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EMISSIONS TRADING IN IMPLEMENTATION OF THE KYOTO AGREEMENT

Lynne C. Myers
Science and Technology Division

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INTRODUCTION

The Conference of the Parties to the United Nations Framework Convention on Climate Change (FCCC) took place in Kyoto in December 1997. The countries present reached an agreement on targets and timetables for reducing worldwide emissions of greenhouse gases. The following points summarize the most important aspects of the agreement.

- Developed countries have accepted binding targets for reducing greenhouse gas (GHG) emissions;
- Collectively, GHG emissions will be reduced to 5.2% below 1990 levels by the period 2008-2012;
- Individually, reduction targets vary, with several Central and Eastern European countries and the European Union agreeing to an 8% reduction, the United States to 7%, and Canada and Japan to 6%;
- To meet the 6% target, Canada will have to reduce emissions by 25% over the business-as-usual scenario;
- The Kyoto Protocol is open for signing between March 1998 and March 1999, following which signatory countries must ratify the Protocol domestically;
- The agreement becomes binding when it has been ratified by 55 countries accounting for 55% of the developed countries' emissions.

Clearly, reaching the Kyoto target will be an enormous challenge for Canada. In the years between signing the original FCCC in Rio in 1992 and the Kyoto conference in 1997, Canada was not on track to meet even the more modest goal of stabilizing GHG emissions at 1990 levels by 2000. Population growth and increased economic activity, among other factors, left Canada headed for estimated GHG emissions some 8% above 1990 levels by 2000.

This is not to say that some progress was not made. In fact, without any action by government, industry and individuals to curb emissions, the gap would have been closer to 13%. Nevertheless, one cannot underestimate the enormousness of the task ahead. Major changes requiring new approaches, particularly in the way we produce, transport and use energy, will be needed. Many policy analysts are pointing to the implementation of emissions trading schemes as one of the most effective and efficient new approaches available. Negotiators at Kyoto recognized the potential of emissions trading for introducing the flexibility needed if countries are to reach their emission reduction targets. The following provisions of the Kyoto Protocol highlight this recognition.

- An international emissions trading regime will allow industrialized countries to buy and sell emission reduction credits among themselves;
- A "Clean Development Mechanism" (CDM) will allow developed countries to receive emission credits for financing emission reductions in developing countries;
- Joint implementation projects will allow developing countries to combine emission reduction efforts and share the resultant emission reduction credits;
- Excess emission reduction credits from one year will be banked for use in subsequent years;
- Countries taking steps to remove GHGs from the atmosphere through improved forestry practices will receive emission reduction credits.

To appreciate the attraction of emissions trading as an instrument for environmental policy, it is important to understand the basic concept. The trading of emission credits effectively "internalizes" the environmental cost of emitting specific air pollutants; in other words, it puts a price on emitting pollutants into the atmosphere. In the most familiar trading schemes, known as "cap and trade," regulatory authorities set a cap or target for emissions of a given pollutant or group of pollutants. They may then allocate the allowable volume of emissions among the companies or regions, or industries that produce such emissions. Over time, the cap can be lowered to achieve additional emission reductions.

Each group with an emissions allowance will incur a different cost through making the changes necessary to meet the allowable level. Under an emissions trading scheme, those who can reduce emissions at the lowest cost will make the reductions. They will even reduce emissions to a level below their allowable limit, thereby creating for themselves an asset

in the unused emission allowance (i.e., an emission trading credit). They can then sell the credits to other participants in the scheme for whom the cost of buying these credits is lower than the cost of implementing reductions themselves.

Contrary to some reports, this system is not equivalent to issuing licences to pollute; rather, it lets the market decide who makes the actual reductions and how they do so. In this way, environmental objectives can be achieved at the lowest possible cost to the economy. Although such trading is a market-based approach to reducing emissions, it is, in fact, driven by the regulatory authorities who set the cap, which, over time, can be reduced to meet increasingly stringent standards. Because the value of "producing" emission credits will therefore increase, companies will have an incentive to find technological improvements. Under the traditional "command-and-control" approach, companies are encouraged only to meet the emission limit and have no incentive to exceed it.

Several jurisdictions in the United States have successfully used emissions trading systems to reduce pollution. Such a system was used, for example, to speed the elimination of lead from gasoline. It is also in use, and has been particularly effective, in implementing the U.S. *Clean Air Act* requirements for the reduction of sulphur dioxide emissions. When the *Clean Air Act* first came into force, it was estimated that compliance would cost the affected industries $5 billion (U.S.) annually with a "command-and-control" approach and only $4 billion with an emissions trading regime. More recent estimates based on the first several years of experience, however, put the compliance cost of the trading regime at just $2 billion per year. Industry representatives initially felt it would cost about $1,500 per ton to meet targets; SO_2 emission credits are currently trading for about $90 per ton.

In Canada, Ontario was the first jurisdiction to begin experimenting with emissions trading. The Pilot Emissions Reduction Trading Project (PERT), begun in 1996, is an industry-led, multi-stakeholder initiative that is developing the basic principles and program elements for creating, recognizing and trading Emission Reduction Credits (ERCs).

The Ontario approach, modelled on similar programs in operation in the Northeast United States (Massachusetts, Connecticut, New Jersey and Michigan) differs somewhat from the "cap and trade" methodology noted above. In this case, companies are not allocated emission permits, but rather create ERCs by undertaking emission reductions in excess of those required by either voluntary or legislated measures. The program focuses on reducing emissions of the smog-precursors — nitrogen oxide (NO_x) and volatile organic compounds (VOCs). It is

hoped, however, that experience gained with PERT will allow Ontario to be part of early efforts to apply the concept to GHG emissions on a much wider scale.

Under the terms of PERT, member companies can bank, sell or trade the ERCs they create. PERT projects are not large in terms of the total reductions that will result, but rather are designed to assess the environmental and economic benefits of adopting an emission reduction trading system in Ontario. In addition, given that much of the smog in the Windsor-Quebec corridor is blown in on the prevailing winds from the U.S., the province has sought out U.S. participation. One PERT project saw Ontario Hydro purchase 400 tons of NO_x ERCs from Detroit Edison in the first international trade in North America. A number of other projects are in operation and assessment of their performance is underway.

In British Columbia, a program modelled after Ontario's PERT program but focusing on GHG emissions has recently been launched. The program is being developed by the B.C. government, in cooperation with representatives from other provincial governments, the federal government, industry and other key stakeholder groups. It is aimed at encouraging voluntary investments in emission reduction projects; providing an incentive for development of GHG reduction technologies; testing and evaluating the legal and administrative elements of an emission reduction trading (ERT) system; emphasizing the use of business principles to achieve environmental and economic objectives; and laying the groundwork for possible future ERT. In ERT, sometimes referred to as offset trading, companies are encouraged to create, buy and sell emission credits, as in the Ontario program. A call for proposals was issued in early 1998, with proposals being accepted until 31 December 1999.

In March 1998, Canadian and U.S. officials held a forum in Vancouver to discuss the issue of international emissions trading. One hundred and fifty people representing the business community, industry and environmental groups attended. The forum highlighted the fact that there is a great deal of interest in this concept, though a great deal of work remains to be done in specifying the details of how it might function. It is clear that Canada must continue to move rapidly in gaining experience with ERT systems, since they appear to be emerging as one of the policies of choice in the fight to reduce GHG emissions around the world.

Both Canadian programs described here will provide much needed experience as Canada takes part in the follow-up meeting to Kyoto, planned for Buenos Aries in November 1998. At that meeting, details of a possible global GHG emissions trading scheme will be worked out. Though reaching agreement on a feasible and effective system will be difficult, the concept of emissions trading appears to hold a great deal of promise.