REPORT OF THE
CREDIT FOR EARLY ACTION TABLE

Voluntary GHG Emissions Trading

An Option for Consideration under the
National Implementation Strategy

December 1, 1999

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EXECUTIVE SUMMARY

PURPOSE

The Credit for Early Action Table[1] was directed by the National Air Issues Coordinating Committee - Climate Change to oversee work on voluntary GHG emissions trading. The task was to complement and balance the work being done under the National Climate Change Process by the Tradable Permits Working Group on trading among sources subject to mandatory limits on their emissions. This report summarizes the key issues and questions related to voluntary emissions trading that were considered by the CEA Table, and presents the Table's recommendations and conclusions.

RECOMMENDATIONS

National Implementation Strategy

The CEA Table recommends that voluntary emissions trading (VET) should be considered an important early action initiative under the National Implementation Strategy on Climate Change. Government support for VET should be cost-effective and commensurate with expected benefits - real GHG emissions reductions, greater experience in trading, and other benefits.

Key Objectives for Voluntary Emissions Trading

The CEA Table recommends that the key objectives for voluntary emissions trading should be:

(1) to provide additional experience with emissions trading;

(2) to contribute to achieving early reductions in greenhouse gases; and

(3) to begin to build the infrastructure required for greenhouse gas emissions tracking, measurement, reporting, and trading.

Focal Points for Support of Voluntary Emissions Trading

The CEA Table recommends eight specific focal points for government support of VET.

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[1] The CEA Table is one of the expert, multi-stakeholder groups established under the National Climate Change Process and reporting to the National Air Issues Coordinating Committee - Climate Change.

In order to support the market-driven development of domestic voluntary emissions trading, the two senior governments should:

(1) invest in infrastructure that supports VET;

(2) reconcile existing inventories of sources and sinks, increase the timeliness of the updates, and adapt the infrastructure to support the new uses of these inventories;

(3) in collaboration with non-government stakeholders, define
- emission baselines
- emission reductions
- emission measurement, reporting and verification protocols;

(4) further the work of the existing pilot(s) and other Canadian initiatives to provide additional experience in VET and important information on costs and benefits;

(5) support the development of VET systems that are compatible and complementary in order to promote efficiency and reduce uncertainty;

(6) clarify the tax treatment of emission credits and trades to reduce a barrier to trading, and consider exemptions from current existing government fees, taxes or other charges to increase uptake of VET;

(7) support the development of cost-effective measures to facilitate the participation of small and medium enterprises (SMEs), municipalities and local institutions in VET.

In order to support private sector participation in international VET markets, the two senior governments should:

(8) offer information services and political support for Canadian companies operating in these markets.[2]

CONCLUDING NOTES

(1) The extent of the greenhouse gas reductions that will be facilitated by a voluntary trading system will be a function of the value/perceived value of the tradable commodity. Some Table members view a credit for early action system as a necessary condition for VET since it provides the value for the commodity traded. Without credit for early action, there will be, at best, a continuation of very speculative, low volume trading.

[2] The representative of the Government of Quebec does not support this recommendation. See Section 4.1.

(2) Table members emphasize that support for VET does not necessarily imply support for a mandatory trading system in the future. In other words, VET is seen by Table members as a building block that could provide a transition to any outcome, but does not presume a future outcome.

(3) Table members recognize the need to identify specific measures for government support to VET and to evaluate these measures against the Secretariat's criteria of GHG reductions, resource requirements, etc. The CEA Table was unable to complete this phase of the work.

I.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

The Credit for Early Action Table was directed by the National Air Issues Coordinating Committee - Climate Change to oversee work on voluntary GHG emissions trading. A voluntary emissions trading (VET) system is one where the commitment to reduce emissions is adopted voluntarily. The task was to complement and balance the work being done under the National Climate Change Process by the Tradable Permits Working Group on trading among sources subject to mandatory limits on their emissions.

Two consultants studies were commissioned by the CEA Table to inform this work. The first study is a 'primer'- an introduction to voluntary emission reduction trading and its possible contribution to Canada's objectives with respect to greenhouse gases.[3] The second study is an examination of three types of voluntary greenhouse gas trading initiatives that could be pursued (individually or jointly) over the next few years – enhancing existing project-based emission reduction crediting mechanisms, increasing participation in voluntary commitment and trading systems, and encouraging further development of a voluntary carbon commodity exchange. Possible steps in the evolution of market mechanisms, as events progress, were also addressed in this paper.[4] These studies are available on the National Climate Change Process (NCCP) public web site.

This report draws on this background work and on extensive discussions at the CEA Table. The report briefly reviews the key issues/questions related to voluntary emissions trading that were considered by the CEA Table and presents the Table's conclusions and recommendations. An alternative view from the West Coast Environmental Law Association is included in Annex A.

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[3] *"Voluntary Trading Primer – Using Tradable Emission Reductions to Contribute to Achieving Canada's Greenhouse Gas Objectives"*, ARC Applied Research Consultants and Margaree Consultants, June 1999.
[3] *"Voluntary GHG Emissions Trading – Evolutionary Next Steps"*, Environmental Financial Products LLC and Winnipeg Commodity Exchange, July 1999.

1.2 REPORT OUTLINE

There were four broad issues/questions considered by the CEA Table.

- Would the value gained from enhancing support for VET (in addition to current support) be sufficient to recommend VET as a Phase 1 initiative in the National Implementation Strategy for Climate Change?

- What would be the key operational elements of a VET system?

- What key objectives and focal points for government support of VET could be recommended?

- What specific measures might governments adopt to enhance their support for VET?

The remaining sections of this report relate directly to these issues/questions. Section 2 addresses the value of voluntary emissions trading; Section 3 focuses on the key operational elements of a VET system; and, Section 4 includes the Table's recommendations on key objectives and focal points for government support of VET, including some examples of possible measures to support the recommendations, and provides some concluding notes.

Attached to the report are four annexes: an alternative view from West Coast Environmental Law Association (Annex A), the list of CEA Table members who participated in this phase of the Table's work (Annex B), abbreviations used in the report (Annex C), and a summary of the CEA Table's contract studies on voluntary emissions trading (Annex D).

The views expressed in this report are broadly representative of the views of members of the Table. When necessary, however, alternative views have been noted as recommended in the guidelines provided by the National Climate Change Secretariat and agreed to by the Table.

2.0 VALUE OF VOLUNTARY EMISSIONS TRADING

Given the uncertainty of the implementation of the Kyoto protocol and the GHG management regime/tools that could be adopted in Canada and internationally, the CEA Table considered the potential value of VET for (1) providing practical experience for policy makers and other stakeholders, (2) achieving early GHG reductions, and (3) complementing/supplementing other

possible domestic GHG management initiatives.

2.1 Experience with VET

A VET system could assist Canada to shape its future national strategy through experience, not theory.

Key questions to be assessed would include:

- Should Canada's implementation strategy provide for domestic emissions trading?
- How will emissions trading work in Canada?
- What skills and infrastructure need to be put in place to trade discharge limit allocations or emission reduction credits in Canada?
- Which commodity/currency do we want to trade, if we have trading?

The experience with VET is expected to help:

- develop source inventory, monitoring, emission verification and measurement practices
- contribute to the definition of the tradable instrument that is required for any baseline-and-credit trading system (including CDM/JI)
- encourage the smooth and early evolution of GHG markets
- provide early signals on the market price of carbon (a critical element to getting an effective market response to climate change)
- assess the merits of any hybrid system with mandatory trading
- prepare Canada to participate in trading activity with the United States, our largest trading partner, as the U.S. already has experience in a wide range of emissions trading environments and could adopt emissions trading as a major policy instrument.

Domestic VET is conceptually similar to voluntary trading in international markets.

- CDM/JI investments are project-based, credit commodities backed by the Kyoto Protocol; creation and trading of these international credits will be voluntary.
- The challenges in developing baseline and emission reduction measurement and verification protocols for project-based credit trading in Canada will likely be very similar to those for CDM/JI investments. In fact, Canada could start to shape these protocols and international trading rules based on real project experience.
- Having a domestic credit trading mechanism that potentially extends to international CDM/JI trading could give Canada an important understanding of what other countries are doing in this arena. It would also enhance opportunities for early participation of Canadian enterprises in these markets.

Experience with emissions trading in Canada has been relatively limited. Some early experience has been gained through the two pilots - the Greenhouse Gas Emissions Trading Pilot (GERT) and the Pilot Emissions Reduction Trading (PERT) project. [5] In addition there has been other trading activity as evidenced by the recent announcements of GHG purchases by Suncor, Ontario Power Generation and TransAlta. However, it cannot be assumed that this level of activity will continue in the absence of some clear signals of support from governments.

2.2 Early GHG Reductions

VET is an experiment that could also deliver low cost early emission reductions. The key questions are: (1) what would be the likely extent of the GHG reductions; and (2) how will the cost of compliance with the Kyoto commitment be affected if we start reducing emissions earlier rather than later?

The Pilots and other GHG trading initiatives in Canada have already delivered some GHG reductions.[6]

A partial foundation for a voluntary trading system for greenhouse gas emissions is already established in Canada (e.g., VCR Inc., trading pilots) and could be expanded relatively quickly. Table members noted that even if international agreement on key elements of the Kyoto Protocol were in place and a Canadian consensus supporting implementation of the Kyoto Protocol existed, it would still take a number of years to fully develop a legislated national mandatory emissions reporting, verification, management and control strategy.

A VET system could be designed with the goal of “bending Canada's emissions trajectory” towards a softer economic landing. It could spread the national

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[5] Trading has occurred in a number of the PERT projects; in each case Ontario Power Generation was the buyer/seller. Of the 12 applications before GERT, five have been trade-matched. All of these trades are bilateral trades handled under private contracts. Many of them involve options to purchase; largely because of confidentiality issues, information on prices and the conditions to exercise these options has not been available for scrutiny by the pilots. Clearly, this is a speculative markets -- the Letter of Understanding that supports the PERT project and the Memorandum of Understanding in the GERT pilot do not guarantee future recognition of the reduction credits. Some experience in Canada-US trading has been acquired under PERT - one purchase and one sale have so far taken place.

[6] For example, as of October 25, 1999 PERT had registered 887,520 tonnes of CO_2E reductions; 7,919,646 additional tonnes CO_2E had been reviewed, but not yet registered. There are, in addition, the ‘intent to create’ 11,231,700 tonnes in 1999 from three of these projects. As of October 1, 1999, GERT had received 4,327,996 tonnes CO_2E in offers to sell and 4,732,996 tonnes CO_2E in trade-matched applications. It should be noted, however, that neither of the pilots has applied an “additionality” test.

obligation to reduce emissions implied in the Kyoto commitment over a longer period which could enhance opportunities to manage and mitigate the economic costs of compliance.

A VET system would likely encourage some capital investment to proceed that is not occurring under present conditions. For example, a VET system that was effective in removing some existing barriers to investment (e.g., untested quantification protocols and procedures for establishing ownership of baselines) would result in more companies taking action to reduce emissions. Depending on the design of the system, VET could encourage companies that want to grow and invest in Canada, but are concerned about future (unknown) GHG obligations, to use VET as risk management tool.

Trading encourages proceeding with the most economically efficient reductions first. A competitive international market for credits is emerging and major multinational corporations are already actively securing control of low-cost emission reduction options around the globe. A domestic trading regime could facilitate our keeping up with international activities in this area and equip corporations with Canadian operations to participate more effectively in the emerging international market. Inaction could ultimately mean reduced access for Canadian companies to low-cost opportunities.

The extent of the greenhouse gas reductions that will be facilitated by a voluntary trading system will, however, be a function the value/perceived value of the tradable commodity. The consensus of CEA Table members is:

(1) VET is not likely to generate significant and incremental GHG reductions (i.e., interest from stakeholders) unless there is strong support from governments for this policy tool.

(2) If governments must backstop this commodity with cash or against a future obligation, then what is being considered is a credit for early action system.

(3) If governments are interested in using VET to get significant GHG reductions, then the credit for early action issue must be solved. The effectiveness of the CEA system would depend on the details of the system design.

2.3 VET and Other GHG Management Initiatives

The CEA Table members explored the issue of a possible transition from a voluntary to a mandatory system (regulations, taxes, cap and trade, or some combination thereof) if/when Canada's domestic GHG management strategy is implemented.

The conclusions of the Table are as follows:

(1) A significant portion of the infrastructure developed to support the implementation of a Voluntary Emissions Trading system will be required for the implementation of any mandatory GHG emissions management program (even one that excludes provisions for emissions trading). These infrastructure elements include:

- inventory of sources and of sequestration opportunities
- links between the inventory and source baselines
- measurement and verification protocols
- reporting mechanisms
- mechanisms for establishing title to baselines and emission reductions
- registry for listing and transferring titles
- mechanism for public review and input into the process
- focal points for the resolution of policy and technical issues
- mechanism for cost-sharing/cost-recovery

Some of the above elements may, however, be of limited relevance in some future regulatory systems. For example, in a cap and downstream trading program, measurement, verification and reporting would be considerably less complex than in a VET system (e.g., involve monitoring emissions or fuel use using accepted methodologies and comparing these emissions to allowances held).

(2) Some members emphasize that, in the context of a Voluntary Emissions Trading program, the development of this infrastructure will a) largely be paid for by the private sector and b) produce environmental benefits at the same time the development costs are incurred.

(3) There are voluntary mechanisms that, if necessary, would be compatible with mandatory systems. For example, VET could be used in place of mandatory obligation and trading (cap-and allocate trading) in some sectors, or could complement it (by providing access to low-cost reductions outside the capped sector).[7]

(4) VET could complement/supplement other enhanced voluntary measures, including:
- ‘credit for early action’ -- the commodity that is central to the VET system can be a government-endorsed credit
- Kyoto Mechanisms (CDM/JI) -- project based, baseline and credit trading systems similar to the GERT and PERT pilots
- voluntary commitment systems -- self-imposed reduction targets or caps

(5) Voluntary mechanisms could also seed the way or evolve into mandatory systems. Most operating emissions trading systems, for example, include early

[7] See Annex B for an alternative view.

action and also include voluntary opt-in provisions. Even when mandatory allowances or allocations have been imposed, opt-in provisions could allow for the conversion of voluntary participant-created "credits" to allowances or allocation-equivalents.

(6) The "credit" could be the principal pre-mandatory or opt-in market currency because it could be readily converted into another tradable carbon commodity. (An international carbon credit is a commodity even if Canada establishes a domestic allowance trading system for the future.)

(7) VET could also encourage
- technology uptake – allowing recovery of some development costs
- expansion of the pool of participants interested in financing sequestration opportunities
- disclosure of early price signals for carbon in the economy that will be important for identifying low cost reduction opportunities

(8) Credit for early action, voluntary trading, and offset investments are all part of an entity's risk mitigation strategy. If there are no mandatory reduction obligations in the future (e.g., Kyoto is not ratified) the private sector will have little recourse in recovering early GHG reduction investments, unless they were economic in their own right, and would be unlikely to continue major economically non-viable GHG reduction investments, except for perhaps continued low-level participation in the VCR Inc. or EcoGESte.

In summary, the CEA Table found that a voluntary emissions trading system could have value in
- providing additional experience with trading systems;
- providing some early GHG emission reductions
- positioning Canadian corporations to be globally competitive in a carbon constrained future;
- developing infrastructure that will have value in any future GHG management regime; and
- supplementing/complementing other GHG reduction measures/tools.

3.0 KEY OPERATIONAL ELEMENTS OF VET

The CEA Table also examined the key operational elements of a voluntary emissions trading system, including (1) establishing the tradable commodity, and (2) developing a market.

3.1 Establishing the Tradable Commodity

A tradable commodity must have value. In order to have value the commodity must be recognized (or have a good probability of being recognized) for use

against voluntary commitments and/or mandatory obligations (including regulations, taxes, cap and allocate systems) now/in the future.

Recognition of a commodity could arise from two sources:

(1) a government commitment
- a general commitment by government(s) (e.g., under a Credit for Early Action Program or a Memorandum of Understanding); or
- a specific agreement by government(s) to back a voluntary commitment and trading (VCT) program; and

(2) an agreement among participants
- an agreement among participants in a VCT program (e.g., under an internal trading system, an agreed upon GHG reduction unit can be traded and used to meet business unit targets); or
- a contractual arrangement to transfer benefits (e.g., the value of reduced liability for reductions) under specified conditions.

Thus there are different types of commodities that could be traded:
- a government backed commodity
  Under a formal credit for early action system, for example, governments could specify the use for credits or could commit to accept credits for application against a possible (as yet unknown) future commitment/requirement. The value of the credits would depend on the perceived likelihood and timing of the future use and the perceived future cost of emission reductions.
- a commodity based on contractual arrangements between buyer and seller
  The commodity represents the value of an early emission reduction that would be transferred to the buyer in the event a specified policy future (or range of policy futures) is put in place.
- a highly speculative commodity
  The possibility that an early emission reduction might be recognized in a future program could give value to the commodity. A small degree of certainty may be added by a government promise to consider future recognition (such as the assurance given for the Registered Emission Reduction that is traded in the GERT Pilot, and the Emission Reduction Credit that is traded in the PERT Project).

CEA Table members felt it important to emphasize that any tradable instrument for GHGs established in advance of government certification would have an inherently speculative character. Beyond the risks of price fluctuation present in almost all markets, instruments created by voluntary agreement have value only if the compact creates relative scarcity and remains in force. In addition, instruments traded in a voluntary system may or may not ultimately evolve into instruments having stronger underlying value with official recognition by governments. This does not mean the instruments are

worthless, but rather that they would be traded in a manner that reflects their speculative character.

The first steps in establishing the commodity would be to determine:

- which gases will be covered;
- how baseline emissions will be calculated for each gas for classes of sources;
- how a carbon-equivalent emission reduction from established baselines will be created;
- how and where the stock and changes in total national carbon emissions will be accounted for and reported;
- what information the certificate of carbon currency (the "credit") will include and how and by whom it will be issued; and
- how currency fluctuations will be tracked and accounted for in the national accounting of carbon stocks.

Just as multiple “grades” of product can be eligible for delivery under a standardized commodity futures contract, specifications defining an instrument can make any number of emission reduction or sequestration activities eligible to receive units of the recognized tradable instrument. Efforts to develop a standardized tradable instrument in the emerging market for GHGs should be encouraged and widely disclosed.

In order to ensure the instrument represents real reductions, a process for verifying and for publicly reporting that the product (reductions or sequestration) conforms to specifications is needed. Early markets in GHG reductions could value – through price differentiation – increasingly rigorous verification efforts. Verification capabilities, involving measurement and third-party reviews, could be important components in any future large-scale GHG emission reduction program. Such a function could be facilitated by government or may evolve in the market place if/as the threat of regulatory emission limits looms closer.

Posting a standardized fungible instrument on a recognized account registry is a final step in establishing a tradable instrument.

3.2 Developing a Market

The creation of the commodity (even under a credit for early action system) will not necessarily stimulate trading.

The following factors will help facilitate a more robust market:

- participation of emitters with different reduction cost profiles

- development of standardized commercial contracting language and mechanisms[8]
- low transaction costs
- few restrictions on trading (across entities/jurisdictions)
- emergence of clear price signals
- acceptance of banking
- government recognition of the commodity

The extent of trading will also depend on the risk management strategies, expectations and capacities of market participants. It is expected, for example, that many firms will want to bank (not trade) their emission reductions. However, other firms may be required to sell at least a portion of their reductions in order to recover some of the project development costs. To the extent that firms have different assessments of the future value of the commodity (related, for example, to expectations of future recognition or the probability of future mandated reductions), more trading is likely.

CEA Table members noted that the market in a cap-and-allocate system and in a VET system could be significantly different. In a cap-and-allocate market, the commodity (e.g., allowance) is certified by governments. Similarly it is expected that a mature CDM market will also involve the exchange of standardized, verified commodities. Only if the commodity created in the VET system is fungible in domestic and international markets (i.e., the commodity is verified, graded, etc.), will the markets be similar.

4.0 RECOMMENDATIONS AND CONCLUDING NOTES

4.1 Recommendations

National Implementation Strategy

The CEA Table recommends that voluntary emissions trading (VET) should be considered an important early action initiative under the National Implementation Strategy on Climate Change. Government support for VET should be cost-effective and commensurate with expected benefits - real GHG emissions reductions, additional experience in trading, and other benefits.[9]

Key Objectives for Voluntary Emissions Trading

The CEA Table members recommend that the key objectives for a voluntary emissions trading should be:

(1) to provide additional experience with emissions trading (guide

[8] The IETA, with participation from the UN, is currently developing contracting language for presentation at COP VI.

[9] See Annex A for an alternative view.

development of domestic policy, enable Canadians to more effectively contribute to the development of international trading rules and systems, give Canadian companies a competitive edge in the market);

(2) to contribute to achieving early reductions in greenhouse gases (remove barriers and introduce incentives to participation of Canadian entities in the emerging market, both domestically and internationally); and

(3) to begin to build the infrastructure required for greenhouse gas emissions tracking, measurement, reporting, and trading.

Focal Points for Support of Voluntary Emissions Trading

The CEA Table members recommend that governments enhance their participation in voluntary emissions trading and focus their support of VET as set out below.

In order to support the market-driven development of domestic voluntary emissions trading, the two senior governments should:

(1) invest in infrastructure that supports VET;

(2) reconcile existing inventories of sources and sinks, increase the timeliness of the updates, and adapt the infrastructure to support the new uses of these inventories (e.g., convert the National Greenhouse Gas Inventory data to SIC(NAISC)/SCC codes and integrate more point source data into the inventory, establish a mechanism for key players to review the quality of the industrial activity data acquired, create a relational database to house the national inventory to facilitate data management and the provision of outputs to a wide range of clients, introduce mandatory reporting of GHG emissions);

(3) help define
- emission reductions that can be traded
- emission baselines
- emission measurement, reporting and verification protocol;

(4) further the work of the existing pilot(s) and other systems (voluntary commitment and trading across companies) to provide additional experience in VET and important information on costs and benefits (e.g., assist project developers with legal, engineering, accounting costs and/or review fees, encourage governments to submit projects for review, strengthen government recognition of the tradable commodity via a policy statement or an agreement with stakeholders, provide financial or increased in-kind support for administration of the pilot(s) and financial support for third party reviews);

(5) support the development of VET systems that are compatible and complementary in order to promote efficiency and reduce uncertainty;

(6) clarify the tax treatment of emission credits and trades to reduce a barrier to trading and consider exemptions from current existing government fees, taxes or other charges to increase uptake of VET;

(7) support the development of cost-effective measures to facilitate the participation of small and medium enterprises (SMEs), municipalities and local institutions in VET (e.g., minimize transactions costs, provide financial assistance)

In order to support private sector participation in international VET markets, the two senior governments should:

(8) offer information services and political support for Canadian companies operating in these markets (e.g., ensure the support of Canadian governments is clear and visible, establish rules quickly so Canadian companies can participate actively now in this competitive market).

With respect to this last recommendation, the Government of Quebec's representatives expressed the need 1) to develop a robust domestic trading system before participating in international trading, and 2) to better understand the impacts of exporting 'credits', first on the sharing of the burden between Canadian provinces and sectors, and second on the capacity of Canada to comply with any future international obligation.

4.2 Concluding Notes

(1) The extent of the greenhouse gas reductions that will be facilitated by a voluntary trading system will be a function of the value/perceived value of the tradable commodity. Some Table members view a credit for early action system as a necessary condition for VET since it provides the value for the commodity traded. Without credit for early action, there will be, at best, a continuation of very speculative, low volume trading.

(2) Table members emphasize that support for VET does not necessarily imply support for a mandatory trading system in the future. In other words, VET is seen by Table members as a building block that could transition to any outcome, but does not presume a future outcome.

(3) Table members recognize the need to identify specific measures for government support to VET and to evaluate these measures against the Secretariat's criteria of GHG reductions, resource requirements, etc. The CEA Table was unable to complete this phase of the work.

Table members did, however, do some preliminary work to identify supporting measures; a number of these measures are included as examples in the above recommendations. Further work will be required (possibly by NAICC) to identify, prioritize and assess the supporting measures. To the extent possible, a quantitative assessment of specific measures, and of VET generally, should be undertaken. Such an assessment would facilitate a comparison of VET with mandatory trading (more specifically with the work of the Tradable Permits Working Group) and would allow identification of the measures that would be most cost-effective and compatible with other elements of the National Implementation Strategy.

Table members also recognized the need for consultation with parties currently involved in trading when further work is done on VET. The work of the International Emission Trading Association, on behalf of the private sector, could also be useful input to the process as the IETA will be integrating experience from national processes around the globe and dealing with the issue of international consistency.

ANNEX A

An Alternate View – West Coast Environmental Law Association

WCELA supports voluntary private sector investments in emission reductions both through internal emission reduction investments and investing in offsets. However, we are concerned that CEA Table Report tends to overstate the benefits of government support for VET, and believe that regulated limits are essential to achieving significant environmental or learning benefits.

With regard to environmental benefits, there has been no attempt to determine whether GERT or PERT have yielded any emission reductions that would not have occurred in the absence of these VET systems. Moreover, it is not clear that a combination of Credit for Early Action a VET would significantly accelerate additional emission reductions. Firms are already able to hedge risks associated with future climate policy through contracts to transfer the value of a reduction under potential regulatory futures. While Credit for Early Action provides a better hedge, the lack of interest in currently available mechanisms suggests a combination of VET and early crediting may not yield a great deal more investment in emission reductions. This is especially true in the absence of pending regulatory limits on emissions.

Finally, the 'learning potential' from VET should not be overstated. As currently structured, VET pilots are not providing information necessary to determine environmental effectiveness or the information on the costs of additional emission reductions. As noted, the challenges of a VET system have limited significance with a cap and trade system, but many VET challenges would also be absent in a full performance standard and credit trading program.

ANNEX B

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ANNEX C

Abbreviations Used in the Report

abbreviation	
CDM	Clean Development Mechanism
CEA	credit for early action
GHG	greenhouse gases
GERT	Greenhouse Gas Emission Reduction Trading Pilot
IETA	The International Emissions Trading Association
JI	Joint Implementation
NIS	National Implementation Strategy
NAICC-CC	National Air Issues Coordinating Committee - Climate Change
NCCP	National Climate Change Process
PERT	Pilot Emission Reduction Trading Project
TPWG	Tradable Permits Working Group
SMEs	small and medium enterprises
VET	voluntary emissions trading
VCT	voluntary commitment and trading
WCELA	West Coast Environmental Law Association

ANNEX D

Summaries of VET Contract Studies

Voluntary Trading Primer – Using Tradable Emission Reductions to Contribute to Achieving Canada's Greenhouse Gas Objectives, ARC Applied Research Consultants and Margaree Consultants, June 1999.

Executive Summary

This paper provides an introduction to voluntary emission reduction trading and its possible contribution to Canada's greenhouse gases (GHGs) objectives. At this point, there are a number of options, including voluntary trading, for achieving the emission reduction commitments of the Kyoto Protocol.

This report is a companion to the earlier report titled Using Tradable Permits to Help Achieve Domestic Greenhouse Gas Objectives[1] which deals with trading among sources subject to mandatory limits on their emissions.

Voluntary trading involves sources that have made a voluntary commitment to limit their emissions. Sources may adopt a voluntary commitment for any of a number of reasons, such as the anticipated public relations benefits or to defer government regulation. Voluntary agreements to address environmental issues are common in Japan and some European countries. Use of voluntary agreements is limited in Canada.

The vast majority of voluntary agreements do not incorporate trading. But participants can agree with the government to allow trading as an option for meeting their commitments. If trading is allowed, a source that reduces its emissions below its commitment can create "credits" which it can sell to a source whose emissions exceed its commitment. Credits can only be created through emission reduction actions that meet specified criteria.

Voluntary trading allows credits to be used to meet the voluntary commitment at lower cost. A trade requires a buyer and a seller. They will not trade unless both benefit -- the seller gets a price that exceeds the cost of the emissions reduction actions that created the credits and the buyer pays a price that is less than the cost of reducing its own emissions. In principle, trading continues until the set of emission reduction measures able to meet the emissions target at the lowest cost have been implemented.

[1] Tradable Permits Working Group, Using Tradable Permits to Help Achieve Domestic Greenhouse Gas Objectives: Introduction to Concepts, Options and Issues, National Climate Change Secretariat, Ottawa, December 1998.

The foundation for voluntary trading for greenhouse gas emissions is already established in Canada. In principle, voluntary trading could be expanded relatively quickly. In practice, significant expansion of voluntary trading is likely to require incentives from the government or a credible threat of regulatory action. Either of those options would take some time to implement, but less time than would be needed to implement mandatory policies to limit emissions.

Enhanced voluntary trading enables sources to begin to reduce their emissions sooner. This benefits the environment and the participating sources. Voluntary trading also generates information on emissions by participating sources and on the costs of emission reduction measures. Voluntary trading does not restrict the choice of future policies to limit emissions if needed.

The key difference between voluntary trading and mandatory trading is that the commitment to limit emissions is adopted voluntary, although possibly motivated by incentives or the threat of regulation.. In practice this difference may be only a matter of degree or timing. The threat of mandatory policies may be perceived to be so compelling that a source feels it has little option but to adopt a voluntary commitment to demonstrate that regulation is unnecessary. The decision to trade is voluntary regardless of whether the commitment is adopted voluntarily or imposed by the government.

A "purely" voluntary system is one driven solely by anticipated internal rewards, such as cost savings due to energy savings or public relations benefits. Most voluntary commitments are initiated in response to some level of incentive or threat of regulatory action. This creates a spectrum of voluntary trading systems ranging from purely voluntary programs to those that stop just short of requiring sources to participate.

In a purely voluntary trading program, the participants can define the criteria. If the commitments are negotiated with the government or are undertaken in response to government incentives, the government will be involved in establishing the criteria and reviewing the credits created. Typically, credits must represent a real, measurable reduction from what emissions otherwise would have been. For greenhouse gas emissions the credit creation criteria should be consistent with those negotiated for implementation of the Kyoto Protocol.

Voluntary trading provides participants more flexibility in meeting their emissions commitments. This greater flexibility lowers the overall cost of achieving a given emission reduction target if emitters have different emissions control costs. The more diverse the range of sources and sinks participating in the trading program, the wider the range of emission control costs (the marginal cost per unit of emissions reduced). The wider the range of emission control costs the larger the potential cost savings due to trading.

Canada's experience with voluntary programs to limit greenhouse gas emissions is limited to:

- Canada's Climate Change Voluntary Challenge and Registry Inc. (VCR Inc.), which registers and monitors progress toward achievement of voluntary commitments incorporates trading when an individual registrant chooses to report it.

- The PERT pilot trading program for various air pollutants, including greenhouse gases, in Ontario.

- The GERT pilot trading program for greenhouse gas emission reductions that is supported by B.C., Alberta, Saskatchewan, Manitoba, Quebec, Nova Scotia and the federal government. Ultimately, the trade is registered at VCR Inc.

A key element of these pilots is government assurances that actions implemented under the program will be recognized toward potential future obligations. Such assurances may become a significant driver for further emission reductions.
The United States has a Voluntary Reporting Program for greenhouse gas emission reduction actions and a voluntary demonstration program for trading of greenhouse gas emission reductions in the New England states.

Hundreds of voluntary agreements to limit or reduce emissions of pollutants have been announced, mainly in Europe and Japan. Very few of these agreements involve trading of emissions reductions. The limited theoretical literature suggests that voluntary agreements are not appropriate in all circumstances and that they are unlikely to achieve the optimum environmental outcome. The environmental performance improves if the threat of regulatory action is high and the government is able to veto proposed agreements.

The empirical literature highlights the importance of clearly-specified, measurable objectives, well-specified reporting requirements, and penalties for non-performance. Many past voluntary agreements did not meet these conditions and the environmental performance was lower than expected. Pembina Institute for Appropriate Development reviewed the Voluntary Challenge & Registry program based on 1997 registration data before the significant enhancements introduced to the program by VCR Inc. in 1998 and 1999. They concluded that it was neither credible nor effective and fell far short of its potential. Pembina also concluded that few companies had taken actions to reduce greenhouse gas emissions that went beyond "business as usual."

Despite their non-compulsory nature, voluntary agreements can have significant legal implications in contract or tort law. It is possible to devise voluntary

agreements that serve both the public and private interests concerned, but failure to properly consider the legal implications and act accordingly could potentially result in problems for all concerned.

A voluntary trading program for greenhouse gases will need large scale participation if it is to achieve emission reductions on a scale sufficient to defer regulatory measures. To secure participation on such a scale will require strong incentives from government or a credible threat that strong regulatory measures will be implemented in the near future. Governments are likely to limit the total incentives available. This implies that a credible threat of strong regulatory measures may be needed to make the voluntary trading program successful.

A voluntary trading program would likely be established, managed and financed by the participants. The program would probably include representatives of the various stakeholders including, sources of greenhouse gas emissions, governments as a source, environmental groups, consumer groups and labour organizations. The role of government in negotiating the design of the trading program is likely to vary with the level of incentive provided.

In a voluntary trading program the possible uses for credits are to:

- Bank credits for possible future use.

- Sell credits to other participants to meet their current commitments or for possible future use.

- Exchange credits for incentives offered by government.

If the main objective of the voluntary trading program is to defer regulatory measures, it probably needs to demonstrate a substantial net reduction in emissions. That implies the quantity of credits created will be much larger than the quantity used and most credits will be banked.

Under the Kyoto Protocol, Canada will be expected to reduce its aggregate emissions of six greenhouse gases to 6% below its 1990 emission level during the period 2008-2012. The Kyoto Protocol includes three mechanisms that Canada can use to help meet its commitment at lower cost. These mechanisms are:

- Emissions trading between Annex I Parties (Article 17).
- Joint implementation between Annex I Parties (Article 6)
- The Clean Development Mechanism (Article 12).

The rules for all three of the Kyoto Protocol mechanisms remain to be developed.

Participants in a voluntary trading program could use the Kyoto Protocol mechanisms to meet their voluntary commitments. For example, if the cost of a CDM credit is less than the cost of an internal reduction or a domestically traded credit it could be used to meet this commitment. The CDM would be the main source of credits prior to 2008. All of the mechanisms should be available by 2008 at the latest. However, participants may be inclined to use the Kyoto Protocol mechanisms only if the penalties for failure to meet their commitments exceed the cost of buying the necessary credits. This is more likely to be the case after 2008 than before.

Canada is expected to be a net importer of credits. Participants in a voluntary trading program could, in principle, export credits for emission reductions implemented in Canada. This would require the emission reduction action to be structured as a JI project or the government to agree to exchange assigned amount for the credits created.

Obviously, if the voluntary trading program is successful in reducing emissions substantially prior to 2008, it could continue to operate during the 2008-2012 period. Some changes, such as revised emission reduction commitments and the penalties for non-performance, might be required, but the basic program could continue. The main issue would be the adequacy of the incentives and the government's continued ability to offer incentives on the scale necessary.

- If the government concludes that the emission reductions achieved by the voluntary trading program prior to 2008 are inadequate, it may be necessary to adopt mandatory policies to meet the commitment for the 2008-2012 period.

If this becomes the case and the incentive offered by government for voluntary reductions prior to 2008 takes the form of permits that can be used for compliance with 2008-2012 obligations, those permits could also be used by sources subject to a mandatory trading program, an emissions tax, or regulations that allow the use of credits for compliance.

The emissions trading program could be a hybrid design that allows credits created by eligible sources and sinks to be used by participants in the program for compliance purposes. Emissions taxes and regulations might also allow the use of credits created by specified sources and sinks for compliance purposes. These arrangements would have the effect of creating a voluntary trading program to complement the mandatory policy. Participants in the program purchase credits created by eligible sources and sinks not subject to the policy. Unlike the situation where voluntary trading is the main initiative, incentives would not be offered to participants by the government.

Voluntary GHG Emissions Trading – Evolutionary Next Steps, Environmental Financial Products LLC and Winnipeg Commodity Exchange, July 1999

Executive Summary

This report examines three types of voluntary greenhouse gas (GHG) trading initiatives -- enhancement of existing project-based emission reduction crediting mechanisms (such as GERT and PERT)[1], voluntary commitment and trading systems, and a voluntary carbon commodity exchange -- which may be individually or jointly pursued during the next few years. Steps for evolving the market mechanisms, as events progress, are also addressed.

As has been well established in earlier proceedings of the Credit for Early Action Table, throughout the report it is noted that government action to provide baseline protection and credit for early action would be likely to:

- increase use of the project-based credit systems;
- increase willingness to participate in voluntary commitment and trading programs and;
- by helping establish a defined trading instrument, allow a commodity exchange to offer services that can yield efficient trading and public prices.

However, a purely voluntary trading program could emerge without government action. The first requirement is a will to take real action. The core operational requirements would be a group of entities who: adopt a commitment to reduce emissions from an emissions baseline reference, define a tradeable instrument, and designate the various possible sources of credits eligible from outside the participant group. The market could develop any needed verification and audit procedures as needs are revealed (as it does in all other commodity or financial instrument markets). The participant group would also be free to set its own rules for other needed market components, which may or may not include prescriptions for future regulatory oversight of the market.

Canada has been a pioneer in establishing two systems for evaluating project-base emission reduction credits. Canada's growing experience with project-based crediting for GHG reductions makes it unique in the world. There is now an opportunity to maximize the benefits that can accrue to those holding first-mover advantage. Project-based crediting systems are likely to be employed in any future scenario involving concerted action to manage GHG emissions

[1] GERT, the Greenhouse Gas Emission Reduction Trading pilot is a multi-stakeholder initiative that was launched in 1998. It is supported by a Memorandum of Understanding signed by representative of six provinces (British Columbia, Alberta, Saskatchewan, Manitoba, Quebec and Nova Scotia) and two federal government departments (Environment Canada and Natural Resources Canada). PERT, the Pilot Emission Reduction Trading project began operations in 1995. Though it was initially focused on ground level ozone precursors it was subsequently expanded to include greenhouse gases. It is a multi-stakeholder pilot supported by a Letter of Understanding signed by major industry participants and the province of Ontario.

through trading. On the international front, both the Clean Development Mechanism and Joint Implementation systems established in the Kyoto Protocol involve project-based credits. Canada's experience presents an opportunity to be a leader in the international design effort for CDM and JI.

This report takes the position that the activities fostered in both the GERT and PERT processes represent a sound approach to managing the risk that broad efforts to manage GHG emissions may be forthcoming. These programs are already helping address the challenging questions associated with quantifying GHG emission reductions. They represent some of the very few programs worldwide that foster real action to foster GHG cuts and the trading process.

Although both the GERT and PERT systems are relatively new and continue to be refined, they have both succeeded in raising awareness, addressing difficult methodological questions and undertaking detailed project reviews. While both pilots set modest early goals, with a focus on learning, it is recognized that some sort of system may ultimately be needed for verifying large volumes of credits. Participants have recognized that both pilots would benefit from more streamlined review processes and increased predictability. However, as the environmental and commercial stakes involved can be significant, efficiency must not come at the expense of environmental integrity.

The pilots can undoubtedly work better, but the main factor that would increase their usage -- demand for verified GHG emission offsets – is an external factor that cannot be directly influenced by the pilots themselves. Currently demand for offsets is driven by anticipation of future regulations and by the handful of entities that have taken on formal or informal voluntary emission limits. Demand can be stimulated by establishing officially recognized credits in a credit-for-early action program, by having such a program be two-sided (crediting for reductions as well as requiring participants to offset when emissions rise above a specified level), by further refinement of voluntary commitment trading programs and by direct government purchases. These rule systems and refinements would directly generate a definition of the tradeable instrument. Experience with other markets suggests that if any of the voluntary market systems become more active, the participation of environmental groups, auditors, brokers and exchanges would be likely to emerge on their own in ways that reflect program design (e.g. rules requiring audits) or the natural roles these entities play.

Voluntary Commitment and Trading (VCT) Programs

Participants in a VCT program would voluntarily commit to generate GHG emissions reductions from an agreed emissions reference case, or baseline and would be free to use trading as a vehicle for meeting their commitment. VCT programs can proceed in the absence of government policy providing official recognition of the emission reductions made by program participants, such as

credit for early action. For example, entities that could not sufficiently cut their own emissions could purchase offsets to meet their limit. Two models of this approach are now operating. Ontario Power Generation is planning to meet part of its self-imposed emission target through the use of credits. This is consistent with the spirit of the proposed Canadian CEERP program.[2] Activating CEERP would require an affirmative government commitment to recognize actions taken by participants and to exempt them from other regulations. The internal tradeable permit programs underway at BP Amoco's (involving twelve business units cutting emissions to 3% below 1995 by 2003) and planned by Shell offer another model. While nothing currently prevents further adoption of such programs, a policy providing baseline protection would remove a disincentive for pursuing such a program while credit for early action would provide positive encouragement to entities to take early action to reduce emissions. Because the GERT and PERT systems could be integrated into a VCT program, it is critical that they be able to handle larger volumes.

Voluntary Commodity Exchange

Several commodity exchanges around the world plan to host trading and offer management services for GHG emissions markets. Such exchanges, which, by their nature involve voluntary participation, can offer the benefits of low-cost trading, public prices and reduced default risk. The lack of public price information has been cited as a significant impediment to trading in some of the early credit-based emissions trading programs. An organized exchange can sponsor trading as long as it or others can establish a standardized instrument to trade. The existence of a government-authorized trading instrument or, alternatively, an instrument that is formally recognized by a group of market participants, would allow exchange-based trading to proceed. Use of an exchange can arise through participants agreeing to trade though the exchange, or their attraction to it based on its inherent benefits. Usage would increase as the number and activity of participants in a market increase.

Verification Issues

Verification capabilities, involving credit definition, measurement, standardized and regular reporting and third-party reviews, would be vital components in any future large-scale GHG emission reduction program. Because continued efforts to enhance these capabilities could provide widespread future benefits for all Canadian entities, further public funding to build verification capabilities may be warranted.

[2] Canadian Early Emission Reduction Program.

Timing

The report recommends that in the immediate term, both the GERT and PERT systems should continue operating and continue their ongoing improvement efforts. Further experience during the next year could arise if external actions to stimulate demand emerge. Annual reviews can be used to assess the desirability of keeping the programs going, in either their current form or as redesigned processes. Further efforts to design voluntary commitment and trading programs can continue immediately, and alternative versions of the CEERP and other programs, such as BP and Shell's, should be encouraged. Corporate internal trading programs can proceed immediately. One Canadian multi-firm program, the Greenhouse Emissions Management Consortium, exists and others could be encourage to develop. Exchanges can be expected to offer services soon after a recognized trading instrument is established by government action or by mutual agreement among participants in voluntary commitment programs.

Impacts

Absent further incentive to cut GHG emissions, the existing pilots are unlikely to directly cause a significant change in Canada's emissions trajectory or to lead to widespread increases in trading experience. However, the skills gained in designing the pilots and applying their processes appear to have already given the participants valuable practical experience. This can be leveraged in the international effort to design and implement the Kyoto Mechanisms. Depending on their design, voluntary commitment and trading programs could provide larger emission reductions, but the overall impact depends on the extent of participation and the stringency of the commitments. Over the medium and long-terms a commodity exchange can improve the credibility of a trading system and stimulate action by making trading efficient and prices public.

Table 1 presents one possible evolutionary scenario for emission trading systems that would call for actions to be both anticipatory and responsive to events.

Table 1
One Evolutionary Path for GHG Emission Reduction Trading Activities

Time Frame	Actions
1999	· Continue refining/enhancing crediting pilots. · Encourage voluntary commitment and trading systems and carbon exchanges. · Further clarify nature of optimum supportive actions by governments. · Develop strategy for increasing utilization of monitoring/measurement

	methods needed to participate in trading. · Refine credit for early action/baseline protection concepts. · Define tradable instrument
2000	(Decisions made by Energy and Environment Ministers may offer strong guidance as to the optimum actions to take in 2000) · Implement policies for crediting early action/baseline protection (which may require promulgation of statutes or regulations). · Continue analysis of the effectiveness of existing pilots, continue refinements. · Refine VCR Registry to support trading programs · Refine national GHG inventory and forecast to support trading programs. · Refine parameters of voluntary commitment and trading pilots along the lines of CEERP and/or other entity-wide trading programs. · Identify/work with potential participants for voluntary commitment/trading programs. · Launch initial-phase voluntary commitment/trading programs · Design carbon exchange systems that can work with both credits-based and voluntary commitment/trading programs. · Address international integration issue.
2001	· Launch initial-phase voluntary commitment/trading programs. · Launch carbon exchange.
2002-2003	(Actions will be driven largely by status of the Kyoto Protocol or domestic GHG policy directives that may call for mandatory participation in emission reduction programs that may or may not be driven by the status of international commitments). · Assess progress and effectiveness of existing programs. · Continue to refine and expand credit-based and voluntary commitment/trading programs. · IF regulations requiring emission reductions appear likely in 2005-2010 time window, assess feasibility of expanding existing pilots as a leading policy vehicle. Assess other needed market mechanisms
2004-2005	(This may be the time window during which any government regulations mandating GHG cuts for 2008-2012 would be formalized) · Refine existing programs and/or establish new programs needed to foster a broader market.
2006-2007	· Regulations, if any, would be implemented in this time period. Existing voluntary initiatives might be integrated into the programs established by regulation.