



**THE EMISSIONS MARKETING ASSOCIATION'S
FOURTH ANNUAL FALL MEETING &
INTERNATIONAL CONFERENCE
2-3 OCTOBER 2000**

The Fourth Annual Fall Meeting and International Conference of the Emissions Marketing Association (EMA) took place from 2-3 October 2000, in Toronto, Canada. Co-sponsored by the United States Environmental Protection Agency (EPA), TransAlta, and Ontario Power Generation, the meeting was attended by 220 participants, including industry representatives, emissions trading brokers, government officials and academics. While the majority of participants were from Canada and the US, there were also participants from Japan, Switzerland, the UK and France.

The meeting was organized by the EMA as part of its series of biannual meetings for Association members. The EMA is a not-for-profit US-based international education and trade association whose mission is to promote market-based trading solutions for environmental management. The EMA pursues this mission with the following objectives: promoting the advancement and application of policies and regulations relevant to market-based emissions trading systems; encouraging and facilitating information exchange among members, professional and technical groups, and the public; and providing programmes in education and training to improve the knowledge and skills of members, and the understanding and acceptance of the public.

The meeting consisted of eight thematic sessions, with the predominant focus being a review of the potential for trading in greenhouse gases (GHG) in the light of recent and anticipated developments in the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC). In all but one of the sessions, panelists presented papers, followed by open plenary discussions. One session took the format of a structured panel discussion, with panelists responding to questions from a moderator before answering questions from the floor.

The meeting opened on Monday, 2 October, with an address by Dan Newman, Minister of Environment for Ontario. Following this, panel discussions were held to review recent developments in UNFCCC negotiations and hear presentations on some negotiators' expectations on the possible outcome of the upcoming Sixth Conference of the Parties (COP-6) of the UNFCCC, which is to be held in The Hague, the Netherlands, from 13-24 November 2000. COP-6 is

of particular significance as it has been set as the deadline for reaching agreement on rules governing provisions under the Kyoto Protocol, including those relating to emissions trading.

In the sessions on Monday afternoon, participants reviewed the experience of developing pilot programmes for GHG emissions in Canada, the United Kingdom, Australia, and Japan, examined a recent European-wide greenhouse & energy trading simulation, and considered corporate risk issues associated with the possible implementation of trading regimes in greenhouse gases.

On Tuesday, 3 October, the sessions focused on: a status report on nitrogen oxides (NOx) and sulfur dioxide (SO₂) emissions trading in North America; innovative financing of GHG deals; current business experiences with GHG trading; and legal issues associated with the market mechanisms.

In addition to these eight thematic sessions, participants also heard lunchtime presentations by journalist/science writer Lydia Dotto and Eileen Claussen, President of the Pew Center on Global Climate Change.

OPENING ADDRESSES

Gary Hart, President of the EMA, welcomed participants, noting that the aim of this meeting was to discuss the benefits of emissions trading in advance of COP-6. He introduced participants to the organization's work on the Emissions Trading Education Initiative, and outlined two recent publications: *Real World Results*, which describes how two case studies, based on the innovative "cap and trade" system, may deliver positive results for reducing GHG emissions; and the *Emissions Trading Handbook*, a joint project of the EMA and Environmental Defense Fund that explains the structure and functioning of the US cap and trade system. He urged participants to work together to make emissions trading real, and to demonstrate to the world that trading is an effective method for achieving GHG emissions reductions.

Dan Newman, Minister of the Environment of Ontario, welcomed the EMA's decision to choose Toronto as the venue for their first meeting outside the United States. After describing Ontario's recent efforts to reduce air pollution, he noted that much work remains to be done to minimize GHG emissions. He outlined Ontario's commitment to a demanding set of emissions targets by 2015 compared with 1990 levels, including reducing nitrogen oxide and volatile organic compounds by 45 percent, and sulfur dioxide by 50 percent. He noted that to achieve these targets, Ontario had developed a three-part

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strategy focusing on the electricity industry that proposes: caps on smog and acid-rain causing emissions applicable from January 2001; the mandatory self-monitoring of emissions by business and industry, with full public disclosure; and the introduction of an Emissions Reduction Trading (ERT) regulation by 2001 to provide businesses with greater flexibility in meeting the requirements of the new caps. He noted that this strategy involves actions such as: the commitment of CAN\$10 million to a Climate Change Fund dedicated to developing new and innovative ways for all sectors to reduce GHG emissions; the adoption of the Drive Clean programme and the Countdown Acid Rain programme; the stringent review of all coal-fired generation facilities before they can be sold; the investment of over CAN\$4 million in enhancements to the air monitoring network; and the establishment of a new SWAT Team at the Ministry of the Environment to strategically target repeat and deliberate offenders.

Regarding ERT, he noted that this will involve participants whose emissions have not been capped who will have the option of voluntarily reducing their emissions below their historical baseline and selling the resulting credits to capped emitters. He explained that under ERT, a trading credit will qualify only if an emissions reduction is real, quantifiable, verifiable, surplus, and unique. He concluded by highlighting the recent establishment of Clean Air Canada Inc., a not-for-profit organization based on the Pilot Emission Reduction Trading programme (PERT). He said that unlike PERT, this programme will continue to facilitate credit trading and market development, will include GHG emissions reduction, and will serve as a center of excellence to make policy recommendations to government.

PANEL 1: LEADING UP TO COP-6 – WHERE ARE WE AND WHERE ARE WE GOING?

Pieter Verkerk, Office of Health, Environment and Welfare, Royal Netherlands Embassy, outlined the Netherlands' experience in developing and implementing their climate change policy, and reflected on possible developments at COP-6. He noted that the Netherlands aims to achieve its GHG emissions reduction commitments through an equal combination of domestic measures and use of the Kyoto mechanisms. On domestic policies, he outlined the allocation of reduction targets across different industry sectors, and emphasized the use of industry covenants, including the recent benchmarking covenant. On international measures, he said that despite the current uncertainties regarding the rules of the Kyoto Protocol mechanisms, the Netherlands was commencing with the use of these mechanisms. As an example, he noted that the Dutch Cabinet had recently approved 500 million Guilders for use on Clean Development Mechanism (CDM) projects over the next two years. Underlining the importance of COP-6 and the need for rapid ratification of the Kyoto Protocol, he identified the following as key issues for COP-6: the mechanisms; compliance and enforcement; monitoring, reporting and verification of emissions; and the developing country issues of technology transfer and capacity building.

John Palmisano, Eco-Energy Trade LLC, reviewed the process leading up to COP-6 and identified some of the key concerns that need to be resolved. He argued that the recent UNFCCC Subsidiary Bodies' meeting in Lyon had witnessed the continuation of entrenched and divergent positions among countries on the key issues, and said that it was no longer possible to submit additional technical considerations into the process, highlighting the predominance of political considerations for negotiators in the lead-up to COP-6. He identified a number of issues that have yet to be resolved, noting that these all affect the supply and demand for GHG reductions and assigned amounts. These issues included, *inter alia*: eligibility of trade; supplementarity; the use

of carbon sinks in the CDM; the nature of the Joint Implementation (JI) project cycle; CDM project eligibility; fast tracking of the CDM through use of a defined "positive list" of projects; liability under emissions trading; and compliance.

On COP-6, he suggested that the EU's position has recently become stronger, while the US position is weakening. He noted that this would be further impacted by the upcoming US presidential election. He highlighted the emissions trading initiatives in Denmark, Norway, and the UK, as well as throughout the EU as a whole. Drawing attention to a recent study by the Royal Institute of International Affairs, which sought to quantify the different elements of the flexibility mechanisms, he noted that this varied from a net deficit of 55 million tonnes of CO₂ to a surplus of 565 million tonnes, and emphasized the implications this had for assessing future prices of tradable units. He concluded by suggesting that not all the issues would be resolved at COP-6, and argued that it was neither possible, nor desirable, for negotiators to seek to do so late on the last day of negotiations.

Richard Baron, Division of Energy and Environment, International Energy Agency (IEA), presented the results of a recent international emissions trading simulation, which had involved participants from 16 Annex B countries, the European Commission and two members of the IEA. The principal goal of the multi-country, multi-sector dynamic simulation, was to provide hands-on experience to delegations to understand how such a market may evolve. The simulation rules were based on Kyoto Protocol Article 3 (commitments), with mandatory reporting of national inventories and net trades. Trading was assumed to take place under issuer liability, and a second commitment period was assumed, with unknown commitment levels and with provision for banking.

Baron outlined some of the results of the simulations, noting that: all Parties traded and achieved compliance; over 400 transactions took place; trading resulted in total costs being reduced by 60%; and countries with economies in transition (EITs) sold more than their "hot air" (a term used for the reduction in emission levels already achieved by former Soviet Union nations since 1990 due to a period of economic decline). He noted that the price was higher than the theoretically optimal level due to government policy inertia and banking, but that significant costs savings were nevertheless achieved.

Bob Reinstein, a former US climate change negotiator now with Reinstein & Associates International, provided his perspective on the lead-up to COP-6. He presented two possible scenarios for GHG emissions from industrialized countries: a "trend scenario" in which current trends continue with additional reasonable measures that can be justified for other reasons; and a "pain threshold scenario" in which all reasonable economically and politically feasible measures are taken to limit emissions. These are contrasted with two scenarios for EITs: a "higher economic growth scenario", in which good progress is made on the transition of the economy from centrally-planned to market-based, including investments to improve energy efficiency as industrial output increases; and a "lower economic growth scenario" where progress on economic transition is slow, with fewer investments to improve energy efficiency but much smaller increases in electricity production and industrial output. Comparing these emissions with the Kyoto targets, he suggested that even under the most optimistic scenarios, few countries would be able to meet their targets by domestic measures alone.

He then examined whether these deficits could be met by using the Kyoto mechanisms. On the potential impact of emissions trading, he noted estimates that indicate that OECD countries will have a potential demand for credits of between 2 and 2.8 billion tonnes of CO₂ equiva-

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lent. He compared this with the supply of possible credits from EITs, which estimates suggest could range from 415 million tonnes to 1.5 billion tonnes. He said that much of this potential supply of EIT credits was from Russia, which has indicated that trading of their emissions allowances would not be considered until after 2013. He estimated that the maximum likely range for CDM credits from developing countries by 2010 is at most 200-300 million tonnes.

In the light of these figures, and considering recent statements by key members of Congress, Reinstein argued that the US is not likely to ratify the Kyoto Protocol in its present form. He suggested that without US ratification, Russia would also be likely to withhold ratification, as the absence of the US in the trading market would greatly reduce the price of Russian credits. As the Protocol requires the ratification of a minimum of 55 countries accounting for at least 55% of 1990 Annex-1 CO₂ emissions, the failure of both these Parties to ratify the Protocol would prevent it from entering into force.

Stating that this creates a "very serious situation for the international process," Reinstein said that if the Protocol was to come into force it would need to be renegotiated in a separate legal instrument. He concluded by arguing that if the most appropriate rules on mechanisms could not be agreed at COP-6, then it would be better either to have no rules, or to have a set of simple rules on an interim basis so as to get the process started.

In the subsequent plenary discussion, one delegate noted that the Kyoto Protocol does not provide for industry participation in an emissions market. Panelists responded that while there is some suspicion within the G-77/China about formally recognizing the role of "legal entities," there is broad agreement on this issue within Annex I countries, and it is anticipated that this issue will be approved. Reinstein noted that for US entities to be engaged in the process, the Kyoto target would have to be legally allocated as a domestic cap. He suggested that this is highly unlikely.

Recalling the sentiments of a number of environmental NGOs, a participant questioned the assumption of most panelists that "hot air" will be included within a trading regime. Baron responded by arguing that any attempts to constrain hot air will limit the incentive for EITs to invest in punctual measures that result in real emissions reductions.

A representative of the Canadian agricultural community expressed concern at the overly political nature of the UNFCCC negotiations, and emphasized the need for sound science to ensure that sinks are included within the CDM. Panelists highlighted the need to ensure the political independence of the Intergovernmental Panel on Climate Change, and recommended greater domestic action aimed at ensuring scientific certainty on the benefits associated with sinks.

PANEL 2: A VIEW FROM THE TRENCHES – NEGOTIATORS' PANEL

Thomas Black-Arbelaez, Colombian Delegation to the UNFCCC and Director of the Andean Center for Economics in the Environment, reviewed recent discussions on the Kyoto mechanisms, focusing in particular on the contributions of the World Bank's National Strategy Studies Programme to the COP-6 negotiations on JI and CDM. Noting that twelve Latin American countries are in favor of market-based solutions to climate change, he urged negotiators to design a CDM that allows a fast and efficient flow of investments to the region.

On the CDM, he argued that there are significant benefits for Annex I countries, and noted that developing countries are trying to understand how a likely market would work. He presented a model on the Estimated Marginal Abatement Cost of the CDM and outlined different

scenarios, including one without using the mechanisms. He concluded that increasing the supply of options could significantly reduce compliance costs.

He added that the CDM presented a win-win situation and recalled that the World Bank was ready to support developing nations by \$5-10 billion dollars a year during the commitment period for Certified Emissions Reductions (CERs). He suggested that CDM projects would build on the experience of current commercial and financial relations, noting that Colombia had a technological potential for credits for emissions reduction for about 42 million tonnes of CO₂.

Black-Arbelaez then drew participants' attention to the following key policy issues for COP-6: supplementarity limits, which he argued would not promote rapid and cost effective climate change mitigation and could present a significant problem in terms of costs; unilateral project formulation that could reduce risks and transactions costs; the inclusion of forestry and land use change projects in the CDM; and the minimization of transaction costs. He concluded by inviting the US and Canada to work together with Latin American countries, and suggested that the EMA hold their next meeting in Latin America.

Jennifer Macedonia, Senior Environmental Engineer, US EPA, and member of the US negotiating team, suggested that considerable progress had been made, while noting that this might not be entirely reflected in the negotiating text. She underlined the learning process that had taken place in recent years, and suggested that, despite criticism of the lack of achievements of this process, the outcome of these negotiations would be likely to reflect the shared interests of different countries.

On emissions trading, she remarked that reductions should first take place domestically, as this is in the countries' best interest. She suggested that key provisions on emissions trading are those relating to compliance, eligibility, and the accounting structure. On entity participation, she emphasized the importance of governments rather than entities in dealing with the obligations of an international convention. On liability issues, she considered that some of the proposals possess unsolved problems and do not reduce the concern of overselling emissions reduction credits. She suggested that the CDM would act as an incentive to promote the use of clean technologies, and added that proposals on competitive access to the CDM reflected the intention to encourage private sector involvement beyond the scope of the Protocol. She highlighted the need for an appropriate design for the CDM, and recommended that negotiators familiarize themselves with the characteristics of past domestic experiences. On JI projects, she recalled that this was a private-sector oriented mechanism, based on transparent reductions arising from projects taking place between countries that, *inter alia*, have rules on emissions inventories and on non-compliance. She predicted the likely adoption of long-term framework rules for all the flexibility mechanisms of the Kyoto Protocol as part of the decisions taken at COP-6.

Wayne Moore, Environment Canada and member of the Canadian negotiating team, agreed with Jennifer Macedonia's positive appraisal of progress made during the negotiations, in particular regarding the mechanisms. He suggested that negotiators were now left with some fundamental choices, and outlined four key issues: the need to find the right balance between domestic and international action; the importance of addressing North-South issues relating to capacity building, technology transfer, the adverse impacts of response measures, and equity; the role of the compliance regime; and the role of sinks. He concluded by urging participants and organizations such as the EMA to make their voices heard in the negotiation process in order to foster international dialogue in emissions trading.

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During plenary discussions, participants expressed their concerns about the costs of non-compliance. Panelists considered that if markets worked well there would be no need for penalties, and highlighted the EU's compliance action plan and other options based on the payment of fixed-price fines, that could be administrated domestically or internationally. Other participants commented on the range of compliance costs, and drew attention to the results of various preliminary studies that suggest ranges from 5-52%. Panelist Thomas Black-Arbelaiez urged negotiators to adopt a decision on the administrative tax of CDM, which will affect the financing of projects in developing nations.

There was general agreement on the role that Parties can play in emissions reduction, and that there are no unsolvable differences. On equity, participants noted that this issue involves more than simply equitable geographic distribution of projects, but also geographic allocation of emissions.

PANEL 3: GHG PILOT PROGRAMMES IN PRACTICE – LEARNING BY DOING

Mike Butters, Executive Director of Ontario's Pilot Emissions Reduction Trading Project (PERT), provided an overview of the PERT initiative, a voluntary, industry-led, multi-stakeholder collaborative process aimed at encouraging and rewarding early emissions reductions. He noted that the objectives of PERT are to: investigate environmental and economic consequences of emissions reduction trading; ensure the compatibility of emissions reduction trading with the regulatory framework in Ontario; identify and address key trading issues; and contribute to the design of a trading system. The initiative began as a multi-stakeholder pilot project in 1996 focusing initially on smog producing gases, before adopting a multi-pollutant approach including CO₂, nitrogen oxides (NO_x), volatile organic compounds (VOC), and sulfur dioxide (SO₂). It was formally recognized through a Letter of Understanding signed with the Minister of Environment in 1998, and more recently became a not-for profit organization known as Clean Air Canada.

PERT uses an open market hybrid model that provides for capped and non-capped emitters. In terms of the defined selection criteria, all traded emissions reductions must be: real reductions from specific actions; quantifiable; surplus to regulatory requirements; verifiable by third party audit; and unique, being created and recorded once from a specific measure at a specific time. He noted that the following credits had been posted on the registry, or were in progress: 28 000 tonnes of SO₂ emissions, 67 000 tonnes of NO_x, 43 tonnes of VOCs, and 13 million tonnes of CO/CO₂. He drew attention to a "lesson-learned" document available at the PERT website (<http://www.pert.org>).

Warren Bell, Manager of the Greenhouse Gas Emissions Reduction Trading Pilot (GERT), outlined experiences in implementing this initiative, a multi-stakeholder consensus-based programme launched in June 1998. The initiative focuses on project-based credit trading for GHGs, and supports policy development by providing practical experience. Bell emphasized the relevance of the pilot credit trading system for: designing a domestic emissions trading system; developing Canada's Baseline Protection Initiative; and attaining credit for early action, and JI and CDM projects. Partners in the initiative include: federal government, six provincial governments, one local government agency, six industry associations, two environmental groups, and Canada's Voluntary Challenge and Registry. Bell then described the various projects within the initiative, and drew attention to a set of discussion papers available at the GERT website (<http://www.gert.org>).

Jean-Yves Caneill, Senior Research Scientist, Electricite de France, presented the results of Eurelectric's Second Greenhouse & Energy Trading Simulation (GETS 2). The simulation was conducted three times from February to July 2000, with 35 virtual companies from 16 European countries and six industrial sectors trading energy and CO₂ futures on an internet trading tool provided by the Paris Bourse. The simulation incorporated a number of additions to GETS 1, including a greater number of participants, as well as testing of the CDM and of financial penalties. An important addition was the testing of three different allocation methods: grandfathering, benchmarking with grandfathering, and grandfathering with auctioning. He noted that the three simulations showed an equivalent evolution of carbon efficiency due to investments and improved environmental management, and that global compliance was obtained in all three of the simulations. Underlining the importance of learning by doing, he argued that the initiative could contribute to the design and implementation of carbon trading at national, sectoral and international levels. He identified a number of lessons from GETS 2, emphasizing that, *inter alia*: carbon equivalent trading was technically feasible; an organized market was efficient in terms of giving visible price signals to the participants; and post-verification was an essential part of the whole process.

David Harrison, Special Advisor, Australian Greenhouse Office, reviewed recent developments in Australia regarding emissions trading. He stated that, following the establishment in April 1998 of the Australian Greenhouse Office, almost \$A1 billion had been committed to addressing GHG emissions over a five-year period. Of this, \$A100 million per annum for four years has been allocated to the Greenhouse Gas Abatement Programme. This programme represented a shift in philosophy, adopting a totally non-prescriptive approach open to all sectors, with funds allocated on a project-basis and awarded following a competitive tender. He said such projects needed to be financially additional, with emissions reductions being achieved within the Kyoto commitment period. He noted that a high level of interest had been expressed during the first round of tenders, with more than 100 applications for projects.

On emissions trading, he said the government was considering a feasibility report on the issue, and that a cabinet report was imminent. He suggested that a domestic trading scheme would not be implemented in Australia prior to Kyoto ratification. Regarding the design of a trading system, he emphasized the need for clear decisions relating to the coverage of sectors and gases, as well as on the issue of permit allocation. While acknowledging that comprehensive coverage of sectors and gases would ensure inclusion of lowest-cost abatement opportunities, he stated that this would be difficult to achieve in practice, and noted that a trade-off would be required between abatement costs and transaction costs. He highlighted the difficulties associated with the allocation of permits, noting in particular their implications for wealth distribution. Citing the example of the coal, aluminum and natural gas industries, he argued that emissions intensity was not a good indicator of economic impact. He drew attention to the four discussion papers on emissions trading that had formed the basis of the consultative process for developing the feasibility study on this issue, and noted that these are available at the Australian Greenhouse Office (<http://www.greenhouse.gov.au>).

Junji Hatano, Deputy President Tokyo-Mitsubishi Securities Co. Ltd., reviewed the general lack of progress in introducing emissions trading in Japan. He identified a number of reasons for this, including, *inter alia*: Japan's comparatively high levels of energy efficiency; the government's preference for a carbon tax due to its potential for addressing the current government deficit; the limited experience in

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Japan with environmental market-based instruments; and the prevalent perception that emissions trading was "irresponsible." He noted that the government was nevertheless examining the potential for a domestic allowances market, and suggested that a pilot project could be ready within 24 months to test its operational aspects.

Lionel Fretz, Eco Securities Ltd, provided a brief overview of the proposed UK Emissions Trading Scheme that is expected to be operational by April 2001. The scheme is being developed by the UK Emissions Trading Group (ETG), which was established in June 1999 by the Confederation of British Industry and the Advisory Committee on Business and the Environment. The ETG currently comprises over thirty companies, as well as a number of trade associations and government departments. Fretz presented the objectives of the scheme, which include: achieving real environmental benefits; being compatible with and informing international developments regarding carbon trading; ensuring coordination with the climate change levy and the adoption of negotiated agreements; and providing a cost effective policy tool to deliver more stringent emissions limits as they are imposed.

He outlined the structure of the proposed scheme, and distinguished between: firms that agree with government to reduce annual emissions limits for the period covered by the trading process ("core participants"); firms that accept an output related emissions target under a negotiated agreement ("unit participants"); and firms that deliver specific emissions saving projects. He said the ETG had sought to encourage wide participation through the use of financial incentives to those companies that take on additional costs and risks by agreeing to binding emissions targets prior to the development of an emissions trading market. He noted that the UK Government has subsequently allocated £30 million per annum in 2003/4 (with additional funding anticipated in subsequent years) to companies who commit to and deliver binding emissions targets that generate additional emissions reductions.

PANEL 4: CORPORATE RISK ISSUES

Jeremy Weinstein, Pacificorp, stated that energy risk management is a new field of expertise and noted that when talking about energy risk management, an array of factors such as regulatory risks, taxes and fiscal incentives must be considered. He recommended following these markets closely to learn about businesses expectations relating to carbon trade. He noted that carbon markets were becoming increasingly real and businesses were starting to watch their baselines. He explained however that, due to the lack of regulations, parties were starting to set these baselines in their agreements. He concluded by drawing attention to the "opportunities for creativity" as these markets evolved, although he warned the audience about transactions that may involve real money for non-existent emissions reduction.

Norwood Davis, Duke Energy Corporation, underscored the need to identify the risks that will affect the central business interests of the corporation and enhance the corporate image and maximize profits. He noted that risk could be described as a function of probability and consequences of occurrence and noted that the sources of risks were multiple components that could be present in CDM projects. In managing risk, he acknowledged that the goal was not always to eliminate it but sometimes to accept it and manage it. He underlined that information is critical for risk management, and suggested a good understanding of the business operation, the market and the impact of national and international policy. He concluded by providing participants with a risk management model that supported the adoption of the following steps: identification of scenarios, signposts

and trends; examination of current and future situations; determination of business implications; development of an integrated strategy and the development of communications and monitoring plans.

Josef Janssen, Institute for Economy and the Environment, University of St. Gallen, Switzerland, gave an overview of issues relating to risk management arising from Kyoto project-based activities. He explained that having a good understanding of the characteristics of the Kyoto mechanisms would help to determine the risk structure of underlying project investment. He outlined a number of factors to distinguish between the mechanisms, including: trading between governments or entities; producing emissions permits involving international or domestic entities; and establishing whether the transfer system was a cap-and-trade or a baseline and credit system. He highlighted the relevance of risk management in JI/CDM projects, noting that investors are interested in attractive risk-return profiles where the realization of potential gains is possible if investments risks are sufficiently low.

On the determination of baselines, he explained that there are several approaches, including: project-specific baselines, multi-project baselines that are applicable to similar project types and are aimed at standardized emissions levels; and a baseline definition set in terms of emissions levels. On the value of emissions permits, he explained that while these may be uncertain today, their value in future will vary depending on where they will be used. He argued that the markets would determine the value if trading occurs and, if used for compliance internally, the value would be determined by the marginal cost of abatement at the regulated source. He added that the value was affected by large political risks such as the uncertainty regarding the entry into force of the Kyoto Protocol, the nature of international rules relating to fungibility, ceiling and liability that may restrict trade, and the interface of domestic and international markets.

On the question of the commercial insurability of the Kyoto mechanisms' projects, he predicted the extension of existing coverage based on causes such as: business interruption for consequential loss; technology performance; fire for sinks projects; and political risk. However, he suggested that insurance companies would be able to design new schemes when baselines were adopted.

PANEL 5: NO_x AND SO₂ STATUS REPORTS

This session was a structured panel discussion on the current status of trading in sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emissions within the US, with panelists responding to questions from the moderator, Andy Ertel (Evolution Markets LLC), as well as from the floor. The panelists were Damon Anderson (PP&L Energy Plus), Jeff Foose (Public Service Electric & Gas Company), Jim Webb (First Energy Corp.), and Bob Pickering (RJM Corp.).

During the discussions, the panelists commented on the healthy state of the SO₂ market, and contrasted this with the static NO_x market in which prices were low. It was suggested that there were still opportunities for trading in NO_x, though these were much more difficult to find. The panelists advised brokers to trade often and intensely, working a varied and flexible portfolio that allowed for rapid responses. On trading by committee, it was recommended that a committee could be useful for defining the overall strategy and objectives, but that experienced individual traders should undertake the trading so as to allow for rapid action in the volatile markets. On the potential for trading in GHG, the panelists noted that they had taken little action on this issue, other than monitoring developments. Regarding the recent high levels of volatility in the Regional Clean Air Market (RECLAIM) in Southern California, it was suggested that this was a result of the stringency of

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the associated legal requirements in California, and that such volatility was not likely to occur in the Northeast Ozone Transport Region (OTR) in the US.

PANEL 6: CASE STUDIES – INNOVATIVE FINANCING OF GREENHOUSE GAS DEALS

Aldyen Donnelly, Greenhouse Emissions Management Consortium, gave a presentation on the Carbon Emission Reduction Credit Trading programme and its real meaning for businesses. She argued that there was a serious disconnection between the perception of negotiators and market reality, and regretted the fact that during the last three years negotiators had not spent sufficient time discussing with the business sector most of the issues under negotiation. She explained that the goal of negotiators appeared to be the minimization of costs, while the goal of corporations was to maximize benefits. She stated that the aim of her presentation was to explore some of the issues underlying this disconnection. She suggested that one of these issues was the “allocated amount” of emissions reductions enacted by the Protocol, and argued that ratification of the Kyoto Protocol would force Canada to reform its national balance sheet. She contended that if Canada ratified the Protocol, then national emitters would be required to commit to more domestic action than currently forecast. She predicted the failure of a Kyoto Commitment Implementation Strategy in Canada that did not support emissions trading between major point and mobile sources, and that relied on technology standards and vehicle stock turnover.

She presented different scenarios of the possible impact of the Kyoto Protocol on the market capitalization of Canadian entities, and argued that the government’s failure to adopt any domestic action had resulted in the reduction of approximately CAN\$3.5 billion in the market value of shares in Canadian energy companies. She added that investing in emissions reducing activities in Canada was currently not a prudent business, and recommended that as an alternative, emitters could slow down on all capital spending in Canada in order to preserve cash to pay anticipated taxes and acquire permits. She argued that while Canadian agriculture was a significant source of emissions, this might be reduced through the adoption of best management conservation practices. She argued that there is no such thing as “permanence” and suggested that the associated risks could be allocated in a seller-buyer agreement of CERs. She concluded that negotiations were anticipating trading levels that were unrealistic, and suggested that this created expectations that were unlikely to be met.

Sid Embree, International Finance Corporation (IFC), outlined the Financing of GHG Emission Reduction Projects. She briefed participants on the structure and activities of IFC, noting that it is one of the institutions of the World Bank Group that deals with private-sector project finance in developing and transitional countries. She described the IFC’s main activities as being project finance, mobilization of other sources of capital, the development of capital markets, the provision of financial advisory services and project development facilities, and investments in small and medium sized enterprises. She noted that the IFC’s Environmental Projects Unit manages the IFC’s Global Environment Programmes, catalyzes and structures environmental investments, identifies and structures GHG emissions reduction investments in the global portfolio, and advises the World Bank on the Prototype Carbon Fund project.

She identified opportunities for including GHG emission reduction issues within the IFC’s activities aimed at improving projects and bringing near-commercial projects to fruition, through steps such as lowering interest loans, granting loans at low cost, giving additional financing to reduce risks, subsidizing new technologies, and providing

additional incentives for sustainable development. She suggested that governments should simplify approval procedures, taking as an example the “royalties” system that had been applied successfully to oil production for several decades. She presented three projects in which the IFC was currently involved, and highlighted the possibilities for promoting reductions in GHG emissions.

She concluded by noting that the IFC was a lender of last resource that was accustomed to dealing with higher risks and providing borrowers with longer term loans on commercial terms. She recommended the identification of other sources of financing when projects are not viable, and emphasized that carbon finance should be seen as one alternative that sometimes fits depending on the baseline.

Francisco Hoyos, Managing Director, Fondelec, briefed participants on the activities of his company, which focuses on worldwide private equity investments in emerging electricity, gas, and wireless communications markets. He described one of the company’s projects – the Dexia-FondElec Energy Efficiency and Emissions Reduction Fund, L.P., primarily focused in Central and Eastern Europe – and explained that the strategy of the fund is to target energy emissions reduction projects, in areas such as district heating, large buildings retrofit, public lighting, manufacturing processes, electric distribution and transmission, small and medium-sized co-generation plants and renewable energy projects. He noted that carbon credits with tradable value emerging from investment may be allocated to investors in the Fund in the form of eligible projects.

PANEL 7: CASE STUDIES – BUSINESS EXPERIENCE WITH GREENHOUSE GAS TRADING

Robert Routcliffe, DuPont Canada Inc, outlined three key deliverables on the Kyoto mechanisms for negotiators at COP-6: engaging foreign direct investment (FDI) to support the goals of the project-based mechanisms; ensuring clarity on credit eligibility; and resisting any imposition of constraints on the markets. He underlined the need for a longer-term view on emissions reduction beyond 2008-2012, and highlighted the power of the market in achieving reductions. On the project-based mechanisms, he suggested that these should include pure JI and CDM projects, as well as “unilateral” CDM projects, in terms of which developing countries may invest in their own CDM projects and sell the credits. He emphasized the potential value of FDI projects in providing opportunities to reduce climate impacts, noting that FDI decision-making was already subject to extensive host country review and approval. He urged negotiators at COP-6 to: minimize administrative and technical demands on the mechanisms while maintaining environmental integrity; reduce delays associated with additionality; affirm the status of legal entities; provide for clear project eligibility and early credit; and provide for full fungibility of credits.

In his presentation, Bob Page, Vice President TransAlta, outlined the measures that TransAlta is taking to manage the risks and take advantage of the opportunities associated with greenhouse gas trading, and also suggested a number of actions required from government to convert the current speculative trading into a robust system. Expressing a preference for a market-based trading mechanism with full fungibility, he suggested that achieving this would be a significant challenge, as most government negotiators have little knowledge or experience with emissions markets. He noted a confusion within the current policy debate between three differing goals: regulated emission cuts to achieve Kyoto commitments; market mechanisms to provide crediting and trading; and the role of the CDM mechanism as a vehicle for delivery of development goals.

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Page said that Canada faced a serious political impasse: although ministers were committed to credits and emissions trading, after three years of discussions they had made very little progress toward implementing a system, a situation which was raising serious risks for businesses seeking investment in appropriate actions. He urged the government to: commit Canada to launching a national emissions trading regime before the end of 2001; establish a design team of key companies, NGOs and government officials comprising people who understand markets; and allow current voluntary trading to receive formal credit if the design team proposals are not completed by the end of 2001.

Brian Jantzi, Ontario Power Generation Inc., highlighted the need to commence trading as soon as possible before 2008, and urged recognition of early action, emphasizing the importance of emissions trading in meeting the Kyoto commitments. He noted a draft regulation in Canada that imposes caps on NO_x and SO_x within the electricity sector, and provides for a hybrid trading system. He reviewed the activities within Ontario Power Generation aimed at reducing GHG emissions, noting in particular its trading activities within the PERT programme, as well as its participation in CDM pilot projects. On COP-6, he emphasized the need to "leave the abstract and get real" by providing concrete examples of projects to demonstrate the full potential of the mechanisms.

PANEL 8: LEGAL ISSUES ASSOCIATED WITH MARKETS MECHANISMS

This panel explored the manner in which international commitments will affect domestic regulations, and examined how certain specific legal aspects, such as the allocation of risks, could be settled in contracts between parties.

Mark Perlis, of Dickstein, Shapiro, Morin & Oshinki LLP, noted that the adoption of new instruments at the international level required a clear definition and a common understanding of legal issues at the domestic level. He explained that the analysis of an emissions trading system from a contractual perspective would help both buyers and sellers of CERs to understand the benefits they will gain from the trade, as well as how to monetize GHG reductions. He proposed the adoption of criteria for analysis that varies depending on the position of the buyer or seller. From the seller's perspective he underlined the need to define the object of trade, asking if the sale involves emissions reduction or credits; if they are project-sourced or portfolio-sourced; if they are a fixed, realized or recognized amount; if the sale will occur now or in the future; and if they are an option or a contingent. From the buyer's perspective, he recommended the need to establish: what the purchase includes (for instance, emissions reduction or credits); if they are project-backed or portfolio-backed; if they are a fixed, realized or recognized amount; if they arise from a contract or property right; and if it involves speculating on the future or on the price.

He explained that current transactions of CERs are being instrumented in contracts, and are therefore creating property rights over them because there are no regulations. On the assumption that the Kyoto Protocol is ratified, he noted the need to establish: the format and structure of the emissions trading mechanism; the national laws and regulations that will govern it; the requirements to validate property rights; and the timing of the start of credit trading. On the allocation of portfolio risk, he underlined the importance of assessing the assigned amount units, credits or reductions, of ascertaining whether fungibility is assured, and confirming whether the commodity is traded and the risk is managed. He argued that trading is a means of managing risk and recommended the conclusion of contracts to enable CERs to be treated as commodities.

Martijn Wilder, of Baker & McKenzie, outlined the legal issues associated with the CDM. He noted that a number of "early" private trades in carbon reduction projects had generated credits that had already taken place despite the absence of a formal international trade regime. Nonetheless, he noted that such projects must manage a range of specific legal transaction and project risks, many of which exist due to the establishment of a formal market and the nature of the carbon emission reduction being traded.

He highlighted the opportunities available at the international level for undertaking carbon emissions reduction projects and identified the issues and legal risks associated with the creation of JI and CDM projects. He emphasized the benefits in developing Kyoto mechanisms – such as JI and CDM – as opposed to other emissions reduction, as these mechanisms provide greatest security owing to existing preliminary legal frameworks, cost-effective emissions reduction creation, the ability to bank CDM CERs as from January 2000, and the institutional support from many host countries, the World Bank and governments such as the Netherlands and the US. However, he urged negotiators to agree on a definition of a legal framework that would provide a good understanding of international obligations and how they interact with national regimes. He noted that one problem lawyers may face when undertaking transactions is the multiplicity of jurisdictions with different regimes. If an international framework was in place it would be easier to recognize CERs that are issued in other jurisdictions.

On CDM projects, he identified the benefits of: clear project criteria that include the possibility of partnerships between Annex I Parties and developing countries; voluntary and approved Party participation; measurable, long-term emissions and climate change mitigation; and additionality and no limitation of project types. He described a case study in China (Orbital Engine Corporation) where an emission reduction of 6.7 tonnes of CO₂ was displaced over 10 years. He noted that in the context of the project, risk management of CERs included the loss of or dispute over title, the failure to generate anticipated CER volume and inaccurate CER verification or baselines. He explained that the risk was minimized through maximizing the compliance with existing frameworks, the development of a buyer due diligence, a high level of verification, the negotiation of contractual terms – appropriate warranties and indemnities, and underwriting credits.

He concluded with a recommendation that negotiators at COP-6 should address a number of specific issues, including the emergence of a positive project list to establish eligible CDM technologies to require ratification before allowing participation in CDM projects, the definition of the administration of the CDM, ongoing monitoring and validation, additionality and supplementarity.

Paul Wilson, Fasken Martineau & DuMoulin focused his presentation on identifying "deal points" that contracts for transferring CERs should address. He noted that these contracts, as is the practice in any contracting process, should help contractors to strip away their assumptions on the risks of the deal. He highlighted the intervention of third parties, changes in science and security and performances issues as common deal points. On the intervention of third parties, he noted that they can be involved in a number of ways and suggested that there may be a large number of additional third parties, such as facility owners, reducers, financiers and local governments. He urged the audience to consider the property of the CERs, access rights and permanence. He recommended managing risks by undertaking due diligence, and obtaining a legally-binding assurance on the part of the supplier.

On the implications of scientific advances, he explained that this requires special assumptions that will help to anticipate how they may affect the deal. He noted that as a consequence of unexpected changes,

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projects may produce more or less sequestration tonnes than forecast, and thus recommended the inclusion of a discount formula. He also suggested the inclusion of re-opener clauses that would allow parties to re-calculate their tonnes if different numbers are adopted by relevant authorities.

On security, he emphasized the critical importance of legal remedies, noting that in many instances the return of the money is not sufficient to ensure the desired result. He recommended that this issue should be addressed by enacting clauses of security or warranty that make provision for the supply of alternate tonnes.

In the ensuing question-and-answer session, participants raised issues such as the lack of rules and how this situation represents a risk for business operations. Panelists repeated their recommendations on the proper allocation of risks as part of the contracting process.

OTHER PRESENTATIONS

In addition to these panel sessions, participants also heard two lunchtime presentations. On Monday, 2 October, Lydia Dotto, a journalist/science writer, addressed participants on the nature of the public's perception of climate change. Noting a general lack of public awareness of the Kyoto Protocol, as well as widespread misunderstanding of some of the key concepts associated with global warming, she suggested that the media were partly to blame for this problem. She highlighted the negative influence of the "scientific skeptics," and suggested that rather than debating the science of models relating to the cause and existence of global warming, the focus should be on identifying means to deal with its potential impacts.

She urged a more comprehensive adoption of the precautionary approach, and drew a comparison with the use of household insurance as an example of precautionary action being taken even when the probability of damage is perceived to be low. She argued that it was unlikely that the Kyoto Protocol will be ratified, and suggested that this may in fact be positive, as it would raise the public profile of the need for ongoing action. On emissions trading, she expressed sympathy with those who argued that this was a means for avoiding the implementation of significant domestic measures.

On Tuesday, 3 October, Eileen Claussen, President of the Pew Center on Global Climate Change, made a lunchtime presentation to participants, focusing on the challenges associated with setting the rules for the Kyoto mechanisms.

She identified five stages in the process of global environmental negotiations: the "rhetorical" phase, where Parties state their seemingly inviolable positions; a period of stalemate, in which Parties continue to argue the main issues; a "traction" phase in which the outlines of possible compromise become apparent; a "clearing" phase, where the difficult technical issues are decided; and the final decision-making phase, where the principal issues are decided. She suggested that following the recent meeting in Lyon, the negotiations on the Kyoto mechanisms were currently in the traction phase, and that it was now possible to see the outlines of the key technical and political issues that needed to be resolved. She emphasized, however, that these issues were difficult, and suggested that a number of them would not be resolved during COP-6.

Citing recent studies and economic models, Claussen highlighted the benefits of introducing an emissions-trading scenario, and urged that the mechanisms should not be defined in ways that minimize their use and/or increase their cost. She rejected the argument that the mechanisms would result in emissions reductions not being pursued at home, or that this would reduce incentives for technology development. While supporting the introduction of tough requirements for monitoring and

verification of CDM projects, she urged that the CDM requirements not be unduly bureaucratic and cumbersome. She recommended that the final text on mechanisms agreed in The Hague should: allow substitution between the mechanisms; permit "legal entities" to participate in international emissions trading; pursue harmonization among the mechanisms; impose and enforce significant penalties for non-compliance; and recognize that the mechanisms are most amenable for use by those countries that adopt domestic cap and trade systems.

While supporting the use of forests to assist in stabilizing the climate, she noted that the language of the Protocol is inconsistent, and noted the continuing need to deal with permanence, leakage, saturation, and verifiability. She doubted whether these issues could be addressed by the end of November.

She concluded by suggesting that three things need to happen if the Kyoto Protocol is to be taken seriously in the US: agreement at The Hague on a series of thoughtful and rational decisions on the mechanisms and on compliance; more thoughtful economic analysis in response to those who argue that the costs of compliance will ruin the US economy; and efforts to address the participation of developing countries, such as by focusing on influencing the nature of investments in these countries, rather than imposing binding emissions reduction targets during this decade.

THINGS TO LOOK FOR BEFORE COP-6

UNFCCC INFORMAL CONSULTATIONS: The FCCC Secretariat has announced informal consultations during the intersessional period relating to: Protocol Articles 5, 7 and 8 (6-8 October, Bonn); LULUCF (9-11 October, Viterbo, Italy); compliance (12-14 October, New Delhi); mechanisms (16-18 October, New Delhi); and adverse effects (19-21 October, Geneva). To confirm dates and for more information contact: FCCC Secretariat, Bonn, Germany; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; Internet: <http://www.unfccc.int/>

CANADA'S ENERGY EFFICIENCY CONFERENCE 2000: This conference will be held from 10-12 October 2000 in Ottawa, Canada. For more information contact: Canada's Energy Efficiency Conference, Ottawa, Canada; tel: +1-613-992-6130; fax: +1-613-236-8493; e-mail: conference.oeo@nrcan.gc.ca; Internet: <http://www.oeo.nrcan.gc.ca/conference/e/Conference.cfm>

EARTH TECHNOLOGIES FORUM: This meeting, organized by the Alliance for Responsible Atmospheric Policy, will be held in Washington DC from 30 October - 1 November 2000. Both ozone and climate change issues will be discussed. For more information contact: Alliance for Responsible Atmospheric Policy; tel: +1-703-243-0344; Internet: <http://www.earthforum.com/>

THE KYOTO EFFECT - THE NEW CARBON ECONOMY: This conference is being held in Antwerp from 13-14 November 2000. It is being sponsored by Prebon Energy and eFinancial News, and is intended for senior business, industry and government representatives. For more information contact: Hugh McGuire, Prebon Consulting Services; e-mail: hmcguire@prebon.com; Internet: <http://www.globalcarbonreduction.com>

SIXTH CONFERENCE OF THE PARTIES TO THE FRAMEWORK CONVENTION ON CLIMATE CHANGE: COP-6 will be held in The Hague, the Netherlands, from 13-24 November 2000. For more information contact: the UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; Internet: <http://cop6.unfccc.int/>