

Canada and Climate Change

The Game Has Just Begun

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Introduction

When the Australian delegation announced at the 2007 Bali Climate Change Conference that their newly elected Prime Minister would immediately proceed with the ratification of the Kyoto Protocol the Conference hall became filled with joy from all but two groups: the Americans and the Canadians.

It should be recalled that Canada signed the Kyoto Protocol¹ on 29 April 1998 and ratified it on 17 December 2002 (UNFCCC 2004), thereby becoming bound by a legal obligation to reduce the green house gases (GHGs) emissions by 6% below the 1990s levels for the period 2008-2012. The decision to ratify the Protocol did not come easy, not without strong push from the academic society at least². The Government of Canada had consistently recognized the great impact of global warming (See Box 1) on the shifts in temperature at home (Government, 2006). However, as soon as the Conservative Party took the governmental power, Ottawa quickly resumed its aged partnership with the United States (US) and declared its intention not to honor its Kyoto commitments in terms of the GHGs emissions reduction targets³.

While the US policy -the strive to control its shares in the global market although others would have to pay great cost- is well known (Editorial, 2002:5), the shock created by the backward political stand of the Canadian Government immediately angered both domestic and external analysts as well as interest groups who

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charge that such political backwardness not only has affected the fine (environmental) international image of the country but has also rendered the country more and more rhetorically and practically dependent on the US policy. In fact, the flip-flop position held by the Canadian Government is not new. Some scholars had long called any such move as Canada's being fitly qualified as a rogue State operating within the boundaries determined by the US (Broadhead, 2001).

Interestingly, the lack of the pro-Kyoto political determination of the Government appears to have affected the way Canadians think about environment. In 1990, 24% of Canadians considered environment as one of the top three issues, whereas only around between 6% to 9% thought so in 2004 (Ipsos-Reid, 2005). Earlier, Marzolini (2002) had already pointed out that the degree of environmental involvement by Canadians with environmental groups is low.

Against this background, however, now that Canada has lost one very important long-term partner- Australia- and that the US seems to be on its way to electing a new (and apparently more pro-global warming) President, there is a renewed hope that Canada might return to its pro-Kyoto position in its future negotiations of the post-Kyoto regime. One way to ascertain the likelihood that such hope would become a reality is by looking at some recent steps the Government of Canada has taken.

Box. 1 Greenhouse Effect and Global Warming

Carbon dioxide as well as other chemical compounds absorb the earth's infrared radiation and trap heat close to its surface in what is called the green house effect. The increased concentrations of these gases in the atmosphere...gradually raise average global temperature...Industrialization is believed by most scientists to have drastically sped up this natural process...

Source: Extract from Porter and Brown (1996:7).

Under normal conditions, a portion of the outgoing infrared

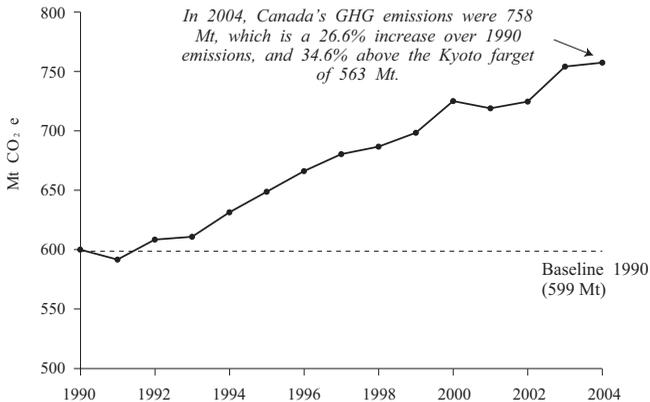
radiation is naturally trapped by the atmosphere-and that is a good thing, because it keeps the temperature on Earth within comfortable bounds...The problem ...is that this thin layer of atmosphere is being thickened by huge quantities of human-caused carbon dioxide and other greenhouse gases. And as it thickens, it traps a lot of the infrared radiation that would otherwise escape the atmosphere and continue out to the universe. As a result, the temperature of the Earth's atmosphere-and oceans-is getting dangerously warmer.

Source: Extract from Gore (2006:26-7).

Canada's GHGs Emissions

It is useful to first note that GHGs comprise many gases of which the major ones are carbon dioxide CO₂, methane CH₄ and nitrous oxide N₂O. The most voluminous one is CO₂ which represents roughly half of all the anthropogenic GHGs (Hunter et al 2002: 621). It will be recalled that both the United Nations Framework Convention on Climate Change and its subsequent Kyoto Protocol

Fig.1 Canada's Emissions Trend 1990- 2004

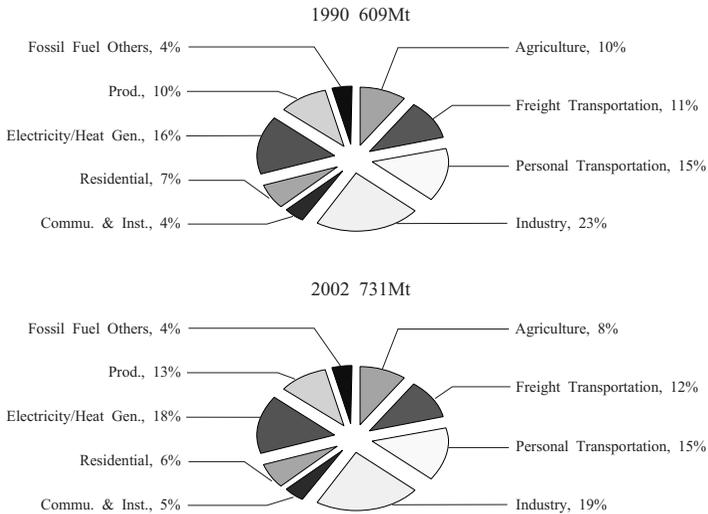


Source: Adapted from Government (2006a:8)

〈4〉 Canada and Climate Change (Prum)

use the year 1990 as the base year for industrialized countries, thus, for Canada. According to the Intergovernmental Panel on Climate Change, in order for the earth's temperature to stay within the 2°C limit, global GHGs emissions reduction of as much as 50% to 85% relative to the 2000 level by 2050 are required (IPCC 2007:23). Under the legally binding obligation set out in the Kyoto Protocol, Canada must reduce 6% below its 1990 emissions during the first commitment period 2008-2012. Globally, industrialized countries will need to reduce their GHGs emissions by 25% to 40% below the 1990 levels by the year 2020 (Hare and Meinshausen 2006:111). Recent studies, however, show that Canada's emissions have steadily grown with no sign of going down. By 2004, for instance, the total Canadian GHGs emissions were 758 MtCO₂e⁴, that is, already 26.6% percent above its initial 1990 levels (See Fig.1). Just one year later in 2005 the total greenhouse gas emissions in Canada increased to 747 MtCO₂e or "32.7% above

Fig.2 GHG Emissions by sector



Source: Environment Canada (2004)

Canada's Kyoto Protocol target of an average of 563 Mt CO₂ eq per year for the period 2008 to 2012.” (Environment Canada 2007b:5)

By sector, Canada's total emissions have grown from 609 Mt in 1990 to 731 Mt in 2002. The most obvious increases are in the fossil fuel production and the electricity production/heat generation sectors, increasing from 10% to 13% and from 16% to 18% respectively (See Fig.2).

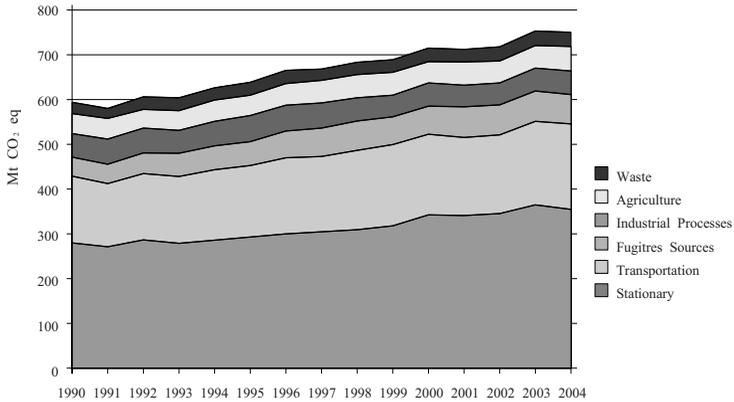
Canada's International Obligations

Under the international regime created by the Framework Convention and the Kyoto Protocol, Canada is under a string of commitments. One of these includes its duty to transfer technology as well as additional resources to developing countries. This duty is perhaps the best known one and had been subject to international bargaining from the very beginning of climate negotiations back in 1991⁵. Other duties are more or less about reporting. So far, Canada has periodically submitted the *national communications*, a “one-time *Initial Report under the Kyoto Protocol* to facilitate the operation of the first commitment period and describe the required infrastructure that Canada has in place”, and “a one-time *Report on Demonstrable Progress under the Kyoto Protocol* outlining the initiatives put in place in Canada in achieving its commitments under the Protocol”. “Along with these submissions, Canada has also established a *national inventory* system for measuring and reporting emissions and removals of greenhouse gases and is establishing a *national registry*. The registry will serve as a tracking system to ensure accurate accounting of the initial issuance of the amount of greenhouse gas emissions allowed in Canada, and the subsequent international transactions undertaken with other countries” (*emphasis added*, Environment Canada 2007b: 3-4).

Of all the obligations Canada has subscribed to, the most important one is the obligation to reduce the GHGs emissions to a 6% below the 1990 level. Sadly, Canada is not even close. As

indicated in its “*Initial Report under the Kyoto Protocol* filed with the UNFCCC Secretariat on March 15, 2007, Canada declared its base year emissions (1990) under the Kyoto Protocol to be 599 Mt CO₂ e. In accordance with Article 3, paragraphs 7 and 8 of the Kyoto Protocol, Canada’s allowable emissions for the period 2008 to 2012 are 2,815 Mt (i.e. 94% of 599 multiplied by five). This means Canada’s target level of greenhouse gas emissions is an average of 563 Mt CO₂ eq per year for the period 2008 to 2012” (*emphasis added*, Environment Canada 2007b: 3-4).

Fig.3 Canada’s GHG Emissions by Source, 1990-2004



Source: Environment Canada (2007c:8)

Government’s Early Approach: Plan

The first Government’s comprehensive initiative on combating global warming was called *Government of Canada Action Plan 2000 on Climate Change* which listed several thought measures to be carried out over a period of five years. Ayres et al (2002:3-4) summarize it thus:

The Government of Canada's Action Plan 2000 on Climate Change, announced in October 2000, is intended to be a cornerstone to Canada's action on climate change. The Plan is a five-year, \$500 million commitment, and targets key sectors. When it is fully implemented, it is expected to achieve an estimated annual reduction of 65 million tonnes in greenhouse gas (GHG) emissions by 2010. While focused primarily on GHG mitigation, the initiative also advances knowledge and foundation building in climate science, impacts and adaptation, northern and Aboriginal communities, and technical innovation. The Action Plan is a horizontally managed initiative led by Environment Canada and Natural Resources Canada, which will see seven federal departments work on 45 specific measures in distinct, but interrelated sectors. As such, it will require a coordinated, sustained, and informed action by governments, industry, interest groups and individual Canadians to ensure that issues related to global warming are given top priority. The early initiatives are intended to build long-term active partnerships and establish the infrastructure necessary to achieve significant GHG emission reductions by 2010, and to continue advancements in knowledge and foundation building.

Two years later, following the US's withdrawal from the Kyoto Protocol, in 2002 the Government of Canada (2002: 9-11) issued another plan called *Climate Change Plan for Canada* which highlights a "made-in Canada" approach that includes six components.

- 1- A made-in-Canada approach that is based on collaboration, partnerships and respect for jurisdiction
- 2- A reasonable sharing of benefits and burdens requiring responsible investment by all
- 3- A transparent and step by step process
- 4- Minimize mitigation costs and maximize benefits
- 5- Promote innovation
- 6- Limit uncertainties and risks

This Plan shows a lot less pro-Kyoto enthusiasm. Following the US's withdrawal, uncertainty arose as to whether the Protocol

would become effective at all. Indeed, from 2002 when Canada eventually ratified the Protocol to 2005 when the Protocol finally came into force, Canada did nothing that could count towards as fulfilling its obligation to reduce the GHGs emissions. As shown above, during this period Canada's total GHGs emissions significantly increased. At the first *Conference of the Parties serving as the Meeting of the Parties to the Kyoto* (so-called CoP/MoP 1) which took place in Montreal in November/December 2005 Canada again failed to show leadership and often sided with the US instead. Before this historic event, a well respected environmental research institute, the Pembina Institute, had released an influential report calling for "deep reductions" by basically rejecting all the major reasons the Government had been using to justify its non-action. Writing for the Pembina Institute, Bramley (2005:4) strongly argues that the non-commitment from the part of Canada is "a serious problem requiring urgent attention because":

- It is not responsible for Canada to be silent on the part it intends to play post-2012.
- Without knowing where we want to be five decades from now, governments cannot make the right policy decisions about where we need to go over the next one or two decades.
- Canada's energy policies, which include support for rapid expansion of highly GHG-intensive activities such as oil sands development, need to be overhauled to make them consistent with our climate policy, but this cannot be achieved if our climate policy is limited to the near term.
- Canadian energy producers are contemplating investments in the order of \$200 billion over the next 20 years in infrastructure with potentially enormous GHG emissions and operational lifetimes of 40 years or longer.
- Without clarity on medium- and long-term GHG objectives, the private sector does not have the necessary incentive to invest in the development and deployment of the technologies needed for deep GHG reductions.

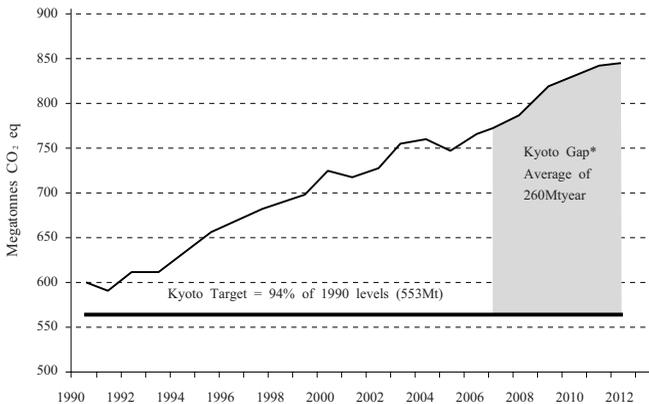
More specifically, Bramley also goes on to refute other claims made by the Government such as “We don't have the technology yet”, “It will cost too much”, “We're a special case because of our energy exports”, “Canada can't act without the US”, “We need more time because we've started late” (2005:5-6).

When a new Government was elected in 2006, it became more obvious that the Government Canada did not wish to honor its Kyoto's obligation to reduce GHGs emission.

Government's New Approach: Regulatory Framework

Despite programs and incentives taken by both the Federal and provincial Governments (see Box.2), it is well known that if Canada's GHGs emissions continue to rise as forecast, it would be impossible for Canada to meet its Kyoto obligation. As shown in Fig. 4, ever since the Kyoto Protocol was signed Canada's emissions never look to decrease. Especially during the first commitment period 2008-2012 there would be a gap of as large as 260 Mt a year. In an attempt to catch up, the Government set, in a recent policy announcement in April 2007 entitled *Regulatory Framework for Air Emissions*, ambitious targets for reduction to surprise the globe. However, instead of using the legally and internationally accepted base year 1990, the Government appears to use 2006 as the starting point. Outlined in the *Regulatory Framework*, Canada is committed to reduce as much as 20% below its 2006 level by the year 2020 and 60% to 70% below 2006 level in 2050 (Government of Canada 2007). The figures for 2020 for instance are already problematic because they represent about 2% *above* the 1990 level in 2020 (Demerse et al 2007:4) while the IPCC has made clear that that industrialized countries must reduce their GHGs emissions by 25% to 40% *below* 1990 levels by 2020 (Hare and Meinshausen 2006:111).

Fig. 4 Canada's GHG Emissions, Projected to 2012



Source: Environment Canada (2007c:10)

Box 2. Programs and Incentives Funded under the Federal Trust Fund for Clean Air and Climate Change

British Columbia - funding of \$199.3 million will support projects, such as providing clean electricity to remote rural areas, extracting energy from sawmill scrap and wood infested with pine beetles, development of a “hydrogen highway” and new geothermal and bioenergy projects.

Yukon - funding of \$5 million will support the installation of a third hydro turbine at the Aishihik hydro electric plant to reduce the territory’s dependence on diesel generated electricity.

Alberta - funding of \$155.9 million will support projects, such as the development of a carbon capture and storage system, the development of clean coal technology and a project to convert municipal waste into energy.

Saskatchewan - funding of \$44.4 million will go towards continuing development of near zero CO₂ emission electrical generation projects, improving energy efficiency and conservation, developing renewable and alternative energy sources, and continuing efforts in

CO₂ capture and storage through the International Test Centre for Carbon Dioxide Capture.

Manitoba - funding of \$53.8 million will support projects to expand the province's low-income energy efficiency program, support the creation of new biodiesel plants in rural Manitoba, further develop solar power and bio-gas, and invest in an East-West power grid with Ontario.

Northwest Territories - funding of \$5 million will support energy conservation and efficiency projects, alternative and emerging technologies, as well as the development of hydro-electric resources.

Ontario - funding of \$586.2 million will support the development of an East-West power grid with Manitoba, allowing for the importation of clean hydroelectric power, and the phasing out of the remaining coal fired generating stations, which could result in emissions reductions of up to 30 Mt.

Quebec - funding of \$349.9 million will support projects such as new technologies in the trucking sector, ethanol production, geothermal energy, research in carbon sequestration, gas capture from landfill sites, and waste treatment and energy recovery from agricultural biomass.

Nunavut - funding of \$5 million will support enhanced energy conservation, and projects that promote efficiency and diversity of the energy system in a move towards alternative and emerging technologies.

New Brunswick - funding of \$34 million will support projects, such as developing renewable fuels such as cellulosic ethanol and biodiesel, capturing landfill gas to produce energy, examining the use of clean coal technology and expanding and enhancing energy efficiency programs in residential, forestry and commercial sectors.

Nova Scotia - funding of \$42.5 million will support the conversion of the Capital Health Authority's heating plants to burn natural gas, a tidal power plant project and the establishment of the Nova Scotia Municipal Climate and Clean Air Fund to allow municipalities to take on their own projects to reduce harmful emissions.

Prince Edward Island - funding of \$15 million will support several renewable energy projects, such as investment in technology

development, uses in homes and government buildings, and a hydrogen fuelling station for the P.E.I. Wind-Hydrogen Village.

Newfoundland and Labrador - funding of \$23 million will support projects such as making public buildings more energy efficient, improving waste management, and promoting environmentally friendly innovation in rural and remote areas.

Source: Extract from Environment Canada (2007b: 26-7)

Pembina Institute's Analysis

The influential Pembina Institute has immediately replied to the Government's reduction targets with a thorough research providing well balanced critics on all the major claims of the Government. In summarizing, Bramley (2007:1-2) writes thus:

[The targets set by the Government in 2007] fall far short of (i) requirements based on our scientific knowledge of climate change, (ii) targets adopted by the developed countries making the strongest GHG reduction commitments, and (iii) Canada's legal obligations under the Kyoto Protocol. The government has apparently not conducted economic modelling of a range of different targets for 2020, and has not made a case for why its 2020 target is consistent with meeting its 2050 target. Its 2020 target therefore appears to be arbitrary.

The government has provided no explanation as to how it expects to meet its target for national emissions to peak during 2010-12. Without measures additional to those the government has announced to date, the short term target can only be met if there is an unexpected and dramatic slowing of the business-as-usual increase in emissions. (emphasis in original)

The government's explanation of how it expects to meet its national target for 2020 is dubious, because (i) there are serious doubts as to

whether the regulatory framework for heavy industry will actually result in industrial emissions being reduced by 2020 to the extent claimed; (ii) the government has provided no explanation of why it expects its other measures to generate the amounts of emission reductions claimed; and (iii) there are several ways in which double counting could cause emission reductions from the various measures to “overlap” and thereby fail to add up to the total required. (emphasis in original)

The government expects emissions in 2020 from sources covered by its proposed regulatory framework for heavy industry to be 18% below the 2006 level but 12% above the 1990 level. These sources accounted for 45% of national emissions in 2003.

In reality, the regulatory framework’s effect on emissions cannot be known with any certainty, because (i) its targets are expressed in terms of emissions intensity, not actual emissions; (ii) we do not yet know how targets will be defined for new facilities; (iii) “fixed process emissions” are exempted but have not been fully defined; and (iv) some of the “compliance options” that companies can use to meet targets will not result in immediate emission reductions, and some may not result in any real emission reductions at all.

Because of these compliance options, during 2008-12 the regulatory framework could produce as little as 27 Mt of actual reductions (5+9+13 Mt in 2010, 2011 and 2012), compared to 180 Mt (5×36 Mt) from the previous government’s proposed regulatory system for heavy industry (the “Large Final Emitters” system under “Project Green”), relative to projected levels in the absence of regulations. The “backloading” of actual reductions towards the end of the period up to 2020 reduces environmental benefits and diminishes the likelihood of emissions actually being reduced in 2020 to the extent claimed, given that the framework will be subject to a review in 2012. (emphasis in original)

Parliament: Bill C-288

Against all odds, the House of Commons passed Bill C-288 entitled *An Act to ensure Canada meets its global climate change obligations under the Kyoto Protocol* in February 2007. According to the Government, it is neither feasible nor desirable for Canada to meet its Kyoto obligations without drastic (bad) impact on the economy. Thus, the Government quickly issued in April 2007 a report named *The Cost of the Bill C-288 to the Canadian Families and Business* and warns of a deep recession. In the Minister of the Environment's own words (2007c:2):

Bill C-288 represents an unbalanced approach - an unbalanced approach that would plunge the Canadian economy into recession and dramatically lower the living standards of workers and families.

Bill C-288 requires that the Government of Canada reduce greenhouse gas emissions to 6% below 1990 levels beginning in 2008, through to 2012. This requires dramatic action, because the latest Canadian data submitted to the United Nations shows we are 35% above this level.

[...] This would result in a recession comparable to the one in 1981-1982, which stands as the largest recession to date in Canada since World War II.

The Government of Canada believes that C-288 represents an unbalanced approach that would hurt workers, families and businesses.

Despite repeated complaints from the part of the Government, the Bill got passed by the Senate and became a federal legislation, *The Kyoto Protocol Implementation Act*. This Act is clearly a blow to the Government's efforts.

Government's Response

In response to the Act, the Government initiated a new initiative called *Turning the Corner* which includes a wide array of former and new regulations. Comparing Canada's projected GHGs emissions with Canada's Kyoto obligations, the Government solemnly recognizes that "it is premature to estimate the resulting emissions reductions in the context of this Plan [*A Climate Change Plan for the Purposes of the Kyoto Protocol Implementation Act-2007*]" (Environment Canada 2007b:19). The Government also acknowledges that "Canada's allowable emissions for the period 2008 to 2012 are 2,815 Mt. These projected numbers will be verified by the national inventory reports, the first of which will be due on April 15, 2010, with the final report for 2012 due on April 15, 2014. The degree to which Canada has met its emissions reduction obligations under the Kyoto Protocol will be assessed after its final report has been filed in 2014" (Environment Canada 2007b:19).

Fig. 5 Canada's Emissions Levels from 2008 to 2012

Year	2008	2009	2010	2011	2012
Projected Emission Levels (Mt)	766	786	742	746	739

Source: Environment Canada (2007b:19)

The problem lies in the "degree to which Canada has met its emissions reduction obligations under the Kyoto Protocol." For the Pembina Institute at least, it is very unlikely that Canada would be able to meet such obligations. In a most recent study, Pembina critically reviews the Government's *Turning the Corner*. This review angered the Government and prompted the Assistant Deputy Minister to issue an on-line public letter "correcting" Pembina's mistakes and claiming that "Canada's plan is based on one of the most stringent regulatory regimes in the world" (Cleroux 2008).

Conclusion

Without going into details of the fight between the Government and the academic society (i.e. Pembina Institute), it is very clear that the Government is anxious about its ability to realize its international promises. Very often siding with the US, the Government of Canada almost never intended to truly meet its Kyoto obligation. “The science is clear and Canada, like the rest of the world needs to take immediate action on climate change” said Canada’s Minister of the Environment when congratulating the release of the fourth Assessment Report of the IPCC (Environment Canada 2007). By “the rest of the world,” the Minister was apparently referring to large emitters in the developing world such as China, India, and Brazil, which so far are not under any GHGs emission reduction commitment. This North-South Divide between old and new developers has persisted since the start (Prum 2007).

Canada is expected to formulate new strategy not only to try to catch up with other good faith environmental players such as the European Union during the first commitment period 2008-2012, but also to form new negotiating positions for the post-Kyoto regime. By looking at some recent steps the Government of Canada has taken, it appears that the current Government has no real intention to engage in international negotiations in a pro-Kyoto manner, at least not immediately after the first commitment period ends in 2012. At any rate, now that the *Kyoto Protocol Implementation Act* has entered into force the real game has finally begun.

Notes

¹ For a quick review of the international negotiations leading to, and during the climate conference in Kyoto 1997, see Prum (2007). See also Kato (2006).

² See one popular study of the Pembina Institute by Boustie, Reynolds and Bramley (2002).

³ For instance, during the 2006-07 sessions, members of the Government

kept voting against the bill C-288 (the Kyoto Protocol Implementation Act), a bill that requires the Government to implement emissions reduction. Eventually, the bill received the Royal Assent on June 22, 2007.

⁴ MtCO₂e : Million tonne of carbon equivalent.

⁵ See A/AC.237/6, the transcript of the first meeting of the Intergovernmental Negotiating Committee (INC), available at <<http://unfccc.int/documentation/documents/items/3595.php>>

REFERENCES

Ayres, John, Emi Hayami, Yemi Fasoyinu and Elhachmi Essadiqi (2002). *Government of Canada's Action Plan 2000 on Climate Change and Specific SF₆ Reduction Strategies for the Magnesium Sector*. <http://www.epa.gov/electricpower-sf6/documents/conf02_fasoyinu_paper.pdf>, visited on April 7, 2008.

Boustie, Sylvie, Marlo Reynolds and Matthew Bramley (2002). *How Ratifying the Kyoto Protocol Will Benefit Canada's Competitiveness*. Alberta: The Pembina Institute.

Bramley, Matthew (2005). *The Case for Deep Reductions- Canada's Role in Preventing Dangerous Climate Change*. Alberta/Vancouver: The Pembina Institute and The David Suzuki Foundation.

Bramley, Matthew (2007). *Analysis of the Government of Canada's April 2007 Greenhouse Gas Policy Announcement*. Alberta: The Pembina Institute.

Broadhead, Lee-Anne (2001). "Canada as a Rogue State: Its Shameful Performance on Climate Change," *International Journal*, LVI (3), Summer 2001.

Cléroux, Cécile (Assistant Deputy Minister, March 28, 2008). *Letter in Response to Pembina Institute's Analysis of Turning the Corner*. (available at <<http://www.ec.gc.ca/default.asp?lang=En&xml=F0AF139B->

17E4-4721-858D-B5DC425943C4> visited on April 10, 2008)

Demerse Clare, Matthew Bramley and Dale Marshall (2007). *Canada in Bali: A Backgrounder on the 2007 UN Climate Negotiations*. Alberta/Vancouver: The Pembina Institute and The David Suzuki Foundation.

Editorial (2002). “Kyoto, Internationalism, and Sovereignty,” *Canadian Dimension*, 36 (6), November/December, 2002.

Environment Canada (2004). *Canada’s Greenhouse Gas Inventory 1990-2002*, cited in Government of Canada (2006). 2006 Canada’s Fourth National Report on Climate Change - Actions to meet commitments under the United Nations Framework Convention on Climate Change, p. 16.

Environment Canada (2007). “Canada’s Environment Minister Welcomes the Report of the Intergovernmental Panel on Climate Change (IPCC),” News release, November 17, 2007. <<http://www.ec.gc.ca/default.asp?lang=En&n=714D9AAE-1&news=4754DC3D-1349-49F2-A6D7-18AEB83B740>>, visited on April 10, 2008.

Environment Canada (2007b). *A Climate Change Plan for the Purposes of the Kyoto Protocol Implementation Act - 2007*. (available at <http://www.ec.gc.ca/doc/ed-es/p_123/CC_Plan_2007_e.pdf>)

Environment Canada (2007c). *The Cost of Bill C-288 to Canadian Families and Business*. (available at <http://www.ec.gc.ca/doc/media/m_123/c3_eng.html>)

Gore, Al (2006). *An Inconvenient Truth: The planetary emergency of global warming and what we can do about it*. New York: Rodale.

Government of Canada (2000). *Government of Canada Action Plan 2000 on Climate Change*. <http://env.chass.utoronto.ca/env200y/ESSAY2001/gofcdaplan_eng2.pdf> , visited April 14, 2008.

Government of Canada (2002). *Climate Change Plan for Canada*.

Climate Change- Achieving our Commitments Together. (available at <www.climatechange.gc.ca>)

Government of Canada (2006). *Action on Climate Change and Air Pollution.* <<http://www.ecoaction.gc.ca/news-nouvelles/pdf/20060426-2-eng.pdf>>, visited on December 21 2007.

Government of Canada (2006a). *Canada's Report on Demonstrable Progress Under the Kyoto Protocol-Demonstration Progress to 2005.* (available at <<http://unfccc.int>>)

Government of Canada (2007). *Regulatory Framework for Air Emissions.* (available at <http://www.ec.gc.ca/doc/media/m_124/report_eng.pdf>)

Hare, Bill and Malte Meinshausen (2006). "How Much Warming are We Committed to and How Much can be Avoided?" *Climatic Change* 75 (1-2).

Hunter David, James Salzman, Durwood Zaelke (2002) *International Environmental Law and Policy.* New York: Foundation Press.

IPCC (2007). Intergovernmental Panel on Climate Change, "Summary for Policymakers," in Metz et al., eds, *Climate change 2007: Mitigation. Contribution of Working group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change.* Cambridge, UK and New York, NY: Cambridge University Press, 2007.

Ipsos-Reid (2005). *Issue Watch- Canadians' National Policy Issues Agenda.* (available at <www.ipsos-ca>)

Kato, Hisakazu (2006). "Promises and Pitfalls of CDM Revisited". Paper presented at the "2006 International Environmental Law Forum," Beijing, 23-24 September 2006.

Marzolini, Michael (2002). *Polling Alone: Canadian Values and Liberalism.* <www.pollara.ca/Library/Reports/newliberalism-feb203.pdf>, visited February 10, 2008.

〈 20 〉 Canada and Climate Change (Prum)

Porter, Gareth and Janet Brown (1996). *Global Environmental Politics*. Colorado, Oxford: Westview Press.

Prum, Virak (2007). “Climate Change and North-South Divide: Between and Within,” *Forum of International Development Studies*, 34, March 2007.

UNFCCC (United Nations Framework Convention on Climate Change, 2004). Kyoto Protocol- Status of Ratification. (available at <<http://unfccc.int/resource/kpstats.pdf>>)