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Summary

Beijing High-level Conference on Climate Change: Technology Development and Technology Transfer

The "Beijing High-level Conference on Climate Change: Technology Development and Technology Transfer" was held in Beijing, China, on 7-8 November 2008. More than 700 representatives from governments, related international organizations, business sectors, academic institutions and non-governmental organizations from over 70 countries participated in the Conference.

The Conference was opened by Premier Wen Jiabao. He emphasized that international cooperation is essential to tackle climate change, highlighting the critical role of scientific and technological progress. Breakthroughs in low-carbon technologies and the wider use of new and renewable energy technologies will lay a solid foundation of climate change mitigation and adaptation and provide strong support for the building of low-carbon economy and low-carbon society. The international community should step up cooperation in the development and transfer of climate change technologies.

In his message to the Conference, the United Nations Secretary-General Mr. Ban Ki-moon stated that climate change is a defining challenge of our times and demands a collective global response and decisive actions. New thinking and specific measures are necessary to remove existing barriers to clean technology transfer and diffusion.

Ministers underlined the critical importance of technology development and technology transfer in effectively combating climate change and advancing the three pillars of sustainable development in an integrated manner. They stressed that action is urgently needed on all four areas of the Bali Action Plan: mitigation, adaptation, technology and finance. The importance of capacity building for developing countries to be able to make effective use of transferred technologies was also emphasized.

Ministers also emphasized that, in the current global financial crisis and slowdown of the world economy, the international community should not waver in its commitments and actions on tackling climate change. Investments in low-carbon technologies and associated infrastructure can provide a needed stimulus to economic activity and to job creation. Comprehensive partnerships, including North-South and South-South cooperation, as well as cooperation between public and private sectors, should be enhanced in promoting climate friendly technology development and transfer.

Track A: Status of Technologies, Technology Transfer, Obstacles to Technology Transfer and Best Practices

- Participants highlighted that a broad range of technologies are available or are under development for climate change mitigation and adaptation. Many renewable technologies and cleaner, more efficient fossil fuel technologies represent options for the short and medium term. Some noted the potential of carbon capture and storage.

In the long-run efforts are underway on several advanced technologies including renewables and hydrogen.

- Many participants called for diversifying the energy matrix in favour of low-carbon technologies. In developing countries, the key challenge is to bring the cost of such technologies and the associated services to affordable levels. Participants also noted that energy efficiency represents one of the most cost effective options to reduce GHG emissions, particularly in developing countries.
- Participants discussed adaptation technologies for climate assessment and early warning, coastal zone management, water resources, agriculture and public health including desalination techniques, reservoirs, levees, new varieties of crops, advanced irrigation systems, tidal barriers, wetland restoration, afforestation, and early warning / evacuation systems.
- Synergies between mitigation and adaptation could be further explored.
- Participants indicated that some progress has been made in closing the technology gap with advanced countries in recent decades but that major gaps remain. In relation to environmentally sound technologies, there are insufficient international efforts to track their flow or transfer. Nevertheless, it is clear that some technologies are very expensive and their adoption in many countries is not economically feasible.
- The UNFCCC technology transfer framework provides valuable information. Technology Needs Assessment reports indicate the need for key renewable energy technologies such as solar PV and thermal, biomass, hydro (mini- and micro-scale) and wind systems. Some priorities identified for energy efficiency were lighting, solar water heating, and stoves and ovens.
- Participants emphasized that the identification of barriers and prioritization of actions to overcome them are country-specific. Barriers include shortage of financial resources, high capital cost requirements, lack of developed markets, high import duties, and lack of appropriate infrastructure.
- Many participants highlighted that limited information is available on barriers affecting the transfer of environmentally sound technologies and that research is essential to allow a more comprehensive assessment of all the relevant barriers.
- Participants noted the valuable experience and best practices available from a range of case studies. The need for strengthened technology cooperation, including South-South cooperation, was highlighted.

Track B: Mechanisms for Overcoming Barriers and Obstacles to Technology Transfer

- Participants discussed technology transfer arrangements under the UNFCCC and its Kyoto Protocol, particularly the Clean Development Mechanism (CDM). While noting that the CDM was not designed primarily for technology transfer, they recognized its contribution, and a number of participants drew attention to the potential of programmatic approaches. Some participants noted the need to ensure

that all regions shared in the distribution of CDM projects. Other important mechanisms that were discussed included the Climate Investment Funds (CIFs) established by the World Bank and other multilateral development banks.

- Many participants noted that available financing mechanisms and partnerships are insufficient for mobilizing adequate resources and effecting technology transfer. It was recognized that international cooperation on technology transfer should be promoted within the framework of the Convention and in accordance with the provisions of the Bali Action Plan. Some participants stated that measurable, reportable and verifiable technology transfer would be a key for success in Copenhagen.

- Some participants stated that commercial mechanisms, such as FDI and international trade, have been relatively effective for the transfer of technologies to some developing countries, but many countries have not benefited substantially from such flows. Participants discussed a number of innovative technology transfer and financing proposals being advanced in the climate change negotiations, particularly the G-77 and China proposals on financing and technology transfer. It was noted that lessons could be drawn from the Montreal Protocol and its Multilateral Fund.

- The complexity of the issue was highlighted, with several participants noting that the barriers and required actions differed depending on the type of technology and its status. At the same time, there was widespread agreement that concrete action could not wait for the perfection of institutions and processes; rather, action needed to take place in parallel on key issues, targeting key technologies.

- Some participants mentioned that IPRs are only one of a number of conditions for innovation; others include capacity building, regulation and market incentives. Some participants underlined that high prices for IPRs prevent developing countries from acquiring low-carbon technologies. On the other hand, a number of participants stated that IPRs are not a decisive barrier to technology transfer; their importance depends on a range of factors, including the type of technology, market size, and extent of competition. It was noted that the IP system itself includes a range of flexibilities upon which countries may wish to draw, including compulsory licensing.

- Among the proposals and ideas discussed by participants include: centers for technology development and transfer; funding mechanisms for developing countries participation in R&D research; patent pools for streamlined licensing; global R&D alliance for adaptation; and technology prizes. Many participants referred to the potential of joint and collaborative R&D, with reference to models such as CGIAR.

<u>Track C:</u> Public and Private Sectors: Roles and Potential Collaboration for Technology Transfer

- The public sector and the private sector each has an important, often complementary, role to play in clean technology development and transfer. While capital and commercial technologies are mostly owned by the private sector, government acts as catalyst for technology development – but less so until now for

technology transfer. Some stressed the need to ensure that key technologies to tackle climate change are in the public domain, suggesting that publicly funded R&D in industrialized countries could be more systematically linked to technology transfer to developing countries.

- In addition to investing in early stage research & development, government performs a number of other valuable functions: providing a conducive regulatory and policy framework for technology adoption, e.g., through efficiency standards and renewable energy mandates, and subsidies to low-carbon technologies; creating a large market for goods and services supplied with cleaner technologies; forming partnerships with the private sector to share the risk of new technology deployment, and/or to secure property rights in key technologies to maintain them in the public domain.

- A number of public-private partnership models, including the Asia-Pacific Partnership, which promote sector-specific co-operation and aim at commercial scale-up and demonstration of low-carbon technologies (e.g., solar PV power plants, energy efficient building complexes, and clean coal). Such partnerships are designed to fill financing gaps – e.g., by using public finances to leverage private investment – as well as skills and capacity gaps. It was suggested that the low-carbon innovation centre model, by supporting enterprise formation and market creation, can serve to embed technology development in the local economy.

- Some participants cited the example of the CGIAR network of publicly-funded research institutions which developed green revolution agricultural technologies, suggesting it could provide a useful model for certain areas of climate change technology where local adaptation is needed (e.g., green buildings, climate-change-resilient crop varieties).

- International partnerships range from broad cooperation on institutional strengthening and policy formulation to more targeted cooperation on hardware investments, e.g., to build carbon capture and storage capable power plants. It was suggested that an international framework should be flexible enough to allow for the diversity of forms of technology cooperation and technology transfer. Likewise, it was noted that the metrics of measurable, reportable and verifiable technology transfer may need to take into account such diversity.

- Countries could benefit from drawing up technology roadmaps for key sectors, identifying the main barriers to wider technology deployment and the means of overcoming them. It was suggested that public-private partnerships could learn more from private sector experience with technology transfer.

- Participants discussed how risks facing private sector technology transfer could be mitigated, including financial and other business risks, technology risks and managerial risks. New financial instruments could be used to mitigate financial risks while public sector funding – both for R&D and for technology demonstration -- could help in reducing technology risks.