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A SUMMARY REPORT FROM THE 5TH UNCTAD/EARTH COUNCIL POLICY FORUM ON TRADE AND CLIMATE CHANGE
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SUMMARY OF THE 5TH UNCTAD/EARTH COUNCIL POLICY FORUM ON TRADE AND CLIMATE CHANGE: THE STATE OF THE GREENHOUSE GAS MARKET 29-31 AUGUST 2001

The 5th UNCTAD/Earth Council Policy Forum on Trade and Climate Change: the State of the Greenhouse Gas Market took place from 29-31 August 2001 in Rio de Janeiro, Brazil. The meeting brought together over 300 executives, officials and representatives from the private and public sector in over 30 countries. The Forum was organized jointly by UNCTAD and the Earth Council, in conjunction with the International Emissions Trading Association (IETA).

UNCTAD's work on greenhouse gas (GHG) emissions trading began in 1991, with the goal of reducing the impact of climate change by fostering an integrated global emissions trading system. Since then, UNCTAD has applied its expertise and experience in commodities trading to research and capacity building in GHG trading. In June 1997, UNCTAD joined forces with the Earth Council to create the Greenhouse Gas Emissions Trading Policy Forum, which led to the formation of IETA and work on a plurilateral emissions trading system based on establishing bilateral and plurilateral arrangements among countries with domestic emissions trading systems.

Forum participants addressed the trade and investment aspects of climate change, with a particular focus on opportunities for both buyers and sellers of GHG emissions credits and allowances. The Forum took place at a crucial moment. It occurred between the political agreement on key elements of the Kyoto Protocol at the resumed sixth session of the Conference of the Parties (COP-6 Part II) to the United Nations Framework Convention on Climate Change (UNFCCC) in July 2001 in Bonn and COP-7 in November 2001 in Marrakech, Morrocco, which will attempt to resolve outstanding issues. Seeking to continue the international momentum, the Forum focused on the three Kyoto Protocol market mechanisms – emissions trading, joint implementation (JI) and the Clean Development Mechanism (CDM) – available to countries to meet their Protocol commitments.

REPORT OF THE FORUM

Forum participants convened over three days to hear presentations and engage in discussions on: the future of the UNCTAD/Earth Council Programme; risk and insurance in the GHG market; practical guidance to the CDM; the activities of the Brazilian Business Council for Sustainable Development; climate change, energy crises and globalization; the science of climate change; next steps in the Kyoto Protocol negotiations; the history of allowance markets; views from allowance and credits producing countries and importing countries; private and public sector views on GHG markets; the role of market makers in developing GHG markets; and a concluding message from the Rio Policy Forum to COP-7.

SPECIAL EVENTS

During the afternoon of Wednesday, 29 August, participants attended a number of special events. The events included discussions of future directions of the UNCTAD/Earth Council Training Programme, risks and insurance in the GHG market, practical issues associated with implementing the CDM and a portfolio of climate change projects in Brazil.

FUTURE DIRECTIONS OF THE UNCTAD/EARTH COUNCIL PROGRAMME

Lucas Assunção, UNCTAD, introduced this event. Panelists made presentations and participants engaged in discussions during a question and answer period.

TRAINING INITIATIVE ON THE KYOTO PROTOCOL MECHANISM: Stephanie Foster, Earth Council Institute, highlighted the Earth Council's long collaboration with UNCTAD and introduced the UNTAD/Earth Council's GHG Emissions Trading Manual. Douglas Russell, Global Change Strategies International Inc, gave an overview of the manual. He noted its purpose is to provide a comprehensive but user-friendly reference tool, to assist trainers and facilitators in design and delivery of their training programs and to provide training and capacity building. Target audiences include public sector officials, private sector parties, journalists, consultants and the public. Russell highlighted elements of the Manual detailed under sections on background, emissions trading and experiences with the Kyoto mechanisms, and highlighted potential uses of and

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next steps for strengthening the manual. Gao Pronove, UNCTAD, described the manual as comprehensive but simple. He said the next step is to get it to the people who need it. On building the training programme, Pronove highlighted the need to develop targeted policy and technical courses and implement a strategy of live and on-line mediated courses for the private and public sector. Next steps would include building a network of training providers, sharing of methods and building a global library of courses.

In general discussion, a participant asked how the manual compares with previous similar guidelines issued by other institutions. Russell noted efforts to make the manual consistent with other guidelines and underscored that the manual is a reference tool that facilitates more specialized initiatives. One participant queried whether the title "GHG Emission Trading Manual" confused the intended scope of the document and noted the relevance of related UNFCCC capacity building work. Moderator Assunção responded that the objective is to build a buyer and seller market and cover the mechanisms consistent with Kyoto political agreements. He agreed on the desirability of harmonizing with other capacity building initiatives. One participant underscored the importance of financial resources for developing countries to allow coordination of efforts. A participant stressed a more audience-tailored approach. Others responded that the general application of the manual militates against specific targeting of audiences and that it should be viewed as a tool. One called for a chapter on financial risk issues, including bundling of small projects. Another participant stressed clarifying government versus industry trading roles.

RESEARCH: FOREIGN TRADE IMPLICATIONS OF THE KYOTO PROTOCOL: Lucas Assunção introduced Laurent Viguier, Institut d'Economie et de Politique de l'Energia, and Visiting Fellow at the MIT Joint Programme on the Science and Policy of Climate Change. Viguier highlighted model-based analysis and results of welfare and trade impacts of the Protocol on six Latin American countries, including scenarios and assumptions. Results showed that Annex B emissions controls might translate into welfare gains or losses in the countries through shifts in international trade and prices. Oil-exporting countries like Mexico or Venezuela are likely to be worse off with the carbon restriction, whereas energy importers like Brazil could be better off. The implementation of emissions trading in Annex B regions would probably reduce adverse economic effects on oil exporters while reducing the positive impacts on non-energy producers. Viguier highlighted the strengths and weaknesses of models and added that Latin American participation in the CDM could provide substantial capital inflows and stimulate sustainable development.

Commenting on the modeling, Carlos Mussi, ECLAC, stressed the need to take research outcomes into the policy forums. He highlighted the importance of addressing impacts and effects of mechanisms on balance of payments, fiscal polices and welfare. A participant underscored the need to analyze consequential effects on national and domestic policies.

RISK AND INSURANCE IN THE GHG MARKET

Andrei Marcu, IETA, and Joao Elisio Ferraz, National Federation of Insurance Companies (FENASEG), co-chaired this event. Andrei Marcu noted that insurance companies have a key role to fulfill in mitigating the various risks of the emerging GHG market. These risks extend to developing countries as well because the CDM is aimed at including such countries in the GHG market, and some of the liability may be transferred to the seller of Certified Emissions Reduction Credits (CERs). He noted that risk mitigation strategies such as credit guarantees and adequate insurance policies could have the effect of attracting additional finance at lower cost to a CDM project and could also attract wider project participation since the resulting lower risk profile of the project is likely to fall within the risk parameters set by a large range of potential investors. A panel then discussed the principal project risks that will need to be considered as well as instruments and policies that will need to be developed to address these risks.

Edward Sankey, MMC Enterprise Risk and Marsh Ltd., provided a perspective from the insurance industry on the types of project risks associated with the GHG market. He differentiated several types of risk. On policies and institutions' risk he noted uncertainties on future rules concerning project registration and CER certification, and raised the possibility that compliance regimes may differ across countries. Other types of risk relate to the performance of the project that generates the compliance units, such as CERs or emissions reduction units (ERU). For example, a project may fail on technical or operational grounds, may be subject to confiscation or expropriation, or may face economic and financial risks. He noted that one of the largest potential calamities is the fungibility of credits. Under the text adopted at COP 6 Part II, CERs from CDM projects, ERUs from JI projects, and assigned amount units (AAUs) may all be used for compliance. In addition, the compliance units may be transferred across countries. There is an inherent risk associated with such transfers if one country's compliance units are deemed less credit-worthy than units from another country and face the possibility that they may be discounted. He concluded saying that insurance companies may not be able to find risk transfer vehicles for all types of risk and that governments must decide and address such issues.

Jorge Barrigh, Corporacion Andina de Fomento (CAF), introduced the Latin American Carbon Programme (PLAC). The CAF traditionally supports infrastructure projects in the Andean countries, but recently has started to include carbon considerations in its project design. The PLAC aims to identify potential carbon reduction resulting from their projects and will assist the holder of the credits in commercializing the CERs. He stressed that most projects will already have been selected and that the carbon component will only add additional revenue to the projects. He described several projects, including the expansion of a cogeneration facility in Colombia, which has the potential to reduce total carbon emissions by 3.3 million tons over the project's 15 year lifespan.

Irma Lubrecht and Edwin Aalders, SGS AgroControl, described their company's role in reducing risk in CDM and JI projects. SGS certifies that projects comply with the SGS GHG Project Eligibility Criteria, which are based on their interpretation of existing criteria, and then verifies that activities have taken place. When all criteria are met, GHG credits will be issued to the developer. However, the developer generally does not receive all the GHG credits at once. SGS quantifies the risks of a particular project and then discounts the total amount of credits at an appropriate level. This creates a buffer of credits from which you can draw in the future when more information becomes available or when an event, a forest-fire for example, does not occur. For example, a recent project in Costa Rica saw 60 % of its total credits generated deposited in the buffer. Projects can increase the credits available for immediate monetization by applying methods that would

decrease the chance of default. For example, forest-based projects may receive more credits upfront if they have an adequate forest-fire management plan in place. An important goal of this system is that investors gain confidence in the new commodity and the project buffers result in virtually risk-free benefits for CO_2 sales.

A PRACTICAL GUIDE TO DEVELOPING THE CDM

This event, chaired and organized by Corinne Boone, CO2e.com, aimed to improve practical understanding of CDM-related issues. Boone introduced the session and noted, *inter alia*, CO2e.com's goal of developing an effective market and its products and solutions.

Paulo Braga, EcoSecurities, highlighted EcoSecurities' background and track record. He then gave an overview of EcoSecurities' ongoing projects to mitigate GHG emissions in Brazil. Challenges that relate to establishment of CDM projects in Brazil include lack of: clear government policy, a CDM focal point and transparency in obtaining host country approval. Projects in the pipeline are afforestation, reforestation and renewable energy projects. In highlighting the projects, Braga noted project description, status, eligibility, baseline assumption, carbon flows and financial structure.

Carlos Martins, EcoInvest, spoke on financing issues around the CDM. He noted key project investment aspects are environmental soundness, social responsibility and economic soundness. Martins indicated market prices per ton of CO_2 range from $US 0.50 to US$3.00 and said they reflect the risk involved. On investing being an analysis of risk, he highlighted the relationships between image risk and public perception, credit risk and project failure, strategic risk and location of project, and cash flow risk and baseline risk. Focusing on cash flow, he noted that while hedging structures can be used to mitigate risk, baseline risk is problematic. In this regard, Martins showed how Brazil could be penalized in spite of a clean electricity generation fuel mix and low electricity baseline. He said project baseline calculation is unmanageable and proposed a credible standardized baseline for the world.

Sergio Vives, of Urquidi, Riesco, Ramirez & Compañia, addressed legal questions for the developers of CDM projects. Focusing on the national framework of the host country, he said elements to address under the environmental legal framework are an environmental impact study and the liability regime. In terms of foreign investment law, relevant elements are clear rules for foreign investors, the tax regime and settlement of disputes. Regarding law in specific sectors, he highlighted variations for investing in forestry, waste management, energy and emissions trading. Legal issues for proactive consideration in specific projects are ownership of the reductions, liability and sanctions for non-compliance, and legal status of the certificate. For contracts, international considerations are the Protocol rules, issues not covered in the Protocol and issues that could be covered at a later stage. Specific contractual issues are: project and certificate ownership; project responsibility; dispute settlement; liability of the developer, certifier and the State; the tax regime; and the possibility of the transfer of the project, company and certificate. Vives stressed the many legal uncertainties, potential for change in the legal framework and the importance of certainty in all project components.

Paul Vickers, TransAlta Corporation, noted TransAlta's gross emissions are growing from 40 to 80 million tonnes per year and their need to acquire emission reductions from others. Stressing his comments would be from the perspective of an entity interested in entering into long term purchase arrangements, he said TransAlta is operating strategically on the basis that the Kyoto Protocol will not come in into force. He added that it is not clear that the Protocol will be a guiding force or provide a legal framework. He stressed that it is easy for the company to agree on commercial terms but it is not easy to actually enter into contracts. This is because it comes down to sharing of risk and TransAlta does not assume the project risk. Elaborating, Vickers said TransAlta enters into long-term carbon reduction projects but they do not take positions in the projects. Noting there is currently a large, segmented, inefficient carbon reduction market, he said TransAlta's project purchase criteria are economic sustainability over 20+ years, clear carbon accounting rules, clear definition of ownership and host country approval of the tones exported. Risk management is achieved through measures including, *inter alia*: a portfolio of 20 to 30 investments; having developers with solid records; payments tied to project milestones, partners, contracts, and ongoing monitoring; and conservative bookkeeping of available volumes. Vickers stressed that it is not the international UN rules that count for them. It's the regime of the local regulatory authority that counts. Thus, Kyoto is not a big deal for them.

On a question on whether dependence of local rules on pending international decisions effects TransAlta purchasing, Vickers said that in the US you get the environmental permit from an authority below the federal level, so the rules and regulations are already in place. On supporting universal Kyoto rules over the difficulty of differing local rules, Vickers agreed that a harmonized international regime is desirable but said it won't happen for a long time. He underscored that, on top of this, the US doesn't generally ratify international agreements, but qualified that the US nonetheless almost always implements the agreements' intent. On a comment suggesting that domestic rules will change to harmonize with Kyoto on ratification, Vickers said this is the contractual concern of the other party that is offering the product for sale. On harmonization of polices and measures, a participant noted that Kyoto negotiators have moved away from harmonization as a focus and moved toward exchange of best practices. Vickers stressed that great projects that reduce emissions will end up as good investments for companies like TransAlta.

Marcelo Carsalade, Brasimport, spoke on infrastructure issues associated with facilitating CDM CER exports. He stressed that, for Brazil to compete, they need effective internal rules. Otherwise an environment of uncertainty will divert flow of capital to host countries with stable and consistent rules. Host country regulations should provide stability, agility and security to guarantee liquidity. Carsalade underscored the need for early host country preparation for trading and recommended private sector and host government collaboration to implement local rules and regulations on CDM projects.

Warwick Manfrinato, CEPEA -USP, commented on reviewing CDM projects in Brazil. Highlighting steps toward formation of an international carbon market, he noted the current "gray market," which is an informal carbon market without official rules and without legitimate rights. On project criteria, he emphasized the importance of learning by doing, case studies, and evaluation of real circumstances and practices. He noted the role of universities and stressed that a participative process requires a balanced stakeholder environment. He also highlighted the need for projects in the pipeline, measuring potential participation, identification of good projects, establishing a strong

case for the CDM in Brazil, growing stakeholder involvement and pursuing values in the best interest of development. Responding to a question, Manfrinato stressed proceeding in a measured, practical and progressive approach that does not require knowing all the answers immediately.

BUSINESS COUNCIL FOR SUSTAINABLE DEVELOPMENT (BCSD) BRAZIL

This event was organized by representatives from the Business Council for Sustainable Development (BCSD) Brazil to discuss the potential for CDM projects in Brazil. Given Brazil's enormous resources, the panelists concluded that ample opportunity exists for such projects. Various Brazilian and international companies were represented at the event.

INTRODUCTORY SESSIONS

On Thursday morning, 30 August, participants met in three introductory sessions: an opening session, a session on the science of climate change, and a session on next steps for the Kyoto Protocol. These sessions were followed by a keynote address by Richard Sandor of the Chicago Climate Exchange.

FORUM OPENING SESSION

The opening session on climate change, energy crises and globalization, chaired by Lucas Assunção, UNCTAD, addressed how bottom-up climate change initiatives can converge with top-down negotiations and considered whether the private sector and civil society need to wait for governments to act.

Rubens Ricupero, Secretary-General, UNCTAD noted that, 10 years after the UN Conference on Environment and Development, the international community is seeing the fruits of the conference. He stressed the importance of developing an inclusive GHG cap and trade system and noted the substantial influence of UNCTAD's evolving GHG project on international negotiations. He stressed the elegance of the cap and trade device in allowing goals to be met in a non–prescriptive and efficient manner. Ricupero recognized that developing countries should not be dealt with in the same way as developed countries, and that their contribution can't be a on a par with developed countries. He also stressed the importance for the Protocol to have an inclusive system that facilitates gradual participation of developing countries in a global cap and trade system, underscoring the need to build the capacity of developing countries to participate in such a system. He stressed a learning by doing process and noted that barriers would be greater than those usually faced by foreign direct investment. Ricupero underscored the importance of reducing transaction costs of GHG offset projects. He noted host countries can take steps to lower transaction costs and better align investments with national goals. He also called for finance to support developing country participation and noted current UNCTAD/ Earth Council work toward a pilot project that would support developing country participation in emerging GHG markets. Ricupero said the Kyoto Protocol is not flawed, but untested. It seeks a global solution to a problem caused by only a few countries and can succeed because of its efficient machinery. Bonn showed the unanimous will of the world to give the Protocol a chance and nations can be proud to participate in this totally new market.

Maurice Strong, Earth Council Institute, concluded that the road from Rio had not been easy. While Strong deplored that the largest polluter, the US, has announced its opposition to the Protocol, he expressed hope that it will be brought back into the process. He said the Protocol is moving ahead and ratification is more likely after Bonn. While the US may be on the sidelines for now, there are several initiatives being discussed that would address the issue of climate change on a unilateral level. While much of the work to be done is very technical, particularly setting up a system of flexible mechanisms to achieve reductions, the Protocol is still a political instrument. As a consequence, the international community must ensure the process remains an open one and that critics have a voice. The system is designed to bring significant benefits to developing countries, through the CDM and JI, and could contribute enormously to the sustainable development of these countries. Strong observed that the sustainable development movement has been going through a transition from a government-led process to one in which civil society plays a more prominent role, with businesses and environmental NGOs working together. This partly reflects the current status of sustainable development, which has moved from policy formulation to the implementation of various agreements. Strong concluded that the Protocol is moving ahead, and that companies that take early action will benefit greatly in the future.

Philippe Reichstul, Petrobras, adopted a realistic view on climate change and environmental stewardship and estimated that 10 percent of total investment funds are aimed at "socially responsible" companies. In addition, companies are now being ranked based on their environmental performance as much as on financial indicators. Another element motivating his company to become an environmental leader in Brazil is that clients demand environmentally-friendly products. As a result, Petrobras is developing a strategic plan to establish internal environmental indicators and inventories of its pollutants between 2003 and 2004, and aims to invest in renewable energy and energy efficiency.

Paulo Protasio, IETA, noted that the issue of GHG emissions trading was first discussed in 1991 by UNCTAD. The goal for governments was to seek the lowest cost solution to reduce emissions by emitting companies, and it was acknowledged at that time that climate change could only be addressed through cooperation. Emissions trading is a good example of such cooperation, where the government sets a firm cap on emissions and leaves it to companies to find the least cost of reduction. Markets are offering solutions to environmental problems and can play a role in achieving sustainable development at the lowest possible cost.

Ronaldo Sardenberg, Minister of Science and Technology and President of the Inter-ministerial Committee on Climate Change, Brazil, observed that the dual frustration of the failure in The Hague and the unilateral withdrawal of the US has been erased since Bonn, and that the Bonn Agreement has provided momentum for Protocol ratification. As head of the Brazilian delegation to COP-6 Part II, he argued that Brazil played an instrumental role in the successful outcome of the meeting, particularly by establishing bridges between European and developing countries. Also, many issues important to developing countries, such as funding, capacity building, and technology transfer, were addressed in Bonn and, as a result, a discussion on the state of the GHG market is very timely. He supported common but differentiated responsibilities to allow for large emitters to assume a larger share of the burden and said the Protocol is consistent with this goal. Brazil will be

well positioned to take advantage of the several flexible instruments of the Kyoto Protocol, particularly the CDM. He stressed the importance of the CDM for a country like Brazil, and expected that it would function as a vehicle for the transfer of technology and funds. This may have a catalytic effect on other types of projects, such as projects involving renewable energy and energy efficiency. He concluded that the Protocol is the most comprehensive and complicated international treaty in history. It requires all countries to cooperate and participate to ensure future generations will benefit from sustainable growth.

THE SCIENCE OF CLIMATE CHANGE: MORE CERTAINTY

Luiz Gylvan Meira Filho, Brazilian Space Agency, spoke on the role and development of science in formulating climate change policy. In the late 1980s, the UN set up the Intergovernmental Panel on Climate Change to examine the state of climate change from all angles. This led to the first assessment on the causes of climate change in 1990, an effort that would be repeated every 5 years. The process is subject to a peer review and the report must be adopted by Governments. The first assessment on the causes of climate change became a catalyst for early steps to combat climate change and contributed to the formulation of the precautionary principle. The second report, published in 1995, gave further impetus to the climate policy debate and contributed to the Berlin Mandate, which instructed Governments to take concrete steps to combat climate change. The last report, completed in 2000, benefited greatly from superior computer models not available before. These models were better able to differentiate between natural carbon fluctuations and anthropogenic influences on climate change. Filho said the conclusion is clear: human activity contributes to climate change. When you look at the increasing concentration of GHG and associated temperature increases over time, and then project future temperature increases in the absence of the Protocol, there are convincing arguments that the Protocol targets should be met. While the impact on temperature will be relatively small even if Protocol targets are met, the important conclusion would be that a trend has been reversed.

THE KYOTO PROTOCOL NEGOTIATIONS: WHAT NEXT?

Tahar Hadj-Sadok, Climate Change Secretariat (UNFCCC), highlighted developments at COP-6 Part II. These included delegations' identification of political crunch issues, ministerial "group" negotiations, ministerial approval of the Bonn agreement followed by its later official adoption, translation of these elements into detailed decision texts, and texts agreed (10) and not agreed (5) forwarded to COP-7 for adoption as a package. Hadj-Sadok outlined package elements of the Bonn Agreement under: funding for developing countries; framework on technology transfer; framework for capacity building; adverse effects of climate change and impacts of response measures; the Kyoto Mechanisms; the CDM and JI; emissions trading; carbon sinks; and compliance. He assessed that good progress was made at Bonn in terms of institutional structures, noting that what was envisioned in Buenos Aires in 1998 is being achieved, though with a delay. Highlighting an assessment of emissions in the first commitment period and contingencies involves, Hadj-Sadok said the overall situation allows for successful implementation of the Protocol.

Paul Fauteux, Canada, said Bonn provides clarity on the general framework for the Kyoto Mechanisms market. The level of clarity, at least with respect to mechanisms, should be sufficient for Parties to make their ratification decision in the coming year, but resolution of operational details for the mechanisms will take us to COP-7, and in some cases beyond.

On supplementarity, Fauteux noted the resolution at Bonn ensures unfettered access to the Kyoto Mechanisms and a robust mechanisms market. However, he noted circumstances under which supplementarity may still emerge. For example, Parties not complying with their target in one commitment period will have to give priority to domestic action in their compliance action plan for the subsequent period. Fauteux noted that the issue of fungibility was not completely resolved but that Bonn effectively gave direction to negotiators to clarify this issue within the registries guidelines. On mechanisms eligibility, Fauteux supported ensuring that the mechanisms' eligibility requirements are not made so needlessly stringent as to prevent some potential major sellers and buyers from ever participating.

Fauteux anticipated key JI issues at COP-7, including: composition and voting rules of the supervisory committee; the actual verification procedures for JI projects; and the timing of transfer of credits vis-à-vis monitoring and reporting obligations. On CDM issues at COP-7, he anticipated consideration of voting rules for the executive board, the role of the executive board versus the COP/MOP, baselines and additional procedures, as well as the question of host Party approval of projects versus host *and* investor Party approval.

Fauteux concluded that the Bonn Agreement has laid the foundation for the rules that will create carbon credits and the rules that will govern the trade of those credits. The next major step is creation of the demand stimulus for the international carbon market, which will come with entry into force of the Protocol. On the Protocol's entry into force, he anticipated a spike in the number of forward transactions in emissions trading and in the number of project activities launched in developing countries and economies in transition. Noting that the Kyoto market will be smaller without the US, he predicted the US may embark on its own international offset program. If so, it will be important for compatibility between the Kyoto system and any US-led system, to facilitate their merging at some future date. Looking past the first commitment period, the size of the international greenhouse gas market will be driven by the number of participants in the system and the depth of future emission reduction targets.

Everton Vargas, Brazil, noted the emerging carbon market has far reaching consequences for many sectors of society. Not only does it present a new tool for environmental policy, it is also changing the nature of international relations. The Brazilian ministries have been working very closely together to formulate sound climate policy and bring their concerns to the attention of policy makers at different international fora such as the Conferences of the Parties. He pointed out that climate change was first addressed by the international community here in Rio de Janeiro. The legal framework that has evolved over the years since Rio, while complicated, is the product of an unique collaboration between developing and developed countries, and alliances within countries between government, business interests and environmental organizations. The Kyoto Protocol is so complicated because it ultimately deals with human behavior, and how we as a community collectively are responsible for climate change. This wide collaboration will contribute to the acceptance and implementation of the Kyoto Protocol. However, while the Protocol was a product of wide collaboration, he advocated "common but differentiated" responsibilities whereby devel-

oped countries, which are responsible for the majority of GHG emissions, also carry the responsibility to reduce their emissions. He stressed acknowledging climate change consequences, greater consultation, behavioral challenges and institutional challenges. He underscored Brazil's efforts and their view that withdrawal of countries from the process is unacceptable. Vargas lauded the international resolve to overcome differences evidenced at Bonn and said this positive note can be built on in Marrakech. Looking ahead to COP-7, he noted that the legal framework needs to be finished, and that compliance and enforcement mechanisms particularly still need much work.

KEYNOTE ADDRESS

Richard Sandor, Environmental Financial Products LLC, gave a keynote address. Sandor has gained first hand knowledge on how markets evolve and explained how the Acid Rain Trading Program in the United States, which started in 1990, represents the latest trend in the commoditization of natural resources. There is no inherent difference between the right to trade a ton of wheat and to trade the right to emit a ton of SO_2. As long as the legal entitlements are well defined, emissions credits can be traded like any other commodity. Once such legal entitlements have been defined, the commodity can be traded on spot markets or even through exotic instruments such as call options, put options, and collars.

The Acid Rain Trading Program has been hugely successful, and current emissions are 40 percent below the allowable limit. Early predictions about allowance prices were much higher than the prices reached. He concluded that it is very difficult to predict allowance prices and that the market for allowances is as volatile as any other spot market. This represents a lesson for the emerging GHG market where great uncertainty exists regarding the forward price of allowances and credits. This uncertainty is exacerbated by the different types of tradable compliance units.

Next, Sandor introduced the Chicago Climate Exchange (CCX), a voluntary regional GHG trading program in the US. It currently includes several energy, agricultural, forest product, and service companies in seven states in the mid-west, which together represent 19 percent of GHG emissions in that region. The companies have agreed to a voluntary cap, starting at 2 percent below 1999 level emissions in 2002, and then ratcheted down 1 percent annually between 2003 and 2005. While the initial focus is regional, the program can extend to all of the United States and can be linked up with other countries if necessary. Brazil can participate in the CCX by providing high-quality CDM projects. Companies will benefit from participation as they will gain first-mover advantage, help design the protocols, and build managing and trading skills. In addition, companies will increase their reputation among stockholders, and potentially gain access to the 2 trillion US dollars that are socially and environmentally screened.

THE STATE OF THE GHG MARKET: VIEWS OF GHG OFFSETS IMPORTING COUNTRIES

On Thursday afternoon, 30 August, participants heard and discussed public and private sector views on the GHG market from the perspective of offsets importing countries.

EXPERIENCE WITH DOMESTIC EMISSIONS TRADING SYSTEMS

This session, moderated by Gao Pronove, UNCTAD, considered the provisions for the purchase of project-based GHG offsets from abroad and the criteria and requirements for their trade within emerging national systems. A panel of European countries discussed their experiences with domestic emissions trading systems. Peer Stiansen, Norway, said that while Norway does not have an emissions trading scheme yet, his country has started discussions on the merits of a national system. Norway attempted to levy an environmental tax on heavy industry, which is largely responsible for GHG emissions, but met much resistance. Norway scrapped this plan when they realized that its industrial base would be at a comparative disadvantage. A future emissions trading scheme would include all emitting sectors, would be compatible with the Protocol and would recognize AAUs, CERs, and ERUs as compliance units. However, no compliance units from nuclear facilities would be accepted.

Margaret Mogford, British Gas, spoke on her participation in the working group in the United Kingdom on setting up an emissions trading scheme. A pilot-scheme started off with 28 companies, several government ministries, brokers, and environmental NGOs. Companies started to accept the political reality that some form of climate change policy was inevitable and largely cooperated. The scheme is designed as a dual system. Some companies, mainly companies that participated in an earlier program to reduce emissions, operate under a cap, which is relative to their output. Other companies will operate under a voluntary classic cap and trade system. However, several exceptions exist, for example, you cannot generate credits by switching from coal to gas. CDM projects will be accepted, however, they will have to meet the same standards as projects under the Protocol. The full-scale emissions trading scheme has not been implemented yet.

Hans Sterh, Danish Ministry of Environment and Energy, explained that Denmark had an aggressive target to reduce CO_2 emissions from power plants before the Protocol specified new targets. Under the EU burden-sharing agreement, Denmark has to reduce its GHG emissions to 21 percent below 1990 levels. Denmark's emissions from power plants, the majority of which are coal-fired, are heavily influenced by its interconnections with other countries, particularly Norway. Norway is 99 percent dependent on hydro electricity, and in a dry year, such as in 1996, it must import electricity from Denmark. Denmark aims to achieve its reduction through a cap and trade system: total emissions are not to exceed 20 million tons of $C0_2$ by 2003. Should total emissions exceed this cap, a tax of approximately US$5/ton will be levied on the excess emissions, effectively setting a ceiling on the price of a CO_2 allowance in Denmark. The majority of the emissions come from the two utilities in Denmark, and this has been a limiting factor on the development of an emissions trading system.

Lex de Jonge, Netherlands Ministry of Housing, Spatial Planning and Environment, said The Netherlands must reduce its GHG emissions to 6 percent below 1990 levels. It aims to achieve these reductions through a combination of domestic cuts and use of the flexible mechanisms of the Protocol, mainly through the CDM. Only at a later stage will The Netherlands participate in an emissions trading scheme. The Dutch government does not only organize the purchase of CERs and ERUs, but also finances the purchase. He echoed the sentiments of

other European panelists on how any system, whether it be emissions trading, CDM or JI, must comply with EU rules on competition. It is against EU rules for any government to subsidize or otherwise favor its national industries. For example, grandfathering sources as a means to allocate allowance under an emissions trading scheme is a violation of EU rules. The Dutch government therefore uses intermediaries to execute transactions on its behalf. While The Netherlands recognizes that the Bonn Agreement stipulates that the host country makes the final determination whether a project contributes to its sustainable development, which is one of the conditions to qualify as a CDM project, it does reserve the right to vary the level of payment according to its interpretation of the environmental and social benefit. On risks and guarantees, The Netherlands aims to use a variety of risk mitigation instruments, including parallel buying of call options for CERs and AAUs, engaging private insurance companies and increasing size and diversity of the portfolio of projects.

Jurgen Lefevere, Foundation on International Environmental Law and Development, spoke on the development of an EU emissions trading scheme, scheduled to be implemented in 2005. While he was not speaking on behalf of the EU, his organization is involved in the consultation process and was asked to speak on this topic. The exact scope of the EU system is still under consideration, and no formal proposals have been put forward, but the core of the several proposals that have been leaked suggest the scheme would be relatively straightforward. Initially, only larger emitters would be included, approximately 4,000 – 5,000 in total, covering only CO_2 emissions. The system would be set up so that the program scope could be expanded as necessary. The EU will not run the emissions trading scheme itself. Instead, member states will operate the scheme, but design proposals will have to be submitted to the European Commission and must be in compliance with EU regulations.

PRIVATE SECTOR VIEWS OF GHG OFFSETS IMPORTING COUNTRIES

This session, introduced by Andrei Marcu, IETA, considered the specific attributes of GHG offset projects that would attract private investment, the specific project characteristics that have attracted investment, and what motivates multinational companies to invest in GHG offset projects in developing countries. John Mogford, British Petroleum (BP), discussed BP's approach to climate change. He noted they first set an internal target in their operations and have learned much since. Since 1997, BP has reduced emissions by about 7.5%, using an internal cap and trade scheme. He noted BP's influence in efficiency and substitution, policy debate involvement, research investment and learning by doing. He said their focus is internal and they are not buying external credits. Reasons for using credits include increased flexibility, cost effectiveness, developing-world location of operations, and impending real value of carbon. Investment criteria include business alignment and contribution to sustaining human progress. Mogford noted characteristics of BP case studies on fuel switching in China and solar in Brazil. On what has been learned, he noted that, *inter alia*: project based credits will be important for the energy industry; connectivity between national schemes and transparency of rules encourage business participation; and credit based projects can help achieve sustainable development.

Cindy Kohuska, SwissairGroup, highlighted the interface between the Kyoto Protocol and the aviation industry, and noted International Civil Aviation Organization (ICAO) recommendations as they relate to Kyoto. ICAO projects that emissions from the airline industry are set to increase significantly. Kohuska noted SwissairGroup's CO_2 portfolio, and indicated that they are looking at Kyoto mechanisms, the GEF, investment funds, CO_2 certification/trading associated with ICAO, and the CO_2 market.

Frede Cappelen, Statoil, noted GHG emission trends in Norway and highlighted Statoil's profile, noting their efforts to find possible reductions throughout the business. He said there is currently no proposal for pilot emission trading Norway. On Statoil's position on emission trading, he noted their management infrastructure is in place. There is no national cap implemented for emissions trading in countries where Statoil is present so there are no incentives to go into trading yet. On CDM/JI, they will explore possibilities to get credit for emission reductions. He noted they will definitely be on the net buyer side in trading. Cappelen stressed predictability in evaluating CDM projects, for which key elements are eligibility, price and project considerations. He added that progress with the Kyoto negotiation will allow a more active approach.

Paul Vickers, TransAlta, highlighted a chart showing the evolution of market instruments and noted their use in achieving environmental outcomes and the sophisticated body of knowledge on what already exists and works. He emphasized TransAlta's high volume of CO_2 emissions and noted they are developing renewables and other measures so that they don't just rely on offsets. He noted internal trading was uneconomical for TransAlta and therefore they had to use external emission reductions. Critical attributes of offset projects for TransAlta include fungibility and compatibility with domestic compliance regimes, and simplicity. Project purchase criteria are economic sustainability over 20+ years, clear carbon accounting rules, clear definition of ownership and host country approval of the tones "exported." Vickers also noted risk management criteria. On the offset market, he said they believe about 74 million tones of emissions reductions are being transacted and project growth to 180 million tones in 2010.

Bernt Rydgren, NRG, noted that NRG is the third largest independent power company in the world and highlighted their vision for the future in terms of high growth and responsibility. On expectations, he noted the Kyoto flexibility mechanisms provide win/win outcomes and stressed it all comes down to risk management. Dependability and the ability to forecast are key. He said that the risk factors were really the same as in regular business. Expectations of credits include that they be verifiable, guaranteed and tradable. To attract private investment, developing countries can, *inter alia*, be good business partners, identify and remove trade and investment barriers, increase regulatory clarity and strengthen the regulatory framework. Rydgren emphasized that they see Brazil as an important market for emission reduction credits.

On whether a CER might have intangible as well as tangible value, Mogford observed companies will draw the line in different places. Cappelen said you need to consider this from a project as well as company basis. Rydgren said some projects have added intangible value. Kohuska stressed SwissairGroup considers the social dimension closely. Vickers noted that ultimately it is an emission reduction, though different qualities can attach.

THE STATE OF THE GHG MARKET: VIEWS OF GHG OFFSETS EXPORTING COUNTRIES

On Friday morning, 31 August 2001, participants met in two sessions on public and private sector views of GHG offsets exporting countries.

PUBLIC SECTOR VIEWS OF GHG OFFSET EXPORTING COUNTRIES

This session, moderated by Frans van Haren, Earth Council Institute, addressed what is happening and being done in export countries regarding GHG offsets, how developing countries are preparing for the emerging GHG market, and what can be done to enhance the capacity of exporting countries. Van Haren said those expected to provide the environmental services are in the driver's seat and will play a central role.

José Miguez, Brazilian Ministry of Science and Technology, spoke about developments in Brazil regarding GHG offsets. He noted Brazil's signing of the UNFCCC and Kyoto Protocol, the coordinating function of the Inter-ministerial Commission on Sustainable Development, and country agencies involved in Brazil's efforts. In 1999, Brazil established the Inter-ministerial Committee on Climate Change. Miguez noted its composition and tasks, including addressing sectoral policies, legal instruments and norms, and defining eligibility criteria additional to those prescribed under the CDM. He also noted Brazil's Climate Change Program Multi-year Plan and the Brazilian Forum on Global Climate Change, which addresses, *inter alia*, awareness raising. On elements of the road ahead, he identified COP-7 decisions, Kyoto Protocol ratification, certification and financial resources, and accreditation. Miguez noted progress made in building an institutional framework, widening participation of existing institutions and experts, increasing capacity and awareness, developing a web page, improving public participation, and supporting the UNFCC process.

Eduardo Sanhueza, National Strategy Studies Programme for the implementation of the CDM, noted Chile's ratification of the UNFCCC in 1994 but said a real understanding of the climate change problem and solutions began later. He noted Chile's active participation in and commitment to the climate process and the ensuing CDM opportunity. Sanhueza noted Chile's views on the CDM, including that sinks are a strategic issue for Chile. On goals for the study, he highlighted initiating dialogue, estimating existing reduction potentials and agreeing on institutional arrangements. He stressed the study is just an initial step and much more will need to be done. Sanhueza stressed lowering transaction costs and called for international cooperation to overcome such barriers.

Jan Pretel, Czech Hydrometeorological Institute, shared his views on the introduction of a domestic GHG market in the Czech Republic. Implementing an emissions trading scheme in an economy in transition is different from an emissions trading scheme in developed economies. For example, circumstances regarding monitoring, verification, certification, and harmonization of domestic trading schemes with international ones are different across different economic systems. The Czech Republic aims to accede to the European Union in the future and is therefore designing its system to become compatible with the EU emissions trading scheme when this takes off in 2005. The Czech Republic will use a variety of policies and measures to achieve its Protocol targets, and aims to be host to JI projects with which it has some experience. The projection of emissions levels generally points upwards, and the energy sector is responsible for most CO_2 emissions, which constitute 86 percent of total GHG emissions. An emissions trading scheme, which would include over 400 sources, would be the most cost-effective way to reduce emissions. Some outstanding issues include the initial allocation of allowances and how to organize monitoring, verification and certification.

Jose Villarin, Climate Change Information System, Philippines, concluded that much deskwork has been done to prepare his country for the emerging GHG market. One of the main goals of the Philippines is to establish a framework for CDM projects, starting with identifying types of projects, set up the operational and legal framework, institutionalize access to information, and finally executing projects. He noted that by some estimates, the wind energy potential in the Philippines could be as high as 70,000 MW, on a total current capacity of 12,000 MW. A CDM framework must be integrated into the wider environmental and economic goals, and should mainly be focused on local communities.

Richard Muyungi, Vice Presidents office, Tanzania, spoke on the potential for investing in Least Developed Countries (LDCs). He highlighted the geographical location of LDCs and noted their preoccupation with immediate problems such as poverty eradication, employment generation, and HIV/AIDS. Muyungi said lack of infrastructure/capacity is a key feature and stressed that the private sector hardly knows about GHG trading. On addressing barriers, he highlighted the UNFCCC capacity building framework as the basis for assistance, awareness raising at public, political and technical levels, implementing coordination frameworks and institutional capacity building. On capacity building, he highlighted addressing systemic capacity needs, additional equipment and awareness, capacity to reform the infrastructure and financial sectors, and creating a critical mass of experts. On roles and responsibilities of agencies, he emphasized additional ways of assisting such as down-to-earth training on key issues, monitoring, verification and certification activities, and providing a critical mass of experts for the public sector. Muyungi also highlighted equity concerns and required strategies on subregional approaches, small scale projects and a bottom up approach. His conclusions included that potential markets do exist in LDCs and investment is needed for infrastructure and capacity building.

Youba Sokona, Environnement et Developpement du Tiers Monde (ENDA), noted there is limited potential for African countries to export and the issue is not on the political agenda. He highlighted the lack of people working on emissions, stressed that exporting requires capacity building and said the private sector doesn't invest in capacity building. Sokona said the three key pillars are policy issues, technical and scientific understanding of issues, and project identification, development and implementation.

Jean Acquatella, Comision Economica Para Latina America y el Caribe, examined how the size of the future GHG market would vary with and without the participation of the United States. In general, the projected size of the market is very large, but when a large potential buyer such as the United States pulls out, an imbalanced supply and demand will result. It is estimated that the total potential market for offsets could be 600 – 1,300 MtC per year, but if the United States

would not be a buyer of such offsets, the market could shrink to 400 – 900 MtC. Given these ranges, Latin American countries could provide 8 – 12 of percent of the offsets.

A participant highlighted uncertainties over the status, accounting and monitoring of trades that pose challenges for the developing market. He considered that market-based instruments will be important in the long term but was not optimistic about the short-term market because of the many obstacles.

PRIVATE SECTOR VIEWS OF GHG OFFSETS EXPORTING COUNTRIES

This session, moderated by Israel Klabin, Brazilian Foundation for Sustainable Development, addressed the economic and developmental interests of the private sector in GHG exporting countries in participating in GHG offset projects, specific project attributes important for their active participation and projects currently under implementation. Klabin compared the Protocol and the emerging market for GHG with the Bretton Woods institutions, which aimed to set up a new economic order after the Second World War. Several representatives from different sectors spoke on their companies' experience and outlook on GHG markets.

Hyo-Sun Kim, Korea Gas Corporation, stated that 80 percent of South Korea's GHG are generated by the energy sector, even though natural gas has increased its share of primary energy consumption significantly in the last decade and is expected to reach 15 percent by 2020. South Korea expects to become an exporter of offsets. Setting up CDM projects now offers the opportunity for learning-by-doing, will build capacity for sustainable development and will offer the opportunity to increase the cooperation between North and South Korea. In fact, a relatively small-sized pipeline project between the two countries is currently under consideration. Korea Gas Corporation's participation in the GHG Market will be enhanced by participating in a multilateral carbon fund with financial instruments, and assisting in building of an electricity-emission trading platform in northeast Asia. As South Korea is already relatively energy efficient and has only a moderate capacity for forest-related projects, she did not expect South Korea to become a large exporter of offsets. However, she said that, while the quantity of projects may be low, the CDM framework to be set up in South Korea will ensure high quality projects.

Fernando Almeida, Brazilian Business Council on Sustainable Development, spoke on how the Protocol can contribute to sustainable development in his country. There are many disenfranchised people in Brazil, and CDM projects must benefit them in addition to generating offsets. They are working on a national model in which many different companies work towards sustainable development. The Bonn Agreement was an important achievement, but many details need finalization. Particularly, there is a need for clear and concise rules on compliance mechanisms. The position of the US is inexcusable, however, without the US the demand for projects will be much smaller, thereby limiting the export potential of credits generated in Brazil.

Mauricio Reis, Companha Vale do Rio Doce, said his company is one of Brazil's largest and was co-founder of the Brazilian Business Council on Sustainable Development. On carbon sinks projects, particularly in the sensitive Amazon region, projects must contribute to the comprehensive set of environmental, social and economic goals. Projects must benefit as many people as possible. Just selling some offsets is not in the interest of the Brazilian people. Reis also argued that CDM projects must have a strong set of compliance rules, including clearly defined rules on verification and certification. COP-7 must address these rules. Businesses are trying to organize the GHG market, which is imperfect, but global companies are slightly apprehensive about the quality of the final implementing rules of the Protocol.

A. Semiawan, PLN-Indonesia, highlighted the characteristics of state-owned electricity company PLN, noting they are a buyer and seller of electricity. She detailed their buying arrangements with independent power producers (IPPs). Regarding their negotiations with a geothermal power plant, she noted CDM implementation is part of the contract settlement and CO_2 credits could be shared under the arrangement. Semiawan highlighted benefits of the CDM, which can help PLN and IPPs. These include financial benefits, enhancing capacity building and technology transfer, and promotion of renewable energy in Indonesia. Implementation issues include host country approval, ratification of the Kyoto Protocol, Indonesia's developing CDM national board/institutional structure and internal capacity of project partners. On parties' arrangements, she identified establishment of a Carbon Credit Task Force, rules related to the Protocol, and exploration/development of "new" projects. On a question as to which agency in Indonesia will have responsibility for certifying the CO_2 reduction, Semiawan said the Ministry of Environment will be the focal point of GHG issues.

Eduardo P. Carvalho, União da Agroindústria Canavieira de São Paulo, spoke on sugar cane energy and greenhouse gas reduction. He highlighted Brazil's production and consumption of fuel alcohol. Carvalho said sugar cane is an energy engine and is perhaps one of the most efficient energies in the world. He underscored the potential of sugar and alcohol production to reduce CO_2 emissions and said the CDM will enhance this potential. Carvalho noted related social impacts, indicating the major potential sugar cane production has to generate employment.

Pablo Mandeville, United Nations Development Programme (UNDP), outlined numeric elements of a study on implications of the Bonn Agreement on the carbon market and the CDM in Latin America. The analysis projected a decline of 40 – 55 percent in demand if the United States would indeed withdrawal from the Kyoto Protocol. This could lead to a flooding of the market by Russian AAUs, or hot air. Conclusions included that market conditions will be weaker in the short term, a recommendation to prepare high quality projects to get the highest prices, pursuing capacity building and using fast track for small projects on renewable and efficient energies.

One participant asked about the most cost-effective way to establish baselines. How will the accounting take place, in Brazil and in other countries, and how will an international settlement authority harmonize such rules? Concerns were expressed about the clarity and quality of the rules, even though one participant argued that companies should not wait for the rules to be specified but develop best practices themselves.

In summarizing the session, Moderator Klabin highlighted what we now know: the US is out for now; the market doesn't just depend on governments; the market is an irreversible trend; and it will organize itself.

MARKET MAKERS PANEL

On Friday afternoon, a market makers panel, moderated by Sergio Besserman, National Institute of Statistics and Geography (IBGE), looked at what funds and other market actors are doing to develop the GHG market(s). The IBGE has been charged with establishing an inventory of GHG in Brazil and will play a role in the dissemination of information about GHG emissions. Only recently has the organization become involved in collecting and disseminating environmental data and this has presented its own set of challenges. For example, it's difficult to collect data on biodiversity, even though Brazil probably has more species than any other country.

Francisco Hoyos, Fondelec, explained that his company is a private equity investment firm focused on the use of clean energy, energy efficiency, and GHG emission reductions. Investment projects include electricity supply companies, gas pipeline companies and data and telephone service companies. In October, Fondelec is launching a Latin American fund with a focus on Mexico and Brazil. The fund will seek to invest in clean, renewable energy and/or energy efficient emission reduction projects. Carbon credits with tradable value resulting from investments may be allocated to investors in the fund from eligible projects.

Teobaldo Leal, Banco do Nordeste, signaled that the market in northeastern Brazil will open up for eco-investments in the near future. Northeastern Brazil is densely populated and has a diversified economy. There is ample opportunity for solar energy in this region as it enjoys over 300 days of sunlight per year. The bank aims to play a role in the emerging carbon market by facilitating public-awareness raising, capacity building, funding eco-friendly businesses, promoting investment and external cooperation, playing a role in the certification of emissions reduction, and serving as a facilitator for the secondary market of carbon credits. Banco do Nordeste's goal is to focus on sustainable development, and it has a network of community-based outreach programmes to help achieve its goal.

Isaura Frondizi, National Development Bank (NDB), explained her bank's role in the environmental field in Brazil. The bank assists the Inter-ministerial Committee on Climate Change, the main vehicle for climate change policies, on financial aspects. For example, the CDM will require adjustments to the tax structure, will lead to transfer of foreign money into Brazil, and will impact equity markets. In addition to advising the committee, the NDB works at the project level to ensure its clients will adhere to environmental regulations. Companies seeking loans or investment from the bank will have to prove that they abide by federal environmental laws. For example, one project involved building a cogeneration plant at a sugar cane processing factory. The bank advised the cogenerator on a plan to reduce GHG emissions from this facility. In the future, the bank may help in monetizing the offsets that are generated by such projects.

Marc Stuart, EcoSecurities, discussed the supply and demand fundamentals in the emerging GHG market. He argued that while some estimates exist, it may not be possible to estimate the full potential of the market until the Protocol is ratified and operational. Most simulation models, which calculate compliance costs based on supply and demand fundamentals, assume the US is a full participant. If this is the not the case, supply and demand will be unbalanced. The CDM is a key determinant of compliance costs, according to most macro-economic models. Without the CDM, compliance costs can be 60 percent higher. In addition, a global trading system that includes the CDM will see its volume grow, whereas trading among Annex I countries alone will lead to a downward trend in the number of trades. It is beneficial for all parties involved that the US is integrated into the Protocol. If not, the market may collapse under the oversupply of offsets.

Neil Cohn, Natsource, observed that the current market for GHG has been voluntary so far and has not been governed by established rules and regulations. The result has been an illiquid market with relatively high transaction costs, however, over 60 actual trades have been recorded, representing 55 million dollars worth of transactions, with strongest demand for 2008 – 2012 vintages. But, the future will see legislation and real rules shaping the market, even if the US does not ratify. If the US develops an isolated system, US firms may not have the same access to projects as other companies. Cohn explained that the market was shifting from VERs to compliance tools, mostly because compliance tools are considered less risky and more likely to be accepted into other programmes. VERs still have value but they are likely to be discounted based on perceived risks. This will put pressure on VER suppliers to find lowest possible costs projects at the lowest transaction costs. To achieve value for VERs, Cohn recommended several steps, including: establishing ownership, formulating climate goals, securing support from host governments early in the process; engaging third parties to quantify, certify, and monitor the credit generating project; and contacting a broker to conclude financial details of the transaction. Brokers play an important role in the creation of the market, as they provide experience and market "know-how," create market liquidity and price discovery, and provide anonymity in the market.

John O'Brien, Enviros, explained some of the intricacies of the United Kingdom's GHG markets, including the Emissions Trading Scheme (ETS) and the Climate Change Levy (CCL). Initially, companies in several energy-intensive industrial sectors were taxed on their energy use, but could get up to 80 percent CCL discount if they would implement energy saving practices. Parallel to this CCL, the United Kingdom is proposing the ETS, which is scheduled to start in April 2002. Companies will benefit from the ETS as trading offers a lower cost alternative to tax and will help companies gain experience in the emerging international GHG markets. However, the ETS is voluntary and uncertainty exists on the costs of non-compliance. In addition, relatively high transaction costs as a result of understanding companies' emissions and abatement costs, and preparing bids into the market are potential barriers for success. Finally, O'Brien noted that the market for energy-efficiency is not driven by the Protocol, but companies can benefit in the future from additional revenues from CERs and ERUs.

CONCLUDING PANEL – A MESSAGE FROM THE POLICY FORUM TO COP-7

The concluding panel, moderated by Rene Vossenaar, UNCTAD, addressed how buyers and sellers can advance the emerging global GHG market and what can be done to enhance the capacity of developing countries to participate in this market.

Eduardo Novaes, Ministry of the Environment, Brazil, highlighted relevant activities of the Ministry including its mandate and role in promoting climate projects. He outlined its project management activi-

ties and noted the establishment and work of an integrated studies center of climate change. Novaes highlighted initiatives directed at preparation for the emerging market.

Fabio Feldmann, Brazilian Forum on Climate Change, highlighted the Forum's formation, composition and structure and noted its main objective is to act as an interface between government and civil society. He identified the government agencies that support the Forum, noted partnerships with diverse sectors and highlighted strategies including following up on negotiations, awareness and capacity building, technical meetings, debates and publications.

Frans van Haren, CEO, Earth Council, stressed the need for capacity building in offset exporting countries and the active role of the private sector. He said the market is there but how it will develop is unpredictable. He called for an uncomplicated and transparent regime and concluded that Brazil is in many respects in the driver's seat. Questions faced are who will misuse the market, is there an added value and will governments keep pace or spoil the market?

Andrei Marcu, IETA, underscored the challenge of supporting the Kyoto deal and addressing the details. He noted that business is generally supportive because the deal provided certainty for a carbon-constrained market. However, eliminating uncertainties created new uncertainties. The US withdrawal raised the possibility of two trading systems applying and there would be a need to promote uniformity. Early action is needed to integrate national trading systems and avoid costly divergence. Marcu concluded that we have a small, illiquid, unpredictable market but society has generally accepted that the market solution can produce the best results within social and environmental constraints.

Lucas Assunção, UNCTAD and Policy Forum Coordinator, summed up and concluded the meeting. He emphasized that the Kyoto Protocol is untested, not flawed, and noted that a signal from the Forum to COP-7 is that the Forum attempted to start this testing. Assunção identified the current status of the GHG market environment, including polices and measures being adopted and demand for credits created. He noted domestic policies create buyers and stressed buyers are ready to start buying and are developing strategies. Assunção said some credit producers or sellers are moving but most are thinking about participation issues. Institutional issues are who the sellers are and how they are enabled/regulated. On market makers, he identified funds, insurance, exchanges, brokers and advisors. Assunção said a nascent market exists and is emerging with possibly rapid acceleration, with opportunities and risks under consideration. For now, demand is driving supply. UNCTAD/Earth Council can contribute through the Policy Forum and its derivatives, down-to-earth research, an upcoming training programme and capacity building. Assunção then thanked sponsors, participants and contributors and brought the meeting to a close.

THINGS TO LOOK FOR BEFORE COP-7

INTERNATIONAL EMINENT PERSONS' MEETING ON INTER-LINKAGES: This meeting will convene from 3-4 September 2001, in Tokyo. The topic of the meeting, which is being jointly organized by United Nations University, the Ministries of Foreign Affairs and Environment of Japan and the Global Legislators Organization for a Balanced Environment (GLOBE) will be "Strategies for bridging problems and solutions to work towards sustainable development." For more information, contact: Jerry Velasquez, United Nations University; tel: +81-3-5467-1301; fax: +81-3-3407-8164; e-mail: jerry@geic.or.jp; Internet: http://www.unu.edu or http://www.geic.or.jp/

EMISSIONS MARKETING ASSOCIATION FIFTH ANNUAL FALL MEETING AND INTERNATIONAL CONFERENCE: This meeting will convene from 30 September - 2 October 2001 in South Carolina, US. Topics will include: voluntary carbon dioxide commitments/GHG trading pilots; international perspectives on COP-7; state and provincial actions on climate change (focus on registries); state-based multi-pollutant legislation; emissions portfolio risk management in a dynamic market; SO_2 and Nox emissions trading trends; system design; and legal issues. For more information, contact: David Feldner, Emissions Marketing Association Executive Director; tel: +1-414-276-3819; e-mail: dfeldner@emissions.org; Internet: http://www.emissions.org/conferences/default.html

18TH SESSION OF THE IPCC PLENARY: This meeting will convene from 24-29 September 2001, in London, UK. The purpose of the meeting is to adopt/approve the Synthesis Report. For more information, contact: Renate Christ, IPCC Secretariat, tel: +41-22-730-8574; fax: +41-22-730-8025; e-mail: christ_r@gateway.wmo.ch; Internet: http://www.ipcc.ch/

13TH MEETING OF THE PARTIES TO THE MONTREAL PROTOCOL: MOP-13 will convene in Colombo, Sri Lanka, from 15-19 October 2001. For more information, contact: Ozone Secretariat; tel: +254-2-62-1234; fax: +254-2-62-3601; Internet: http://www.unep.org/ozone/

17TH EUROPEAN PHOTO-VOLTAIC SOLAR ENERGY CONFERENCE AND EXHIBITION: This conference will convene from 22-26 October 2001, in Munich, Germany. Subjects to be addressed include: fundamentals, novel devices and new materials; crystalline silicon solar cells; photo-voltaic systems technology; and use of photo-voltaic by developing countries. For more information: tel: +49-89-720-1235; fax: +49-89-720-1291; e-mail: wip@wip-munich.de; Internet: http://www.wip-munich.de/conferences/pv/munich_2001/munich.html

INTERNATIONAL SYMPOSIUM ON ARCTIC FEEDBACKS TO GLOBAL CHANGE: This symposium will convene from 25-27 October 2001, in Rovaniemi, Finland. It is sponsored by the Nordic Arctic Research Programme and the Academy of Finland, and will feature a summary of Global Climate Model results for the Arctic. For more information, contact: Peter Kuhry; tel: +358-16-341-2758; e-mail: peter.kuhry@urova.fi

SEVENTH CONFERENCE OF THE PARTIES TO THE UN FRAMEWORK CONVENTION ON CLIMATE CHANGE: COP-7 is scheduled to take place from 29 October - 9 November 2001, in Marrakech, Morocco. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; Internet: http://www.unfccc.int/