

# Technology transfer and intellectual property rights in a post-Kyoto regime

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# Introduction

- Mechanisms to facilitate, promote, develop and manage transfer of knowledge that vests in clean energy technology.
- Clear link between R&D / technology transfer & Intellectual Property Rights (IPR).
- IPR influences the manner in which new technology is transferred (multi faceted impact)

# Background

- Clean energy technology – reduce CO<sub>2</sub>
- Energy production  $\longrightarrow$  CO<sub>2</sub>  $\longrightarrow$  80%
- N. America (30%) / Europe (15%) / Africa (3%).
- Africa and other developing will suffer the brunt of climate change.

# Developing Countries

- Development requires energy
- Possibility of Clean Energy Technology having an economic, environmental as well as a developmental value?
  - Infrastructural requirements can be developed around the new technology.
  - Abundant clean energy sources
- Sustainable use of energy is imperative for sustainable development!

# Climate Change Technology

- Includes any technology that has a smaller environmental footprint.
- Neither UNFCCC nor Kyoto Protocol defines Clean Technology.
- IPR problem

# Table 1. Average Annual Growth Rates of Renewable Energy Sources (1<sup>st</sup> Generation)

<b>ENERGY SOURCE</b>	<b>1970-1980</b>	<b>1980-1990</b>	<b>1990-2001</b>
<b>Renewables</b>	3.2%	2.4%	1.2%
<b>Biomass</b>	3.5%	3.0%	1.6%
<b>Hydro</b>	2.6%	0.7%	0.4%
<b>Geothermal</b>	8.3%	9.4%	0.4%
<b>Wind/Solar</b>	6.4%	23.5%	23.1%
Source – Renewable Energy Market & Policy Trends in IEA Countries, IEA 2004			

- 2<sup>nd</sup> Generation renewables are showing impressive growth (due to R&D funding)
- Yet, fractional contribution as compared to 1<sup>st</sup> generation renewables.

# Specific Technologies

- Wind Technology
- Photovoltaics (PV)
- Concentrated Solar Power (CSP)
- Biomass

# IPR in Clean Technology

- US and Japan – leading patent filing countries (Chatham House report)
- Climate Group – existing technology sufficient



# TRIPS

- Clean Energy Technology – patentable
- Must be afforded patent protection
- Art 27(2)
- Art 8
- Compulsory licensing

# Compulsory licensing -TRIPS

- Individual merits
- Authorisation
- Limited scope and duration
- Non-exclusive & Non-assignable
- Terminate, reviewable, financial compensation, judicial review

# South African Patent Legislation

- New and inventive step
- Trade, Industry and agriculture
- Discoveries & scientific theories – not patentable
- Compulsory licensing
  - Dependent patents
  - Abuse of patents

# Compulsory licensing – Dependent

- Working of a patent results in infringement
- Important technical advance
- Considerable economic significance
- Cross-license

# Compulsory license - abuse

- Any interested person
- Not worked, demand not met
- Public interest
- Excessive imported price
- License on reasonable terms refused.

# IPRs

- Barrier & stimulus
- Exhaustion of rights
- Specific improvements & features
- Export of product protected by process patent

# Technology Transfer

- Facilitation
  - Assignment
  - Licensing
    - Voluntary
    - Compulsory (no blanket compulsory licensing)
  - JV
  - Domestic R&D
- Different to the IPR in pharmaceutical industry

# Technology Transfer

- Not merely the transfer to IPRs
- But IPRs identified as a cross-cutting issue
- Barrier & stimulus
- Specific improvements are patented more than basis technologies



# Technology transfer

SEARCH TERM	SOUTH AFRICA	USA	EPO	INDIA	PCT	CHINA
Photovoltaic	54	3893	1164	48	1739	1009
Ethanol	111	4251	1427	56	2127	4542
Biofuel	0	117	38	0	147	38
Wind Energy	28	1333	423	9	830	2465
Wind Power	21	1946	560	12	1176	3490
Concentrated solar power	0	68	3	0	24	12
Concentrated Solar Energy	0	213	14	0	73	39

# Technology transfer

- Facilitation
- Article 4.1(c) UNFCCC
- Article 4.5 UNFCCC
- Article 10 Kyoto
  - Peremptory
- Johannesburg Plan of Implementation

# Technology transfer

- Bali Action Plan
- Article 66.2 of TRIPS
- Expert Group on Technology Transfer
- Global Environment Facility