



SIERRA  
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CANADA

Planetary Citizen's  
Guide to the Global  
Climate Negotiations

**2008 UPDATE:  
COP-14  
POZNAN, POLAND**



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*Cover photo: Image of Arctic sea ice on September 9, 2008  
Credit: NASA/Goddard Space Flight Center Scientific Visualization Studio  
The Blue Marble Next Generation data is courtesy of Reto Stockli (NASA/GSFC).*

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## **Introduction**

On December 1-12, 2008, over 9000 people from around the world will gather in Poznan, Poland for international climate talks. The meetings are also known as COP 14/MOP 4, an abbreviation for the 14th Conference of the Parties to the United Nations Framework Convention on Climate Change, and the 4th Meeting of the Parties to the Kyoto Protocol.

The climate crisis is the central challenge of our time, and time is running out. The world must take action during the meetings in Poznan. We need to shift gears, away from fossil fuels, to a zero-carbon future – one that embraces renewable sources of energy such as wind and solar. The meetings in Poznan must set us on the path to a comprehensive international climate agreement, by the time negotiators gather in Copenhagen, in December 2009.

If you are walking into an international meeting of the United Nations for the very first time, you may wonder what to expect. If you're staying at home, you may wonder what all of the negotiators will be talking about. With more information about the issues, you can be more effective in communicating your message – during one of the many events planned for the December 7 Day of Action on Climate Change.

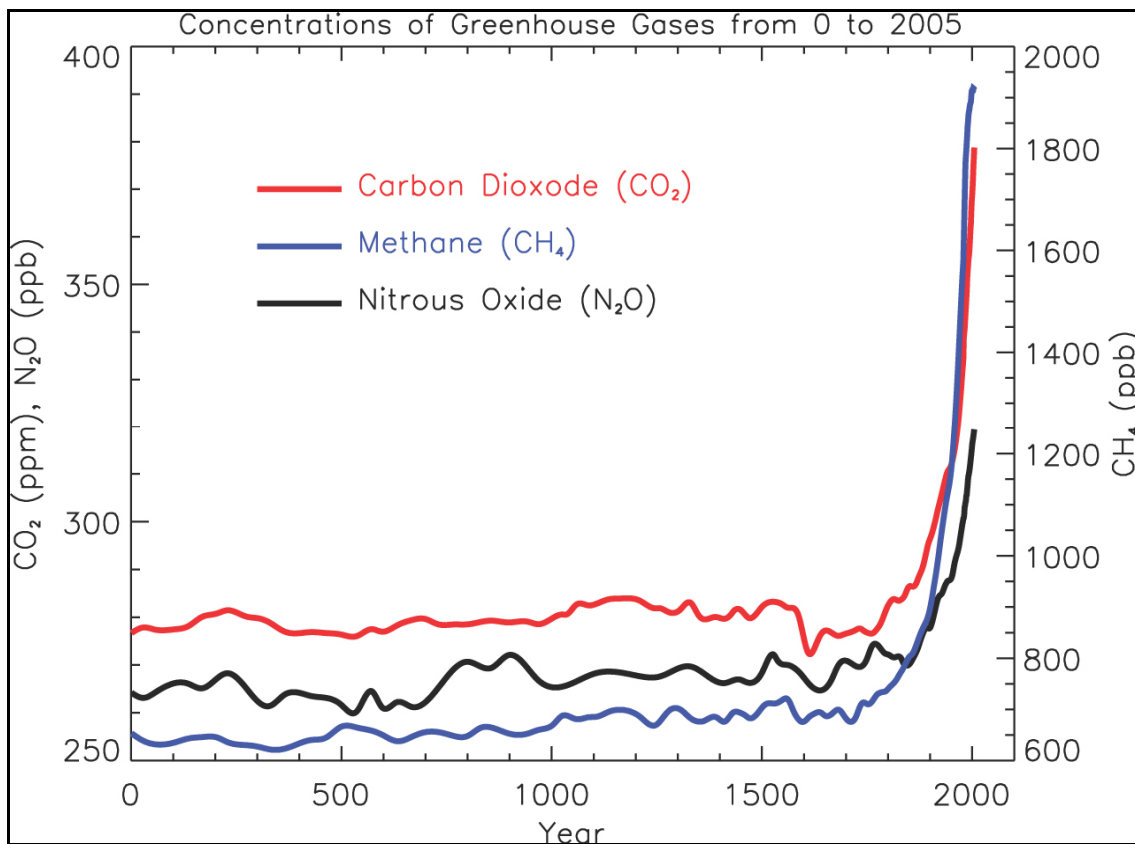
Sierra Club Canada's "Planetary Citizen's Guide to the Global Climate Negotiations" will help you understand some of the obscure terminology used at international meetings. It will give you an accessible review of the history of negotiations, and the potential impacts of climate change. This guide is meant to help make the negotiations a success, by equipping citizens with the information we need to pressure governments to stop dangerous climate change.

*December 1, 2008*

## 1. Catastrophic climate change

Climate change is the greatest threat to our environment, health and economy. We are already experiencing it: erratic weather patterns, devastating hurricanes, forest fires, droughts, new diseases, insect infestations, melting glaciers and the unprecedented loss of Arctic sea ice. Because of the greenhouse gases we have already pumped into the atmosphere, temperatures will continue to rise. The severity and frequency of severe weather events will continue to increase. If we do not take urgent action to reduce global emissions of greenhouse gases, the disasters of today will be dwarfed by future catastrophic impacts.

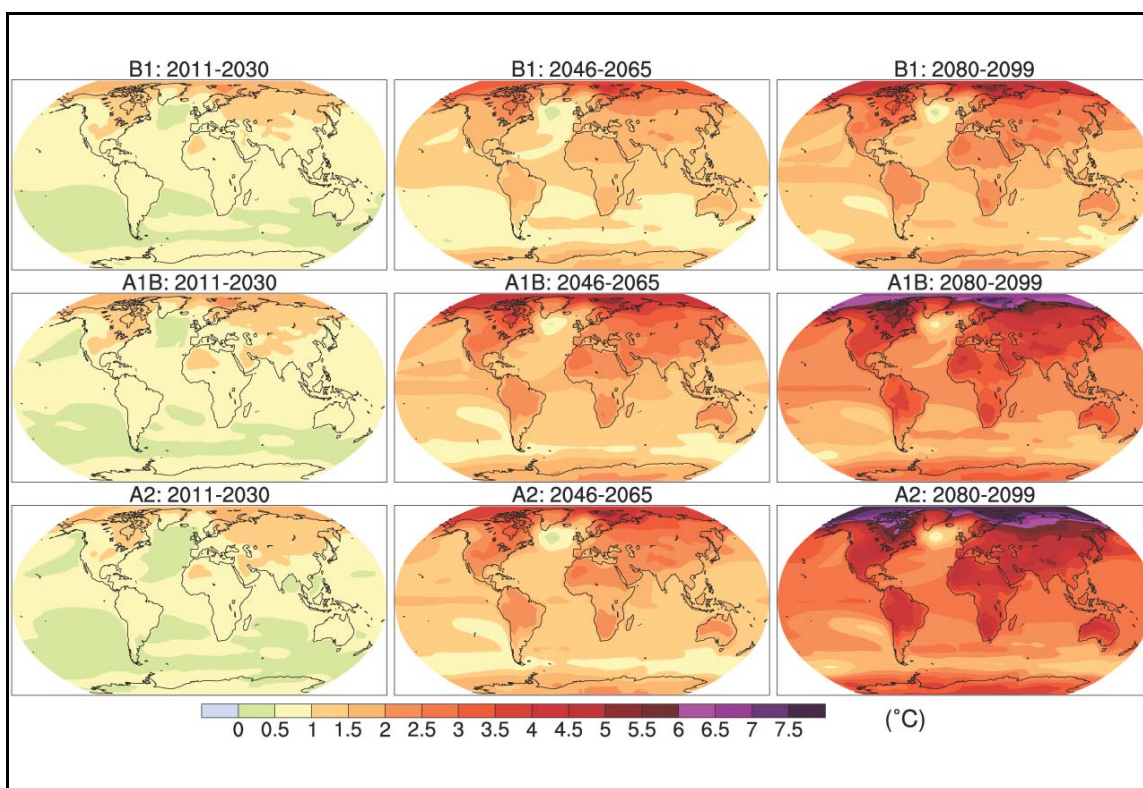
Humanity's principal challenge this century will be to avoid catastrophic levels of human-induced global warming, and this will require radical changes in how we live. We must drastically reduce our emissions of carbon dioxide and other greenhouse gases, which trap heat in our atmosphere, raising global temperatures. Atmospheric levels of CO<sub>2</sub> have increased from pre-industrial levels of 280 parts per million (ppm) to a current level of 387 ppm – an increase of 38%, largely due to the burning of fossil fuels. Since the year 2000, CO<sub>2</sub> levels have increased an average of 2.1 ppm per year.<sup>1</sup>



**Figure 1:** Increases in concentrations of the greenhouse gases carbon dioxide, methane and nitrous oxide. Figure from the IPCC's 4th Assessment Report.

<sup>1</sup> Adam, David. "World CO<sub>2</sub> levels at record high, scientists warn." Guardian, May 12, 2008. <http://www.guardian.co.uk/environment/2008/may/12/climatechange.carbonemissions>.

Measurements from ice cores have shown that current concentrations of CO<sub>2</sub> are far higher than the natural range over the past 650,000 years. With increasing levels of greenhouse gases, global temperatures could rise dramatically. The IPCC's 4th Assessment Report includes some predictions, based on climate modeling for different scenarios. The scenarios incorporate different policy choices. Will the world community unite behind policies that promote environmental protection, or will it continue to depend heavily on fossil fuels? Depending on the scenario, temperatures may rise 1.8-4.0 degrees Celsius, compared to the 1980-1999 period. These are the best estimates, for the different scenarios – but there are some uncertainties involved. The fossil-intensive “business as usual” A1FI scenario could see temperatures rising by as much as 6.4 degrees Celsius by the year 2100, threatening the existence of most of the world's plants and animals.<sup>2</sup>



**Figure 2:** Modelling of increases in mean global surface temperature, under SRES scenarios B1, A1B and A2. Three time periods are shown: 2011-2030, 2046-2065 and 2080-2099. Temperature increases are relative to the average for the period 1980-1999. Figure from IPCC's 4th Assessment Report.<sup>3</sup>

<sup>2</sup> Solomon, Susan et al, ed. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC*. Summary for Policymakers, 2, 12-15. Cambridge: Cambridge University Press, 2007. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>.

<sup>3</sup> Solomon, Susan et al, ed. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC*. Chapter 10, Figure 10.8. Cambridge: Cambridge University Press, 2007. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter10.pdf>.

## 2. What are greenhouse gases (GHGs), and how are they produced?

Greenhouse gases include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>). There are other greenhouse gases, but these are some of the most significant ones produced by human activities. All six greenhouse gases are included in the Kyoto Protocol.

Where do emissions of greenhouse gases come from? We have become addicted to fossil fuels for energy. Over half of human-created, or anthropogenic, greenhouse gas emissions come from burning fossil fuels for energy. Carbon dioxide is released into the atmosphere, every time someone travels in a gasoline-powered car or SUV, or burns oil in a furnace to heat a home. A lot of carbon dioxide is produced by industries, and power plants that use fossil fuels for energy.

The ongoing assault on the world's tropical forests through burning and cutting is another factor. Clearing of land for livestock production has played a key role in deforestation, particularly in South America. In the Amazon, 70% of previously forested land has been converted to pasture – with subsequent degradation of the soil. The global livestock industry takes up 70% of the planet's agricultural land, and is responsible for 18% of the world's greenhouse gas emissions, with the release of methane and carbon dioxide.<sup>4</sup>

## 3. Two degrees Celsius, and tipping points

Increasingly, scientists worry that climate change may operate more as a switch than as a dial. Sudden, abrupt and catastrophic impacts may occur at a given "tipping point." If we allow the global average temperature to increase more than 2 degrees Celsius above pre-Industrial Revolution levels, then we run an unacceptable risk of reaching a devastating tipping point.

The sorts of sudden and abrupt changes that are now top of mind for many scientists include the collapse of the Amazon rainforest and other tropical forests, runaway melting of the Greenland Ice Sheet, collapse of the Western Antarctic Ice Shelf, a vast increase in methane emissions from the permafrost, and a dramatic reduction of the ability of oceans to absorb carbon dioxide from the atmosphere. Any one of these events could lead to abrupt changes in the climate, triggering even greater changes. The result could be irreversible runaway climate disruption, with catastrophic consequences around the world.

The collapse of the Western Antarctic Ice Sheet could raise sea levels by an estimated 5 metres. The melting of the Greenland ice sheet could raise sea levels by another 7 metres over time. Once the ice sheets melt, it may be difficult for them to return. According to the IPCC, "Under pre-industrial or present-day atmospheric CO<sub>2</sub> concentrations, the climate of Greenland would be much warmer without the ice sheet, because of lower surface altitude and albedo, so it is possible that Greenland

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<sup>4</sup> Steinfeld, Henning et al. "Livestock's Long Shadow: Environmental Issues and Options." United Nations Food and Agriculture Organization, 2006. <ftp://ftp.fao.org/docrep/fao/010/A0701E/A0701E00.pdf>.

deglaciation and the resulting sea level rise would be irreversible.”<sup>5</sup> Albedo is a technical term, referring to the amount of sunlight reflected by a surface. Ice reflects lots of sunlight, but land with no ice cover absorbs it. The ice sheets help cool our climate.

Kyoto was always seen as a small first step. To avoid an increase of 2 degrees Celsius, we need to hold long-term atmospheric concentrations of greenhouse gases to no more than 450 ppm. This requires much deeper reductions than the targets in Kyoto. By 2050, global emissions must be reduced at least 50% below 1990 levels. To achieve this, goal, the world's emissions must stabilise and start to decline rapidly.

Developed countries have been emitting GHGs for well over a century, so they are responsible for much of the human-generated greenhouse gases that have accumulated in our atmosphere. Their reduction targets should reflect their historical contributions to causing global warming. In addition, developed countries' per capita emissions dwarf those of the developing world: Canada emits approximately 23 tonnes of GHGs per capita. By comparison, China emits around 5.5 tonnes per capita.<sup>6</sup> Industrialized countries must take on their fair share of reductions, and reduce GHG emissions below 1990 levels, by at least 25-40% by 2020, and 80-95% by 2050.

#### **4. Impacts of climate change, across Canada and around the world**

Climate change could have devastating consequences, in Canada and around the world. Reports by the IPCC, Health Canada, Natural Resources and Environment Canada detail some of the impacts. Here are a few highlights. It's not meant to be a comprehensive list, and the future depends on us. We still have a chance to prevent some of the severe impacts of climate change, if we act now.

- Worldwide: Inaction on climate change will lead to devastating economic consequences: trillions of dollars in economic losses worldwide, according to the Stern Review.
- Asia: Up to one billion people could face water shortages by the year 2050, due to the melting of glaciers that feed rivers.
- Worldwide: Mass extinctions of plant and animal species, if temperatures continue to rise. A 2.9 degree Celsius rise above pre-industrial temperatures could lead to the extinction of 21-52% of the world's plant and animal species.

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<sup>5</sup> Solomon, Susan et al, ed. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC*. Chapter 10, 829-830. Cambridge: Cambridge University Press, 2007. <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter10.pdf>.

<sup>6</sup> Per capita emissions of greenhouse gases have been calculated using UNFCCC data, for Canada, the United States, Australia and the European Union. The most recent data is for 2006, and includes total anthropogenic emissions of CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs and SF<sub>6</sub> – excluding emissions/removals from land use, land-use change and forestry. For China, the data is from CAIT for 2005.



- North America: An increase of 2.3 degrees Celsius above pre-industrial temperatures would lead to the loss of a quarter of all freshwater fish habitat.
- Across Canada: Droughts will lead to economic losses. The drought of 2001-2002 reduced Canada's gross domestic product by \$5.8 billion, and led to the loss of 41,000 jobs.
- Across Canada: West Nile virus and Lyme disease will spread because of milder winters, heatwaves and droughts. Climate change could lead to outbreaks of diseases that are now rare or unknown in Canada.
- Arctic: Animals such as the polar bear and caribou will be severely affected by loss of habitat. Polar bears, walrus and seals face a high risk of extinction, if temperatures rise 2.8 degrees Celsius above the pre-industrial range.
- Arctic: The melting of the permafrost will play havoc with infrastructure. If temperatures continue to increase, the melting permafrost could release massive quantities of methane, a greenhouse gas – leading to escalating increases in temperature.
- Atlantic Canada: The number of hurricanes is expected to increase, leading to economic losses in the Maritimes. In 2003, Hurricane Juan caused \$100 million in damages in Nova Scotia.
- Atlantic Canada: Erosion of coastlines, due to the melting of ice cover, rise in sea level, and increased severity of storms.
- British Columbia: Hot summers and mild winters have led to an unprecedented infestation of the mountain pine beetle – destroying \$6 billion worth of trees, and the infestation is now spreading to Alberta.
- British Columbia: Vancouver residents can look forward to a significant increase in rainfall during the winter. The Lower Mainland has already experienced record rainfalls.
- Prairies: According to Natural Resources Canada, "Increases in water scarcity represent the most serious climate risk in the Prairie provinces." Droughts will lead to billions of dollars in economic losses.
- Ontario: Heatwaves will be more common in southern Ontario. The number of days with temperatures exceeding 30°C is projected to more than double by 2050 and triple in some cities by 2080.
- Ontario, Québec, New Brunswick, and Nova Scotia: These provinces have already been hit by an extreme weather event, the 1998 Ice Storm. This was the costliest natural disaster in Canadian history, leading to 28 deaths, power outages for 250,000 people, and economic damages of \$5.4 billion in the four provinces.

- Ontario: Lake Superior fell to its lowest level in September 2007, and the other Great Lakes have also been affected by higher temperatures. A drop of 0.08 - 1.18 metres in the Great Lakes water levels will cost the hydroelectric industry \$240 - 350 million each year.
- Québec: Heatwaves will be more common, and hundreds of people could die because of the higher temperatures. There will be an increase of 550 deaths per year by 2020, and 1,400 deaths per year by 2080.
- Québec: According to Université de Montréal researchers, the ticks responsible for the spread of Lyme disease will spread to several parts of eastern Canada, including Québec, within 10 to 20 years, as the climate warms.

## 5. Global climate treaties

### a. Introduction

There are many different words used to designate binding legal agreements between countries: *treaties, conventions and protocols*.

Environmental treaties generally start as "*conventions*." A convention, such as the Vienna Convention to protect the ozone layer, is a broad statement of principles and objectives without binding targets. Every convention has its own formula for *entry into force* (abbreviated in many UN documents as EIF). The EIF formula is determined in the negotiations. Governments often sign a new convention as soon as it is negotiated, but it also needs to be approved domestically, through national parliaments and legislatures. That process is called "*ratification*." It is particularly difficult to achieve in the United States, where, under the Constitution, the ratification of international treaties requires a 2/3 majority in the Senate.

Whenever a country ratifies a convention, that country is known as a "*party*" to the convention. Once the convention has been signed and ratified by enough countries, it *enters into force*. Once a convention or protocol has entered into force, it becomes international law.

Every environmental convention is much more than a piece of paper. Each convention launches a living process. All the countries that have signed and ratified (the *Parties*) meet regularly in a mini-Parliament to make sure the convention meets its goals. These mini-Parliaments are called "*Conferences of the Parties*," or COPs. The Parties often decide that the vague statement of principles, the Framework Convention, is not enough. Then they negotiate a more meaningful and specific agreement. Any binding legal agreement negotiated by Parties to an existing convention is called a "*protocol*."

A good example of this is the progress of the UN Framework Convention to Protect the Ozone Layer, known as the Vienna Convention. After a few years, it was very clear that the threat to the ozone

layer was urgent and that without specific targets and timelines to eliminate ozone-depleting chemicals, the result would be catastrophic for the world's environment. The countries began working in scientific meetings and diplomatic sessions to develop an approach to real reductions. Those meetings culminated in a meeting in Montreal in September 1987. The resulting treaty, the Montreal Protocol, was the first agreement to set out mandatory reductions for chlorofluorocarbons (CFCs) and other ozone-depleting substances.

The Montreal Protocol celebrated a successful twenty years in September 2007. It is an important agreement to have in mind, because it shows us what is possible when the international community takes unified action. The Montreal Protocol worked! By 2006, the countries that ratified the Protocol reduced their use of ozone-depleting chemicals by 95 per cent. Developing countries reduced their consumption by more than 72 per cent. The Montreal Protocol is likely the most effective of all global environmental treaties.<sup>7</sup>

The Kyoto Protocol was designed using the same principles as the Montreal Protocol. It embraced the principle that the agreement would be "science-driven" and responsive to new information about the scale and scope of the threat as it emerged. It also established the principle that industrialized countries should take the first steps.

In order to ensure fairness between rich countries and poor countries, the two groups were treated differently under the Montreal Protocol, and the same is true for the Kyoto Protocol. There were several reasons for this. For one thing, the problem had been created by the rich countries. For another, the rich countries had more resources to develop the technologies to replace the ozone-depleting chemicals. As well, developing countries had urgent need of better refrigeration and wanted to expand their use of ozone-depleting refrigerants. And finally, the negotiators wanted to ensure that all countries were in the agreement, so they made provisions for developing countries to take on the reduction targets later than developed countries. So, the successful Montreal Protocol of 1987 called on rich countries to reduce their manufacture and use of ozone-depleting substances by 50%, while allowing developing countries to increase their use initially. Rich countries successfully met, and in some cases exceeded, their targets under the Montreal Protocol, paving the way for developing countries to join in and take on reductions of their own.

## **b. Climate agreements**

Efforts to limit greenhouse gases by international treaty began with the 1987 Report of the World Commission on Environment and Development (WCED). The WCED is often known simply as "The Brundtland Report," after its chair, Dr. Gro Harlem Brundtland. At the time, Brundtland was the Prime Minister of Norway, and she is now one of the UN Secretary General's special envoys on climate change. The WCED's final report, *Our Common Future*, identified three global crises – a development

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<sup>7</sup> The United Nations Ozone Secretariat, United Nations Environment Programme. *A Success in the Making: The Montreal Protocol on Substances that Deplete the Ozone Layer*. [http://ozone.unep.org/Publications/MP\\_A\\_Success\\_in\\_the\\_making-E.pdf](http://ozone.unep.org/Publications/MP_A_Success_in_the_making-E.pdf).

crisis, an environment crisis and a crisis of militarism.<sup>8</sup> The Brundtland Report called for a major global summit to be held in 1992 to address the most pressing threats. Climate change was seen as one of the most urgent challenges.

The United Nations General Assembly called for negotiations in advance of the 1992 Summit, which was to take place in Rio de Janeiro. The gathering became the largest summit of heads of government, to that point, in world history. The Earth Summit, as it became known, succeeded in approving two global conventions – one to protect biodiversity, and the second to deal with climate change. This 1992 agreement is called the UN Framework Convention on Climate Change (UNFCCC).

The Convention's "ultimate objective" is to stabilize "greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." In other words, the buildup of greenhouse gases (GHGs) due to human activity should be stopped before it becomes dangerous.

The key word here is "dangerous." It is a subjective word. If you were in France during the heat wave of 2003, in New Orleans when Hurricane Katrina swept through in 2005, or on the coastlines of Southeast Asia hit by devastating cyclones, you might well conclude that things are already pretty dangerous. Canada has not been spared from the impacts of climate change – witness the record losses of Arctic sea ice, the disruption caused by the melting permafrost, and the economic losses from extreme weather events such as the Ice Storm.

To ensure a science-based approach, the Convention relies on an expert group of scientists: the Intergovernmental Panel on Climate Change (IPCC). The IPCC summarizes scientific developments, and translates this complex science into advice for "policy makers." The IPCC was created in 1988. It is comprised of scientists from government agencies, universities and the private sector, who analyze all the peer-reviewed published scientific literature to produce their summaries. It is essentially the world's largest peer review system. It was awarded the Nobel Peace Prize with Al Gore in 2007 for its work on climate change.

The Convention requires its parties to "aim towards" stabilization of GHGs in the atmosphere. It set out two large areas for work:

- Reduction of GHGs, called "*mitigation*" in convention-speak; and,
- *Adaptation* to climate change that cannot be avoided.

"Mitigation" is a funny term for reducing emissions. To many people, mitigation sounds more like adapting, in the way that projects "mitigate" an environmental impact through modifications in design. In UNFCCC-speak, "mitigation" means one thing: reducing GHG emissions (or removing them from the atmosphere).

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<sup>8</sup> The issue of militarism was dropped from the "sustainable development" challenge when the UN General Assembly approved an agenda for the 1992 Summit on Environment and Development.

“Adaptation” refers to those policies and practices, such as land-use planning and engineering designs, which help protect communities against the climate change that can no longer be avoided. Examples of adaptation strategies include drought-resistant cropping, higher levees and dykes in low-lying areas, and avoiding building in flood plains.

Virtually all aspects of human activity, as well as biological systems and species, will need some kind of adaptive response to climate change. Because of their lack of financial resources, poorer countries will have a much harder time than the wealthy industrialized world. Developed countries need to contribute significant resources to an Adaptation Fund. Wealthy countries also need to be prepared. Think of dried-up lakes in Australia, and Hurricane Katrina victims in the United States. It’s clear that everyone needs to be better prepared, with effective adaptive strategies – and we have a responsibility to take action.

### c. UNFCCC enters into force

Within two years, the UNFCCC was signed by over 165 countries. Over 100 ratified, including the United States, Canada and every Annex I (industrialized) country. This allowed the Convention to enter into force (EIF) on March 21, 1994 (now almost all the countries in the world have ratified). Once it became legally binding on the Parties through its entry into force, the Conference of the Parties (COP) process began.

The first COP was held in Berlin in 1995. It was at this first and critical negotiating session that a way forward was developed, known as the **Berlin Mandate**. Acknowledging that the obligations under UNFCCC were not sufficient to avoid dangerous climate change, the Berlin Mandate launched a two-year negotiating phase to establish a new treaty protocol that would include a “comprehensive menu of actions.” Countries could then pick and choose options to reduce emissions that made best economic and environmental sense. The new protocol would also provide a uniform approach to reporting emissions and GHG reduction measures.

Building on the precedent of the successful Montreal Protocol, the Parties agreed that they should:

[...] protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.<sup>9</sup>

COP 2 in Geneva in 1996 advanced the work toward a protocol.

COP 3 was in Kyoto, Japan in December, 1997, where the parties finally reached agreement on a protocol. One is tempted to say, “and the rest is history...”

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<sup>9</sup> The United Nations Framework Convention on Climate Change, Article 3.1.  
[http://unfccc.int/essential\\_background/convention/background/items/1349.php](http://unfccc.int/essential_background/convention/background/items/1349.php).

#### d. The Kyoto Protocol: a comprehensive menu for emissions reductions

The Kyoto Protocol followed the principles established in the Montreal Protocol. It listed the industrialized nations in an Annex, called “Annex B.” Quite often discussions about Kyoto will refer to “*Annex I countries*”, because Annex I of the UNFCCC is almost identical to Annex B of Kyoto. Annex I includes the European Union (27 countries as of January 1, 2007), the United States, Canada, Japan, Norway, New Zealand, Australia, Russia, Ukraine, Belarus, Turkey, Iceland, and Switzerland. Annex II is another relevant group, consisting of Annex I minus the former Soviet Bloc countries, referred to as “Economies in Transition” or EIT. Developing countries are also separate. They can be part of the protocol, but do not have emission reduction targets.

The Annex B countries (except for Belarus and Turkey) accepted binding targets for emissions reductions. The greenhouse gases covered by the Kyoto protocol are:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF<sub>6</sub>)

Based on the 1992 agreement at Rio to promote “**common but differentiated responsibilities,**” Annex B countries took on different targets at Kyoto. The European Union, which entered the Kyoto negotiations proposing 15% reductions, accepted an overall 8% reduction target. The United States adopted a 7% goal. Canada came in with a 6% target. All of these reductions were to be from 1990 levels. The reductions were to be achieved between 2008 and 2012. This five-year time frame is known as the “*first commitment period,*” under the Kyoto Protocol.

Most global negotiations are a challenge. Even the successful Montreal Protocol negotiations nearly ended in a deadlock. Everything fell apart that September week in Montreal, twenty-one years ago. The same two groups that so often have been at loggerheads on Kyoto, the United States and the European Union, were not talking. President Reagan didn’t really want to curtail ozone depleting chemicals, and even the Netherlands became unhelpful. New Zealand’s Environment Minister came up with a compromise, and thank goodness for it.

By any standard, Kyoto was worse. It is the style of UN negotiations to achieve agreement by attrition. Negotiations can go into the wee hours of the morning. There is often no food. Vending machine pop and chips keep bleary-eyed negotiators at their microphones so long as the translators are willing to make things work in six official languages. It is a grim and uninspiring spectacle.

While late nights and cliffhangers are routine, Kyoto’s sleep-deprived brinkmanship remains unsurpassed. The negotiations exceeded the allowable time for the meeting itself. The last round went for an incredible, uninterrupted 36 hour marathon. By the end, the Kyoto convention facility

was being dismantled to make room for a trade show. When the deal was finally agreed upon, the ink was still wet as delegates rushed for planes home.

In order to get a deal, negotiations had developed a complex set of brand new concepts. These concepts are generally called "*flexible mechanisms*." Many environmentalists called them "loopholes." Based on the understanding that the global atmosphere is well mixed and it does not matter where emissions are released, three basic kinds of flexible mechanisms were adopted:

- 1) **Joint Implementation**, under which Annex I countries can get credits for funding projects that reduce GHG emissions in other Annex I countries, principally those in the former Soviet Bloc (EIT);
- 2) **The Clean Development Mechanism (CDM)**, through which Annex I countries can get credits for funding projects that reduce GHG emissions in developing countries; and
- 3) **International Emissions Trading**, through which Annex I countries can buy and sell carbon credits where one country has exceeded its target and can "sell" its reductions by tonne to another country.

This third element has been the most controversial. It is Russia that has always been seen as the main beneficiary of this provision. Because of Kyoto's 1990 base year, Russia can get credit for the post-Soviet collapse of its economy and resulting decline in GHG emissions. Without making an effort to reduce emissions, Russia has met and exceeded its Kyoto targets. Trading in the pollution of the former USSR is generally called trading in "Russian hot air."

As well, Kyoto included the idea that Annex I countries can get credit for enhancing "*sinks*." In convention-speak, a sink is any natural ecosystem that sequesters carbon, holding it out of the atmosphere. Carbon sinks are especially important because they capture a significant fraction of greenhouse gases. The total capacity of sinks is decreasing rapidly through deforestation, conversion of forest land to agriculture and other changes, referred to under Kyoto as "land use, land use change and forestry" (LULUCF).

Kyoto's sinks are generally related to agricultural land and forests, with credits available for projects in farming, afforestation, and reforestation. In other words, if you plant a forest where one was not before, you can get credits under Kyoto. This does not apply to commercial logging. You cannot get credit for cutting down a forest only to plant one. Also due to controversy, credits for avoided deforestation are not included in the Kyoto protocol. These issues are very technical, the science is still evolving, and not surprisingly the debate over what should actually qualify as Kyoto "sinks" is very heated.

#### **e. Kyoto's rocky road**

The Kyoto Protocol also had a complex formula for its entry into force (EIF). Fifty-five countries would have to ratify the Protocol and, in addition, those 55 countries would have to be equivalent to 55% of the global emissions in 1990.

In 2001, within a few months of taking office, President George W. Bush pulled the United States out of the Protocol, announcing that it would not ratify the agreement. President Bush did this without even a pretense of Cabinet consideration and without so much as a conversation with the head of his environmental agency.<sup>10</sup>

The administration indicated that it viewed the Kyoto accord as “unfair to the United States.” The EU sent high-level diplomats on an emergency mission to Washington, to try to persuade the US administration to change its stance. Unfortunately, the emissaries were unsuccessful.<sup>11</sup> EU President Romano Prodi criticized the US rejection of Kyoto. “If one wants to be a world leader, one must know how to look after the entire earth and not only American industry,” said Prodi.<sup>12</sup>

When Bush pulled the United States out of Kyoto, he did more than walk away with one vote out of 55. Bush walked away with 25% of global emissions, and 36% of Annex I GHG emissions, making the challenge of reaching 55% of Annex I emissions from 1990 far more difficult. Then the United States exerted pressure on Russia not to ratify. The Kyoto Protocol was in trouble.

Negotiations had fallen apart even while Bill Clinton was in the White House. In the fall of 2000, at the height of the US Presidential race, the 6th COP took place in The Hague, Netherlands.<sup>13</sup> The EU and the US reached an impasse over the rules to make Kyoto work. The Chair of the COP chose not to end the meeting, but to take a pause of over six months and resume in Bonn at what was known as COP 6 (*bis*).

COP 6 resumed with Bush denouncing Kyoto, and pushing others to abandon the treaty (the US still sent a delegation to the COP, as it was – and still is – a party to UNFCCC). But the COP 6 *bis* managed to salvage global resolve to keep Kyoto alive. The world decided it could not afford to wait for George W. Bush. The effort to develop intricate, detailed, fair and transparent rules continued, while pursuing the uphill work of achieving ratification.

COP 7 in Marrakech (2001) achieved a breakthrough on key rules for the flexibility mechanisms. By COP 8 in New Delhi (2002), the US was overtly pressing India *not* to accept GHG emission reduction targets. As Bush had used the rationale that Kyoto was unfair because developing countries did not have targets, Bush had an incentive to keep the developing countries from doing what he refused to do.

COP 9 in Milan was held while there was still uncertainty about when or even whether Kyoto would come into force. Those difficulties were removed when Russian President Vladimir Putin announced that Russia would ratify. The Russian Duma had ratified by the December 2004 meeting in Buenos

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<sup>10</sup> See Suskind, *The Price of Loyalty*, the story of Bush’s first term Secretary of the Treasury, Paul O’Neill who had favoured the Kyoto Protocol.

<sup>11</sup> Jehl, Douglas. “U.S. Rebuffs European Plea Not to Abandon Climate Pact.” *New York Times*, April 4, 2001. <http://query.nytimes.com/gst/fullpage.html?res=9C05EFDF163EF937A35757C0A9679C8B63>.

<sup>12</sup> Lobe, Jim. “Europe: Will ratify Kyoto Protocol despite US withdrawal.” *Third World Network*, April 3, 2001. <http://www.twinside.org.sg/title/ratify.htm>.

<sup>13</sup> COP 4 had been in Buenos Aires, Argentina in 1998; COP 5 in Bonn, Germany in 1999.



Aires, but the required waiting period under the formula for EIF meant that the Kyoto Protocol would not officially become a fully binding instrument until February 16th, 2005.

## **6. Breakthrough in Montreal**

COP 11 was held in Montreal, November 28-December 9, 2005. With ratification by Russia earlier that year, the Kyoto Protocol had officially entered into force as international law. It was a historic breakthrough. It meant that the climate negotiations included the first “MOP” or “*Meeting of the Parties*” under Kyoto. Just as the COP series of meetings governs actions under the UNFCCC, the Kyoto Protocol has its own process under MOP. COP and MOP meetings are held at the same time.

This was the first time such a meeting took place in North America, and Canada played a crucial role as host of the negotiations. Volunteers and delegates from around the world, including the United States, showed up in force. Over 10,000 people attended, making it one of the largest climate negotiations in history. The stakes were high: this meeting could either launch negotiations for a second commitment period after 2012, or Kyoto could expire after 2012 – a victim of the Bush administration’s strategy of sabotage.

Throughout the two week meeting, involved citizens kept up the pressure on the delegations. Over 40,000 people marched in the freezing streets of Montreal, to support the continuation of the Kyoto Protocol. Canada’s Environment Minister, Stéphane Dion, presided over the negotiations and worked around the clock to make sure the Kyoto Protocol would not die. The outcome of these negotiations was a reinvigorated international community, respect for Canada’s leadership in the Kyoto negotiations, isolation of the anti-Kyoto Bush stance, and the launch of discussions for a second Kyoto phase. Delegates agreed there would be “no gap” between the first commitment period, which ends in 2012, and the second commitment period. This implies that negotiations for the post-2012 regime must finish by 2009 at the very latest, to allow countries the time to ratify the new agreement so it can enter into force in 2013. An “Ad Hoc Working Group” (AHG) was created to begin discussions on a way forward for Annex I countries after 2012.

A “dialogue” process under the UNFCCC was also launched in Montreal. The United States is part of the UNFCCC and has to agree to anything decided under this process. With US insistence, it was clearly spelled out that the “dialogue” would not lead to any new, binding targets. Although it is clear that Annex B countries and the US should take on absolute, binding emissions reduction targets, the dialogue could provide a forum through which developing countries can discuss participation in a second commitment period.

Another important success in Montreal was a June 3, 2006 declaration from a summit representing 1,400 municipal leaders. The Federation of Canadian Municipalities made a firm commitment to support the Kyoto Protocol: “Municipal governments commit themselves... to implementing policies and operational changes that will achieve a global reduction in greenhouse gas emissions of 30 per

cent by 2020 and 80 per cent by 2050, based on 1990 levels.”<sup>14</sup> The action by Canadian municipal leaders mirrors a parallel movement in the United States. Over 900 mayors have signed the U.S. Mayors' Climate Protection Agreement, calling for their cities to “meet or beat the Kyoto Protocol targets in their own communities, through actions ranging from anti-sprawl land-use policies to urban forest restoration projects to public information campaigns.”<sup>15</sup> On both sides of the border, municipal leaders are calling on their governments to respect the Kyoto Protocol, with policies to reduce emissions of GHGs.

## 7. Canada's changing tune

Little more than a month after Stéphane Dion hammered down the gavel and successfully launched discussions for Kyoto Phase II, the Liberal government of Paul Martin was defeated and replaced by a minority Conservative government under Stephen Harper. While the new Environment Minister, Rona Ambrose, accepted the position of President of the UNFCCC negotiations (a position the Environment Minister of the country hosting the conference holds for a full year), she and her government wasted no time in trashing the Kyoto Protocol and its flexible mechanisms as vehicles for corruption, denouncing the Montreal conference as a waste of money, and abandoning Canada's Kyoto target. Although he has not officially withdrawn Canada from the Kyoto Protocol, Stephen Harper consistently aligned himself with the Bush administration.

During the May 15-26, 2006 climate talks in Bonn, Canada's representatives were instructed to delay negotiations, push for the abandonment of the Kyoto protocol after 2012, and block discussion of tougher targets for industrialized countries. This strategy of obstruction was revealed by a document leaked to the Globe and Mail and La Presse. According to the document, “Canada will not support agreement on language in the work program that commits developed countries to more stringent targets in the future.”<sup>16</sup>

The momentum established in Montreal was effectively destroyed by Canada's new government. Canada was supposed to chair the international negotiations in Bonn. However, Environment Minister Ambrose showed her lack of concern, when she opened the talks on May 15, 2006. After only two days, she returned to Canada.<sup>17</sup> Ambrose indicated that Canada would not be able to meet its Kyoto commitment. Many people called on Ambrose to resign. How could Canada chair the international climate negotiations, when our government refused to respect the Kyoto Protocol?

It took only one year to severely damage Canada's international credibility. Minister Ambrose arrived at COP 12 in Nairobi and stood on a world stage to blame Canadian opposition parties and reiterate Canada's abandonment of Kyoto. This time, she also declared that Canada had a 20% reduction

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<sup>14</sup> Lalonde, Michelle. “Mayors to go it alone on Kyoto.” National Post, June 4, 2006. <http://www.nationalpost.com/news/story.html?id=459ebd03-6dca-41e1-97d7-a75c534c56bf&k=99466>.

<sup>15</sup> U.S. Conference of Mayors Climate Protection Agreement. <http://www.usmayors.org/climateprotection/agreement.htm>.

<sup>16</sup> Currie, Bill. “Ottawa now wants Kyoto deal scrapped.” Globe and Mail, May 20, 2006.

<sup>17</sup> “Environmental groups seek Ambrose's resignation.” Edmonton Journal, May 10, 2006. <http://www.canada.com/edmontonjournal/news/story.html?id=b279c716-1c57-4dd8-9601-583f304bd6fc&k=58204>

target for 2020. She conveniently left out the fact that Canada had changed its baseline year and was now using 2006, not the Kyoto baseline year of 1990.

In January 2007, John Baird replaced Rona Ambrose as Environment Minister. Unfortunately, the government's policy on climate change remained unaltered, and Baird continued the practice of exaggerating claims about the effectiveness of Canada's climate change policies. Under Baird, Canada retreated from the Kyoto Protocol, and muzzled government scientists. In January 2008, Environment Canada employees were instructed to apply for approval for all media inquiries – a move that many believe was aimed to stifle dissent. The editors of the scientific journal *Nature* criticized the government's treatment of its scientists, and its climate skepticism.<sup>18</sup> On the world stage, Canada's negotiators stood in the way of progress. During international climate talks in Bali, the Canadian delegation tried to obstruct negotiations, seriously eroding the trust that is essential for constructive agreements.

## 8. The Bali embarrassment

Canada's new government continued its stance of obstruction during the COP 13 talks in Bali, Indonesia, December 3-15, 2007. Canada joined the United States, Japan and Russia, leading the way in blocking any reference to the 25-40% range of emissions reductions recommended by the IPCC. Canada and the United States also worked together to remove language calling for a peaking of global emissions in 10-15 years.

Environment Minister John Baird made an interesting statement by skipping his own speech – leaving a full house of astonished spectators, who were interested in learning about Canada's climate change strategy. The Canadian government had organized a side event – a presentation that would offer details about Canada's "Turning the Corner" climate plan. The chair of the meeting announced that "the Minister is too busy with negotiations" to speak to them. The Canadian youth delegates walked out in protest.

The Canadian delegation also distinguished itself by saying that developing countries must adopt absolute emissions reductions, even though the federal government has adopted intensity targets, for its plan. Canada won first prize in the infamous "Fossil of the Day Awards," for its insistence that developing countries must adopt absolute emissions reductions targets, before Canada would consider the same.<sup>19</sup> Canada's stance was widely criticized by people around the world. Rajendra K. Pachauri, Chair of the IPCC, warned that the Harper government is "a government of sceptics" that "do not want to do anything on climate change."<sup>20</sup>

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<sup>18</sup> "Science in Retreat." *Nature* **451**, 866 (February 21, 2008).

<http://www.nature.com/nature/journal/v451/n7181/full/451866a.html>.

<sup>19</sup> Turnbull, David. "Canadian Minister a no show." Bali ECO Issue 9. <http://www.climatenetwork.org/eco/bali-ecos>.

<sup>20</sup> Turnbull, David. "Canada instructed to sabotage negotiations." Bali ECO Issue 7.

<http://www.climatenetwork.org/eco/bali-ecos>.

The Bali climate talks concluded with the drafting of the “Bali Roadmap,” a plan for the next two years of negotiations. The Bali Action Plan is intended to help lead to a post-2012 climate agreement, or amendment to the Kyoto Protocol – to avoid dangerous climate change. Negotiators reached agreement to deal with deforestation in developing countries, and they also decided to give priority to the transfer of technology to support adaptation to climate change. The Bali Action Plan indicated that deep cuts in emissions will be needed, but it failed to specify what those targets would be.

The Bali Action Plan was nearly scuttled by the American delegation. Speaker after speaker went to the podium, calling for action. Kevin Conrad, the representative from Papua New Guinea came to the podium, and issued a challenge to the Americans who stood in the way of a deal: “We ask for your leadership,” he said. “But if for some reason you’re not willing to lead, leave it to the rest of us. Please get out of the way.” Finally, the head of the US delegation capitulated to pressure from the others. US Undersecretary of State Paula Dobriansky signalled that she would stop her opposition to a deal, and she was applauded by the other delegates.<sup>21</sup>

## **9. Getting side-tracked**

Several meetings over the course of 2007 had climate change at the top of their agendas. This included the G8 meeting in Heiligendamm, Germany, the Asia Pacific Economic Cooperation (APEC) meeting in Australia, and the Major Economies Meeting on Energy Security and Climate Change, held in Washington.

Pro-Kyoto countries, including the Europeans, have clearly stated that none of these meetings are meant to compete with Kyoto. Instead, any agreement they generate will help build on the UN and Kyoto processes. Thanks to the leadership of the German Presidency of the G8, the G8 meeting in Germany made progress on climate change with a reaffirmation that the UN is the only legitimate negotiating forum for a way forward. By contrast, the Bush administration attempted to launch a new, voluntary process that would generate an empty agreement lacking binding commitments, continuing the trend of delay.

As of October 16, 2008, the Kyoto Protocol has been signed by 182 countries, as well as the 27-member European Union. The Kyoto Protocol is the largest and most inclusive multilateral initiative to reduce global greenhouse gas emissions. Under the Protocol, all parties are bound to implement measures and programs to prevent and adapt to climate change. If large developing countries are to adopt fixed commitments at a later date, it is imperative that industrialized countries keep their commitment under Kyoto.

Since the Kyoto Protocol was signed a decade ago, the Parties have met twice a year to build and strengthen the institutions, infrastructure and resources needed for the integrity and good running order of these flexible mechanisms. The infrastructure in place mandates strict reporting and monitoring of greenhouse gas emissions. The world cannot afford to start all over again.

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<sup>21</sup> Revkin, Andrew C. “Issuing a Bold Challenge to the U.S. Over Climate.” New York Times, January 22, 2008. [http://www.nytimes.com/2008/01/22/science/earth/22conv.html?\\_r=1](http://www.nytimes.com/2008/01/22/science/earth/22conv.html?_r=1).

Instead of sabotaging negotiations, distracting attention away from Kyoto, and being dishonest with Canadians and the world about its intentions for 2020, the Canadian government should take note that the scientific consensus increasingly and urgently warns that time is running out. Like the European Union, Canada must recognize the need to keep global warming from rising 2 degrees Celsius above pre-industrial levels.

## **10. Why the meetings in Poznan are so important**

The meeting in Poznan represents a critical point in history. Negotiators must come together, to find a way to meet humanity's greatest challenge: stopping dangerous climate change. If the talks are successful, we will be on the way to a comprehensive climate treaty, to be negotiated in Copenhagen in December 2009.

Governments around the world must move swiftly to reach an international agreement with deep reductions, and each country must introduce policies to support the accord. The Kyoto Protocol will end in 2012. We need a new binding treaty by 2009 at the latest. This would allow three years for countries to ratify the agreement. It took an agonizing eight years for enough countries to ratify Kyoto for it to enter into force. We can't afford to wait any longer.

We must set the world on track to limiting global warming to as far below 2 degrees as possible. For the next commitment period, all countries must take on deeper commitments than they had in the first phase of Kyoto. Key elements of the post-2012 agreement must include deeper absolute targets for Annex I countries in line with their *historical responsibilities*: 25-40% below 1990 levels by 2020, and 80-95% below 1990 levels by 2050. Carbon-intensive countries such as the United States, Canada and Australia must do their fair share, and that includes making up for lost time.

## **11. Things to avoid: intensity targets**

An agreement must avoid the misleading idea of intensity targets. What's the difference between intensity targets, and absolute targets? Absolute targets, such as those in the Kyoto Protocol, set goals in terms of GHG emission reductions. Intensity targets set their goals in terms of emissions per unit of production (e.g. GHG emissions per barrel of oil produced, or GHG emissions relative to a country's GDP).

Under an intensity target system, if output increases, overall emissions can increase even if companies meet their targets. The intensity-based approach has long been advocated by industry, and has been promoted by George W. Bush and Stephen Harper. Unfortunately, the atmosphere reacts to and measures greenhouse gases in absolute terms – it doesn't, and couldn't care less about reductions in intensity, just reductions in GHG emissions.

It is not acceptable for industrialized countries to adopt intensity targets, either as their national targets or goals for industrial sectors. Unfortunately, Canada has proposed using intensity targets for heavy industry, and has misled the international community and the public about this. At an APEC meeting in Australia, Prime Minister Stephen Harper spoke about an 18% reduction in emissions as a result of his regulatory proposal for industry. He failed to mention that this was an 18% *intensity* target, which will in fact allow a rise in emissions from Canada's biggest polluters.

## 12. Positioning of key countries

Governments have created a wide range of targets and policies for dealing with climate change. At one extreme, there are the governments that have recently tried to obstruct negotiations at international climate talks. This select group includes Canada and the United States. More green governments are taking decisive action. Norway plans to be "carbon-neutral" by the year 2030. Costa Rica plans to reduce net emissions of greenhouse gases to zero by 2021, the same year it celebrates two-hundred years of independence.<sup>22</sup> Other countries could follow the examples of Costa Rica and Norway, by declaring their independence from fossil fuels and other polluting forms of energy.

### The global south

The climate talks at Poznan are the most inclusive multilateral negotiations, and include some of the countries that are the most vulnerable to climate change. People living in developing countries in Africa and Asia will be severely impacted by water shortages and drought. And yet, they have the least responsibility for climate change.

For many people, the devastating impacts of climate change can be thought of in terms of human rights. The Universal Declaration of Human Rights is supposed to guarantee everyone "the right to life, liberty and security of person." Climate change will make it difficult for many people to survive. In some regions of Africa, crop yields could be halved, as soon as 2020. Crop yields could fall by 30% in Central and South Asia by 2050. People in rich developed countries have a special responsibility to help.

Many negotiators from developing countries are vocal proponents for stronger action on climate change mitigation. They are also very strong supporters of the Kyoto Protocol's Adaptation Fund. It is hoped that the fund will support projects in developing countries, to deal with the impacts of climate change. At least \$50 billion U.S. a year is urgently needed to fund adaptation projects.<sup>23</sup> Other important issues are reducing emissions from changes in land use – including deforestation and forest degradation.

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<sup>22</sup> "Greenhouse Gas Curbs, From US To China." Reuters, November 26, 2008. <http://www.planetark.com/enviro-news/item/50676>.

<sup>23</sup> *Climate Wrongs and Human Rights*. Oxfam International, September 9, 2008. [http://www.oxfam.org.uk/resources/policy/climate\\_change/downloads/bp117\\_climatewrongs.pdf](http://www.oxfam.org.uk/resources/policy/climate_change/downloads/bp117_climatewrongs.pdf).

## Annex B countries/parties

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### European Union

Population (2008): 499 million

Emissions of GHGs (2006): 4,151 million tonnes

Change: down 2.2% from 1990 to 2006

Annual emissions per capita (2006): 8.4 tonnes per person

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The European Union has a 8% reduction target, for Kyoto's first commitment period. The EU as a whole is on track to meeting this goal. The EU strongly supports a second commitment period under the Kyoto Protocol. The EU has also taken action to ensure that companies reduce emissions of greenhouse gases. In January 2005, the European Union Greenhouse Gas Emission Trading Scheme (EU ETS) began operations.<sup>24</sup> It places absolute caps on industrial emissions in the EU. The 11,500 installations that are part of the system can meet their targets through emissions trading.

The EU has declared that we must avoid dangerous climate change, by limiting global increases in temperature to 2 degrees Celsius. It has pledged to reduce its emissions by 20% below 1990 levels by 2020. If other industrialized countries adopt similar targets, it will improve its target to 30% below the 1990 level by 2020. The EU has also pledged to increase energy efficiency by 20% by 2020, and to generate 20% of its energy from renewable sources by the same date.

Details of the EU's climate change plan are now being negotiated. Italian Prime Minister Silvio Berlusconi shocked other European leaders with his vocal criticism of the plan. Italy has been joined by Poland, Hungary, Bulgaria, Estonia, Latvia, Lithuania, Romania and Slovakia.<sup>25</sup> Both Poland and Italy have threatened to veto a climate change deal, unless there are concessions. These could include compensation, or exemptions.

Poland and other eastern European member states would like their coal-dependent power sectors to be exempt from participation in the EU's Emissions Trading Scheme, until 2020.<sup>26</sup> There are concerns about the costs of shutting down polluting coal-fired plants. In the case of Poland, around 90% of its power comes from coal.

The climate package will be discussed during a summit of EU leaders in Brussels, December 11-12, 2008. Will the climate deal be watered down, with exemptions for many industries? Failure to reach

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<sup>24</sup> Emission Trading Scheme (EU ETS). [http://ec.europa.eu/environment/climat/emission/index\\_en.htm](http://ec.europa.eu/environment/climat/emission/index_en.htm).

<sup>25</sup> Francesca Piscioneri and Pete Harrison. "Italian backlash threatens EU's climate fight." Reuters, October 21, 2008. <http://www.reuters.com/article/environmentNews/idUSTRE49K5WI20081021>.

<sup>26</sup> Hawley, Charles. "EU Climate Stalemate Could Threaten Global Deal." Spiegel, October 21, 2008. <http://www.spiegel.de/international/europe/0,1518,585541,00.html>.

an agreement will have serious implications for the climate talks in Poznan. The world will be watching, and hoping for continued leadership by the European Union.<sup>27</sup>



## Australia

Population (2006): 20.7 million

Emissions of GHGs (2006): 536 million tonnes

Change: up 28.8% from 1990 to 2006

Annual emissions per capita (2006): 25.9 tonnes per person

Australia is one of the countries most affected by climate change. After years of unrelenting drought, many rivers and lakes have dried up, and there are water shortages. Farmers have been hit by crop failures. It is the worst drought in hundreds of years. With everyone affected by climate change, people looked for political change. The country had the world's first election decided by a debate on the climate crisis. On November 24, 2007, Australians went to the polls, and threw out the government of John Howard, the conservative prime minister who refused to sign Kyoto.

Labor Party leader Kevin Rudd promised to sign the Kyoto Protocol, as his very first act of government. And this is exactly what he did, when he became prime minister. During climate talks in Bali, the Australians were given a standing ovation when they ratified Kyoto.

Australia is now committed to a target of 8% above 1990 levels, under the Kyoto Protocol – reversing its stance as a staunch ally of the climate-skeptic Bush administration. However, during climate talks in Bali, the Australians disappointed everyone by failing to back the range of reductions recommended by the IPCC, 25-40% below 1990 levels by 2020. Prime Minister Rudd said he wants “clear cut commitments” to reduce emissions from developing countries.<sup>28</sup>

More recently, Australia's Garnaut Climate Change Review has released some recommendations for Australia's climate change policy.<sup>29</sup> The report looks at two possible scenarios – Australia could choose to support “a global agreement that ‘adds up’ to either a 450 or a 550 emissions concentrations scenario, or to a corresponding point between.”

If a global agreement aims to stabilize carbon dioxide at 450 ppm, Australia would offer to reduce emissions by 25% below 2000 levels by the year 2020, and 90% below 2000 levels by the year 2050. If a more risky 550 ppm scenario is chosen, Australia would reduce emissions by 10% below 2000 levels, and 80% below 2000 levels by 2050.

<sup>27</sup> Harrison, Pete. “Rushed EU climate talks on course for perfect storm.” Guardian, November 26, 2008. <http://www.guardian.co.uk/business/feedarticle/8085839>.

<sup>28</sup> Turnbull, David. “Will Australia show leadership.” Bali ECO Issue 9. <http://www.climatenetwork.org/eco/bali-ecos>.

<sup>29</sup> Garnaut Climate Change Review. <http://www.garnautreview.org.au/>.



Australia would offer much more modest emissions reductions, if a global agreement does not include targets for developing countries. If there is no comprehensive global agreement reached in Copenhagen in 2009, Australia “should commit to reduce its emissions by 5 per cent (25 per cent per capita) from 2000 levels by 2020.”

The Garnaut Review emphasizes that “all developed and high-income countries, and China, need to be subject to binding emissions limits from the beginning of the new commitment period in 2013. Other developing countries – but not the least developed – should be required to accept one-sided targets below business as usual.” Meanwhile, Australia's emissions have grown. Its per capita emissions are the fifth highest in the world – over ten times per capita emissions from Indonesia, and fifteen times emissions from the Philippines.



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### **United States**

Population (2006): 299.4 million

Emissions of GHGs (2006): 7,017 million tonnes

Change: up 14.4% from 1990 to 2006

Annual emissions per capita (2006): 23.4 tonnes per person

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After announcing that the United States would withdraw from Kyoto, the Bush administration worked strenuously to scuttle climate talks, opposing even weak agendas for meetings to negotiate a post-2012 framework. This is set to change, with president-elect Barack Obama’s new administration. However, he will not become president until January 20, 2009. That means that the Bush administration may continue to slow progress at the talks in Poznan.

Meanwhile, a powerful groundswell of public support has led to over 900 cities joining the Mayor's Climate Protection Agreement. State laws have been introduced to reduce vehicle greenhouse gas emissions, set global warming targets and create clean energy programs. The northeast Regional Greenhouse Gas Initiative (RGGI), Western Climate Initiative and Midwest Governors programs are moving toward full-fledged carbon market programs with regional CO<sub>2</sub> caps, allowances, trading and offsets. The Bush administration has turned its back on international agreements, but many Americans have taken action to change climate change.

During the climate talks in Bali, both the US and Canada were awarded many “Fossil of the Day Awards,” in recognition of their backward approach to climate talks. Obama has promised to change things, with investments of \$15 billion U.S. annually in renewable energy. He has also promised to introduce a cap and trade system, and Canada is expected to join.<sup>30</sup> American environmental groups are now pushing for the introduction of a carbon tax.<sup>31</sup>

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<sup>30</sup> Associated Press. “Obama vows to lead on environment,” *Globe and Mail*, November 18, 2008. [http://www.theglobeandmail.com/servlet/story/RTGAM.20081118.woclimate1118/BNStory/International/home?cid=al\\_gam\\_mostview](http://www.theglobeandmail.com/servlet/story/RTGAM.20081118.woclimate1118/BNStory/International/home?cid=al_gam_mostview).

<sup>31</sup> Price Carbon Campaign. <http://www.pricecarbon.org/>.

The United States has the financial and technical resources to lead a revolution in renewable energy – but this potential has been squandered with spending of trillions for its military. We hope the new administration will return to international negotiations, with a strong commitment to reduce emissions, and help poorer countries adapt to the severe impacts of climate change.



## Canada

Population (2006): 31.6 million

Emissions of GHGs (2006): 721 million tonnes

Change: up 21.7% from 1990 to 2006

Annual emissions per capita (2006): 22.8 tonnes per person

In a recent interview, Canada's climate policies were criticized by Yvo de Boer, executive secretary of the UN Framework Convention on Climate Change. He said, "The situation is perhaps a bit strange. The country has said that it will not be able to reach its Kyoto goal, but it still says that it doesn't intend to abandon the treaty."<sup>32</sup> Although Canada remains an Annex B country under Kyoto, it has announced it has no intention of reaching its target, or even trying to honour its commitments. By 2006, Canada's greenhouse gas emissions were 29.1% above the Kyoto target of 558.4 megatonnes of CO<sub>2</sub> equivalent.

Canada's federal government continues to support a 20% reduction target below 2006 levels, by the year 2020. This target is misleading, because the government has not chosen 1990 as the base year for reductions. In effect, by 2020 Canada would be reducing emissions by less than 3% from 1990 levels. This target is unacceptable for a country such as Canada, with per capita emissions that are among the highest in the world. Not only that, but independent studies have shown that with the proposed regulations, this 2020 target won't even be met.

In 2007 Canada announced regulations for greenhouse gases based on intensity targets, allowing Canada's overall emissions to continue to rise. The use of intensity targets will allow the tar sands to produce escalating emissions of greenhouse gases. Without stronger regulations, emissions from the tar sands could triple between 2006 and 2020.<sup>33</sup>

Countries such as China, Denmark, Germany, Greece and Spain have supported renewable sources of energy: wind turbines and solar panels. Meanwhile, Canada is pushing obsolete and dangerous nuclear energy as a solution to climate change. According to the November 19, 2008 Speech from the Throne, the Harper government "will ensure that Canada's regulatory framework is ready to respond should the provinces choose to advance new nuclear projects." However, the government has promised to look into a North America-wide cap and trade system, following the lead of US president-elect Obama.<sup>34</sup>

<sup>32</sup> Spiegel Online, November 18, 2008.

<sup>33</sup> *Stuck in the Tar Sands*. Climate Action Network Canada, October 2008.

<http://www.climateactionnetwork.ca/e/resources/publications/can/stuck-in-the-tar-sands.pdf>.

<sup>34</sup> Speech from the Throne, November 19, 2008. <http://www.sft.gc.ca/eng/media.asp?id=1364>.

Canada has a responsibility to do much more – we should be showing leadership, by making the switch to solar and wind power. We need to do our fair share to avoid dangerous climate change, by keeping global temperatures from rising by 2 degrees Celsius. Canada must honour its Kyoto commitment, and follow the IPCC recommendations. The IPCC says developed countries such as Canada must reduce emissions by 25-40% below 1990 levels by the year 2020. Reductions must be 80-95% by the year 2050, if we are to avoid the most serious consequences of climate change. Canada was the recipient of many “Fossil of the Day Awards,” during the 2007 climate talks in Bali. Let’s hope our government takes a more constructive approach to negotiations in Poznan.

## Non-Annex B countries

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### China

Population (2008): 1.3 billion

Emissions of CO<sub>2</sub> (2005): 7,219.2 million tonnes.<sup>35</sup>

Annual emissions per capita (2005): 5.5 tonnes per person

Change: up 100.9% from 1990 to 2005

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According to a recent report, China has overtaken the United States to become the world’s largest emitter of carbon dioxide. In 2007, its emissions increased by 8 per cent, accounting for two-thirds of the global increase. According to the study by the Netherlands Environmental Assessment Agency, China’s emissions were 14% higher than US emissions in 2007.<sup>36</sup> China emits about 5.5 tonnes of greenhouse gases per person, about a quarter of US per capita greenhouse gas emissions.

Some skeptics would blame the increase on the fact that China has no binding targets under Kyoto. However, all countries that have ratified Kyoto, even those without fixed reduction targets, have obligations under Article 10 to implement emissions reductions programs.

China is actively participating in the Clean Development Mechanism (CDM) under the Kyoto Protocol. CDM projects are expected to deliver annual reductions of 124 million tonnes of greenhouse gases.<sup>37</sup> China has indicated it is not willing to take on binding emissions reductions under a post-2012 regime, although it could take on voluntary commitments.

On June 4, 2007, China unveiled its first national climate change strategy. The plan includes a 20% improvement in energy efficiency by 2010. The use of renewable energy is set to double by 2020. Chinese planners aim to balance reductions with growth. “We must reconcile the need for

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<sup>35</sup> Estimates for China, Brazil and India from CAIT, 2005.

<sup>36</sup> Rosenthal, Elisabeth. “China Increases Lead as Biggest Carbon Dioxide Emitter.” New York Times, June 14, 2008. <http://www.nytimes.com/2008/06/14/world/asia/14china.html>.

<sup>37</sup> Clean Development Mechanism. <http://cdm.unfccc.int/Statistics/Registration/AmountOfReductRegisteredProjPieChart.html>.

development with the need for environmental protection," said Ma Kai, head of China's National Development and Reform Commission. When he unveiled the plan before reporters, Ma was asked whether or not China would back the EU's call for global warming to be limited to 2 degrees Celsius. Ma rejected the EU's stance, saying "I fear this lacks a scientific basis."<sup>38</sup>



## India

Population (2008): 1.1 billion

Emissions of GHGs (2005): 1,853 million tonnes

Change: up 67.9% from 1990 to 2005

Annual emissions per capita (2005): 1.7 tonnes per person

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On August 26, 2002, the Indian Government ratified the Kyoto Protocol. As a developing country with low levels of emissions per capita, India has no binding GHG reduction targets. Under Article 12 of the Kyoto Protocol, India is participating and benefiting from the Clean Development Mechanism (CDM). It is currently predicted that the CDM will achieve annual reductions of over 31 million tonnes of greenhouse gases from 2008 to 2012. The Kyoto Protocol enables India to initiate clean technology projects with external assistance, to support its priorities for sustainable development. India's decision to ratify the Kyoto Protocol is an indication of the country's faith in the multilateral process for addressing global environmental problems.

India's emissions of greenhouse gases are less than 2 tonnes per capita. By comparison, Canadians produce about 23 tonnes of greenhouse gases per capita. The main objective of India's national development strategy is to reduce the incidence of poverty to 10% by 2012, and provide gainful employment. As a result, India is expecting a growth in energy consumption, and this will lead to increases in emissions. One of India's main priorities is the transfer of technology from industrialized countries, in order to achieve development through clean technology.



## Brazil

Population (2008): 185 million

Emissions of GHGs (2005): 1,014 million tonnes

Change: up 47.0% from 1990 to 2005

Annual emissions per capita (2005): 5.4 tonnes per person

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The Kyoto Protocol was ratified by the Brazilian Government in August 2002. As a non-Annex I developing country, Brazil has no targets for reducing or limiting its emissions of anthropogenic greenhouse gases. Deforestation of the Amazon is a critical problem in Brazil. Around 75% of the country's emissions are from deforestation – forests that have been cut down to be used for

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<sup>38</sup> Watts, Jonathan. "China unveils climate change plan." Guardian, June 4, 2007.  
<http://www.guardian.co.uk/world/2007/jun/04/china.jonathanwatts>.

agriculture. Deforestation has slowed over the past three years. However, there is a lot of pressure on Brazil's forests, due to high prices for commodities such as beef and soybeans.

Brazil's national priorities are to meet pressing social and economic needs, such as eradicating poverty, improving health conditions, fighting famine and creating decent living conditions. Brazil is committed to doing its part to reduce greenhouse gas emissions and has been actively participating in various projects under the Clean Development Mechanism of the Kyoto Protocol. In addition, there are a number of governmental programs and initiatives, resulting in significant reductions in emissions of greenhouse gases. Brazil has a comparatively "clean" energy matrix, with low levels of greenhouse gas emissions per unit of energy produced or consumed.

## Appendix: COPs and other acronyms

AIJ	activities implemented jointly (a pilot phase of the project flexible mechanisms)
AOSIS	Alliance of Small Island States
AP6	Asia-Pacific Partnership on Clean Development and Climate (USA, Australia, South Korea, Japan, India and China). A technology platform set up outside of the UNFCCC process
AR4	The fourth assessment report of the IPCC
AWG	Ad Hoc Working Group
BAP	Bali Action Plan, drafted in Bali in December 2007
CAN	Climate Action Network
CCS	Carbon capture and storage
CDM	clean development mechanism
CER	certified emission reduction
COP	Conference of Parties
CMP	Conference of Parties to the Kyoto Protocol serving as the Meeting of Parties to the UNFCCC
EOR	enhanced oil recovery
ERU	emission reduction unit (emissions trading)
FAR	First Assessment Report (IPCC, 1992)
GEF	Global Environment Facility
GHG	greenhouse gas
GWP	global warming potential (a measure of the relative impacts of different greenhouse gases)
IPCC	Intergovernmental Panel on Climate Change
JI	joint implementation (one of the Kyoto flexible mechanisms)
JISC	Joint Implementation Steering Committee
KP	Kyoto Protocol
LCA	Long-term cooperative action, as in the AWG-LCA as established by the Bali Action Plan
LDCF	least developed countries fund
LULUCF	land use, land-use change and forestry
MEM	Major Economies Meetings
MRV	measurable, reportable, and verifiable as described in the Bali Action Plan
NAMA	Nationally appropriate mitigation action, in the Bali Action Plan
QELROs	quantified emission limitation and reduction objectives (Kyoto-type emissions caps)
RES	renewable energy sources
SAR	Second Assessment Report (IPCC, 1996)
SBI	Subsidiary Body for Implementation (a body set up under the UNFCCC)
SBSTA	Subsidiary Body for Scientific and Technological Advice (a body set up under the UNFCCC)
SD	sustainable development
SIDS	small island developing states
TAR	Third Assessment Report (IPCC, 2001)
UNFCCC	United Nations Framework Convention on Climate Change