, 21st Floor
Ottawa, Ontario, K1A 0E4
Tel: (613) 996-2007
Fax: (613) 996-4516
E-mail: hdhaliwa@nrcan.gc.ca

Transport Canada
330 Sparks Street
Ottawa, ON K1A 0N5
Tel: (613) 990-2309
Fax: (613) 954-4731
Email: webfeedback@tc.gc.ca
Web site: http://www.tc.gc.ca

David M. Collenette
Minister of Transport
Tower C, Place de Ville 29th floor
330 Sparks Street
Ottawa, Ontario, K1A 0N5
Tel: (613) 991-0700
Fax: (613) 995-0327
E-mail: Collenette.D@parl.gc.ca

Industry Canada
Policy Sector
235 Queen Street
Ottawa, Ontario K1A 0H5
Tel: (613) 995-9605
Fax: (613) 995-2233
Web site: http://www.ic.gc.ca

Allan Rock
Minister of Industry
C.D. Howe Building
11th Floor, East Tower
235 Queen Street
Ottawa, Ontario K1A 0H5
Tel.: (613) 995-9001
Fax: (613) 992-0302
E-mail: minister.industry@ic.gc.ca

John Manley
Minister of Finance
Finance Canada, Minister's Office
Wellington Street
Ottawa, Ontario, K1A 0A6
Tel: (613) 996-7861
Fax: (613) 995-5176
E-mail: jmanley@fin.gc.ca

Provincial Governments

Each province has web sites, which are set up to inform the public on programs that they are running to deal with climate change. Listed first are these pertinent web site followed by a full listing of Provincial contact information broken down by Province listed in alphabetical order.

If you wish to follow the process, check out the following provincial web sites:

Alberta

- **Climate Change Central:** http://www.climatechangecentral.com
- **Alberta Environment - Climate Change:** http://www3.gov.ab.ca/env/climate.

British Columbia

- **Water, Air and Climate Change Branch, Ministry of Water, Land and Air Protection:** http://wlapwww.gov.bc.ca/air/climate/
- **State of Environment Reporting:** http://wlapwww.gov.bc.ca/soerpt/index.html

Ontario

- **Ontario Ministry of Environment and Energy - Climate Change:** http://www.ene.gov.on.ca/envision/climatechange/index.htm
- **Ontario Ministry of Environment and Energy, Energy Section - Climate Change:** http://www.est.gov.on.ca/english/energy/en_air_climate.cfm

- **Ontario Ministry of Agriculture and Food - Climate Change Resources:** http://www.gov.on.ca/OMAFRA/english/policy/climatechange/Index.html

Québec

- **Changements climatiques - Le Québec face aux changements climatiques:** http://www.menv.gouv.qc.ca/air/changement/agir_ensemble/index.htm
- **Changements climatiques - Programmes - Programme de protection du niveau de référence:** http://www.menv.gouv.qc.ca/programmes/ppnr/index.htm
- **Changements climatiques - Programmes - ÉcoGESTE - Programme québécois d'enregistrement des mesures volontaires sur les changements climatiques:** http://www.menv.gouv.qc.ca/air/changement/ecogeste.htm.

Saskatchewan

- **Saskatchewan Environment - Climate Change:** http://www.serm.gov.sk.ca/environment/climatechange.
- **Climate Change Saskatchewan:** http://www.climatechangesask.ca.

Provincial Contact Information

Different Provinces have different departments dealing with Climate Change. Listed below is the contact information for relevant departments, most of these departments were discussed in section X on Provincial involvement in the Climate Change Policy Process.

Alberta

Climate Change Central
Suite 100, 999 - 8th Street S.W.
Calgary, AB, T2R 1J5
Tel: (866) 609-2700
E-mail: contact@climatechangecentral.com

Strategic Directions (Alberta Environment)
7th fl Petroleum Plaza S Tower 9915 – 108 Street
Edmonton, AB, T5K 2G8
Tel: (780) 422-7873

British Columbia

Water, Air and Climate Change Branch (Ministry of Water, Land and Air Protection)
PO Box 9341, Stn Prov Govt
Victoria, BC, V8W 9M1
Tel: (250) 387-9932
E-mail: air@victoria1.gov.bc.ca

Ontario

Air Policy and Climate Change Branch
Ministry of Environment and Energy
4th Flr, 135 St Clair Ave W
Toronto, ON M4V 1P5
Tel: (416) 314-8562

Environmental Liaison Office
Ministry of Environment and Energy
5th Flr, 135 St Clair Ave W
Toronto ON M4V 1P5
Tel: (416) 325-4440

Energy Policy Branch
Ministry of Environment and Energy
3rd Flr , 880 Bay St
Toronto ON M7A 2C1
Tel: (416) 325-6591

Policy Analysis Unit
Ministry of Agriculture and Food
2nd Flr SE, 1 Stone Rd W
Guelph ON N1G 4Y2
Tel: (519) 826-3764

Québec

Direction des changements climatiques
Ministère de l'Environnement
Édifice Marie-Guyart, 9e étage
675, boulevard René-Lévesque Est
Québec, QC G1R 5V7
Tel: (418) 521-3813

Direction des affaires intergouvernementales
Ministère de l'Environnement
Édifice Marie-Guyart, 6e étage
675, boulevard René-Lévesque Est
Québec, QC G1R 5V7
Tél: (418) 521-3828

Agence de l'efficacité énergétique
5700, 4e Avenue Ouest, Local B405
Charlesbourg, QC G1H 6R1
Tél: (877) 727-6655
E-mail: aee@aee.gouv.qc.ca

Bureau d'enregistrement des mesures volontaires sur les changements climatiques
Programme ÉcoGESte
675, boul. René-Lévesque Est, 9e étage, boîte 30
Québec, QC G1R 5V7
Tél: (418) 521-3970
E-mail: ecogeste@menv.gouv.qc.ca

Saskatchewan

Ed Dean
Manager
Water Management and Climate Change
Saskatchewan Environment
240 - 3211 Albert Street
Regina, SK S4S 5W6
Tel: (306) 787-7812
Email: Edean@serm.gov.sk.ca

Ron Zukowsky
Executive Director
Policy and Assessment Division
Saskatchewan Environment
524 - 3211 Albert Street
Regina, SK S4S 5W6
Tel: (306) 787-6285
Email: Rzukowsky@serm.gov.sk.ca

Energy Development and Climate Change
Saskatchewan Industry and Resources
8th Floor
2101 Scarth Street
Regina, SK S4P 3V7
Tel: (306) 787-7632

13.2. BUSINESS

The following section lists contact information for various businesses whom have been involved in the Policy Process and covered in this document. It is organized in the same order as the major document.

13.2.1. National trade associations

Alliance of Manufacturers and Exports of Canada
5995 Avebury Road, Suite 900
Mississauga ON L5R 3P9
Tel: (905) 568-8300
Fax: (905) 568-2876
E-mail: jack.radford@cme-mec.ca
http://www.cme-mec.ca

Business Council of British Columbia
1050 West Pender Street Suite 810
Vancouver BC V6E 3S7
Tel: (604) 684-3384
Fax: (604)684-7957
E-mail: info@bcbc.com
http://www.bcbc.com

Canadian Chamber of Commerce
350 Sparks Street, Suite 501
Ottawa, ON K1R 7S8
Tel: (613) 238-4000
Fax: (613) 238-7643
E-mail: info@chamber.ca
http://www.chamber.ca

Canadian Council of Chief Executives
90 Sparks Street, Suite 806
Ottawa, ON K1P 5B4
Tel: (613) 238-3727
Fax: (613) 236-8679
E-mail: leaders@ceocouncil.ca
http://www.bcni.com

Centre Patronal de l'Environnement du Québec
640, Saint-Paul West, suite 206,
Montréal, Québec H3C 1L9
Tel: (514) 393-1122
Fax : (514) 393-1146
Email: cpeq@generation.net
http://www.cpeq.qu.ca

The Greenhouse Emissions Management Consortium (GEMCo)
PO Box 42082, RPO
Oak Bay, Victoria, BC V8R 6T4
Tel: (604) 731-4666
Fax: (604) 731-4664
E-mail brianwil@istar.ca
http://www.gemco.org

13.2.2. Fossil fuel industry

Canadian Association of Petroleum Producers (CAPP)
2100, 350-7 Avenue S.W
Calgary, Alberta T2P 3N9
Tel: (403) 267-1100
Fax: (403) 261 4622
http://www.capp.ca

Canadian Energy Pipeline Association
1650, 801 – 6th Avenue S.W.
Calgary, Alberta T2P 3W2
Tel: (403) 221-8777
Fax: (403) 221-8760
E-mail: dannesley@cepa.com
http://www.cepa.com

Coal Association of Canada
Suite 502, 205 - 9 Ave. S.E.
Calgary, Alberta T2G 0R3
Tel: (403) 262-1544 or 1-800-910-2625
Fax: (403) 265-7604
E-mail: info@coal.ca
http://www.coal.ca

Canadian Petroleum Producers Institute (CPPI)
1000- 275 Slater
Ottawa, Ontario K1P 5H9
Tel: (613) 232 3709
Fax: (613) 236 4280
http://www.cppi.ca

Canadian Gas Association
20 Eglinton Avenue West
Suite 1305, P.O. Box 2017
Toronto, Ontario M4R 1K8
Tel: (416) 481-1828
Fax: (416) 481-2625
E-mail: info@cga.ca
http://www.cga.ca

Gaz Métropolitain Head Office
1717, rue du Havre
Montréal, QC, H2K 2X3
Tel: (514) 598- 3222
Fax: (514) 598-3144
E-mail: info@gazmet.com
http://www.gazmet.com

Imperial Oil
111 St. Clair Avenue West,
Toronto, ON, M5W 1K3
Tel: 1-800-668-ESSO
http://www.imperialoil.com

Sunoco Inc., A Suncor Energy Company
36 York Mills Rd.
North York, ON M2P 2C5
Tel: 1-888-858-7242
Fax: (416) 512-1693
E-mail: customer@suncor.com
http://www.sunoco.ca

13.2.3. Transportation industry

Air Transport Association of Canada
255 Albert Street, Suite 1100
Ottawa, ON K1P 6A9
Tel: (613) 233-7727
Fax: (613) 230-8648
Email: atac@atac.ca
http://ww.atac.ca

Canadian Shipowners Association
350 Sparks Street, Suite 705
Ottawa, ON K1R 7S8
Tel: (613) 232-3539
Fax: (613) 232-6211
http://www.shipowners.ca

Canadian Vehicle Manufacturers' Association
170 Attwell Drive, Suite 400
Toronto, ON M9W 5Z5
Tel: (416) 364-9333 or 1-800-758-7122
Fax: (416) 367-3221
E-mail: info@cvma.ca
http://www.cvma.ca

The Railway Association of Canada
99 Bank Street, Suite 1401
Ottawa, ON K1P 6B9
Tel.: (613) 567-8591
Fax: (613) 567-6726
E-mail: rac@railcan.ca
http://www.railcan.ca

13.2.4. Manufacturing and resource industries

Alcan
P.O. Box 6090
Montreal, QC, H3C 3A7
Tel.: (514) 848-8000
Fax: (514) 848-8115
E-mail: maison.infocentre@alcan.com
http://www.alcan.ca

Canadian Federation of Agriculture
75 Albert Street, Suite 1101
Ottawa, Ontario K1P 5E7
Tel: (613) 236-3633
Fax: (613) 236-5749
E-mail: info@cfafca.ca
http://www.cfa-fca.ca

Canadian Wood Council
1400 Blair Place, Suite 210
Ottawa, ON, K1J 9B8
Tel: (613) 747-5544 or 1-800-463-5091
Fax: (613) 747- 6264
E-mail: hlemieux@cwc.ca
http://www.cwc.ca

DOFASCO
1330 Burlington Street East
Box 2460,
Hamilton, ON, L8N 3J5
Tel: (905) 544-3761 or 1-800-DOFASCO
E-mail: general@dofasco.ca
http://www.dofasco.ca

Canadian Chemical Producers Association
Suite 805, 350 Sparks Street
Ottawa, Ontario K1R 7S8
Tel: (613) 237-6215
Fax: (613) 237-4061
E-mail: info@ccpa.ca
http://www.ccpa.ca

Canadian Home Builders Association
#500, 150, Laurier Ave West
Ottawa, ON, K1P 5J4
Tel: (613) 230- 3060
Fax: (613) 232- 8214
E-mail: chba@chba.ca.
http://www.chba.ca

Cement Association of Canada
1500-60 Queen Street,
Ottawa, ON, K1P 5Y7
Tel: (613) 236-9471
Fax: (613) 563-4498
E-mail: info@cement.ca
http://www.cement.ca

Mining Association of Canada
350 Sparks Street, Suite 1105
Ottawa, ON, K1R 7S8
Tel: (613) 233-9391
Fax: (613) 233- 8897
E-mail: pgratton@mining.ca
http://www.mining.ca

Canadian Plastics Industry Association
5925 Airport Rd., Suite 500
Mississauga, Ontario, L4V 1W1
Tel: (905) 678-7748
Fax: (905) 678-0774
E-mail: info@cpia.ca
http://www.cpia.ca

NOVA Chemicals Corporation
645 Seventh Avenue S.W.
P.O. Box 2518, Station M
Calgary, AB, T2P 5C6
Tel: (403) 750-3600
Fax: (403) 269-7410
E-mail: care@novachem.com
http://www.novachem.com

Canadian Steel Producers Association
1425 O'Connor Street
Ottawa, ON, K1P 6L2
Tel: (613) 238-6049
Fax: (613) 238-1832
E-mail: cspacpa@canadiansteel.ca
http://www.canadiansteel.ca

Québec Forest Industries Association
1175, avenue Lavigerie, suite 201
Sainte-Foy, QC, G1V 4P1
Phone: (418) 651-9352
Fax: (418) 266-2015
E-mail: aifq@riq.qc.ca
http://www.aifq.qc.ca

13.2.5. Electricity

BC Hydro
P.O. Box 9501 STN Terminal,
Vancouver, B.C. V6B 4N1
Tel: (604) 431-9463 or 1-800-BCHYDRO
E-mail: customer.service@bchydro.com
http://www.eww.bchydro.bc.ca

Hydro Québec
75 Rene-Levesque Blvd. West
Montreal, QC, H2Z 1A4
Tel: (514) 289-2211
E-mail: info@hydro.qc.ca
http://ww.hydroquebec.com

TransAlta
Box 1900 Station "M",
110-12th Avenue SW,
Calgary Alberta, T2P 2M1
Tel: (403) 267-7110
Fax: (403) 267-4902
http://www.transalta.com

Canadian Electricity Association
1155, rue Metcalfe, bureau 1120
Montréal, QC, H3B 2V6
Tel: (514) 866-6121
Fax: (514) 866-1880
E-mail: konow@canelect.ca
http://www.canelect.ca

Nova Scotia Power
P.O. Box 910
Halifax, NS B3J 2W5
Tel: 428-6230 or 1-800-428-6230
http://www.nspower.ca

13.2.6. Alternative energy

Canadian Association of Energy Service Companies
55 St Clair Ave W, Suite 225
Toronto ON M4V 2Y7
Tel: (416) 969-9208
Fax: (416) 969- 9225
http://www.ardron.com/caesco/

Canadian Solar Industries Association
2378 Holly Lane, Suite 208
Ottawa, ON K1V 7P1
Tel: (613) 736-9077 or 1-866-5CanSIA
Fax: (613) 736-8938 or 1-866-CanSIA9
E-mail: info@CanSIA.ca
http://www.cansia.ca

Canadian Wind Energy Association (CanWEA)
3553 31 Street NW Suite 100
Calgary AB T2L 2K7
Phone: (403) 289-7713 or 1-800-9-CANWEA
Fax: (403) 282-1238
E-mail: canwea@canwea.ca
http://www.canwea.ca

Earth Energy Society of Canada
Suite 504, 124 O'Connor,
Ottawa, ON K1P 5M9
Phone: (613) 371-3372
Fax: (613) 822-4987
E-mail: Eggertson@EarthEnergy.ca
http://www.earthenergy.ca

Independent Power Producers Society of Alberta (IPPSA)
Suite 100 Discovery Place One
3553 – 31 Street NW
Calgary, AB T2L 2K7
Tel: (403) 282-8811
Fax: (403) 282-1238
E-mail: ippsa@ippsa.com
http://www.ippsa.com

Independent Power Producers' Society of Ontario (IPPSO)
PO Box 1084 Station F
Toronto, ON M4Y 2T7
Phone: (416) 322-6549
Fax: (416) 481-5785
Email: ippso@ippso.org
http://www.newenergy.org/ippso.html

Solar Energy Society of Canada Inc.
P.O. Box 33047, Cathedral P.O.
Regina SK, S4T 7X2
Email: info@solarenergysociety.ca
http://www.solarenergysociety.ca

13.2.7. Nuclear energy

Canadian Nuclear Association
130 Albert St., Suite 1610
Ottawa, Ontario K1P 5G4
Tel: (613) 237-4262
Fax: (613) 237-0989
http://www.cna.ca

13.2.8. Environmentalists

Climate Action Network
Mr. John Bennett
412 - 1 Nicholas St.,
Ottawa, Ontario K1N 7B7
Phone: (613) 241-4611
Fax: (613) 241-2292
Email: aajb@magma.ca
http://www.sierraclub.ca

Greenpeace
250 Dundas St. W, Suite 605
Toronto, Ontario M5T 2Z5
Phone: (416) 597-8408 or 1-800-320-7183
Fax: (416) 597-8422
E-mail: greenpeace.toronto@yto.greenpeace.org
http://www.greenpeace.org

Sierra Club
Mr. John Bennett
412 - 1 Nicholas St.,
Ottawa, Ontario K1N 7B7
Phone: (613) 241-4611
Fax: (613) 241-2292
E-mail: aajb@magma.ca
http://www.sierraclub.ca

West Coast Environmental Law
1000 –207 West Hastings Street
Vancouver, BC V6B 1H7
Phone: (604) 684 7378 or 1-800-330-WCEL
Fax: (604) 684-1312
E-mail: admin@wcel.org
http://www.wcel.org

David Suzuki Foundation
Mr. Dermot Foley
Suite 219, 211 West 4th Avenue
Vancouver, BC V6K 4S2
Phone: (604) 732-4228
Fax: (604) 732-0752
E-mail: stopclimatechange@davidsuzuki.org
http://www.davidsuzuki.org

Pembina Institute
Box 7558,
Drayton Valley, AB T7A 1S7
Phone: (780) 542-6272
Fax: (780) 542-6464
E-mail: info@pembina.org
http://www.pembina.org

Toronto Environmental Association
Mr. Keith Stewart
30 Duncan Street, Suite 201
Toronto, Ontario M5V 2C3
Phone: (416) 596-0660
Fax: (416) 596-0345
E-mail: tea@torontoenvironment.org
http://www.torontoenvironment.org

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Alberta Environment (2002). *Albertans and Climate Change: A Plan for Action.* Edmonton: Alberta Environment.

Anderson, David, Minister of the Environment, speech delivered April 3, 2002

John Bennett, Director of CANet and Director of Atmosphere & Energy, Sierra Club Canada personal communication to Rachel Riddle, spring, 2002.

Bernstein, Steven and Christopher Gore. (2001). "Policy Implications of the Kyoto Protocol for Canada." *Isuma: Canadian Journal of Policy Research*. vol. 2, no. 4, winter. pp. 26 - 36.

Boyd, David R. (January 2002). *Up in the Air: Canada's Mixed Record on Ozone Depletion and Climate Change.* Vancouver: David Suzuki Foundation.

Bramley, Matthew (Sept., 2000). *A Climate Change Resource Book for Journalists*. Ottawa: Pembina Institute.

Bramley, Matthew (1998). *Greenhouse Gas Emissions from Industrial Companies in Canada*: 1998. Ottawa: Pembina Institute.

Brooks, Stephen and Andrew Stritch (1991). *Business and Government in Canada.* Scarborough: Prentice-Hall.

Calgary Herald.

Canadian Chamber of Commerce (June 27, 2002). *Response by the Canadian Chamber of Commerce to A Discussion Paper on Canada's Contribution to Climate Change.*

Canadian Chamber of Commerce, September 10, 2002, newspaper advertisement, *Globe and Mail*.

CCCE (June 2002). *The Kyoto Protocol Revised: A Responsible and Dynamic Alternative for Canada.*

Canadian Electricity Association, 1999

CEA, Battle, E. and Margolick, M. (February 2002). *Canadian Electricity and the Environment: Electricity and Climate Change, towards a Sustainable Future*. Montreal: Ellen Battle Consulting Inc, Global Change Strategies International Inc and CEA.

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