Technology Transfer in the UNFCCC Process

Technology Transfer Session

Asia Clean Energy Forum

18 June 2009, Manila

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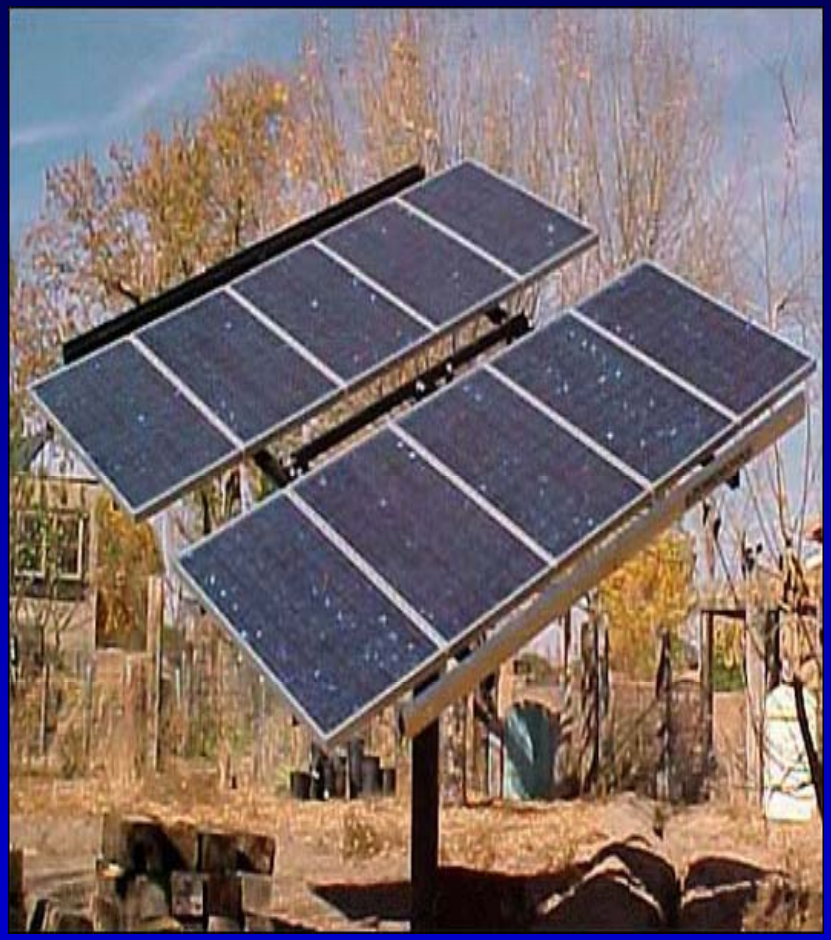
Outline of Presentation



- Technology transfer: Expectations
- Realities: Barriers and their removal
- GEF Poznan Technology Transfer Program
- New Climate Investment Funds
- Looking ahead to Copenhagen

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Technology Transfer: Expectations

- Convention. UNFCCC and international dialog gives attention to deployment, diffusion and transfer of environmentally-sound technologies to support low-carbon and climate-resilient economic development.
- Bali Action Plan. Building blocks – technology transfer, mitigation, adaptation and financing.
- Developing Country Demands. Calls for promotion of investment in environmentally beneficial technologies as well as both north-south and south-south transfer of clean technologies.

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Context for Tech Transfer

- Trade in clean technology is fastest growing area of venture capital - $8.4b in 2008.
- Carbon market trades - $30b in 2006, $65b in 2007, $125b in 2008, $140b in 2009 (forecast).
- Investments and financial flows through the market are the best proxy for measuring technology transfer – movement of equipment and associated know-how, but constrained by barriers – policy, market and institutional.
- Scope includes both mitigation and adaptation technologies...

Types of Mitigation Technologies

Energy Supply	• Fossil fuels • Hydrogen • Renewable energy • Nuclear fission and fusion
End Use and Infrastructure	• Transportation • Buildings • Industry • Electric grid and infrastructure
CO2 Capture, Storage and Sequestration	• CO2 capture • Geological sequestration • Terrestrial sequestration • Marine sequestration
Emission Reduction of other GHGs	• Methane from energy product/waste • Methane and N2O from agriculture • High global warming potential gases • N2O from combustion

Types of Adaptation Technologies

Extreme weather, climate and sea level events	• Climate models • Monitoring and early warning • Climate proofing infrastructure
Coastal zone management	• Protection • Retreat • Accommodation
Water resources management	• Desalinization • Reservoirs and levees • Advanced water recycling
Agriculture	• New crop varieties • Advanced irrigation • Efficient wind breaks • Emission control technologies
Public health	• Urban planning • Improved public transport • Disease vector control

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Technology Transfer Barriers

- Market
  - poor information flow on benefits and costs of technologies,
  - capital market constraints, weak banking sector or lack of information on the nature of investments (perceived high risks),
  - property rights issues affecting the ability to capture returns (public goods argument for government investment in R&D).
- Policy
  - restrictions on import or export of technologies (tariff or non-tariff barriers) and/or the associated know-how,
  - subsidies and taxes,
  - restrictions on the free flow of information or capital.
- Institutional/structural
  - weak capacity to plan, install and maintain equipment,
  - domestic and international technology standards incompatibilities.

Barriers to Technology Dissemination (GEF Paper)

- **Policy frameworks:** Government plays an essential role in setting the ground rules that are favorable to the adoption of ESTs.
- **Technology:** The technology itself needs to be robust and operational…the more mature a technology is, the easier it will be to transfer.
- **Awareness and information:** National stakeholders, especially market participants, need to be aware of the technology and have information on its costs, uses, and niches.
- **Business and delivery models:** As technology transfer occurs through markets, businesses and institutions need to be in place to deliver and service the markets.
- **Availability of financing:** Financing needs to be available for the technology, but *financing itself is insufficient* to ensure the uptake of the EST.

Elements for "Meaningful and Effective Actions" (EGTT)

- Technology needs assessments
- Technology information
- Enabling environments
- Capacity building
- Support mechanisms – including facilitation of projects and programs

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Poznan Strategic Program on Technology Transfer (of GEF)

- Technology needs assessments (TNAs)
- Piloting high priority technology projects
- Dissemination of successfully demonstrated technologies.

US$50 million grant, with high leveraging

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Clean Investment Funds (CIF): Clean Technology Fund (CTF)

- **Resources:** up to $5b for current period
- **Goal:** Promote scaled-up financing for demonstration, deployment and transfer of low-carbon programs and projects with a significant potential for long-term GHGs emissions reductions.
- **Countries:** Mexico, Turkey, Egypt, Philippines…
- **Programs:**
  - Power Sector - Renewable energy and highly efficient technologies to reduce carbon intensity
  - Transport Sector - Efficiency and modal shifts
  - Energy Efficiency - Buildings, industry and agriculture

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Looking Ahead to Copenhagen

- Expert Group on Tech Transfer, 3 reports in Bonn
  - Future financing options
  - Long-term strategy
  - Performance indicators
- Essentially merged with financing topic
- Emphasis on UNFCCC Financial Mechanism
- Most attention to mitigation over adaptation
- Weak links to carbon market and private sector