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Company: Pembina Institute for Appropriate
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Contact: Matthew Bramley

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Matthew Bramley
Domestic Emissions Trading

The ABCs of Emissions Trading: An Overview



emissions
T R A D I N G

National Round Table
on the Environment
and the Economy

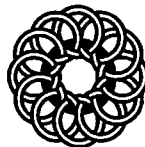


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National Round Table on the Environment and the Economy

344 Slater Street, Suite 200

Ottawa, Ontario

Canada K1R 7Y3

Tel.: (613) 992-7189

Fax: (613) 992-7385

E-mail: admin@nrtee-trnee.ca

Web: <http://www.nrtee-trnee.ca>

Mandate

The National Round Table on the Environment and the Economy (NRTEE) was created to “play the role of catalyst in identifying, explaining and promoting, in all sectors of Canadian society and in all regions of Canada, principles and practices of sustainable development.” Specifically, the agency identifies issues that have both environmental and economic implications, explores these implications, and attempts to identify actions that will balance economic prosperity with environmental preservation.

At the heart of the NRTEE’s work is a commitment to improve the quality of economic and environmental policy development by providing decision makers with the information they need to make reasoned choices on a sustainable future for Canada. The agency seeks to carry out its mandate by:

- advising decision makers and opinion leaders on the best way to integrate environmental and economic considerations into decision making;
- actively seeking input from stakeholders with a vested interest in any particular issue and providing a neutral meeting ground where they can work to resolve issues and overcome barriers to sustainable development;
- analysing environmental and economic facts to identify changes that will enhance sustainability in Canada; and
- using the products of research, analysis and national consultation to come to a conclusion on the state of the debate on the environment and the economy.

The NRTEE’s state of the debate reports synthesize the results of stakeholder consultations on potential opportunities for sustainable development. They summarize the extent of consensus and reasons for disagreement, review the consequences of action or inaction, and recommend steps specific stakeholders can take to promote sustainability.

Members of the National Round Table on the Environment and the Economy

The NRTEE is composed of a Chair and up to 24 distinguished Canadians. These individuals are appointed by the Prime Minister as opinion leaders representing a variety of regions and sectors of Canadian society including business, labour, academia, environmental organizations, and First Nations. Members of the NRTEE meet as a round table four times a year to review and discuss the ongoing work of the agency, set priorities, and initiate new activities.

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The ABCs of Emissions Trading: An Overview

About This Background Paper

This background paper has been prepared by the National Round Table on the Environment and the Economy as part of a series for its Emissions Trading Awareness Initiative, which is taking place between November 2001 and February 2002. The initiative, funded by the federal government, is intended to broaden awareness and understanding of the concept of greenhouse gas emissions trading among leaders in key sectors that would be involved in such trading. These sectors include industrial greenhouse gas emitters, the financial sector, municipalities and non-governmental organizations. The initiative is intended to lay the groundwork for future national discussions on the role of emissions trading in Canada's response to climate change and the United Nations accord known as the Kyoto Protocol.

What Is Emissions Trading?

The term "emissions trading" refers to a market where parties can buy or sell allowances or permits for emissions, or credits for reductions in emissions of specified pollutants. Emissions trading can work within a region or country or on a global basis. Businesses, governments and voluntary groups are all potential participants in emissions trading. As with any market, emissions trading requires many buyers and sellers to come together to trade a commodity, which in this case is emissions allowances or permits or emissions reduction credits.

Experts consider emissions trading to be an important potential means of minimizing the costs of reducing global emissions of greenhouse gases.¹ Human-produced emissions of these gases—due mainly to the burning of fossil fuels—are now firmly believed to be the cause of climate change around the world. Emissions trading is especially relevant for Canada, which faces a considerable challenge in meeting its international commitments to reduce its large and growing emissions of greenhouse gases.

How Does Emissions Trading Work?

At the start of an emissions trading program, emitters are *allocated* or *permitted* a limited amount of emissions. Governments may either *auction* permits to emitters or provide the allowances free of charge. The sum of the permits corresponds to the overall emissions target of the covered sources. Emitters that reduce their emissions below their permitted levels can sell their unused permits to companies that are emitting above the level they are allowed. For some emitters, it may be cheaper to buy at least some unused permits than to make investments (in new equipment, technologies, etc.) to reduce the emissions themselves.

If governments reduce the total number of permits in circulation, over time the market for auctioned or unused permits will become increasingly expensive, and more excessive emitters will find that clean-up is a cheaper alternative. In the meantime, emissions

¹ The costs of controlling greenhouse gas emissions can be significantly reduced with emissions trading. "One of the earliest and most robust findings of economics is that, where relative costs of performing an activity differ among individuals, business firms or regions, there are almost always potential gains from trade." From J. Edmonds et al., "International Emissions Trading and Global Climate Change: Impacts of the Cost of Greenhouse Gas Mitigation," report prepared for the Pew Center on Global Climate Change, December 1999. http://www.pewclimate.org/projects/econ_emissions.pdf

overall will have been reduced, and innovative emitters will have profited from selling unused permits or buying fewer auctioned ones. Emissions trading can also give companies time to modernize their operations. For example, if an emissions trading scheme has a five-year time frame, companies can invest in cleaner technologies within this period as they renew their capital stock.

Emissions trading differs from a traditional regulatory approach that relies solely on an agency, usually the government, to issue standards and specific directives on the amount by which emitters must reduce their emissions, how they must do so and the penalties for failure. The traditional regulatory approach has been criticized because it tends to require many government regulators, leads to rigid and uniform application of standards and stifles innovation. Although emissions trading still involves a regulator, it harnesses the power of the market to identify the lowest-cost opportunities for reducing emissions.

Is There Any Proof That Emissions Trading Is Effective?

There is early evidence that emissions trading works. For example, a highly successful emissions market was established in the United States to reduce acid-rain-causing emissions in the 1990s. This sulphur dioxide emissions trading program gave power plant operators the flexibility to choose the most cost-effective means to reduce emissions. Over 400 power plants located in 21 eastern and mid-western states were able to comply with their emissions targets and

cut acid rain at far less cost than anticipated for participating companies and states.²

Between 1995 and 1997, sulphur dioxide emissions from these plants were reduced by 30 per cent more than originally required under the *Clean Air Act*.³ Although the U.S. Acid Rain sulphur dioxide trading program will run until 2010, the initial evidence indicates that trading is an effective tool in terms of cost savings and emissions reductions.

What Are the Advantages of Emissions Trading?

When designed properly, emissions trading allows *flexibility* for emitters without sacrificing the environmental objective of reducing emissions. Emitters can meet their reduction commitments entirely through their own efforts, through buying permits auctioned by the government or unused by another source, or through doing both. Ultimately, emissions trading is driven by the desire to minimize costs and maximize profits.

Trading can significantly *reduce overall compliance costs* for the specific pollutants covered by the trading program if the emissions reductions that take place are the most cost-effective ones. The trading market functions like any other commodity market, with trade brokers, outside investors interested in the future potential of innovators and established rules of acceptable activity. According to analysts from the International Energy Agency, the use of economic instruments such as domestic and international emissions trading could reduce the costs of complying with emissions targets by up to 50 per cent.⁴

2 It is estimated that the emissions trading system saved as much as \$3 billion per year.
<http://www.epa.gov/airmarkets/arp/overview.html>

3 The Clean Air Act established a cap on sulphur dioxide emissions (10 million tonnes below 1980 levels) affecting power plants in 21 eastern and mid-western U.S. states. This amounted to a 50 per cent cut in sulphur dioxide emissions using a 1980 baseline. The U.S. Acid Rain Program was implemented in two phases. Phase I began in January 1995 and Phase II in 2000.
<http://www.epa.gov/airmarkets/arp/overview.html>

4 http://www.pewclimate.org/media/pershing_presentation.pdf

Emissions trading can also *encourage innovation* in the reduction of greenhouse gas emissions.

Competition among emitters for the lowest-cost emissions can stimulate innovation and development of the least costly measures and techniques of emissions reduction. For example, a company can eliminate or significantly reduce its emissions by developing renewable technologies to replace traditional fossil-fuel-fired electricity generation.

When a new technology is introduced or an activity is undertaken that reduces emissions, an “offset” is created. The company can then take credit for that offset and sell it in the emissions market. The mass planting of trees, which act as “carbon sinks” because they absorb greenhouse gas emissions, is an example of an offset that could be used for a credit.

What Is the Role of Emissions Trading in the International Community?

Much as it works for companies within a country that has set emissions limits, emissions trading can work within the global environment, giving individual countries flexibility in determining how to reduce their country’s share of worldwide emissions. A reduction target for all industrialized countries has already been agreed to under a United Nations-sponsored accord called the Kyoto Protocol.⁵ The Protocol allows industrialized countries to enable their individual greenhouse gas emitters to trade among themselves or around the world. It also allows countries to gain credits by helping developing nations offset emissions through cleaner technology.

Can Emissions Trading Solve Climate Change?

Although emissions trading itself cannot solve climate change, it is a tool that can help reduce global greenhouse gas emissions to agreed-upon levels. Emissions trading can work well for large emitters, but it cannot easily cover many other significant sources of greenhouse gases. Emissions trading can complement other important measures in addressing climate change, including mandatory and voluntary emissions reductions at specific sources, diversions away from fossil fuels to cleaner energy sources and energy-reducing efficiencies.

Why Is Emissions Trading Timely?

Scientific evidence convinced the international community in the early 1990s that human-induced climate change—caused mainly by emissions of greenhouse gases from fossil fuel combustion—was a reality that needed to be addressed. By 1995, it was clear that voluntary efforts were not enough to reduce global emissions. As a next step, the 1997 Kyoto Protocol committed industrialized-country signatories to achieve an initial reduction in combined emissions to 5.2 per cent below the 1990 level by 2012. At a follow-up meeting in Bonn in July 2001, Canada and all 83 other signatories except the United States reconfirmed their intention to ratify the Kyoto Protocol.

A number of countries, including Japan⁶ and Germany, are expected to ratify the Protocol within

5 Targets are listed in Annex B in the Kyoto Protocol to the United Nations Framework Convention on Climate Change, 1997. <http://unfccc.int/resource/docs/convkp/kpeng.pdf> As noted later, however, the United States has indicated that it does not intend to participate in the Protocol.

6 Japanese officials announced their intention to ratify the Kyoto Protocol at the Seventh Conference of the Parties to the United Nations Framework Convention on Climate Change in November 2001.

the coming months. Once ratified by 55 nations emitting 55 per cent of the industrialized world's total greenhouse gas emissions, the Protocol will become international law. It should be noted that while the United States has stated that it will not ratify and thus will not be bound by the Kyoto Protocol, it is still developing a climate change response strategy for both domestic and international use.

Opinion research confirms that individual Canadians want to see action taken at home and abroad to slow climate change. Recently, the Prime Minister expressed confidence that the Bonn agreement opens the way for Canada's ratification of the Protocol in 2002.⁷ A domestic emissions trading system, linked to the international trading mechanisms under the Kyoto Protocol, could form a central part of Canada's response to meeting its commitments. As a result, it is important for key sectors, companies and civil society groups to better understand emissions trading and what it may mean for them.

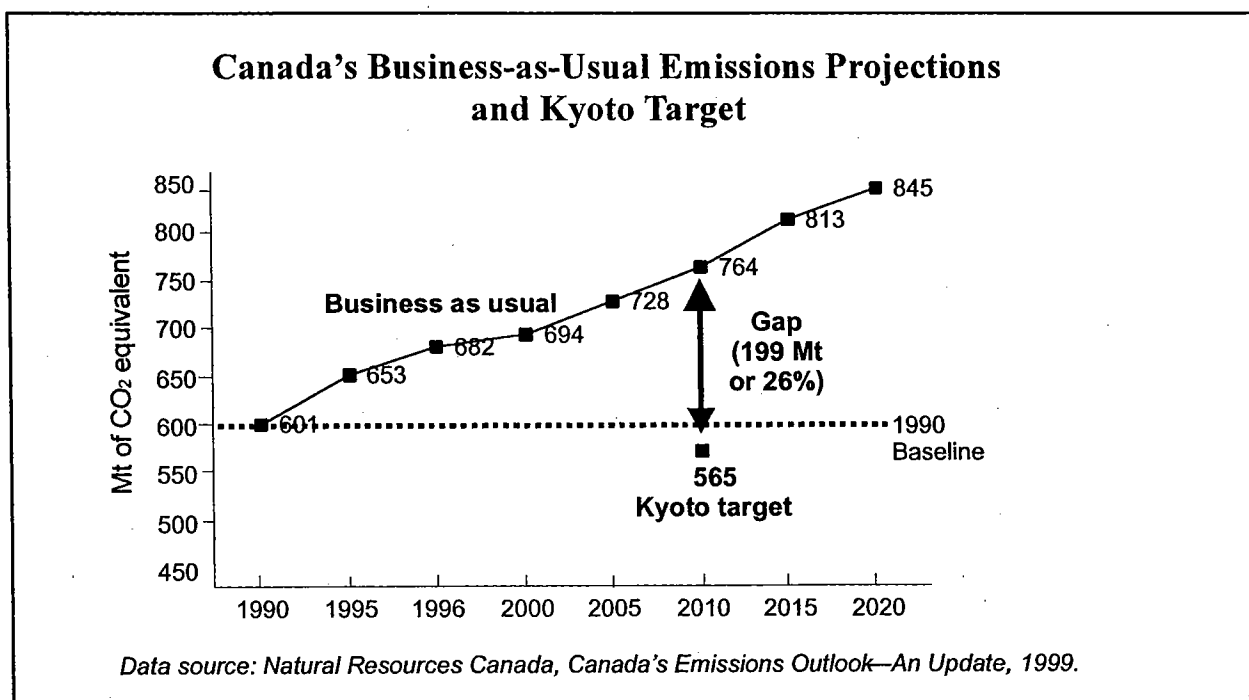
Under the terms of the Kyoto agreement, Canada is committed to reducing emissions by 6 per cent below

1990 levels by 2012. However, recent government estimates suggest that, without significant new action, we will exceed our 1990 levels by 26 per cent by 2010.⁸

Much of the rest of the industrialized world is already taking steps to address its Kyoto commitment. European nations such as Britain and Denmark have already launched trading programs dealing with their emissions. The European Union has also announced a proposal for an emissions trading scheme that would cover all member countries. This is putting Europe at the forefront of innovation.

When Might an Emissions Trading Market Be Established?

The Kyoto Protocol anticipates a global emissions trading market starting in 2008. However, as mentioned, emissions trading systems are already being established in some countries, at least on a pilot basis. Denmark adopted a legal framework for



7 Prime Minister's Office, *Statement by the Prime Minister*, July 23, 2001. <http://pm.gc.ca>

8 Natural Resources Canada, *Canada Emissions Outlook: An Update*, 1999, p. 39. <http://www.nrcan.gc.ca/es/ceo/outlook.pdf>

emissions trading in greenhouse gases on a selective basis in 1999.⁹ Britain is introducing a system in January 2002 that was jointly designed by the private sector and government.¹⁰ The European Union has introduced a proposal to adopt a legal framework for an emissions trading system¹¹ with a trial period between 2005 and 2007. Norway plans to implement a domestic emissions trading system by 2005.¹²

Several firms have already established themselves internationally as brokers of carbon dioxide emissions, or carbon traders. Individual companies—including some major Canadian firms—have been engaged in voluntary trading for several years. The World Bank operates an emissions credit program to support clean development projects in developing countries.¹³

The year 2008—the first year of the Kyoto commitment period—has often been suggested as Canada's target for starting emissions trading, although an earlier date could be adopted to encourage earlier action by all sectors. In any event, significant lead time is required to design and implement an effective system. Britain's experience offers important insights. The British program was substantially encouraged by private sector interests, embraced as a commitment by the national government and took less than three years to design and implement. Furthermore, the system is part of a larger program of other measures including taxes on

energy use, and it will position Britain prominently in the emerging world trading market before the first commitment period.

How Much Could Emissions Trading Reduce Canada's Greenhouse Gas Emissions?

The effectiveness of emissions trading in Canada will depend upon many factors: how many regions and economic sectors participate; the numbers of emissions permits initially allocated to participants; and whether participants have access to international trading. A 1999 study by the Round Table examined four types of emissions trading systems and found they could include from 44 to 90 per cent of emissions sources.¹⁴ The study also found that different systems vary greatly in cost effectiveness, political feasibility and acceptability to different industrial sectors.

A 1998 Pembina Institute–David Suzuki Foundation study concluded that involving more than 200 companies in oil, gas and coal production, in heavy industry (such as smelting, papermaking and chemicals) and in electric power generation would cover 65 per cent of all industrial emissions.¹⁵ It concluded that a reasonable, cost-effective trading program applied to these firms could achieve nearly one third of Canada's Kyoto commitment. The study

9 The establishment of a pilot carbon dioxide quota system, initially set to run between 2001 and 2003, represents an effort to reduce emissions from the electricity sector. http://www.ens.dk/uk/energy_reform/emissions_trading/Danish_CO2_cap_Final.pdf

10 See *A Greenhouse Gas Emissions Trading Scheme for the United Kingdom*. <http://www.defra.gov.uk/environment/climatechange/trading/pdf/trading-summary.pdf>

11 In October 2001, the European Commission adopted a package of measures to combat climate change, including a proposal for the European Community to ratify the Kyoto Protocol and a draft directive on the implementation of an EU-wide greenhouse gas emissions trading system. http://europa.eu.int/comm/environment/docum/0087_en.htm

12 "Norwegian Environment Ministry Develops Emissions Trading Mechanism," *International Environment Reporter* (October 10, 2001).

13 The World Bank Prototype Carbon Fund promotes carbon mitigation projects in developing countries by engaging industrialized countries to finance projects, obtaining credits in return. <http://www.prototypecarbonfund.org/router.cfm?show=about.cfm&Item=3>

14 National Round Table on the Environment and the Economy, *Canada's Options for a Domestic Greenhouse Gas Emissions Trading Program*, 1999.

15 The Pembina Institute and the David Suzuki Foundation, *Canadian Solutions: Practical and Affordable Steps to Fight Climate Change*, 1998. <http://www.pembina.org/pubs/pdf/cdnsol.htm>

suggested that other measures and different kinds of emissions trading could be applied to the transportation industry, which is the other big source of domestic greenhouse gases, accounting for 25 per cent of total emissions.¹⁶

The Tradeable Permits Working Group (TPWG)¹⁷ explored the potential contribution that a domestic emissions trading scheme could make toward achieving Canada's greenhouse gas reduction target. In a 2000 Options Report,¹⁸ the TPWG analyzed two design options:

- a downstream design (targeting large final emitters¹⁹), which would capture approximately 400 to 500 Canadian firms representing about 35 per cent of Canada's total greenhouse gas emissions; and
- an upstream or midstream design (aiming for broadly based coverage²⁰), which would include about 100 to 500 entities and cover about 75 per cent of Canada's total greenhouse gas emissions.

Emissions trading may not be a cost-effective solution to curbing greenhouse gas emissions in all sectors of the Canadian economy. Dispersed, difficult-to-measure sources such as small garbage dumps and livestock are less likely to be involved in any national program of emissions reduction through trading. However, such sources could potentially be included on a case-by-case basis via emissions reduction projects. Emissions reduction credits from such offset projects could be traded within a national emissions trading program.

Who Would Be Involved in Emissions Trading?

In addition to private businesses, governments and regulators have an essential role to play in emissions trading. Governments would need to determine overall emissions limits, the allocation of permits, the eligibility of offsets, and time frames and penalties for non-compliance. Governments could also kick-start emissions trading by supporting pilot projects or a phase-in period, or by providing financial incentives.

Emissions trading also requires brokers, analysts and certifiers of claimed emissions reductions. Some firms with years of specialization in financial or commodity trading have already established expertise in carbon trading, and national and international organizations of emissions traders are already in existence.²¹

Municipalities, non-governmental organizations and interested citizens could also get into the business of emissions trading by creating offsets, such as landfill gas capture projects or tree plantations, and selling the resulting credits to emitters. Or these same organizations could buy up permits on the market and permanently retire them to tighten the supply of permits and accelerate the pace of change. For example, in 1996, schoolchildren in Maine raised enough money to bid for 16 tons of sulphur dioxide in an Environmental Protection Agency auction. They subsequently retired the credits to ensure faster overall reductions.²²

16 Residential and commercial sources produce 10 per cent of emissions, and non-industry, non-energy sources such as agriculture and garbage dumps produce another 14 per cent. See Environment Canada, *Canada's Greenhouse Gas Inventory: 1990–1998: Final Submission to the UNFCCC*, 2000.

17 http://www.nccp.ca/NCCP/national_process/issues/tradable_e.html#TradablePermitsWorkingGroup

18 <http://www.nccp.ca/html/tables/pdf/options/Englishb.pdf>

19 Including electricity generators, industrial emitters and possibly large transportation carriers.

20 Includes emissions from fossil fuel combustion, non-combustion carbon dioxide and most other final emitter greenhouse gases.

21 For example, 37 major firms are participating in the design phase of a voluntary pilot trading market called the Chicago Climate Exchange (CCX). The trading system is expected to come into effect in 2002. <http://www.chicagoclimatex.com/html/initial.html>

22 <http://www.usm.maine.edu/%7Epos/eedu.htm>

What Are the Major Design Considerations in Emissions Trading?

There are two main approaches to emissions trading systems: cap and trade (also known as permit or allowance trading) and credit trading.

To establish a *cap and trade* system, a regulatory body would first need to set an overall limit or cap on emissions. (In effect, Kyoto provides this kind of overall cap for industrialized countries, although it has no regulatory authority.²³) Defined groups of emitters would be allocated (either for free or via auctioning, see below) a proportion of the total allowed amount, which they could then trade among one another in the form of permits. Thus emitters that took measures to reduce their pollution below the level represented by the permits they held could sell their unused permits to other emitters that were emitting at a level higher than that represented by their permits. Participants that emitted beyond their limits without the necessary permits would face stiff penalties. This system would guarantee that the overall environmental objective was met because total emissions would be limited under the cap.

Under *credit trading*, companies would be allowed to certify emissions reductions below a certain voluntary or imposed level as “tradeable credits,” which could then be sold to emitters that needed them to meet their own target level of emissions. Credit trading could be used in conjunction with a cap and trade system to enable sources not regulated by the cap to gain credits for reductions in greenhouse gases caused by their new initiatives. However, it is anticipated that credit creation would be limited to certain sectors and activities.

Credit trading poses some design challenges. For credit trading to be effective, strong and effective criteria would have to be in place to ensure that

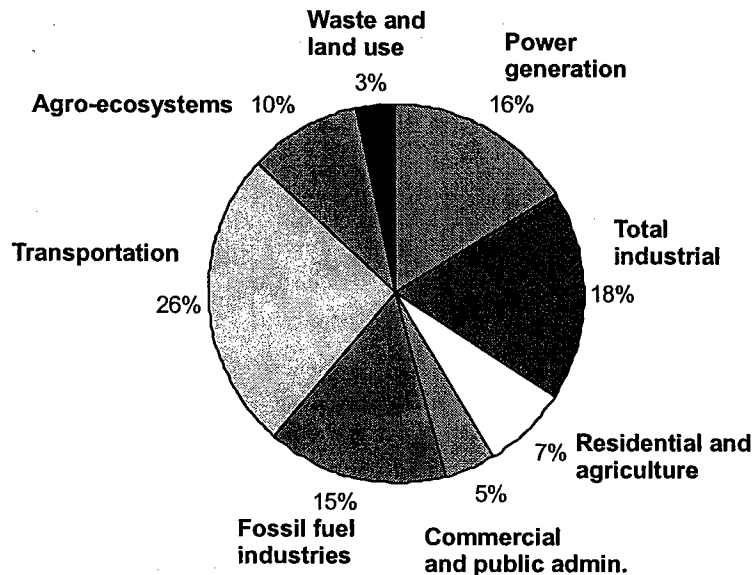
reductions qualifying for offsets or credits were additional to business-as-usual and not simply the results of what would have taken place anyway (a concept known as “additionality”). Also, if credits were allocated for emissions reductions that took place a long time ago, or assigned to offsets that had no relationship to emissions reductions, the market could be flooded with them. This could compromise the original intention of the trading system and actually cause an increase in emissions.

An emissions trading system also needs to determine how permits are allocated. One option is to allocate the permits automatically based on the historical emissions of each source. This practice is known as “grandfathering.” There are a number of other ways of allocating permits “free of charge” (i.e., without cost to users). For example, permits could be allocated on the basis of emissions per unit of production (a so-called rate-based system). Another option is for a regulatory agency to auction emissions permits. The revenue derived from auctioning permits could be “recycled” to offset potential impacts associated with the system (e.g., increases in prices of electricity or products that are energy-intensive). A certain number of permits would be available to current emitters, and some would be held in reserve to sell to new entrants in the field. At all times, however, the total number of permits could not exceed the cap on emissions.

Emissions trading systems can be designed to apply to upstream or downstream sources of fossil fuels, the primary sources of Canada’s emissions. An upstream system would cover producers and importers of fossil fuels. The number of Canadian sources participating in this emissions trading market would be relatively small. A downstream system would include fuel end-users rather than the producers of the fuel. It could include a large range of participants, including small commercial enterprises, and would be more complicated than an upstream

²³ The Kyoto Protocol will exclude the United States if it does not ratify the agreement.

Canada's Greenhouse Gas Emissions by Sector



Data source: Natural Resources Canada, *Canada's Emissions Outlook—An Update, 1999*.
Based on projected data for 2000.

model. While this model would cover more emitters, it is likely to cover smaller amounts of emissions. Vehicles, small businesses and homes are too numerous to include in a downstream system, but their emissions could be effectively captured in an upstream system. The number of market participants determines the overall “liquidity” of the system.

One suggestion is for Canada to introduce a greenhouse gas trading system that covers about 35 per cent of total national greenhouse gas emissions. This system would apply only to emissions from large industrial sources, including direct emissions from upstream energy producers such as oil and gas companies. The other two thirds of greenhouse gas emissions would then need to be reduced by measures such as financial incentives and tougher regulated standards.²⁴

Another important design consideration is how much credit Canadian emitters should be allowed to claim for emissions reductions that they finance in

other countries. For example, Canadian investment in a modern replacement power plant in China is likely to produce major emissions reductions more cost effectively than achieving the same reductions in Canada, where plants are already more modern. However, some have raised the concern that Canadian emitters could buy their way out of reducing their domestic emissions through international investments, without taking action at home. Also, if significant emissions reduction investments were made internationally, co-benefits associated with reducing greenhouse gas emissions (such as cleaner air) would not reach Canada.

The 2001 Bonn agreement on implementation of the Kyoto Protocol states that international trading of emissions is to be “supplemental to domestic action [which]...shall constitute a significant element of the effort made” to reduce emissions domestically. The Canadian government has also stated that it is committed to achieving the majority of its reductions through domestic action.²⁵

24 Tradeable Permits Working Group, *Options Report*, April 2000. http://www.nccp.ca/html/tables/pdf/options/TPWG_en_bw.pdf

25 David Anderson, Minister of the Environment, speech delivered on May 11, 2001, available at http://www.ec.gc.ca/minister/speeches/2001/010511_s_e.htm

What Are the Costs Associated with Emissions Trading?

Actions to reduce greenhouse gas emissions are expected to create both economic costs and benefits. In general, however, economists expect national emissions reductions to be more costly without emissions trading.

According to research commissioned by the federal and provincial governments, using emissions trading to meet Canada's Kyoto target would slow GDP (gross domestic product) growth less than other emissions reduction options.²⁶ Some, but not all, sectors of the economy would be affected. Caps on greenhouse gas emissions combined with emissions trading could cause prices of fossil fuels (such as natural gas, gasoline and electricity generated from coal) to rise enough for consumers to seek improvements in the energy efficiency of their homes and transportation.

The administrative costs to government of establishing and operating a well-designed emissions trading system could be quite low. Once the rules are established, an ongoing emissions market could be independent and financially self-supporting within any commodity market through small levies on trades.

What Is Canada's Experience with Emissions Trading?

Canada has sponsored research on emissions trading over the past three years. Some limited pilot projects have also occurred during this time. To date,

however, Canada has not announced a clear emissions trading framework.

Government Action

In 1998, federal, provincial and territorial governments established a Climate Change Secretariat to work under the direction of the Joint Ministers of Environment and Energy to develop Canada's climate change response strategy.²⁷ These governments have commissioned research to assess the cost-benefits of initiating domestic greenhouse gas emissions trading.

Together, the federal, provincial and territorial governments have also begun to explore the possible design of an emissions trading system for Canada. Three multistakeholder issue tables met from 1998 to 2000 as part of the National Climate Change Process to discuss issues related to emissions trading, including how to develop tradeable permits,²⁸ how to give credit for early action,²⁹ and the design elements of international trading.

More recently, an intergovernmental working group—the Domestic Emissions Trading Working Group³⁰—was established to examine the key design issues associated with a Canadian emissions trading system. The group is addressing a series of analytical issues including design options, such as which sectors to include in the system, how permits should be allocated and the economic impacts of various options. It is also exploring linkages to trading mechanisms under the Kyoto Protocol, Canada–U.S. issues and the potential transition to a mandatory system. Another group³¹ is considering how emissions could be allocated by regions or sectors. This work is being done at the request of the provinces and territories.

26 National Climate Change Program, Analysis and Modelling Group, *An Assessment of the Economic and Environmental Implications for Canada of the Kyoto Protocol*, 2000. http://www.nccp.ca/NCCP/pdf/AMG_finalreport_eng.pdf

27 http://www.nccp.ca/NCCP/nat_secretariat/index_e.html

28 http://www.nccp.ca/NCCP/national_process/issues/tradable_e.html#TradablePermits Working Group

29 http://www.nccp.ca/NCCP/national_process/issues/credit_e.html#Credit for Early Action Table

30 <http://www.nccp.ca/NCCP/pdf/media/DETWGRevisedTextforTranslationBT16052001.doc>

31 http://www.nccp.ca/NCCP/pdf/media/ALL_BU%7E1.PDF

In addition, federal, provincial and territorial ministers of energy and the environment agreed on a process to ensure that businesses and institutions undertaking early emissions reductions will not be disadvantaged if a future domestic emissions trading regime is based on past emissions levels.³² This process, known as the Baseline Protection Initiative (BPI) under the National Climate Change Process, opened for participation in March 2001. To participate in the BPI, organizations must register their emissions reduction activities carried out since January 1, 1990, through Canada's Climate Change Voluntary Challenge and Registry, Inc. or le Bureau d'enregistrement des mesures volontaires sur les changements climatiques (ÉcoGESTe) in Quebec.

Private Sector Initiatives

TransAlta Utilities and Epcor in Alberta and Ontario Power Generation (OPG) are among a handful of Canadian firms that have conducted experimental voluntary emissions trades domestically and across the border since the mid-1990s to familiarize themselves with the process. In addition, several Canadian companies, including OPG, Suncor and Alcan, are participating in the Partnership for Climate Action, a unique private-NGO partnership to promote emissions trading as an efficient and cost-effective tool.

Joint Pilot Credit Trading Programs

The Greenhouse Gas Emission Reduction Trading (GERT)³³ pilot, launched in 1998, is a partnership between the Canadian federal government, a number of provinces, industry, labour and environmental

groups. GERT reviews and evaluates greenhouse gas emissions reduction projects that have used trades to determine whether they have resulted in actual emissions reductions, whether these reductions are measurable and verifiable, and whether the reductions are over and above what is required by law. Four projects have been reviewed to date.³⁴

The Ontario Pilot Emission Reduction Trading (PERT)³⁵ project was an industry-led, multistakeholder initiative established in 1996. The objective of the PERT program was to evaluate emissions trading as a tool to assist in the reduction of greenhouse gas emissions, smog and other air pollutants in the heavily industrialized corridor running from Windsor, Ontario, to Quebec City. PERT members received negotiated letters of understanding from the Ontario Ministry of Environment, which granted them benefits for emissions reductions that surpassed those required by regulations.³⁶ In 2000, PERT was supplanted by Clean Air Canada Inc., a federally incorporated non-profit organization, formed by the original private sector members in PERT to continue and expand on the work started under the pilot.³⁷

What Work Is Needed Before Emissions Trading Can Be Introduced in Canada?

Emissions trading appears to hold significant promise for Canada as part of a climate change strategy. However, general understanding of emissions trading is limited, and debate about it has

32 http://www.nccp.ca/NCCP/baseline_pro/index_e.html

33 <http://www.gert.org/>

34 The most recent approved transactions took place between 1) Pacifica Papers Inc. (seller) and Powell River Pulpmill (buyer) (involving fuel substitution/cogeneration) and 2) British Columbia Ministry of Environment, Lands and Parks (buyer) and Taylor Munro Energy Systems Inc. (seller) (arising from the installation of a solar water heating system). These reviewed transactions were announced on April 11, 2001. <http://www.gert.org/whatsnew/index.htm#010411>

35 <http://www.pert.org/pert.html>

36 <http://www.pert.org/pert.html>

37 <http://www.ene.gov.on.ca/envision/news/sp0059.htm> http://www.emissions.org/publications/emissions_trader/0103/

yet to occur in the domestic public arena. As well, further analytical work will be needed to determine the potential economic impacts of a trading system, compliance with a domestic regulatory regime, NAFTA (North American Free Trade Agreement) and other trade law implications, and potential linkages to an international trading system. Some of this analysis is being conducted by the Domestic Emissions Trading Working Group as part of its work plan under the National Climate Change Process.³⁸ Completion of this phase of work is expected in the spring of 2002.

Other steps that will be required to establish an emissions trading system include:

- the development of a permit/credit registrar;
- the establishment of a market oversight body;
- determination of a verification process;
- determination of when such a system should be announced and begin operating; and
- agreement on how emissions reduction actions undertaken prior to the operation of the system should be recognized within the system.

Between now and whenever a decision is made on an emissions trading system for Canada, governments will also have to address the issue of investor uncertainty. For example, governments will have to determine how to treat emitters who enter into the system either after the system is in place or between the time it is announced and when it is implemented.

As well, governments will have to consider the merits of harmonizing emissions trading regimes with those of major trading partners and the international trading mechanisms envisaged by the Kyoto Protocol. Participating countries and companies will also need clear assurances that net emissions are accurately determined and reported.

What Are Other Countries Doing About Emissions Trading?

Denmark has implemented the first carbon dioxide cap and trade system, which is limited to the electricity sector. The system took effect in 2001 and will run to 2003 as a pilot project.

In the United Kingdom, the government has unveiled a six-year plan for domestic greenhouse gas emissions trading, which will take effect in 2002. Instead of capping emissions, the plan provides more than \$500 million in progressively larger subsidies for firms that voluntarily reduce emissions.

The European Commission released a draft directive on the implementation of a European Union-wide greenhouse gas emissions trading system in October 2001,³⁹ proposing a cap and trade system for large sources such as refineries, smelters and power plants beginning in 2005.

Norway is preparing a plan for a domestic trading system, which would replace its existing carbon dioxide tax law and cover about 80 per cent⁴⁰ of the country's emission sources; the system would begin in 2005, to correspond with the timing of the EU system.

New Zealand announced plans in the fall of 2001 to develop a domestic emissions trading system as the major instrument in its climate change policy; this system would be adaptable to any international emissions trading scheme.

The World Bank launched a Prototype Carbon Fund in January 2001 with two dozen major Western industrial emitters that invest in developing countries' clean technologies and share the greenhouse gas offsets achieved.

38 <http://www.nccp.ca/NCCP/pdf/media/DETWGRevisedTextforTranslationBT16052001.doc>

39 European Commission, *Proposal on a Council Decision Concerning the Conclusion on Behalf of the European Community of the Kyoto Protocol to the UNFCCC and the Joint Fulfilment of Commitments Thereunder*, October 2001. http://europa.eu.int/comm/environment/climat/com/01579_en.pdf

40 <http://odin.dep.no/md/engelsk/index-b-n-a.html>

The United States announced its withdrawal from the Kyoto Protocol in March 2001, promising to implement a domestic program more reflective of American economic concerns and interests.

Individual states such as Massachusetts have developed state-wide proposals for controls on various pollutants including greenhouse gases, which will include emissions trading as a compliance tool.

Several companies are also taking steps to implement emissions trading systems within their operations.

For example, Shell, one of the world's largest energy corporations, has launched an emissions cap and trade system between its divisions and subsidiaries.

The system is expected to reduce emissions by 2 per cent from 1998 levels by the end of 2002. In addition, BP, which in 1997 was the first energy giant to declare climate change a pressing reality, has used emissions trading since 1998 as a means of attaining its internal emissions reductions targets.