



**ICTSD**

INTERNATIONAL CENTRE FOR  
TRADE AND SUSTAINABLE  
DEVELOPMENT

# Low Emission Technology and Innovation: the role of IPRs and Technology Cooperation

**Ahmed Abdel Latif  
ICTSD**

**Trade Policy Nexus with Climate Change  
and Sustainable Development for  
the Asia Pacific Region  
ICTSD/TFCTN  
18-20 February 2009**



# Climate Change Technologies and IPRs : A New Old Issue ! (I)

- The UNFCCC calls on developed countries to take steps to promote transfer of technology (TOT) to developing countries (Article 4.5).
- The Bali Action Plan called for “enhanced action on technology development and transfer to support action on mitigation and adaptation, including, inter alia, consideration of:
  - (i) Effective mechanisms and enhanced means for the removal of obstacles to, and provision of financial and other incentives for, scaling up of the development and technology to developing country Parties in order to promote access to affordable environmentally sound technologies;
- However, transfer of technology and IP were raised in the discussions of the Expert Group on Technology Transfer (EGTT) and in Poznan.
- Developing countries (G77) propose the establishment of an institutional Mechanism on TOT. IPRs are viewed as one of the obstacles that must be addressed in a systematic and cross-cutting manner to enhance access to clean technologies. A parallel is made with access to medicines and developing countries wish to avail themselves of TRIPS flexibilities to access climate change technologies.
- For developed countries technology lies with the private sector and IPRs are essential to promote innovation in climate change technologies.



## **Climate Change Technologies and IPRs : A New Old Issue !**

- **IPRs are not mentioned expressly in UNFCCC or Kyoto Protocol provisions on transfer of technology.**
- **However, reference is already made to them in Chapter 34 of Agenda 21 (1992) which contains language for instance, on compulsory licensing !**



## Main Findings of the Study by Prof. John Barton (2007)

### *IP and Access to Clean Energy Technologies in Developing Countries An Analysis of Solar Photovoltaic, Biofuel and Wind Technologies (I)*

- **Objective:** explore whether there are IP barriers, to access clean technologies by developing countries in three sectors: **solar (Photovoltaic) energy, biofuel and wind energy.**
- The paper focuses on emerging countries such as **Brazil, China and India.**
- **Main findings in each sector:**
  - In the **PV sector**, developing nations are facing a loose oligopoly. IP is unlikely to be a significant barrier. Firms in India and China have been able to enter the industry.
  - For **biofuel technologies**, IP does not appear to be barring developing countries for accessing the current generation technologies. The harder question is about future or second generation biofuel technologies where methods, or enzymes, or new microorganisms are likely to be patented. At present, the most significant obstacles relate to trade barriers.
  - The **wind sector** appears to be the most concentrated of the three sectors. However, the industry is competitive enough for developing nations to be able to build wind farms without enormous IP costs. The greater challenge for developing countries is to enter the global market for wind turbines as existing industry leaders are hesitant to share cutting-edge technology out of fear of creating new competitors.



**General conclusions of the Study by Prof. John Barton (2007)**  
*IP and Access to Clean Energy Technologies in Developing Countries An  
Analysis of Solar Photovoltaic, Biofuel and Wind Technologies (II)*

- At the moment, there seems unlikely to be significant IP barriers to developing nation access to solar, biofuel and wind technologies.
- Each of the sectors is organized as an oligopoly at a key level of technology supply. Members of the oligopoly may have IP for which it would like to charge a high royalty, but it will be constrained by competition from the other members of the oligopoly, and, even more, by competition with alternate means of producing electricity or fuel.
- Further, research is needed. IP may become a more significant obstacle in accordance with the evolution of market structure.



## Directions for future research and action on Climate Change Technologies and IPRs

- Need for more **evidenced based research** on transfer of technology, IPRs and climate change (patent landscapes). Some studies, as those by the European Patent Office (EPO), have noted the increasing number and scope of patent claims in wind energy and bio-fuels technologies.
- Issues around **licensing** of climate change technologies require further enquiries. The number of patents in the area might not be the key issue but rather the licensing practices and whether effective IPR-based markups and royalty rates are likely to be substantial or only a minor portion of overall costs.
- The interface between **competition policies and IP** might be relevant here:
  - Evidence is needed to have better understanding of existing practices including pricing.
  - Based on this evidence, there might be a need to consider appropriate domestic or international instruments dealing with compulsory licensing, abuses of dominant position, refusal to deal, essential facility.
- Ultimately what is at stake: **FINANCIAL COST, TRANSACTION COST and DIFFUSION RATE.**



## Making Transfer of Technology more effective for Climate Change Technologies

- Greater use of **Public Private Partnerships (PPPs)**
- Addressing issues relating to **technical standards** (biofuels)
- **Indicators** for measuring transfer of technology
  - It is clearly difficult to devise effective usable and verifiable indicators; but doing so would be extremely valuable. This is particularly important in light of the language in the Bali Plan of Action that technology transfer must take place in a “measurable, reportable and verifiable manner.”
- Emphasis on developing and strengthening **absorptive capacities**
- Exploring different **innovation models** (prizes, open collaborative innovation, patent pools)



## **ICTSD initiative on climate technology and trade**

- **This initiative was launched at the Bonn climate change talks on 4th June 2008.**
- **It is an informal platform composed of prominent international experts in transfer of technology with a view to identify research and knowledge gaps and priorities in this area and generate policy oriented outcomes and solutions which can be fed into the UNFCCC process**
- **Preliminary priorities and areas for future work include: patent landscaping, licensing practices and indicators for transfer of technology and financing**



## Possibilities within APEC

The **Industrial Science and Technology Working Group's (ISTWG)** objective is to fulfill the APEC vision for the 21st century: to be a dynamic and prosperous region built on the development and application of industrial science and technology that improves the quality of life, while safeguarding the natural environment and achieving sustainable development.

- In 1997, the **Intellectual Property Rights Experts' Group (IPEG)** was established.

- **Joint meeting?**



# Questions

- **What are the needs of the Asia Pacific region in terms of climate change -related technologies?**
- **How can the technological capacities in the Asia Pacific region be harnessed to enhance the diffusion of climate change related technologies in the region?**
- **What specific measures and initiatives could be taken in this regard, in the context of APEC, for example?**
- **What could be the contribution of the Asia Pacific region to ongoing debates on this issue in the UNCFCCC context?**