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Events convened on Thursday, 31 October 2002

## Science and technology capacity building for climate change

Presented by the Indian delegation in collaboration with the Ministry of Science and Technology



Klaus Töpfer, UNEP Executive Director, congratulates the Indian Government on their proposal for a science and technology capacity-building center.

Amitabha Pande, Indian Department of Science and Technology, noted that climate change has brought technology and science into the policy world, and called for context-specific, multidisciplinary and non-compartmentalized science and technology capacity building for mitigation and adaptation.

S.K. Srivastav, India Meteorological Department, said scientific and technological knowledge and capacity are critical for coordinating a global response to climate change and formulating national and regional policies and strategies. He outlined the Indian Government's proposal to establish an interdisciplinary science and technology capacity-building center to address regional needs. He said the center would, *inter alia*, harness regional strengths and traditional knowledge, involve all stakeholders, create information repositories, foster development of national and regional capabilities, encourage institutional networking, and develop policies for adaptation and mitigation based on sustainability values.

V.S. Ramamurthy, Indian Department of Science and Technology, stated that impact analyses should be conducted locally, and highlighted the need to strengthen observation networks.

Rajendra Pachauri, IPCC Chair, lauded the Indian Government's proposal for a science and technology capacity-building center. Noting that locally-based research will be required for the fourth IPCC Assessment Report, he underscored the possible contribution of the proposed center for science and technology capacity building. Noting that some technologies may not be suitable for all locations, he highlighted the need to draw on existing capacity and traditional knowledge to find solutions that are appropriate for local conditions, and called for a bottom-up approach to address vulnerability. He stressed the need to integrate mitigation and adaptation with sustainable development.

Klaus Töpfer, UNEP Executive Director, congratulated the Indian Government for their initiative, highlighted the importance of cultural identity, and called for technologies that are compatible with local culture.

Godwin Obasi, World Meteorological Organization, highlighted that developing countries are most vulnerable to climate change but have the least capacity to adapt to or mitigate consequences. He noted that the least developed countries (LDCs) will be most affected by climate change and stressed the need for capacity building and south-south cooperation. He called for the development of affordable and culturally-compatible technologies and expressed his support for the proposed center for science and technology capacity building in India.

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# National Strategy Studies

Presented by the World Bank in collaboration with the World Business Council for Sustainable Development (WBCSD)



Peter Kalas, World Bank, outlines the main recommendations of the Workshop on capacity building for the Kyoto Protocol.

Martin Enderlin, Switzerland, introduced the National Strategy Studies (NSS) programme, aimed at assisting capacity development, policy formulation and institutional building. He highlighted capacity building as a prerequisite for the successful implementation of the Kyoto Protocol offset mechanisms.

Kjell Ören, WBCSD, emphasized the role of the private sector in implementing the CDM, and stressed the need for clear, transparent frameworks at the national and international levels.

Peter Kalas, World Bank, called for a shift from capacity-building needs assessment to the identification of ways to implement capacity-building programmes. He noted that the NSS draws upon, *inter alia*, a high level of local expertise and domestic surveys.

Anne Arquit Niederberger, Policy Solutions, outlined the aim, context and methodology of a workshop on capacity building for the Kyoto Protocol held in September 2002. She stressed the need for capacity building to properly implement the UNFCCC and the Kyoto Protocol, participate in their evolution, and take advantage of the Kyoto Protocol mechanisms. She explained that the workshop addressed: information on countries' readiness to engage in Kyoto Protocol mechanisms; assessment of capacity-building needs; and the design and implementation of capacity-building programmes.

Mohan Munasinghe, Munasinghe Institute for Development, said the workshop's working group on institutional prerequisites for the CDM in non-Annex I countries focused on: linkages between climate change and sustainable development; procedural rules and stakeholder participation; capacity-building needs; and resource mobilization.

Peter Kalas, World Bank, outlined the recommendations of the working group on institutional prerequisites for economies in transition, including the need to: choose between joint implementation (JI) or emissions trading; formulate national capacity-building strategies; build upon national expertise; establish JI regional centres; create partnerships for disseminating information; and integrate capacity building for implementation of the Kyoto Protocol into relevant national policies.

Eduardo Dopazo, World Bank, reported on the working group on ways to generate viable CDM projects. He said key issues include: generating viable CDM projects to develop further projects; fostering partnerships; training and awareness-raising initiatives for all stakeholders; building capacity on project transaction costs; and addressing uncertainties about carbon markets.

Thomas Black-Arbeláez, Andean Centre for Economics in the Environment, outlined the main findings of the working group on benefit maximization from carbon markets for host countries. He stressed the need for capacity building on total values of CER flows, CDM costs, legal and contractual instruments, negotiation models, and CDM benefits.

Peter Kalas, World Bank, said the conclusions of the workshop stressed the need to: develop awareness of the risks and opportunities arising from the Kyoto Protocol mechanisms; assess commonalities and disseminate information on CDM and JI experiences; mobilize financial resources; promote partnerships; and democratize capacity building for implementing the Kyoto Protocol through, *inter alia*, sectoral policy integration.

## More information:

<http://www.admin.ch/swissaj>  
<http://www.wbcd.org>  
<http://www.worldbank.org>  
<http://www.prototypecarbonfund.org>  
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# Climate change issues and CDM opportunities in Asia

Presented by the International Petroleum Industry Environmental Conservation Association (IPIECA), the International Emissions Trading Association (IETA) and the United Nations Industrial Development Organization (UNIDO)

David Mansell-Moullin, IPIECA, described the activities and aims of IPIECA and outlined the goals of its recent workshop in Malaysia on development and climate change issues and opportunities in Asia.

Wishart Robson, Nexen, reported on the themes presented at the workshop including Asian development priorities, anticipated economic growth, and affordable energy. He outlined the projected long-term energy demand and emission forecasts for Asia, gave examples of the technologies considered, and reviewed technology transfer barriers and enabling frameworks for Asia.

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Ariesta Ningrum, URS, outlines the technical issues that arose in the development of geothermal energy generation in Indonesia.

# Climate change issues and CDM opportunities

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Frede Cappelen, Statoil, set out the workshop's findings on: host country priorities; national approaches; the viability of large-scale CDM projects; and private sector priorities. He discussed the results of several CDM case studies, underlining the need for "learning by doing", private-public partnerships, economically-sound projects, and solutions to tackle high transaction costs.

Brian Flannery, Exxon Mobil, outlined the workshop's conclusions, including: the need to consider climate change in the context of development and poverty alleviation; the CDM as a new pathway to development with multiple objectives; the benefits and challenges of large-scale CDM projects; the need for lower transaction costs and fast approvals; and the need to address procedural and substantive uncertainties.

Robert Dornau, IETA, underscored the need to address barriers and foster enabling frameworks for capacity building. He said there is a need for capacity building to create value in CDM credits so that they can be competitive with credits generated in parallel markets. He stressed the need to: improve the knowledge of experts in both Annex I and non-Annex I countries; foster cooperation among the public sector, private sector and civil society; and address issues faced by stakeholders in the CDM process.

Novi Ganefianto, Unocal Geothermal of Indonesia, described the Indonesian energy sector and reviewed the advantages of and work on geothermal energy generation in that country. He underscored that work on geothermal energy generation has increased domestic institutional capacity for the CDM, and established links between stakeholders and potential carbon buyers.

Ariesta Ningrum, URS, reviewed the technical processes undertaken in Indonesia regarding geothermal energy generation, outlining the baseline studies, validation lessons and host country approval processes.

Peter Pemberton, UNIDO, outlined the capacity-building efforts taken by UNIDO in identifying needs, developing preparatory assistance programmes, and implementing capacity-building programmes for industry-oriented CDM projects in Asia. He also described the results of a forum held in Japan to acquaint Asian investors with CDM issues and opportunities.

## More information:

<http://www.nexeninc.com>  
<http://www.statoil.com>  
<http://www.ipeca.org>  
<http://www.uscib.org>  
<http://www.unido.org/doc/310797.htmls>

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## New energy technology: The Finnish Technology and Climate Change Programme

Presented by the delegation of Finland

Jouni Backman, Finnish Minister of the Environment, highlighted that: climate change mitigation is one of Finland's top environmental policy priorities; Finland was the first country to introduce a carbon dioxide tax; and the country has succeeded in stabilizing GHG emissions from the transport sector. He said there are many technology options available for mitigating climate change, and that Finland has launched several national technological research and development programmes that aim to reduce GHG emissions. He explained that Finland's National Climate Strategy aims to increase the competitiveness of renewable energy, and noted public funding for technology development. He noted that in 1999, the National Technology Agency launched the CLIMTECH programme, which aims to promote technologies that reduce GHG emissions and to support the commercialization of Finnish technology. He underscored Finland's long-term objective to double the use of renewable energy.

Ilkka Savolainen, VTT Technical Research Centre of Finland, noted that Finland has few domestic energy sources and imports 70% of its energy. He underscored that there will be growing demand for new technologies due to GHG emission restrictions. He explained that eight companies and seven research institutes conduct research for CLIMTECH, and that the Programme focuses on, *inter alia*, renewable energy, energy efficiency, and the capture and utilization of carbon dioxide. He highlighted that Finland represents 5% of global installed wind capacity, which he said is high considering the country's relatively small population. He noted that biomass represents 20% of Finland's primary energy supply and 10% of its electricity production.



Ilkka Savolainen, VTT Technical Research Centre of Finland, highlights the large global potential of biomass energy.

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# Finnish Technology and Climate Change Programme

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## More information:

<http://www.tekes.fi/english/programm/climtech>

<http://www.ymparisto.fi>

<http://www.vtt.fi>

<http://www.wartsila.com>

<http://www.winwind.fi>

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P.V. Krishna, Wärtsilä, explained that combined heat and power technology reduces GHG emissions due to the extremely high efficiencies that result from the capture and use of waste heat. He highlighted the strong growth potential of biofuels and underscored that Wärtsilä uses biomass technology appropriate for wet biofuels.

Jouko Rämö, Pohjolan Voima Oy, explained that WinWinD is a Finnish power company that has had excellent success with its 1 MW wind turbine. He noted that the turbine has low operating and maintenance costs, can be grid-connected or stand alone, and is efficient at low wind speeds. He said a pilot project for 2.5 MW onshore and 3 MW offshore turbines will begin in 2003.

# US-India technology cooperation on global climate change: Shared success

Presented by Winrock International, India in collaboration with USAID



R.V. Shahi, Indian Ministry of Power, outlines power needs in India and recommends ways to meet increasing energy demand.

R.V. Shahi, Indian Ministry of Power, emphasized that Indian *per capita* energy consumption is very low and that the country's energy demands will increase significantly over the next decade. To meet this growing demand, he recommended that: technologies be applied that use Indian resources in an environmentally acceptable manner; inefficiencies, such as in the transmission of power, be addressed; maintenance standards be improved; and energy distribution be decentralized.

B.N. Ojha, National Thermal Power Corporation, discussed best practices for pollution reduction in thermal power plants. He reviewed the use of clean coal technology in India aiming to minimize ash content and improve combustion efficiency.

Chetan Maini, Reva Electric Car Company, described the climate change and sustainable development benefits of using electric vehicles in India. He stressed that the technology for manufacturing these motor vehicles is available in India and the environmental benefits in terms of emission reductions and noise pollution are significant.

Tapan Basu, Bajaj Auto, highlighted an electric three-wheeled prototype vehicle as a contribution to the Indian Zero-Emission Transportation Programme, which aims to: develop market-driven technology for electric vehicles; provide commercially-attractive technology options; and increase awareness of the benefits of using electric vehicles. Noting the completion of field testing, he said the production phase has started and noted the need for long-term investments.

Ram Tyagarajan, Thiru Arooran Sugars, outlined sugarcane cogeneration projects and benefits, including short gestation, low capital investment and low transmission and distribution costs. Noting that such projects are environmentally friendly, he highlighted their potential contribution to sustainable development, highlighting that sugarcane in India is an indigenous energy source that can foster rural development. He said the production potential of the 492 installed sugar mills in India is 5000 MW and the offset potential is 18,72 million tonnes.

Gayathri Ramachandran, Environmental Protection Training and Research Institute, introduced the Integrated Environmental Strategy that aims to analyze and identify ways to reduce GHG emissions, through, *inter alia*, impact assessments, capacity building, and the development of institutional frameworks and cost-effective policies.

Ranadhir Reddy, Municipal Corporation of Hyderabad, outlined an initiative for reducing pollution through better traffic management. He explained that possible activities include emissions and traffic management and prevention through land-use planning. Noting that improving traffic speed by 20% in Hyderabad would reduce emissions by 9%, he said the strategy focuses on reducing congestion and transit times through vehicle segregation, synchronization of traffic lights, and junction improvements. Through the strategy, he said carbon dioxide emissions are expected to be reduced by 1.45 to 2.8 tons per day.

## More information:

<http://www.ntpc.co.in>

<http://www.revaindia.com>

<http://www.bajajauto.com>

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