



Intellectual Property Rights in Cleantech A Patent Practitioner's Perspective

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Are patent rights helping or hindering the transfer and development of clean technologies to developing countries?

- Recently discussed at the European Patent Forum 2008
 - (<http://www.epo.org/about-us/events/archive/2008/epf2008.html>)
- Views
 - Developed countries – patent rights are needed to reward and promote innovation (prevent free riding and copying)
 - Developing countries – patent rights can pose a barrier for technology transfer (increased costs, ability to exclude)

Patent Rights Generally

- Patent right – fundamentally a right to exclude others from making, using, selling, offering for sale what is covered by the patent
 - NOT a right for owner to practice what the patent covers
- Remedies – money damages, injunction, exclusion order (e.g., US ITC can issue order for US Customs Service to stop product from coming into the US at the border), IF patent enforced

Are patent rights hindering? Consider ...

- Technology transfer issues related to intellectual property rights (IPRs) have been discussed mainly in a theoretical manner, and the process needs clarity on where IPRs are actually a barrier and where they are not a barrier
 - paucity of hard data
- Many clean technologies are not protected by patents
 - wind power, photovoltaic, biofuel technologies not entirely new, and those past patent term are open
- IPRs are a small part of the total cost
 - e.g., photovoltaic (solar) panels and wind turbines are just plain expensive, but not because patent rights extract too high a premium
- (See European Patent Forum 2008, de Boer)
(<http://www.epo.org/about-us/events/archive/2008/epf2008.html>)

Are patent rights hindering? Consider . . .

- Regarding photovoltaic technologies
 - Developing nations are likely to be able to obtain licenses on reasonable terms because of the large number of companies in the industry.
- Regarding biofuel technologies
 - Appears developing nations will have adequate access to current generation technologies, which are traditional (e.g., ethanol)
 - New generation of technologies for developing fuels from different feed stocks (e.g., algae) is being patented
 - But there are a number of active firms, and competition likely to prevent licensing fees from being a barrier
- Regarding wind technologies
 - Enough competition that developing countries can build wind farms using equipment purchased from global market without significant IP costs
 - Difficult for developing countries to enter market as equipment manufacturers – existing leaders reluctant to share technology and create more competitors

(See Barton, Intellectual Property and Access to Clean Energy Technologies in Developing Countries: An Analysis of Solar Photovoltaic, Biofuel and Wind Technologies, ICTSD Trade and Sustainable Energy Series Issue Paper No. 2, 2007)

Are patent rights hindering? Consider . . .

- Some specific instances of leveraging patents that created barriers to clean technologies
 - Montreal Protocol (1987 and revised in 1990s)
 - Treaty for limiting chlorofluorocarbons (CFCs) responsible for depleting ozone layer
 - Korea's booming semiconductor chip manufacturers used large amounts of Freon gas and needed a substitute
 - Korean manufacturers could not obtain licenses at reasonable royalty rates on patented technology and invested 12 million dollars over 6 years to develop their own
 - Similar indication that firms in India were refused licenses on patent technologies for substitute substances.

(See Hutchison, Does TRIPS Facilitate or Impede Climate Change Technology Transfer into Developing Countries?, 3 U. Ottawa L & Tech. J. 517, 2006)

A Patent Practitioner's Perspective

- Are patents on clean technologies in developing countries themselves a barrier? Evidently not.
- US companies, at least, engage in relatively select, not widespread, patenting in foreign countries
 - Popular countries/regions where foreign patents sought typically include western Europe (e.g., via EPO), Japan, Canada, China, Taiwan, India, Brazil
- Why don't innovators seek patents elsewhere?
 - Cost – can't patent everywhere
 - limit selections to main markets and own/competitor manufacturing centers
 - Underdeveloped judicial enforcement
- Patents in developing countries themselves not likely a barrier to technology transfer
 - But strong patent positions of a firm in developed countries could impact prices of exports to developing countries

A Patent Practitioner's Perspective

- What about technology leaders setting up shop in developing countries themselves? (i.e., if IP in developing country is not a barrier)
- Possible other barriers might limit such activity
 - Underdeveloped infrastructure
 - Unpredictable commercial law
 - Political uncertainty
 - Trade barriers
 - Regulatory hurdles
 - Etc.
- There's more to this problem than IP

A Patent Practitioner's Perspective

- As a practical matter, solid patent rights are necessary
- Reward/promote investment and innovation -- prevent free riding
- Consider startup companies
 - Look to startups for much of our technological innovation
 - \$2.4 billion investment into clean energy startups in 2006*
 - Even large companies recognize importance of such new ventures and invest in startups (e.g., General Electric)
 - A plan for obtaining patents is needed to obtain venture capital funding, and success in patenting is needed to maintain funding
 - Without funding, startups are not viable
 - Without patents, startups are not viable

(* See Miller et al., Patent Trends in the Cleantech Industry, 20 No. 7 Intell. Prop. & Tech. L. J. 1, 2009.)

A Patent Practitioner's Perspective

- Patents particularly important for disclosure of cleantech process technologies that might otherwise remain trade secrets – biofuel example
 - Processes are not easily reverse engineered, and are often maintained as trade secrets, particularly by established companies
 - But startups as a practical matter may be required by investors to patent their novel processes
 - Why? Because there can be high turnover at startups of technologists/inventors, making maintaining trade secrets risky
 - Investors may prefer patents assigned to company as a safer investment
 - Different biofuels may require significantly different process technologies based on different feed stocks
 - Startup companies are significant players in this area
 - Beneficial to have these technologies disclosed in patents to spawn further innovation

A Patent Practitioner's Perspective

- Assuming patent barriers exist or arise, what can be done?
 - Compulsory licensing – individual WTO countries can implement under their own laws (TRIPS requirements)
 - Other possible examples
 - “Blue Skies” scenarios – no injunctions
 - “Eco-Patent Commons”
 - Encourage patent holders to donate clean technology patents to a patent pool
 - Patent holders may be willing to do so for patents that are not essential source of business advantage or income
 - Corporate goodwill
 - Government tax credits/incentives to encourage cleantech transfer (e.g., to offset license fees)

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Thank You!

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