



**SUMMARY OF THE EXPERT GROUP MEETING
ON THE CLEAN DEVELOPMENT MECHANISM**

REPORT OF THE MEETING

**AND SUSTAINABLE INDUSTRIAL
DEVELOPMENT: NEW PARTNERSHIPS FOR
INDUSTRY IN DEVELOPING COUNTRIES
VIENNA, AUSTRIA, 1-2 OCTOBER 1998**

The "Expert Group Meeting (EGM) on the Clean Development Mechanism (CDM) and Sustainable Industrial Development" took place in Vienna, Austria, at the Vienna International Centre from 1-2 October 1998. The EGM was organized and hosted by the United Nations Industrial Development Organization (UNIDO), with 35 participants from industry, government, United Nations agencies and NGOs. A set of observations was agreed at the conclusion of the EGM. The observations reflect input into the EGM during the course of five sessions consisting of thematic presentations followed by an open discussion. Two sessions were prefaced by input on related UNIDO projects on energy and research tools. A more concrete report, presenting areas where UNIDO's involvement as a provider of technical support services within the context of the CDM could be more useful to the developing world will be released following the meeting. This report will be presented at a Special UNIDO Event at the Fourth Conference of the Parties to the UNFCCC (COP-4), in Buenos Aires, on Monday, 2 November.

The Kyoto Protocol, agreed in December 1997, is an important step towards meeting the objective of stabilizing greenhouse gas (GHG) concentrations in the atmosphere. The Kyoto Protocol established binding GHG emissions reduction and limitation objectives for Annex I Parties to the UNFCCC with a view to achieving at least a 5% aggregate reduction from 1990 emission levels in the period 2008-2012. Article 12 of the Kyoto Protocol creates a "clean development mechanism" (CDM) which enables developing countries (i.e. Non-Annex I countries) to transfer certified emissions reduction units from projects to Annex I Parties. The Article allows Annex I Parties to count such project-level emissions reduction achieved from the year 2000 towards their compliance in the first commitment period (2008 to 2012). The UNIDO EGM took place in the run up to COP-4, where Parties are expected to further elaborate arrangements for the flexibility mechanisms, including the CDM. Together with other UN agencies, UNIDO is expected to contribute to these developments, drawing on its areas of expertise and experience in such areas as sustainable industrial development and capacity building in the developing world.

In an introductory address to the opening session of the EGM, on Thursday, 1 October, EGM Co-Chair, Ambassador Irene Freudenschuss-Reichl (Austria), said the Kyoto Protocol's flexible mechanisms, including the CDM, demonstrate that the magnitude of the climate change problem is such that it cannot be dealt with by ordinary instruments of international cooperation. She said innovative mechanisms engaging market forces will be needed to generate adequate financing and facilitate technology transfer, possibly resulting in technology "leap frogging" in many parts of the world. Anticipating further refinement of the mechanisms at COP-4 in Buenos Aires, Freudenschuss-Reichl identified issues requiring further attention: access by all interested parties and the authenticity of emissions reductions; project eligibility criteria; development impacts; verification and additionality; national baselines for developing countries; equity concerns; and the role of operational entities. Noting that UNIDO's business plan and portfolio of new services include scope for work on climate change and energy, she said UNIDO might well be one of the international actors to play a role as an impartial expert in addressing some of the issues she had outlined.

Angelo D'Ambrosio, Managing Director of the Sectoral Support and Environmental Sustainability Division, UNIDO, welcomed participants and conveyed apologies on behalf of Carlos Magariños, Director-General, UNIDO, who was unable to attend the EGM. He announced that UNIDO had just signed a Cleaner Production Declaration, initiated by UNEP. D'Ambrosio conveyed Magariño's view that the climate change agreements are having a unique impact on the concept of industrialization. He acknowledged the significance of the Kyoto Protocol for the environment, economic growth, investment flows, technological innovation and sustainable development, and signaled UNIDO's desire to be part of this common effort. He outlined a new portfolio of UNIDO service modules for sustainable development, some elements highlighted include: Climate Change and Kyoto Protocol (including: advanced policy advice on energy, planning, transfer and assessment of energy-related technologies; government and institutional capacity building for monitoring, verification and certification; mitigation projects and information networking); Energy Efficiency (including the implementation of tailor-made industrial energy efficiency measures based on energy audits, monitoring activities and systems analysis); and Rural Energy (including a focus on the provision of adequate, modern energy services in the least developed countries, using renewable energy, and improving efficiency and the promotion of the local manufacture of appropriate energy equipment through technology transfer and capacity building). He also outlined UNIDO's Service Modules for Cleaner Production and Environmental Management. He said UNIDO will have to tackle the question of how its efforts will relate to the needs and wishes of Member States. The

organization wants to find out how best to position itself within the Kyoto Protocol process. In concluding, he further announced that, on the basis of the recommendation of the UN Secretary-General, the Ted Turner Foundation had decided to fund a UNIDO project on Kyoto Protocol issues.

Miquel Rigola, Director, UNIDO, recalled the requirements set out in Article 12 of the Kyoto Protocol on the CDM: certification of each project activity; real, measurable, long-term benefits; additionality, transparency, efficiency and accountability; and coverage of administrative expenses. He said UNIDO had decided to focus on providing assistance to developing countries for sustainable development and on transfer of technology. Observing that southern European Union countries are due to increase energy consumption, Rigola explained that trends in energy-use can provide an insight into how developing countries will approach European patterns. He noted the strong connection between developing countries and southern European countries and how this provided a reference point for differentiated responsibilities. Using an analysis of the energy trajectories of the European Union's northern and southern countries and their differentiated responsibilities within the EU "bubble" agreed in Kyoto, Rigola explained that anticipated development is currently being defined in Europe by energy per capita figures of between 2500-2800 kilogrammes (oil equivalent) per year, representing 7000-8000 kilogrammes of CO₂ per capita per year. Rigola proceeded to describe how established UNIDO activities correspond to the three main groups of factors influencing energy intensity, including housing and transportation, sectoral energy intensity and efficiency values, and the composition of industry.

Drawing on OECD data to examine the scope for CO₂ emissions reductions, Rigola argued that, with projected rises of 1-2% in energy consumption per year, OECD countries will have to involve developing countries, especially within the private sector, if they are to comply with their Kyoto commitment targets. He posed a number of subsequent questions on: how to maximize the impact of technology transfers to industrial sectors, the effective involvement of developing country private sectors, using a preventive approach, and how Africa and the least developed countries can become substantive partners in the CDM. Rigola concluded that all sectors and all countries will have to be involved to achieve positive advances in climate change, developing countries will have to look at the CDM as an opportunity to move into sustainable development, equity may be difficult to achieve in the case of Africa, and effectiveness calls for strong UNIDO participation.

DISCUSSION SESSIONS

CDM AND SUSTAINABLE INDUSTRIAL DEVELOPMENT FOR THE DEVELOPING COUNTRIES - THE SPECIAL NEEDS OF AFRICA

Introducing a session on the CDM and the "Special Needs of Africa," Kojo Hagan, UNIDO, reporting on conversations at a recent IEA/UNEP meeting in Accra, Ghana, noted growing interest in a number of CDM issues, including: the question of equitable geographical representation on the governing body (a matter of particular interest to small island states); additionality; the adaptation fund to assist the poorest and most vulnerable countries to undertake adaptation measures; and the role the CDM will play in relation to existing funding for development. He reported on a suggestion that there should be seed funding to assist the least developed countries and small island states in attracting CDM projects. Issues which need to be addressed include: infrastructure and communications to ensure effective quantification of GHG reductions and certification; regional and sub-regional networking, including the involvement of regional insti-

tutions; capacity building in the form of training, technology, research and development; the involvement of the public and private sectors; and environmental protection.

Grace Akumu, Climate Network Africa, said the CDM, unlike other flexible mechanisms of the Kyoto Protocol, offers Non-Annex I countries a chance for sustainable development. She noted that Africa had not benefited from Joint Implementation (JI) and/or Activities Implemented Jointly (AIJ) and that while emissions reductions are not the priority of developing countries generally, following a cleaner production path could result in avoided future emissions and sustainable development. She said political will in Annex I countries will be necessary to facilitate the effective participation of Africa in the CDM. She called for an emphasis on infrastructure projects, including communications, to help attract further investment. She also called for the full incorporation of Africa's private sector into the UNFCCC negotiating process.

Akumu set out recommendations for a UNIDO role in: creating awareness of the UNFCCC/Kyoto Protocol in Africa; involving industry in pollution and waste management; supporting the integration of Africa's industrial sector into the UNFCCC/Kyoto Protocol process; capacity building in, for example, baseline determination; providing a base for Member States for the identification of relevant national/regional CDM projects; reviewing and/or developing relevant regulations in African countries; providing incentives for member countries to invest in cleaner production; and ensuring equity in terms of Africa-based CDM projects by, inter alia, working alongside African regional organizations. She called for qualitative and meaningful CDM projects, which will impact on African development and the lives of the people.

Peggy Drodskie, South African Chamber of Commerce, described extensive policy revisions conducted since 1994, when the African National Congress came to power. These have involved consultations with NGOs, Community Based Organizations, business and labour organizations. Identifying her country's needs, Drodskie highlighted: the implementation of energisation strategies to reduce dependence on wood fuel and the identification and provision of appropriate forms of energy; establishment of a southern African federation of chambers of commerce and industry to facilitate private sector participation in the implementation of the Kyoto Protocol; and capacity building.

Opening the session for the first round of discussion among the expert participants, Co-Chair Freudenschuss-Reichl said three key questions stood out in the presentations: how to involve the African private sector in the CDM, how to take the equity question seriously, and the specific role of UNIDO in areas such as renewable energy, cleaner production, and UNFCCC- and Kyoto Protocol-related activities. In addition, she asked participants to consider the message that should go forward to COP-4. Ambassador Arizal Effendi (Indonesia), Chair of the G-77/China, congratulated UNIDO on convening the EGM. He identified clarification of the benefits for developing countries, clarification of the special needs of the industry sector, and the need to ensure the feasibility and longevity of the programme as the three pillars for the implementation of the CDM. He noted a lack of clarity regarding the promise of sustainable development for developing countries and said this must be spelled out in dollars and cents, in terms of poverty alleviation and job creation. He also raised the lack of capacity in developing countries to calculate additionality and the need for assistance to help countries establish the feasibility of CDM projects. Simon Worthington, Environmental Policy Adviser, British Petroleum (BP), cautioned against any tendency to pigeon-hole projects as "CDM projects" and advocated simply outlining development concerns and the CO₂ reductions that can be achieved. Tibor Faragó (Hungary) suggested that there might be competition between the Kyoto Protocol flexible mechanisms including the CDM. Engi-

neer S. I. Nyagba, Managing Director, Benue Cement Co, Nigeria, called for clarification of the incentives for the host country and partner in CDM projects. D'Ambrosio, UNIDO, said the incentives will have to be decided by countries. Responding to a point raised by Ambassador Effendi, he agreed that it will be important to decide how additional costs of CDM projects are to be covered. He cited the parallel of grants provided for by the Montreal Protocol to meet the costs of technology replacement and operations. Tahar Hadj-Sadok, UNFCCC, agreed with Climate Network Africa's view that the CDM's purpose is to move African countries along the path of sustainable development and that many opportunities for projects existed. He rejected the view that few projects will be developed in Africa because of its low CO₂ emissions. He said it does not appear that the CDM will have its own fund but will emerge as a very decentralised arrangement in which investment opportunities will emerge in dialogue between the actors. He added that ODA could be used to enhance the attractiveness of projects in Africa. Frank Joshua, on behalf of UNCTAD and UNEP, welcomed the EGM's focus on Africa, which he described as long overdue. Without detailed attention to the equity issue, he said, outcomes will not differ from those of normal investment flows that flow towards higher rates of return and high growth. He urged caution in dealing with the issues of baselines and additionality and how these are to be defined and suggested the application of differentiated rules. He supported the use of an ODA fund in the context of CDM projects. Akumu (Climate Network Africa) said the CDM will offer mutual benefits for all stakeholders involved including multinational corporations. She called upon UNIDO to invite experts to work with African projects. Juan Pablo Bonilla Arboleda, Colombian Industry Association (ANDI), said a great test for UNIDO will be to incorporate the private sector into the climate change negotiations. He underlined the centrality of credibility and certification of emissions reductions for the CDM and proposed a key role for industry associations in countries where the public sector does not enjoy credibility. Worthington (BP) cautioned that a failure to resolve CDM issues could send the initiative off the rails and discourage private sector involvement. Kok Kee Chow, Chairman of the UNFCCC Subsidiary Body for Scientific and Technical Advice (SBSTA), said the successful implementation of the CDM will depend on private sector input. He said the UNFCCC subsidiary bodies welcome input from the private sector.

Co-Chair Freudenschuss-Reichl offered a summary of the discussion, which focused on Africa and other low income countries. Participants highlighted: the wide variation in countries' per capita emissions; the need to tackle the equity question head on, using CDM projects and adaptation funds for vulnerable countries; the fact that the CDM will not be a "fix all" for all development problems; the need in Africa and other low income countries for more information on the UNFCCC and the Kyoto Protocol and the possibilities for participation; the need for capacity building; the need for effective private sector participation at an early stage in negotiations; the role of international organizations, including UNIDO, in bringing credibility to the CDM process and facilitating objective certification; and the importance of considering baselines, certification and additionality together.

CDM PROJECTS FOR INDUSTRY: SECTORS, ENERGY EFFICIENCY, BASELINES AND ADDITIONALITY

Cahit Gurkok, Director, SES/IEE, UNIDO, opened the session with an outline of UNIDO's Energy Programme, focusing on how UNIDO can add value to the CDM process. He said the major UN conferences, from UNCED to Kyoto, recognized the importance of energy, which is linked to all major global environmental, socio-economic and security issues. Energy must be viewed as a means of contributing to the solution of major global problems and as an instrument for the achievement of sustainable development. Noting the centrality of industry in the transition to sustainable development and

UNIDO's mandate to address energy issues, Gurkok outlined the organization's Energy Service Modules pursued with a mix of external partners and cooperating agencies: industrial energy efficiency-technology upgrading and capacity building; policy, legal and regulatory framework; and rural energy supply.

He said UNIDO's Kyoto Protocol strategies include: building national capacities for monitoring, verification, certification and development of technological options; mitigation projects in the industrial sector; and information dissemination and networking. He cited a number of UNIDO's successful projects including the lessons of the Montreal Protocol. A brief discussion followed. Preeti Soni, Tata Energy Research Institute (TERI), India, suggested that UNIDO concentrate on the identification of suitable CDM projects in cooperation with partners in the developing world, and noted that UNIDO could act as a powerful facilitator for South-South cooperation.

Introducing the session on "CDM projects for industry," Marina Ploutakhina, UNIDO, invited participants to look at the specific needs and concerns of private industry, notably the key implementation issue of establishing baselines. She explained that baseline determination is central to the definition of GHG emissions reduction and the quantification of an Emission Reduction Unit (ERU). Without an unbiased baseline it would be impossible to certify the value of ERU for CDM investors and to determine whether the global benefits from a CDM project are real, long-term and additional. She conceded that baselines are often difficult to specify because, by definition, "additional to any [reductions] that would otherwise occur," they are hypothetical. She said any upward bias in baseline estimation will reduce the price of offsets, may increase the global level of emissions and reduce the transfer to a host country. Given the importance of unbiased baseline estimation, she called for the designation of an international operational entity for the approval of project baselines. She also discussed views on the related issue of additionality, asking whether "win-win" or "no regrets" projects will count as CDM projects and outlined issues for the determination of project level baselines. Ms. Ploutakhina suggested a forum to work on baseline methodologies.

Dr. R.S. Maya (Zimbabwe) noted that the CDM would have a short term negative impact by compressing or increasing economic growth exponentially, resulting in an increase in the rate of accumulation of emissions from developing countries, while reducing emissions per unit. What is important, he added, is the possibility of developing countries overshooting global limits if an intervention is not made and developing countries keep to the slow accumulation path. The idea of the CDM is to force Africa to reach a certain critical level, doing so in a clean fashion and ensuring that it does not surpass global limits. It is assumed that developing countries will meet the rest of the world at a particular point in emissions levels.

On ways for UNIDO to assist southern Africa, he suggested that UNIDO: examine the region's strategic objectives for energy efficiency, in pursuit of competitiveness, and assess the baseline the region is setting for itself as a possible point of departure for further work; note on-going work on the needs of small scale enterprises in the energy context; investigate a role in assisting with no regrets measures which can deliver up to 40% savings; develop host industrialists, building people up for collaboration on CDM projects; assist Africa in building infrastructure to improve its ability to attract projects; examine ways to ensure equity for host industrialist partners in CDM projects; and help establish energy service centres to exploit no regrets policies.

Leonidas Giradin, Bariloche Foundation, Argentina, presented a Country Study on Argentina's energy scenario, mitigation options and costs. He outlined reductions in specific emissions related to energy production, noting increased hydro-generation and a switch to natural gas using up-to-date technology. He outlined mitigation options for

transport (technical improvements, sources substitution and mode substitution); industry (technical improvements and co-generation); and power supply (hydro, wind and nuclear). Professor Michael Antonovsky, Institute for Global Climate and Ecology, Russian Federation, spoke briefly to a scientific paper on "Some Methodological Issues in GHG Offset Quantification."

In opening the session for discussion, Chair Kok Kee Chow (SBSTA) noted that many developing countries still lack basic infrastructure such as electricity for lighting, and that the challenge for UNIDO's Rural Energy programme will be to assist with such provision using innovative energy supplies which do not add significantly to GHG emissions. He also identified the challenge of industrial energy efficiency at an early stage in developing countries' industrial development process. Responding to comments by Maya (Zimbabwe), Chow suggested that floating baselines for participants in the CDM will lead to leakages in terms of emissions. He said, and Maya agreed, that the Kyoto Protocol process will have to guide the procedures for the determination of baselines. Soni (TERI) suggested that UNIDO focus on three kinds of energy activities: new and more efficient technologies; upgrading existing plants; and technologies encouraged or subsidized by governments. Joshua (UNCTAD and UNEP) called for a focus on project baselines as opposed to the extremely complicated option of national baselines. He said national baselines will be useful for emissions trading. Experience in dealing with projects would eventually assist in the development of sectoral and national baselines. On the question of whether no regrets measures should qualify under the CDM, he cautioned that such qualification would inflate baselines and inflate the availability of credits while deflating the value. Annex I countries would obtain cheap credits, damaging the credibility of the process. He added: "No regrets opportunities exist but we must not create opportunities for violating the credibility of the Protocol." Joshua called for investors in CDM projects to move several levels above no regrets measures and recognize that the Protocol is dealing with additionality. Worthington (BP) asked Joshua if he meant that a project with a financial return should not qualify for credits. Joshua replied that if a project was considered viable and in the pipeline ten or fifteen years ago, with a respectable rate of return anticipated, the question of whether such a project should qualify for credits should be raised. The Kyoto Protocol clearly intends to establish analyses to determine what would have happened in the absence of the Protocol. Worthington said financial returns would be the main reason for the private sector's involvement in the CDM. This raised a serious question. He raised the issue of efficiency gains in the oil industry which are currently not pursued for lack of commercial justification. Jed Jones, Lloyds Register, UK, supported the use of project baselines, adding that the CDM has not been designed to maximize the number of credits. Tahar Hadj-Sadok (UNFCCC) queried Joshua's view that no regrets measures should not pass the additionality test and not qualify for credits. He said Joshua's argument would stand only in circumstances where capital is infinitely available and all economically viable projects are taken up. He countered that no regrets activity should not exclude projects from eligibility on the grounds that they do not meet the criteria for additionality. Juan Pablo Bonilla (Colombia) agreed with Joshua on the danger of inflating the availability of credits but defended the inclusion of no regrets measures if the private sector in Colombia is to invest in cleaner production. Joshua said the question of no regrets measures and commercial viability had become mixed up. He clarified his position, stating that additionality must be demonstrated and that not all no regrets measures can be ruled in per se. He said that an investor in a no regrets policy must demonstrate that she would not have become involved in a project unless the credits were available.

INSTITUTIONS FOR CDM: GOVERNANCE AND OPERATIONAL ISSUES DOMESTICALLY AND INTERNATIONALLY

Robert Williams, UNIDO, introduced the session on "Institutions for CDM: Governance and operational issues domestically and internationally." He outlined the anticipated CDM structure of an executive board overseeing implementing entities, with domestic institutions also established in key sectors. He said the quality of offsets and whether they will lead to long term climate change mitigation are related to a number of capabilities currently unavailable in a majority of Non-Annex I countries. He noted the scope for multilateral organizations, including UNIDO, to assist with building capacity for the successful operational of the CDM in developing countries. In addition to institutional and governance capacity, he noted the need for technical and technological capacity and training capacity in areas such as training in industrial energy efficiency and conservation. He called for a special emphasis on endogenous capacities for technology transfer and absorption. On the role of the private industrial sector, Williams called for early determination of guidelines for CDM projects and drew attention to the importance of indirect incentives (information on CDM investment, matchmaking, facilities for project identification and development, baseline certification and co-financing) and direct incentives (tax exemptions, domestic credits and subsidies).

Franz Tattenbach (Costa Rica) described his country's experience with AIJ and how these could inform domestic developments in the context of the CDM. He highlighted: attention given to spreading knowledge to the private sector and facilitating their awareness of opportunities; standardized methodology; the collection of numerous small projects into one viable project; and the establishment of a 'single window' focal point. The private sector has played a strong role in institutional development.

During the ensuing discussion, Tahar Hadj-Sadok (UNFCCC) recalled that a number of national authorities had been designated to work on AIJ and these could also serve as focal points for CDM, which is seen in many ways as a continuation of AIJ. Some countries have discussed the possibility of using national development banks and financial entities to serve as focal points and ensure that investments are consistent with existing development priorities. Jennifer Morgan, Worldwide Fund for Nature, said a range of questions regarding guidelines for certification, monitoring and verification will have to be addressed before there is a transfer of certified reduction units (CRU). Frank Joshua (UNCTAD and UNEP) noted that the Kyoto Protocol does not place responsibility on host countries but added that the credibility of the CDM process will depend on host countries putting their weight behind project approval, monitoring and certification. He said Costa Rica's experience with AIJ has demonstrated the importance of national mechanisms. He called on UNIDO, UNEP and other UN agencies to help developing countries develop similar institutions for the CDM, with UNIDO taking a lead. Juan Pablo Bonilla (Colombia) invited UNIDO to work with national industry associations to facilitate CDM focal points and identify projects.

Robert Williams (UNIDO) welcomed the expert suggestions on a role for UNIDO in capacity building and supporting organizations such as industry associations. He said the proposals fall squarely within UNIDO's main activities in the areas of promoting discussion on industrial development and technical assistance. Peter Kalas, Manager of the World Bank Program of the National Strategy Studies on II, described how a programme of national studies in south-eastern Europe on AIJ has been extended to cover countries interested in the CDM, in the wake of Kyoto. He said national capacity building is a centerpiece of the program, and signaled interest in working with UNIDO to develop the program. James Crawford, American Standard Companies, cautioned that projects will be required throughout the

entire spectrum of economic activity to ensure the participation of smaller sustainable development projects. Ambassador Arizal Effendi (Indonesia) said he was unclear about the tangible dollars and cents benefits of the CDM for developing countries and he wondered if the CDM will perhaps, inadvertently or otherwise, place the burden of GHG mitigation on developing countries who will be responsible for issuing the certification for emissions reductions. While developing countries are unclear about what they will receive from this trade, they will be issuing certified emissions reductions (CERs) to the developed countries, which will mean that they can further exceed their cap.

Franz Tattenbach (Costa Rica) said the CDM will create a commodity in the form of CER and questioned how the benefits are to be shared. He said the monetary value of the projects will benefit developing countries and provide an additional source of revenue equivalent to that of an additional export. He further noted that the question of who really captures this benefit could be determined by country policy. Joshua (UNCTAD and UNEP) agreed that national authorities should decide on the benefits of sustainable development. He saw a risk, however, of participants in the CDM finding themselves in a situation where all sorts of projects are being approved, bringing the process into disrepute. He suggested the preparation of an indicative list, prepared by the COP, to guide national authorities and the private sector on which projects should qualify as sustainable. On finance, Joshua said the CDM will open up an opportunity for new and additional resources for leveraging. An ODA fund could be used to leverage private sector funding to attract investment to low income countries

CAPACITY BUILDING FOR CDM: PROJECT IDENTIFICATION AND DEVELOPMENT, TECHNOLOGY TRANSFER, INTERNATIONAL PARTNERSHIPS

Robert Williams (UNIDO) opened the session with a presentation on a software package, called "IDENTIFY", used to facilitate a UNIDO study on behalf of the G-77 on technology transfer and the impact of improved technology on industrial GHG emissions in developing countries. The software was used to assess the implications of introducing new energy-efficient technologies into industry and has been field tested in China.

IDENTIFY is a software package designed to help users answer two key questions: to what extent can improved industrial technologies and practices reduce GHG emissions in a given developing country? and what other impacts such as costs and non-economic benefits would result from the introduction of these technologies? IDENTIFY is intended to be used by analysts to assess energy-efficiency and fuel-switching measures that can reduce fossil-fuel consumption, thereby reducing GHG emissions and, in many cases, providing overall economic benefits. The software can facilitate project analysis and comparative analysis.

Introducing the session topic "Capacity Building CDM", Guillermo Jiménez, UNIDO, noted the opportunities for cooperation, technology transfer and networking between Annex I and Non-Annex I countries presented by the CDM, and underlined the shortcomings in the capacity of some developing countries to take full advantage of these opportunities. He expressed hope that COP-4 in Buenos Aires will address outstanding uncertainties such as monitoring, certification, national reporting and accountability. He anticipated an incremental launch of the CDM, a "learning by doing" approach based on a mechanism for automatic approval of certain types of projects before the year 2000. He stressed the urgent requirement for capacity building if the CDM is to become operational from November 1999.

He suggested that UNIDO could provide capacity building for global cooperation for climate change abatement through support to: FDI through UNIDO's investment promotion services network, "Technology Markets" and through support to national investment infra-

structure; the creation of national/regional "strategic alliances"/ networks among stakeholders; and the development of national/regional technology and technology information services to industry, including capacity for technology needs assessment. Jiménez said UNIDO is perhaps the developing world's most important repository of industrial information and knowledge. He detailed information and assessment requirements that could be met by UNIDO projects and suggested that UNIDO could become or constitute a knowledge centre on industrial technologies for CO₂ abatement.

Enrique Prini, Business Council for Sustainable Development, Argentina, said UNIDO will have an important role in bringing corporate associations together and establishing their needs. The CDM will lead to such an exchange. On technology transfer, he said the approach will have to focus on Annex I and Non-Annex I partners in order to get the best result. The rules of the market will determine the most suitable technology to maximize credits. He added that the CDM can play a major role in Latin American privatization programs.

Stephen Mutimba, African Centre for Technology Studies, Kenya, identified two main functions for UNIDO in his presentation, "CDM as a Conduit for Technology Transfer for Sustainable Development in Africa." In the policy and institutional arena, he proposed that UNIDO promote networking opportunities, encourage cleaner environmental practices by advising governments, and provide advice and support for industrial policy research in environmentally sound technologies (ESTs) and for capacity building to support the adoption of ESTs. On development, Mutimba proposed that UNIDO provide material and managerial support to existing projects on renewable energy and ESTs transfer, work closely with existing institutions in the identification and implementation of projects, and assist in the identification of more suitable donors for small scale enterprises and projects in renewable energy and ESTs, especially in rural areas.

Preeti Soni, TERI, India, made a presentation on "Institutions and Governance for CDM: TERI's Repository on Environmental Activities and Technologies." She described how TERI's programmes focus on projects that lend themselves to AIJ/CDM criteria. Based on the view that the most important issue in AIJ and now the CDM is related to how the partners find each other and negotiate a mutually-beneficial agreement, TERI has established a Repository on Environmental Activities and Technologies to bring about a symmetry in the knowledge sets available to Annex I and Non-Annex I partners. Major activities include the development of a pipeline of potential projects and providing policy recommendations. Soni invited UNIDO to become involved with TERI's preparation of a data base. She conveyed a number of proposals based on deliberations at TERI on CDM issues for discussion at COP-4. These included: proposed criteria for selection of CDM projects (inclusion of a financial additionality clause in the CDM; conformity with sustainable development as defined by national priorities, interests and policies; funding and economic benefits; technology upgrades and capacity building; and additional benefits such as employment creation); the role of government (a proactive role in defining a country's sustainable development; and fixing a tax for endorsing CDM projects with proceeds used for sustainable development); governance (composition to be based on the GEF model, with roles to include supervision and review, identification of independent bodies for verification and certification, policy guidance, and assistance with arrangements for funding); and the adaptation fund (funding should be drawn from all the flexible mechanisms and from a non-compliance fund, and should not rely solely on the CDM).

Peter Pembleton, UNIDO, presented a paper on "Technology Information Centres - from information to knowledge." He informed the EGM that UNIDO has put forward its 'candidacy' for involvement in the establishment/enhancement of technology information centres and possibly an "international" technology information centre as

discussed by Parties to the UNFCCC. He invited the EGM to think in terms of dynamic, user-oriented, "local" systems to deliver to industrial clients what they "really need" i.e. to convert information into the knowledge required to solve specific technological problems through "processed and competently assessed technical and economic information that is tailored to their project- and site-specific needs." This will require a mix of technical, diagnostic, economic and information skills and be undertaken by a strategic alliance of stakeholders or "virtual centers." He outlined preliminary ideas for activities/projects based upon past UNIDO experience and building on its previous contributions to the UNFCCC: preparation and execution of a detailed "Industrial Technology and Technology Needs Assessment under the Climate Convention;" development of a concept for "Industrial Technology Advisory Centres and Knowledge Networks for Climate Change;" and increase the UNIDO technical knowledge base and references on climate relevant technologies building upon existing material on the UNIDO web site (<http://www.unido.org/SustDev/SIDsectors.html> and <http://www.unido.org/services/environment/envlearn/ftp/Lueight52.html>).

During the open discussion, Kok Kee Chow (SBSTA) told the EGM that SBSTA is looking forward to setting up specialized information centres under the UNFCCC. Thousands of technologies are available to address climate change. No single information clearing-house will be able to handle all the information. However existing information centers, including UNIDO's, can take on a new role, establishing links with each other. R.K. Pachauri, Director, TERI, India, invited UNIDO to assist in establishing knowledge networks for small scale industry units in India. Maya (Zimbabwe) asked how many industries in Zimbabwe know of UNIDO's information. He said it is important to find out why this information is not the first, second or third port of call by people with problems: "We probably have an inaccurate picture of what information is out there and how it is packaged." Rigola (UNIDO) conceded the need for UNIDO to look at creating demand-driven information. Jimenez (UNIDO) said UNIDO is changing to become a more demand-driven and knowledge based organization.

ROLE OF INDUSTRIAL PRIVATE SECTOR: OPPORTUNITIES AND CHALLENGES FOR BUSINESS

Simon Worthington (BP) began his presentation "The CDM - Finding Synergies and Moving Forward" with an outline of BP's three stage response to the climate change challenge: understand your emission sources and types; measure and verify emissions; and identify GHG reduction opportunities across the business. He said BP found that the key is to develop a strategy that will result in the greatest GHG emission reduction at the lowest cost over an appropriate timeframe. On the CDM, Worthington identified possible roles for all the key actors, utilizing the strength and skills of the entities that will engage in the CDM:

- The private sector role: Project identification and Annex I and Non-Annex I engagement and collaboration.
- Non-Annex I Country role: Meeting development needs by identifying the project areas that satisfy its priorities.
- The CDM Board role: setting the framework and creating the guidelines and rule for effective operation.
- Independent Certifiers' role: to guarantee the integrity of the commodity and verify the credibility of the project and maintain its integrity.

He said the CDM will depend on: a political agreement to suit the varying stakeholders' "wants"; a framework that encourages solutions to hurdles and builds on experience ("learn by doing"); effective reporting and verification procedures that keep transaction costs low; building on existing institutions to utilize expertise and experience; collaboration; and financial incentives for the private sector.

Dr. S. I. Nyagba, Chief Executive, Benue Cement, Nigeria, made a presentation on the "CDM and Sustainable Industrial Development: The Nigerian Cement Industrial Sub-sector Perspective." He profiled the Nigerian cement industry, including its environmental impact, and invited UNIDO to offer assistance to the industry in the following areas: conversion to more environment-friendly fuel; projects for the reduction of CO₂ emissions; electrical power generation; and plant refurbishment.

In a presentation on "Business and Industry in the CDM", James Crawford, American Standard Company, explained that industry is the source of technology and commerce is the source of all funding. He set out the expectations of business and industry when dealing with the CDM: volunteerism; participation throughout the negotiating process; mutual benefits (i.e. financial returns); assured credits (there must be a reasonable belief that the success of the project is the only risk); minimum overheads; flexibility; transparency; simplicity; no arbitrary limits; carry-forward; an appeal mechanism; and stability (e.g. institutional memory.)

Peggy Drodskie, South African Chamber of Commerce, addressed the "Opportunities and Challenges for Business." She outlined some of the many opportunities presented by the CDM: the potential to encourage FDI; an improvement in technological expertise as a result of technology transfer and capacity building resulting in greater productivity; improved access to local, regional and international networks and information; the development and initiation of national and regional projects, particularly in regional energy networks; and an opportunity for the private sector to be involved in infrastructure provision. She described social benefits including job creation, health and education. She cautioned that such benefits do not come naturally but depend on the ability of developing countries to address a number of challenges including the provision of a political and economic environment which encourages investment and policy frameworks that provide assurance and certainty.

Juan Pablo Bonilla Arboleda, (ANDI), presented a paper on "The CDM for the Private Sector in Colombia." He described how Colombia, as a fossil fuel exporting country and a country with a high potential for GHG sequestration, has an excellent opportunity to formulate projects under the CDM with the participation of the private sector. Among ANDI's 640 affiliates are fossil fuel exporters, energy producers, reforestation groups and a variety of companies producing GHGs in their production processes. He said ANDI will be able to promote reduction or fixation projects among its affiliates either by using cleaner production technologies or by forestry projects. ANDI is also promoting the idea of exporting "green fossil fuels." He explained that the plan is to have coal and petroleum exporting companies working together with reforestation companies to sell fossil fuel that is accompanied by a certification of CO₂ sequestration in Colombia. Clients in Annex I countries will be able to buy a fossil fuel which already includes the carbon offset in Colombia. With the possibility of future commitments for developing countries in mind, ANDI is also promoting a "domestic" JI scheme through which reforestation companies would compensate the emissions of the industry. This would allow Colombia to maintain a reference baseline without significant problems with future commitments. CDM projects are also on offer as part of the Colombian Peace Process to help solve the problem of illegal crops. In a presentation on "Mexican Industry and the Climate Change Kyoto Protocol", Daniel Basurto, Vice President, Employers' Federation (COMPARMEX), Mexico, described industry's interest in carbon sequestration and noted the country's loss of 0.5 million hectares of forest annually.

During the open discussion, Richard Sykes, Shell International, provided an industry view of the risks involved in the CDM, including the risk of doing business in a developing country and the uncertainties

that surround the award of credits and their value. He found the talk of excluding commercially viable and no regrets measures "highly discouraging." Responding to the issue of carbon sequestration, Ted Jones, Lloyds Register, wondered about the biggest threat to the climate change regime: "Russian hot air or sequestration?" Bonilla Arboleda (Colombia) said he anticipated developing country commitments if Annex I countries complied with their commitments in the first budget period. Work is progressing on an inventory for carbon sequestration, however developing countries need a lot of help to reduce the uncertainty for forest projects. Akumu (Climate Network Africa) urged caution on the inclusion of forest projects, noting that developed countries should concentrate on other areas.

Ambassador Effendi (Indonesia) called on developed countries to provide the incentives for the private sector actors participating in the CDM. Citing the US position that it cannot fulfil commitments without impacting on its economic growth, he said Article 12 of the Kyoto Protocol is clearly in the interests of developed countries, providing a source of CERs. He advised the private sector to approach the developed countries for incentives.

Frank Joshua (UNCTAD and UNEP) used a section in the paper presented by Nyagba (Nigeria) on the Nigerian cement industry to underline his concerns about additionality. Joshua read a paragraph in which Nyagba refers to funding constraints on his plans for plant refurbishment and his hopes for a partnership through the CDM. Joshua said the Nigerian paper links lack of funds to eligibility of CDM projects. He called on participants to put an end to such ideas about additionality. Tattenbach (Costa Rica) said it was looking dangerous to see the CDM interpreted as simple AIJ with credits.

PRELIMINARY CONCLUSIONS OF THE EXPERT GROUP MEETING

Miquel Rigola, Director, UNIDO, presented a draft summary of observations on potential areas where UNIDO can contribute to the efforts of developing countries in responding to the opportunities the CDM could create. The observations, based on exchanges at the Expert Group Meeting, include:

- Africa will need to build its institutional and infrastructure capacity in order to take full advantage of the opportunities under the CDM.
- The CDM should remain additional to ODA funding.
- Left entirely to market forces, the CDM cannot guarantee for Africa the equitable share of technology transfer and resources that might otherwise be available.
- Organizations such as UNIDO should step up assistance to Africa in order to create the necessary conditions to attract an in-flow of investment, including CDM investment.
- Private sector representatives emphasized that the main motivation behind their investments is profitability and the full involvement of the sector. CDM projects should provide opportunities for commercially attractive investments.
- UNIDO sees its role in developing and strengthening the institutional infrastructure for the identification and development of CDM projects.
- Capacity at all levels, particularly in Africa, needs to be strengthened to attract a meaningful amount of additional investment resources through the CDM.
- UNIDO should enhance the involvement of African business and industry in the UNFCCC and Kyoto Protocol processes.
- There is a role for UNIDO in identifying the potential CDM stakeholder partnership opportunities and building alliances between the private industrial sector in the host and recipient countries.
- Technology transfer remains the key issue on the development cooperation agenda. The success of the CDM will largely depend

on its potential to transfer climate-relevant technologies.

- It is important to get the methodological issues right, including additionality, if all the parties to the CDM partnership are to gain.

CLOSING REMARKS

Miquel Rigola, Director, UNIDO, invited participants to comment on and amend the conclusions. Prini (Argentina) stressed that there should be an objective approach to additionality. Bonilla (Colombia) suggested that UNIDO work on an indicative list of preliminary CDM projects for which additionality criteria are clear. Kok Kee Chow (SBSTA) urged participants not to pre-judge negotiations and suggested that UNIDO convey its experience in a presentation at COP-4. Chow told Rigola that all inputs are welcome to the process. Perhaps, based on the outcome of the Expert Group Meeting, UNIDO's role in the UNFCCC and the Kyoto Protocol will be enhanced. Akumu (Climate Network Africa) thanked UNIDO for convening the EGM. Kok Kee Chow (SBSTA) said UNIDO has a very positive role to play in the UNFCCC.

THINGS TO LOOK FOR

INTERNATIONAL CONFERENCE ON TROPICAL FORESTS AND CLIMATE CHANGE: This meeting will be held from 19-22 October 1998, Manila, the Philippines. For more information contact the Conference Secretariat, Environmental Forestry Program, UPLB College of Forestry, 4031 College, Laguna, the Philippines; tel.: +63-49-536-2342; fax: +63-49-536-2341; e-mail: Rdl@mudspring.uplb.edu.ph.

1998 EARTH TECHNOLOGIES FORUM (formerly Climate Change Conferences and Ozone Protection Technologies Conference): This meeting will be held from 26-28 October 1998 in Washington, DC. The Forum will address climate change and ozone protection technologies and policies. It is co-sponsored by the International Climate Change Partnership (ICCP), the US Environmental Protection Agency and the Alliance for Responsible Atmospheric Policy. The conference will provide a forum for discussion of current technologies and efforts to bring them into the marketplace. It also offers an opportunity to learn more about the important linkage between technology issues and policy discussions prior to the next climate negotiation in Buenos Aires. For conference registration, program and exhibit information contact: Heather Tardel; tel: +1 (703) 807-4052; fax: +1 (703) 243-2874; <http://www.earthforum.com>.

ENVIRONMENTAL R&D IN THE UK ELECTRONICS INDUSTRY--DRIVING ECO-INNOVATION: This meeting will be held on 29 October 1998 at the DTI Conference Centre in London, UK. The goal of the event is to discuss real environmental R&D needs/gaps/opportunities in the UK electronics industry. The event will launch two new projects: the UK recycling initiative by Dr Kim Howells MP; and the Strategic CARE Initiative (an environmental R&D network for European electronics companies). For more information contact: Martin Charter; fax: +00 44 1252 892747.

FOURTH CONFERENCE OF THE PARTIES TO THE FCCC: The Fourth Conference of the Parties will be held in Buenos Aires, Argentina, from 2-13 November 1998. The ninth sessions of SBI and SBSTA are expected to meet during the first week. A High-Level Segment will be held from 12-13 November. Canada and Japan announced plans to hold interessional meetings in September. For more information contact the FCCC Secretariat in Bonn, Germany; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.de. Also try the FCCC home page at <http://www.unfccc.de> and UNEP's Information Unit for Conventions at <http://www.unep.ch/iuc/>.