Innovation & Entrepreneurship in the Energy and Environment Sector -- Patents

Prof. Joshua D. Sarnoff
DePaul U. College of Law
Chicago, IL, USA
jsarnoff@depaul.edu
01-312-362-6326
Overview

• Problems with technology development, transfer, and trade imbalances
• Traditional rationales for the patent system and their application to green technology
• University-based R&D, ownership, and licensing and cultural assumptions
• Regime shifting and forthcoming conflicts
• Conclusion
Green Technology Development

- Dramatically skewed national patterns of clean technology developments (funding and expertise)
  - First tier – Japan; Germany; U.S. (trilateral patent system with Germany as EPC proxy)
  - Second tier: Developed – U.K./France; Emerging Economies – BRICS-plus – China; South Korea; Russia; Brazil; Mexico; India (specific sectors only – e.g., cement; renewable energy; hydro/marine energy)
  - Less Developed Countries

- May be more or less skewed than other fields
  - Continued skewed development/“Specialization gains”
Green Technology Transfers

• Lack of direct foreign investment, market penetration, licensing, etc. to developing countries even in well-functioning markets

• Uncertain causes:
  • IP rights (or lack of IP rights)
  • Lack of scientific capability
  • Market conditions
  • Investment climate
Green Technology Trade

• Trade implications and pressures for international financing
  • Wealth transfers from developing world to very narrow set of technology-rich and patent-rich countries
  • Continued emphasis on border measures, exhaustion, and parallel trade to reduce prices and increase technology flows
Traditional Rationales for Patents?

- Investment – government funding v. leveraging private funding?
- Invention – needed economic incentives for labor and rewards?
- Disclosure (and trade secrecy implications) – ability to maintain secrecy and willingness to disclose and commercialize v. other appropriability mechanisms
- Prospect Development – need to control development and efficiency of avoiding duplication v. benefits of competitive development?
- Anti-commons licensing concerns – clean technology as multiple-input products?
University R&D and Licensing Policies

• Major benefits and costs of the U.S. Bayh-Dole Act experience (context of both public and private R&D) and export of B-D model to other countries
• Cultural assumptions about ownership and inventor/labor incentives – Indian experience
• Policy levers and defaults – e.g., exclusive v. non-exclusive licensing; private retention of rights to re-license; government license, march-in, compulsory licensing
• Progressive U.S. university licensing policies – the power of private action?
• Publication policies
National Patent Law Implications 1

- Traditional measures to assure access to developed technologies
  - Differential treatment of foreign technologies (invention location and novelty requirements, etc.) – but TRIPS Art. 3.1 National Treatment obligation
  - Working requirements – Paris Art. 5.A(2) (abuses of grant of rights, including failure to work, but only after four years from filing/three years from grant and two extra years for forfeiture)
  - Compulsory licensing and judicial refusals to enjoin infringement – TRIPS Art. 31 (government use or government authorization), Art. 44.2
National Patent Law Implications 2

- Competition policy – Abuse of Dominant Position; Essential Facilities – view of the economic/legal role of IP rights
- Price and market regulation
- Patent-law doctrinal variations
  - Experimental Use
  - Dominant-subservient patent licensing
  - Other
International Regime Shifting

- UNFCCC
- WTO
- WIPO
- Affected Sectoral Intergovernmental Organizations – Energy, Transport, FAO, UNEP, etc.
Conclusions/Predictions?

• Elevated Importance of Patent System
• Conflicts Spilling Into Other Areas – Will They Play More of a Role
• Scenarios Planning Futures