iisd

Earth Negotiations Bulletin

Workshop FINAL

A Reporting Service for Environment and Development Negotiations

Online at http://www.iisd.ca/climate/cciod/

Vol. 12 No. 244 Published by the International Institute for Sustainable Development (IISD) Friday, 1 October 2004

SUMMARY OF THE UNFCCC WORKSHOP ON INNOVATIVE OPTIONS FOR FINANCING THE DEVELOPMENT AND TRANSFER OF TECHNOLOGIES: 27-29 SEPTEMBER 2004

The United Nations Framework Convention on Climate Change (UNFCCC) workshop on innovative options for financing the development and transfer of technologies was held from 27-29 September 2004, in Montreal, Canada. Attended by more than 60 representatives of governments, intergovernmental organizations, non-governmental organizations and the private sector, the workshop sought to create a better understanding of innovative financing for technology transfer under the Convention. The workshop also aimed to share experiences and information on good practices for financing technology transfer, and to catalyze innovate thinking on the issue, as well as to help narrow any differences that might exist.

The workshop included sessions focusing on the views and perspectives of the financial sector, current practices and lessons learned in development finance, and ongoing initiatives for innovative thinking. It concluded with a session assessing the workshop's outcomes and possible ways to move forward. The discussions and outcomes of the workshop will be taken up by the UNFCCC's Subsidiary Body for Scientific and Technological Advice (SBSTA) and its Expert Group on Technology Transfer (EGTT) in December 2004 in Buenos Aires.

A BRIEF HISTORY OF THE UNFCCC AND TECHNOLOGY TRANSFER

Climate change is considered one of the most serious threats to sustainable development, with adverse impacts expected on human health, food security, economic activity, water and other natural resources, and physical infrastructure. Global climate varies naturally, but scientists agree that rising concentrations of anthropogenically-emitted greenhouse gases in the Earth's atmosphere are leading to changes in the climate. Scientific observations on climate change were brought to policy-makers' attention in the late 1970s. Scientific uncertainty was high, and debate on whether or how to take action took place throughout the 1980s. By the end of the decade, though, the international community had agreed that a global framework for action was necessary to stabilize the atmospheric concentrations of greenhouse gases in order to avoid "dangerous anthropogenic interference" with the climate system. Gases that were considered important to control included methane, nitrous oxide and, in particular, carbon dioxide. Negotiations on the UNFCCC began in 1991, and governments adopted it in June 1992. The UNFCCC entered into force on 21 March 1994, and now has 189 Parties.

TECHNOLOGY TRANSFER: Technology transfer is considered a key element in combating climate change under the UNFCCC. Technology transfer activities have been on the agenda of every session of the SBSTA and the Conference of the Parties (COP). UNFCCC Article 4.5, which addresses the need for technology transfer, states that "developed country Parties…shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention," adding that "in this process, the developed country Parties shall support the development and enhancement of endogenous capacities and technologies of developing country Parties."

At the seventh Conference of the Parties (COP-7) held in November 2001 in Marrakesh, Morocco, delegates decided to establish an Expert Group on Technology Transfer (EGTT) to support the work of the SBSTA in advancing the Convention's technology-related goals. During 2002-2003, the EGTT met several times, adopting a work programme and providing input and advice to the SBSTA on technology transfer. During that time, the

IN THIS ISSUE

This issue of the *Earth Negotiations Bulletin* © <enb@iisd.org> is written and edited by Changbo Bai and Chris Spence. The Editor is Pamela S. Chasek, Ph.D. <pam@iisd.org> and the Director of IISD Reporting Services is Langston James "Kimo" Goree VI <kimo@iisd.org>. The Sustaining Donors of the *Bulletin* are the Government of the United States of America (through the Department of State Bureau of Oceans and International Environmental and Scientific Affairs), the Government of Canada (through CIDA), the Swiss Agency for Environment, Forests and Landscape (SAEFL), the United Kingdom (through the Department for International Development - DFID), the Danish Ministry of Foreign Affairs, the Government of Germany (through the German Federal Ministry of Environment - BMU, and the German Federal Ministry of Development Cooperation - BMZ), and the Netherlands Ministry of Foreign Affairs. General Support for the *Bulletin* during 2004 is provided by the United Nations Environment Programme (UNEP), the Government of Australia, Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, the Ministry of Environment and the Ministry of Foreign Affairs of Sweden, the Ministry of Environment and Ministry of Foreign Affairs of Norway, the Ministry of the Environment and the Ministry of Foreign Affairs of Finland, Swan International, the Japanese Ministry of Environment (through the Institute for Global Environmental Strategies - IGES) and the Japanese Ministry of Economy, Trade and Industry (through the Global Industrial and Social Progress Research Institute - GISPRI). Funding for translation of the *Earth Negotiations Bulletin* in French has been provided by the International Organization of the Francophonie (IOF) and the French Ministry of Foreign Affairs. The opinions expressed in the *Earth Negotiations Bulletin* are those of the authors and do not necessarily reflect the views of IISD or other donors. Excerpts from the *Earth Negotiations Bulletin* may be used in non-commercial publications with appropriate academic citation. For information on the *Bulletin*, including requests to provide reporting services, contact the Director of IISD Reporting Services at <kimo@iisd.org>, +1-212- 644-0217 or 212 East 47th St. #21F, New York, NY 10017, USA.

EGTT considered a variety of issues, focusing in particular on information dissemination, enabling environments for the transfer of environmentally-sound technologies, and technology needs assessments. In this regard, UNFCCC workshops were held on technology information (Beijing, China, April 2002), needs assessments (Seoul, Republic of Korea, April 2002), and enabling environments (Ghent, Belgium, April 2003).

In December 2003, the nineteenth session of SBSTA approved the EGTT's programme of work for 2004. The programme included a new request that the EGTT should begin to examine the matter of innovative financing for the development and transfer of technologies. SBSTA-19 also asked the UNFCCC Secretariat to organize a workshop on the matter, and to report back on the findings of the workshop at SBSTA-21 in December 2004. At its twentieth session in June 2004, SBSTA provided further guidance on how the workshop should be organized, recommending that it have a practical focus and that it consider case studies from various stakeholders using a range of technologies under varying situations and circumstances.

REPORT OF THE WORKSHOP

The workshop was opened on Monday morning, 27 September 2004, by Margaret Martin (Canada), the Chair of the EGTT and the workshop. Observing that this was the first formal opportunity under the UNFCCC process to discuss innovative options for financing technology development and transfer since the topic was added to the EGTT's work programme in 2003, she indicated that the meeting would focus on practical matters, including case studies and experiences, good practices and obstacles to technology transfer.

Janos Pasztor, Coordinator of the UNFCCC Secretariat's Sustainable Development Programme, highlighted the transfer of technology as a key component in implementing the Convention. Noting that technology transfer requires significant financial assistance but that there had been a decline in official development assistance in recent years, he observed that it was therefore timely to consider new and innovative financing options. He explained that this workshop would create a better understanding of the issue, allowing for an exchange of experiences on good practices and dialogue with the financial sector. It would also help narrow any differences and identify possible next steps.

Elmer Holt, Vice Chair of the Climate Technology Initiative (CTI), outlined the work of CTI, which was founded by a group of developed countries and the European Commission in 1995. He explained that CTI aimed to support the UNFCCC's technology objectives, and was actively involved in promoting public-private sector partnerships, supporting technology needs assessments under the Convention, and helping to create enabling environments for the transfer of environmentally-sound technologies.

Margaret McCuaig-Johnston, Assistant Deputy Minister of Energy Technology and Programmes, Natural Resources Canada, gave the keynote address of the opening segment. She observed that this workshop marked the start of a process designed to build a solid foundation to support innovative options for financing technology transfer under the UNFCCC. Highlighting the need for transformative and new technologies, she cautioned that existing, readily-available technologies should not be overlooked. As an example, she cited an initiative to promote energy efficient compact fluorescent light bulbs. She also highlighted the challenges in bringing new technologies to the market, drawing attention to the role commercial demonstration projects can play. In this context, she stressed the critical need for international cooperation and private-sector partnerships. Noting that work on financing should be considered within the broader context of technology transfer, she noted the EGTT's excellent work in areas such as technology needs assessments and the information exchange facilitated by the TT:CLEAR website (http://ttclear.unfccc.int/).

SESSION ONE: SETTING THE SCENE

The workshop's first session, which took place on Monday, was divided into two parts. The first part, held in the morning and early afternoon, focused on providing background and context to the issue, with briefings from the UNFCCC Secretariat and a discussion on participants' expectations for the meeting. The second portion took place in the afternoon, and involved several presentations offering a general perspective on the issue from representatives of the financial sector. This was followed by a panel discussion.

Editor's Note: *As a matter of policy, the* Earth Negotiations Bulletin *does not directly attribute statements made by participants in workshop sessions when requested by the organizers.*

PART I – BACKGROUND: Presentations from the UNFCCC Secretariat: Wanna Tanunchaiwatana, Manager of the UNFCCC's Technology Subprogramme, outlined the workshop's background and context. She noted that many developing countries have now conducted their technology needs assessments, and that this workshop would help identify financing options to support these needs. She then asked developing country representatives to identify their specific technology needs. Several responded, highlighting areas such as energy efficiency, solar energy, adaptation, and biomass. Tanunchaiwatana concluded by reviewing relevant provisions of the Convention and existing financing opportunities. She said the workshop's outcomes would be considered at SBSTA-21 in December 2004.

Daniele Violetti, Programme Officer, UNFCCC Secretariat, presented on trends in financial flows for technology transfer. He noted that financial flows to developing countries have declined since 1997, but increased again in 2002 and 2003, while foreign direct investment is expected to increase in 2005. He drew attention to the limited involvement of the private sector in financing climate-related technology transfer, and highlighted the need to bridge the gap between governments and the private sector. Identifying the challenges facing the public sector, he emphasized the need to provide adequate funding, create favorable market conditions and raise awareness.

Paul van Aalst, UNFCCC Consultant, presented the *Background Information Paper* prepared for this workshop (http://ttclear.unfccc.int/ttclear/pdf/Workshops/Canada/Montreal%20background%20paper-edited.pdf). He highlighted the key prerequisites for securing financing, including the need to add value for stakeholders, demonstrate minimal risk and acceptable returns, offer transparency, accountability and credibility, and contribute to sustainable development. He reviewed some general financing characteristics for both mitigation and adaptation activities, and identified barriers to accessing financing at the country, sectoral and project levels. He then listed the main sources of financing, including multilateral and intergovernmental organizations, country-based instruments, other financing models, deal brokers and market facilitators. He also noted that additional financing instruments were under construction, and concluded by outlining some general guidelines for innovative financing, which he said should take into account wider economic and development goals, and include an effective policy framework.

Discussion on workshop expectations: Participants were then asked to comment on their expectations for the workshop. One speaker said he hoped it would lead to a better understanding of the issue, and was interested in hearing case studies, new ideas for innovative financing, and suggestions on next steps. A developing country representative said he did not have high expectations, as the process of technology transfer under the UNFCCC had not moved quickly to date. He called for the process to be addressed with far greater urgency, adding that discussions on the role of the private sector should not be used as an excuse by industrialized countries for not meeting their obligations under UNFCCC Article 4.5. An industrialized country representative said he hoped for a meeting focused on what is possible, practical and achievable. He looked forward to discussions involving financial "intermediaries" and the private sector, and noted a need to focus on small and medium-sized enterprises. One developing country speaker said he anticipated useful discussions on capacity building and on barriers to technology transfer, while another expressed an interest in learning where the financial resources would come from, and what the priorities should be. A speaker from the financial sector explained that investment decisions by the private sector were based on an assessment of the likely rate of return.

PART II – GENERAL PERSPECTIVE FROM THE FINANCIAL SECTOR: On Monday afternoon, the second part of the session began, chaired by EGTT member Rawleston Moore (Barbados).

Presentations: George Sorenson, Chair of FE Clean Energy Group, USA, made a presentation on renewable energy and energy efficiency strategies. He explained that FE Clean Energy Group is a private equity investment firm with US$150 million of investment capital, and that it finances energy efficiency and renewable energy projects worldwide. He indicated that for projects to receive financing, the following elements must be in place: national policies that support energy efficiency initiatives; financing "enablers," including some financing by local or government institutions; financial guarantors; and a clear and efficient licensing process for new projects.

Charles W. Donovan, Commercial Manager of Transactions, CAT Alliance Ltd UK, spoke about private sector perspectives on risk. He reviewed several private sector financing options with different levels of risk, such as common equity, preferred equity, "Mezzanine" debt that combines debt and equity, senior debt that receives priority for repayment, and subordinated debt. He indicated that private sector financing institutions demand project evaluation that evaluates risks relating to the exchange rate, political situation, environmental compliance, technology type, operational activities, construction, counterparty credit and commodity price. He also provided an overview of the credit risk management process, including the screening of counterparties, development of trading limits and transaction limit processes, monitoring and reporting of financial exposure against limits, testing of exposure to financial losses on individual transactions, and development of credit-support packages that facilitate the efficient allocation of credit risk for multiple transactions.

Martin Whittaker, Senior Vice President, Swiss Re Financial Services, spoke about commercializing his company's commitment to sustainability through innovative financing options. He outlined two specific projects his company is involved in. The first is the "Footprint Neutral" initiative being developed in partnership with the Nature Conservancy, Conservation International, and the UN Development Programme. The initiative will create a voluntary scheme allowing companies to buy into projects that will offset their carbon emissions and other environmental impacts. The second project is a European renewable energy and energy efficiency equity fund targeting returns of 15-25 percent. The fund will focus on Central and Eastern Europe with the aim of generating and selling carbon offsets to boost investment returns.

Question-and-answer session: In the ensuing discussion, one participant raised concerns that banks were willing to fund a range of projects, but that in some cases insurers were not willing to provide the necessary performance guarantees on the investment because of a lack of certainty on the returns, particularly in terms of the value of the carbon that might be offset by the project, and the risk involved. Martin Whittaker responded that insurers did not have the underwriting capacity and expertise in some areas, but would respond should a critical mass of demand for insurance develop in a particular area, such as geothermal or wind power.

Several government representatives asked how governments could support private sector involvement. George Sorenson replied that governments should ensure greater predictability in terms of financial returns. For instance, he considered the rules governing "additionality" under the Kyoto Protocol's Clean Development Mechanism (CDM) to be unhelpful because they provided no clarity on what the final value of the carbon might be. Whittaker said governments should create an attractive environment for investment to take place, and could help underwrite and remove risk where the private sector lacks data or information.

Several participants noted the different "languages" and concepts being used by representatives of governments compared with those from the private sector, and said ongoing contact and communication between the two groups would be extremely valuable.

Panel discussion: Following the presentations and question-and-answer session, participants engaged in a panel discussion involving briefings from five invited speakers. This was followed by an exchange of views on financing issues.

Raymond Wright, Group Managing Director for the Petroleum Corporation of Jamaica, spoke on financing and renewable energy markets in Jamaica. He stressed the need for government guarantees in financing renewable energy projects, as well as the need to tackle issues relating to taxation, risk sharing, capital availability, and legal and policy frameworks. He observed that foreign investment in renewable energy projects will promote risk sharing and access to international markets, and will enhance local private sector participation.

Christine Woerlen, Global Environment Facility (GEF), highlighted governments' role in promoting international financing for technology transfer projects by identifying priority areas, setting out framework conditions for transactions, shaping the financial flows, enhancing national capacities, and providing adequate information to investors.

Kok Seng Yap, Deputy Director-General of the Malaysian Meteorological Service, said that in order to support financing for technology transfer, countries should disseminate information on their successes and enhance capacity building for project implementation. He urged workshop participants to take into consideration the technology needs assessments conducted in many countries and to identify ways to meet these needs.

Alan Miller, International Finance Corporation, spoke on financing technology transfer through commercial lending. He noted obstacles to commercial lending for technology transfer, including unacceptable investment risks, significant policy barriers, low or no returns on the investment, and excessive transaction costs.

Eric Usher, United Nations Environment Programme (UNEP), considered three major areas he said needed to be enhanced in order to promote financing for technology transfer: information transfer; networks among financial institutions, investors, and countries in need of technologies; and partnerships among the various actors involved in financing transactions. He recommended that national governments improve the enabling environment so as to attract financing.

Following the panel presentations, a number of participants responded with comments and questions. A civil society speaker briefed participants on a technology transfer workshop held recently in Tokyo attended by government officials and industry representatives. He noted comments during the meeting that competition is critical, citing as an example the popularity of the Toyota Prius hybrid car in encouraging other automakers to enter the hybrid car market. He also highlighted the issue of intellectual property rights, noting that opportunities for technological leapfrogging were being hampered by concerns over loss of profits if these rights were given away.

On the issue of project financing, one participant stressed that it was available for "good" projects, but that most projects were seen as "bad" by the international finance sector because those in developing countries who were submitting project proposals did not have sufficient experience in document preparation, and did not "speak the language of the financial institutions."

OVERVIEW OF DAY ONE: On Tuesday morning, participants heard an overview of the first day's presentations and discussions. Workshop Chair Margaret Martin noted participants' expectations that the workshop should share information on case studies, good practices, and barriers to financing. She acknowledged some disappointment in progress on technology transfer to date, as well as the need to provide enabling environments and reduce investment risk. She drew attention to comments about adaptation activities and the view that adaptation and mitigation activities are not mutually exclusive. She noted speeches emphasizing that insurance companies are paying greater attention to climate change as a result of increased risk, while observing that not all risks are quantifiable. She also highlighted comments that environmentally-sound technologies should be in the public domain, and that a lot of "good" money is available but that there are more "bad" or poorly-prepared projects than "good" ones. Finally, she noted discussions on the need for a policy framework that is "loud, long and legal," meaning that governments provide clear signals to the market that the renewable energy sector is supported by stable, effective and transparent rules that encourage investment.

EGTT member Rawleston Moore, who had chaired the afternoon portion of the day's discussions, added his reflections on the session. He highlighted participants' comments on the importance of mobilizing domestic capital, the value of foreign investment, the need to overcome the barrier of inadequate information available to potential investors, the benefits of public-private partnerships, and the role of donor financing.

SESSION TWO: CURRENT PRACTICE AND LESSONS LEARNED

The workshop's second session, which was held on Tuesday, 28 September, consisted of two segments. The first focused on "development finance in practice," with four speakers providing insights and case studies on the subject. This was followed by a question-and-answer period. The second part of the session examined barriers and lessons learned in relation to financing, focusing in particular on case studies from Ghana and China.

PART I – DEVELOPMENT FINANCE IN PRACTICE: Presentations: EGTT member Elmer Holt (US), who chaired the first part of the session, introduced the topic by drawing attention to the commercial realities of development finance. He observed that, where risk is high and returns are ill-defined, little can be expected. Meanwhile, at the other end of the spectrum, projects offering low risks and predictable returns are generating a lot of interest and activity. The focus of this discussion, he said, would be those projects that fall in between these extremes.

Peter Storey, Vice President of Financing, HERA International Group, spoke about private sector development and financing of technology-related projects, focusing on his experiences in sub-Saharan Africa. Storey examined the project development cycle, stressing the need for a thorough pre-development stage that carefully examines the feasibility of the project. As pre-development costs can amount to as much as 2% of total project costs with no guarantee of success, he advocated developing a consortium of interested parties to spread the risk. He then reviewed a case study, the Zambezi Valley Development Scheme, reflecting on its successes, failures, and lessons learned. He recommended an integrated approach to projects that engages both public and private sectors, and said governments must create a stable legislative and regulatory environment.

Peter Rossbach, Director, Impax Capital Ltd, spoke about Impax's Patient Capital Initiative and equity finance for renewable energy in emerging markets. He described the Initiative as a "one-stop shop" with co-funding for local/regional sub-funds, as well as funding for carbon credit purchases and technical assistance. He highlighted lessons learned and identified various prerequisites for developing successful renewable energy activities, including appropriate government regulations and project debt, and acceptable returns. He also suggested ways of making projects financially viable in the market, including supporting the development of long-term market forces, the establishment of policies and regulations that encourage investment, as well as private funding and official development assistance accompanied by country co-financing.

Patrick Daddario, President of the Fiorello H. LaGuardia Foundation, spoke about how to engage local financial institutions in project development and implementation. He explained that, since its establishment in 2001, the Foundation has carried out projects in Brazil, China and India aimed at catalyzing human, institutional and financial resources to support the development of locally-defined and managed enterprises engaging in sustainable energy activities. He stated that utilizing local resources and maintaining environmental, social and financial sustainability are critical to developing and implementing projects. Asserting that local financial institutions have the ability and capacity to participate, he cautioned that projects were unlikely to succeed without their involvement.

Youba Sokona, Executive Secretary of the Sahara and Sahel Observatory, spoke about the approach of the African Rural Energy Enterprise Development (AREED) initiative to public-private partnerships. He listed various challenges in the African context, including the need to improve people's access to energy services, support a self-sustaining "scale-up" of energy systems, and create or stimulate markets. Stressing that no one solution fits all circumstances and that no one actor can operate in a vacuum, he called for a cooperative approach focused on connecting multiple partnerships that add value in the areas of financing, programme development, implementation, enterprise, and service delivery. He hoped that the current focus on projects would shift towards discussions on the creation of "portfolios" and ultimately to "systems" of self-supporting products and services.

Question-and-answer session: In the discussion that followed, one participant sought clarification on the suggestion that projects could involve an unbiased "integrator" or consultant to help facilitate them. In response, Peter Storey explained that this agent can provide credibility and avoid any conflict of interest by remaining independent of the government and the development consortium, while also having a commitment to the project.

A developing country participant argued for minimizing the costs involved in a project's pre-development phase, as high costs represent a risk in itself. He also raised the issue of "bundling" sustainable energy projects at the national or regional level, which can help reduce overall project development costs. In response, Patrick Daddario said project bundling offered efficiencies and the potential to develop ongoing expertise that would lead to lower transaction costs.

One UN expert said donors should consider shifting away from grant-based technology demonstration projects towards providing seed capital. He supported seed capital as a donor mechanism that could be used to support small and medium-sized enterprises and lead to ongoing activities that could ultimately pull in commercial capital and lead to sustainable businesses. He referred to this as a "blended" approach that involves both donor and private financing.

PART II: BARRIERS AND LESSONS LEARNED: During the second portion of the session, delegates heard two case studies examining barriers and lessons learned in Ghana and China.

William Kojo Agyemang-Bonsu of Ghana's Environmental Protection Agency reflected on his country's experiences, stressing that it is imperative to move from negotiations to implementation in terms of technology transfer. He explained that Ghana had conducted a thorough technology needs assessment in order to start the implementation process. The assessment contains a technology implementation plan, identifies barriers to technology transfer, suggests actions to remove such barriers, identifies the stakeholders to be involved, and prioritizes key technologies. He said that the weakest link in the implementation process is the mechanism for technology transfer, including the financial mechanism. He also noted that technology transfer should not be based on a formula but should be an innovative process that includes the concept of learning by doing. He then presented a case study on the promotion of biomass energy, which requires financing for technology transfer.

Ji Zou, Professor at Renmin University in China, offered a Chinese perspective on financing the development and transfer of technologies. He argued that effective technology transfer under the UNFCCC would require developed countries to meet their obligations under the Convention. He also identified a need to fill the gap between the high price set by the private sector for technology transfer and the weak purchasing power of developing countries. In reviewing practical strategies for achieving technology transfer, he stressed that financing should bring a range of benefits, such as poverty alleviation, local environmental improvement, the creation of jobs and improved infrastructure, consistent policies and plans, and information sharing. He referred to a project in Inner Mongolia to demonstrate the importance of combining different financial resources in implementing technology transfer.

SESSION THREE: ONGOING INITIATIVES FOR INNOVATIVE FINANCING

On Tuesday afternoon, 28 September, participants considered ongoing initiatives for innovative financing. The session, which was chaired by EGTT member William Agyemang-Bonsu (Ghana), began with three presentations from financial sector representatives focusing on venture capitalism, emerging markets, and export credit agencies. This was followed by a question-and-answer session and an interactive discussion on key issues and linkages.

INNOVATIVE FINANCING OPTIONS: Presentations: Nicholas Parker, Chair of Cleantech Venture Network LLC, spoke about trends in clean energy venture financing. He noted a growing interest among venture capitalists and others in clean energy, with US$3 billion invested in recent years in new technologies, mostly in North America and Europe. On opportunities in developing countries, he differentiated between big economies like China, which he said had huge potential for leapfrogging that should be driven by the private sector, and smaller developing countries, which he said need capacity building and training. He observed that work on renewable energy is already happening on a huge scale in China and elsewhere.

Frank Joshua, CEO of the Climate Investment Partnership, discussed opportunities and approaches in financing renewable energy in emerging markets. He noted that emerging markets offer significant opportunities for renewable energy projects, citing the case of China, which is reportedly planning to spend US$120 billion to double energy capacity by 2010. From an investor's perspective, he stressed that what drives the market is the risk-adjusted rate of return. One problem with developing countries is that there is no easy "exit strategy" that would allow investors to benefit from their investment. He explained that, in industrialized countries, an investment in wind power, for instance, would offer strong profit potential, as the initial investor could sell the business as a going concern after several years through an initial public offering (IPO) on the stock market. This type of exit strategy needs to become feasible in developing countries, too. Joshua also raised concerns about monetizing carbon credits, noting that the market and prices need to be more stable and certain for carbon considerations to have an impact on decisions about project viability. Highlighting that investment institutions are generally interested only in large projects, he suggested bundling as an option for smaller projects.

John Balint, International Financial Consulting Ltd, discussed the relevance of export credit agencies (ECAs), which facilitate trade by insuring against political and commercial risks, and which also provide some investment insurance and direct lending. Noting the significant role played by ECAs in some areas, he pointed out that less than 1% of their exposure is in the areas of renewable energy and energy efficiency. However, greater involvement could be encouraged if governments and other shareholders give ECAs clear instructions that encourage this. He noted that the fourth UNEP ECA annual environmental workshop would be held shortly and would discuss international guidelines for ECAs.

Question-and-answer session: In the ensuing discussion, a UN agency representative said it is important to lobby government finance ministries/departments on the importance of climate change, as they can influence the private sector in terms of where financial resources flow. John Balint said ECAs need to present successful examples of their work to demonstrate to governments the need for their greater involvement in renewable energy and energy efficiency. Responding to a question about financing options, Nicholas Parker said they would differ in each case depending on the specific market conditions, including market size and the project timeframe.

Interactive discussion on issues and linkages: Late on Tuesday afternoon, participants engaged in an interactive discussion on the issues raised during the session, and on the linkages and connections between these issues. Many participants expressed general satisfaction with the discussions and proposed continuing the dialogue between governments and the financial sector. One civil society representative said it is critical to establish a "common language" for such dialogue. He also stressed the need to integrate discussions on technology transfer financing with the CDM process. One financial sector speaker expressed his confidence that the financial market will be increasingly active in the area of climate change and urged governments to help set the stage for further financing, while a developing country representative argued that the stage has already been set and that it is time to move the process forward.

Noting that many developing countries have now assessed their technology needs, a developing country participant said it is time to identify how to meet these needs by establishing action plans. Another developing country representative said technology transfer has to adopt a sector-by-sector approach. Several non-Annex I Party representatives also expressed their disappointment with the limited progress in technology transfer in the context of the UNFCCC. One called on developing countries and the private sector to work together to develop projects, and another suggested that more attention be given to mitigation and adaptation activities that are crucial to developing countries.

Several participants raised the issue of how to bring the unit costs of renewable energy down to the level of "old technologies" used to generate electricity from coal and other fossil fuels. One private sector participant responded that governments could factor in the actual costs of fossil fuel use, such as the impact of pollution on human health and the health care system. Replying to a comment on adaptation activities, Frank Joshua said participants from the financial sector attending this workshop knew about financing for mitigation rather than adaptation activities. He suggested that it could be useful to hold a separate event on financing adaptation activities.

Participants also discussed what governments can do to catalyze financing, with Frank Joshua recommending that they could reduce the risks for investors by funding the development of an effective risk assessment model that the private sector could then apply to projects. He also urged governments to put in place appropriate regulatory frameworks.

OVERVIEW OF DAY TWO: On Wednesday morning, delegates were presented with a brief wrap-up of the second day of the workshop. Elmer Holt, who had chaired session two, highlighted comments that financing is not a "bolt on" element to be added at the end of a process, but needs to be secured early on. He noted participants' statements that the externalities associated with fossil fuels must be incorporated into their price if renewable energy financing is to become more viable. He also drew attention to participants' comments on the need to:

- mobilize local resources and build capacity to help create local entrepreneurs;
- develop training programmes to educate local banks and other institutions on financing technology transfer;
- establish the necessary infrastructure to support technology transfer; and
- develop appropriate regulatory environments, such as Germany's creation of a favorable framework for wind power.

Reflecting on the presentations and discussions during the third session on Tuesday afternoon, William Agyemang-Bonsu, who had chaired this session, drew attention to the major opportunities for renewable energy investments in emerging markets, and investors' growing interest in energy projects. He highlighted comments on the value of seed financing from governments, the important role of technology needs assessments and enabling environments in helping leverage funds for technology transfer, and the benefits of "bundling" replicable, high-quality projects so as to make them more commercially attractive. He also noted statements on the need to develop risk assessment models and to structure projects from a technical, financial and risk perspective so as to increase access to "project debt and equity." Finally, he drew attention to discussions on the importance of identifying project synergies that would link climate technologies with development issues such as water management and poverty.

SESSION FOUR: OUTCOMES AND POSSIBLE WAYS FORWARD

The final session of the workshop took place on Wednesday morning, 29 September. The session focused on outcomes and ways forward, with deliberations taking place in a roundtable discussion moderated by EGTT member Bernard Mazijn (Belgium). Reflecting on the past two days' discussions, Mazijn reminded participants of the goals established for the workshop, which included fostering a better understanding of financing issues, sharing experiences and lessons learned, narrowing differences and generating new ideas. He noted that there had been significant progress in participants' understanding of financing and that public and private sector representatives had started to speak a "common language." He also observed that, while some of the financing options discussed at this meeting were not necessarily innovative in the financial world, they were new within the context of the UNFCCC.

Outlining some next steps for the coming weeks and months, Daniele Violetti of the UNFCCC Secretariat indicated that a report would be prepared ahead of COP-10/SBSTA-21 in December 2004, and that a two-hour side event would take place at COP-10 on the issues raised by this workshop.

ROUNDTABLE DISCUSSION: Participants then engaged in a roundtable debate on the way forward on issues raised at this workshop. An Annex I Party representative said he had been very encouraged by the discussions, and felt that some useful proposals and models had been outlined that could be replicated elsewhere. He felt that although progress had been made, "we are still speaking several different languages," and suggested that an ongoing dialogue was needed. He proposed that the next meeting could perhaps be held in a developing country and also include private sector experts from developing countries, perhaps with more of a focus on adaptation. A number of other participants supported an ongoing dialogue with the private sector, and one industrialized country speaker suggested engaging with both public and private sector financial institutions, and small and medium enterprises. However, while several speakers seemed to favor discussions on adaptation, one speaker preferred a focus on renewable energy and energy efficiency at this stage, focusing on adaptation later.

Several developing country participants stressed that UNFCCC Article 4.5 was the foundation of this process and said that further clarification of the article's meaning would be helpful. One said the best way to move ahead was to focus on public-private partnerships in the context of Article 4.5, while another speaker said it was clear that developing countries needed assistance in preparing projects to make them more attractive to investors.

In suggesting a way forward, some said future discussions should consider both mitigation and adaptation activities, government roles, the financial resources available in the public domain, and how to remove barriers in both developed and developing countries. Others encouraged the UNFCCC to interact with its sister conventions in the context of technology transfer in order to learn from their experiences. They emphasized that developing countries should continue to improve enabling environments for financing technology transfer and develop more demonstration projects. One participant suggested forwarding text for a draft decision to SBSTA-21/COP-10 on the promotion of carbon trading in relation to technology transfer based on the discussions at this workshop. He also suggested holding further discussions in 2005 and urged the private sector to provide financial support for this. A participant from the private sector urged developing country participants to understand ECAs in their countries and to lobby ministries of finance to support ECAs' involvement in financing technology transfer.

One participant from an industrialized country proposed strengthening the analytical basis for work on Article 4.5. Noting that COP-10 was to be held in Buenos Aires, he quoted the old adage that "it takes two to tango, and one to lead," stressing that while the private sector's interest is clear, the public sector must push this process forward.

A developing country speaker highlighted the role of the CDM in technology transfer. Noting that governments are often more focused on regulations than on single projects, he drew attention to the option of a project development fund, especially as the GEF process can be quite time-consuming. He also recommended further thinking on adaptation issues. Another developing country speaker said technology needs assessments should form the basis for the development of strategic plans to move the process forward. However, he noted that this would require donor support.

Wrapping up the roundtable, Bernard Mazijn noted comments on the need to consider adaptation in more detail. On the issue of tools and models, he said it seemed appropriate to develop a list of existing tools and models, and identify those that are missing. He also noted some comments on whether some sort of toolkit, handbook or guidelines would be helpful. He identified calls for an ongoing dialogue with the private sector, and comments on linking the UNFCCC's work into wider processes.

Participants supported Mazijn's overview, although one speaker noted that there had been some uncertainty in discussions over the value of further guidelines. Several speakers endorsed building on the work that has already been undertaken and using the existing tools, including the technology needs assessments. One participant added a suggestion to recommend to SBSTA the use of existing models and approaches that have been successful in this area, and another added that the EGTT can put "flesh on the bones" of these ideas.

CLOSING REMARKS

In her closing comments, workshop Chair Margaret Martin thanked participants for their openness, concluding that it had been a very productive two-and-a-half days. She detected a willingness to move forward, particularly in the area of public-private partnerships. She thanked the organizers, including the UNFCCC Secretariat and her Canadian colleagues, as well as EGTT members, session chairs, and all the participants, expressing her gratitude to them for "putting the word 'work' into this workshop." In particular, she thanked fellow EGTT members Thomas Verheye of the European Commission and Elmer Holt of the US for their efforts in making this workshop a success. She also expressed her gratitude to representatives of the private sector for making themselves available for this event.

Wanna Tanunchaiwatana, UNFCCC Secretariat, thanked Margaret Martin for chairing the meeting so effectively and Canada for its hospitality. She indicated that the Secretariat was extremely pleased with the outcome of this workshop, and informed participants that the report of the workshop would be made available ahead of COP-10. She hoped for further progress on this issue at COP-10/SBSTA-21, and noted that ministers will be discussing technology issues during the high-level segment. She also expressed her appreciation to the donors for funding this event. The meeting concluded at 12:30 pm.

UPCOMING MEETINGS

WORKSHOP ON TRANSPORTATION AND CLIMATE CHANGE: This workshop will be held from 12-13 October 2004, in Baltimore, Maryland, US. Organized by the International Petroleum Industry Environmental Conservation Association (IPIECA), this event will bring together experts from academia, government, business, intergovernmental and non-governmental organizations to discuss the future of transportation against the backdrop of global climate change. The workshop will consider regional and global trends, new technologies for vehicles and fuels, air and marine transport, and near-term measures that could contribute to longer-term strategies on climate change. For more information, contact: Tim Stileman, IPIECA; tel: +44-20-7633-2388; fax: +44-20-7633-2389; e-mail: tim.stileman@ipieca.org; Internet: http://www.ipieca.org/climate/climate_news.html

CDM EXECUTIVE BOARD MEETINGS 2004: The Executive Board of the Kyoto Protocol's Clean Development Mechanism is scheduled to hold its sixteenth session from 21-22 October 2004, in Bonn, Germany. Its seventeenth session is scheduled for 1-3 December 2004, in Buenos Aires, immediately prior to the tenth Conference of the Parties of the UNFCCC. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1005; fax: +49-228-815-1999; e-mail: cdm-info@unfccc.int; Internet: http://cdm.unfccc.int

UN SYMPOSIUM ON HYDROPOWER AND SUSTAINABLE DEVELOPMENT: This United Nations Symposium will be held from 27-29 October 2004, in Beijing, China. Organized by DESA/DSD, the World Bank, and the Government of China, this meeting will focus on a variety of issues, including: the strategic importance of hydropower for sustainable development; benefits and concerns regarding existing dams and hydropower facilities; and principles and processes for hydropower development. For more information, contact: Kui-Nang Mak, Chief, Energy & Transport Branch, UN DSD/DESA; tel: +1-212-963-8797; fax: +1-212-963-4340; e-mail: makk@un.org; Internet: http://unhsd.icold-cigb.org.cn/english.html

CLIMATE CHANGE AND BUSINESS CONFERENCE AND EXPO 2004: This international conference is scheduled for 3-5 November 2004, in Auckland, New Zealand. The conference will consider the linkages between business and climate change. Based on the assumption that "climate change is big business and will remain so whether or not the Kyoto Protocol enters into force," the meeting will include discussions on business opportunities and on improving companies' bottom line performance by reducing energy costs and emissions. The conference is supported by the Australian and New Zealand governments, and is co-organized by business and union groups, as well as the Pew Center on Global Climate Change. For more information, contact: The Conference Company, Ltd; tel: +64-9-360-1240; fax: +64-9-360-1242; e-mail: secretariat@climateandbusiness.com; Internet: http://www.climateandbusiness.com

22ND SESSION OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE: The IPCC's 22nd session will be held in New Delhi, India, from 9-11 November 2004. The IPCC is now working on its fourth assessment report. For more information, contact: IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025; e-mail: IPCC-Sec@wmo.int; Internet: http://www.ipcc.ch/calendar.htm

EMA EMERGING MARKETS CONFERENCE: EMISSIONS & RENEWABLES: The Emissions Marketing Association's conference on emissions and renewable energy in emerging markets will be held in Houston, Texas, US, from 14-17 November 2004. For more information, contact: David Feldner, EMA Executive Director; tel: +1-414-276-3819; fax: +1-414-276-3349; e-mail: dfeldner@emissions.org; Internet: http://www.emissions.org/conferences/houston04/

WORLD CONFERENCE ON ENERGY FOR SUSTAINABLE DEVELOPMENT – TECHNOLOGY ADVANCES AND ENVIRONMENTAL ISSUES: This international conference will take place in Cairo, Egypt, from 6-9 December 2004. It will seek to provide a forum for discussions between energy experts, technology users and manufacturers/suppliers, decision makers and planners, and interested business for the near-term deployment of sustainable energy technologies and concepts, particularly in relation to the Middle East. The event is being organized by the National Renewable Energy Laboratory and the Arab Academy for Science and Technology and Maritime Transport. For more information, contact: Fuad Abulfotuh, Arab Academy; e-mail: mceet@link.net; Internet: http://www.aast.edu/mceet/confindex.htm

WORLD CONFERENCE ON ENERGY FOR DEVELOPMENT: This meeting will take place in Noordwuk, the Netherlands, from 12-14 December 2004. The conference is based on the premise that energy is the key to economic development, poverty reduction and environmental sustainability, and that huge investments are needed in the Third World to develop energy systems in a way that contributes towards sustainable development. The conference will consider investment needs in the energy sector, obstacles and solutions. It is being hosted by the Dutch Ministry of Foreign Affairs and the Ministry of Housing, Spatial Planning and the Environment, with support from the World Bank, UNDP and the World Business Council on Sustainable Development. For more information, contact: Secretariat, tel: +31-70-339-1812; fax: +31-70-339-1306; e-mail: projectteam@energyfordevelopment.org; Internet: http://www.energyfordevelopment.org

TENTH CONFERENCE OF THE PARTIES TO THE UNFCCC: The tenth Conference of the Parties (COP-10) to the UN Framework Convention on Climate Change (UNFCCC) will convene in Buenos Aires, Argentina, from 6-17 December 2004. COP-10 will resume negotiations relating to the Convention and the Kyoto Protocol. It will occur alongside the twenty-first sessions of the subsidiary bodies (SB-21). On the issue of technology transfer, a two-hour side event is being planned at SB-21/COP-10 on the topics raised by this workshop. The side event is tentatively scheduled for Wednesday, 8 December, from 6:00-8:00 pm. 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