Technology Transfer & Intellectual Property

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Key Elements on TT in UNFCCC

- Developed countries…. “shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and know-how to other Parties, particularly developing countries to enable implementation of the Conv...and to support the development and enhancement of endogenous capacities and technologies of developing countries. (Art 4.5)

- The extent to which developing countries effectively implement their commitments under the Conv. will depend on the effective implementation by developed countries Parties of their commitments under the Conv. related to financial resources and TT. (Art. 4.7 UNFCCC)

Bali Action Plan

- The Bali Action Plan also links mitigation actions of developing countries to technology provision and finance, all of these items in a “measurable, reportable and verifiable” manner.

- On enhanced action on technology development and transfer, the Bali Action Plan covers

  (i) mechanisms and means to remove obstacles (and to provide incentives for) technology development and transfer to developing countries

  (ii) ways to accelerate development, diffusion and transfer of affordable technologies

  (iii) Cooperation on R&D of current, new and innovative technology

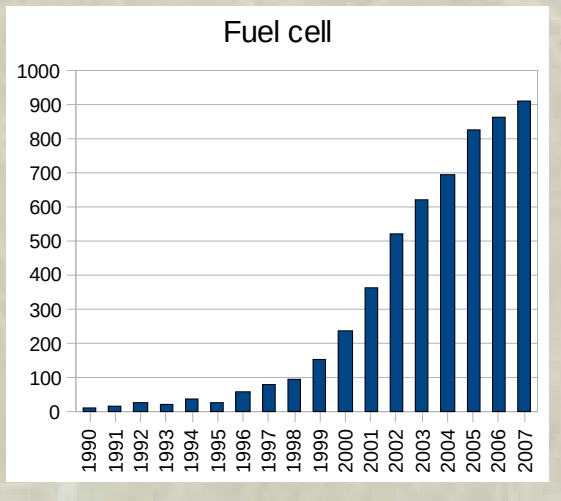
  (iv) Technology cooperation in specific sectors

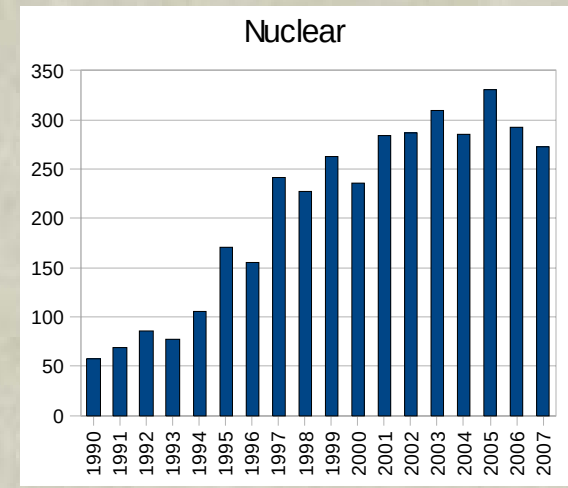
Some preliminary points

- Need for thinking outside the usual box because Business as usual won't work in conventional technology paradigm
- 3 types of technologies
  - technologies in the public domain (not patent protected)….issues of costs, transfer of know-how to use, maintain and adapt to local conditions of developing countries.
  - technologies that are patent protected
  - future technologies
- Need to address the issue of IPRs in the context of (1) Innovation and (2) Access to technologies on fair and reasonable terms and at affordable prices to deal with CC
- Usual categories of IPRs that needs to be dealt with is patents and trade secrets (know-how).
- Minimum standards of protection for patents and other categories of IPRs is now required by the TRIPS Agreement.

Patenting Trends

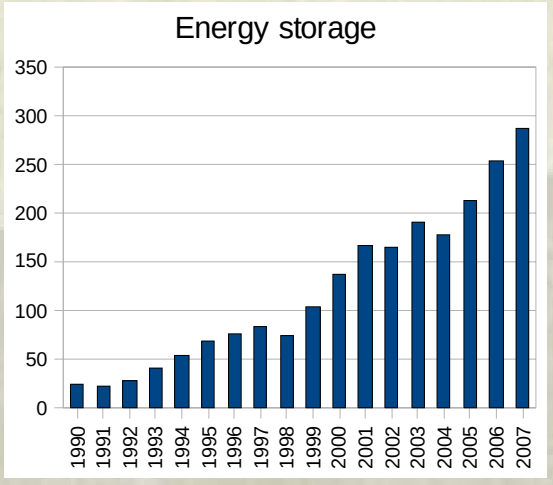
WIPO PCT patent filings, 1

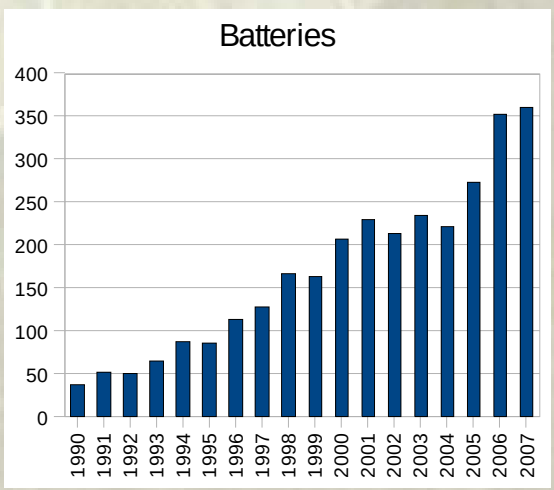


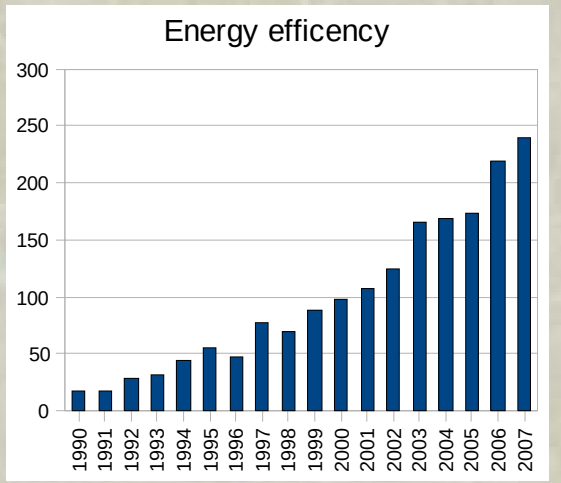


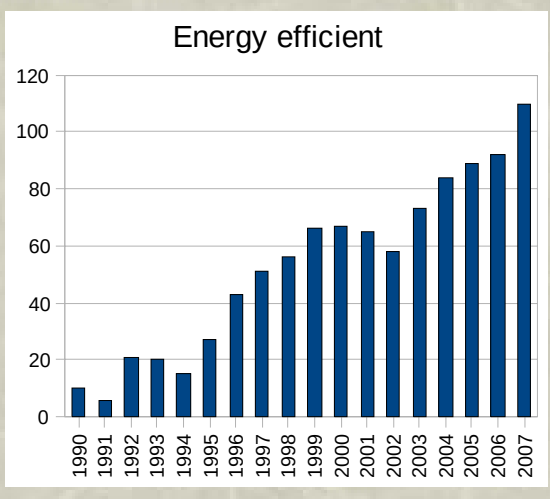
Source: James Love, Knowledge Ecology International

WIPO PCT patent filings, 2

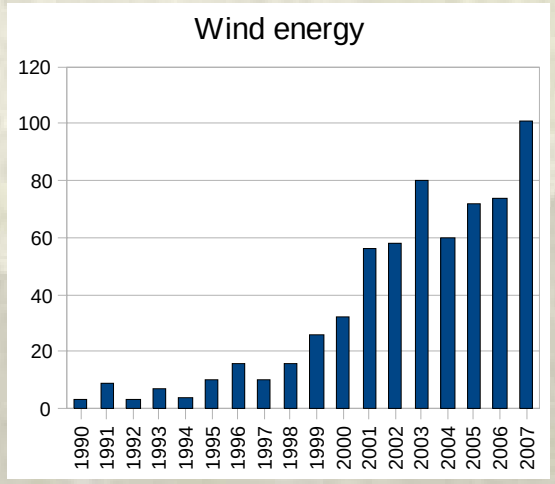


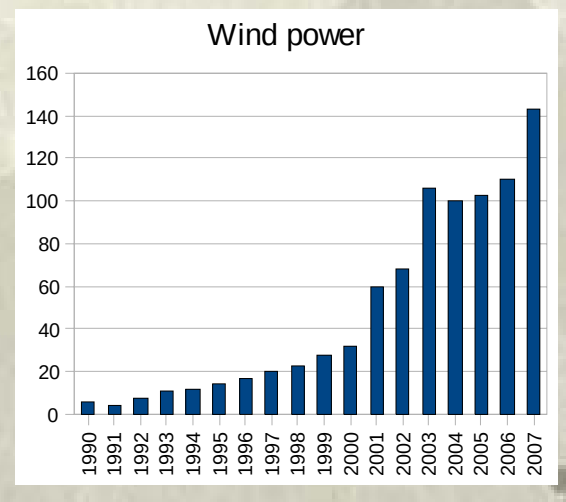


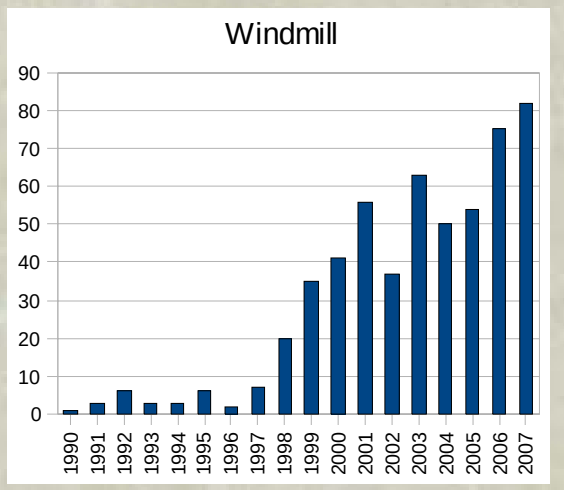


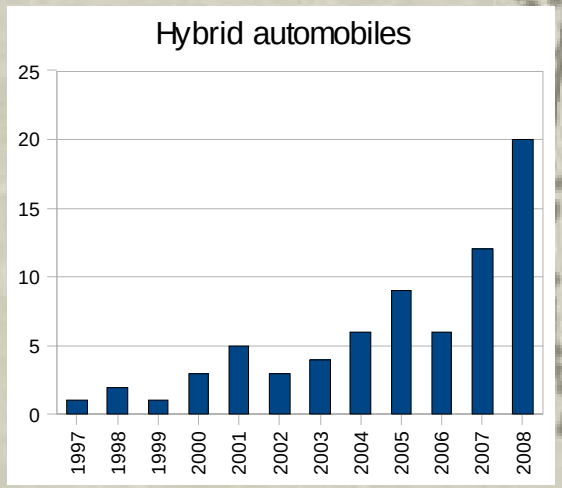


WIPO PCT patent filings, 3

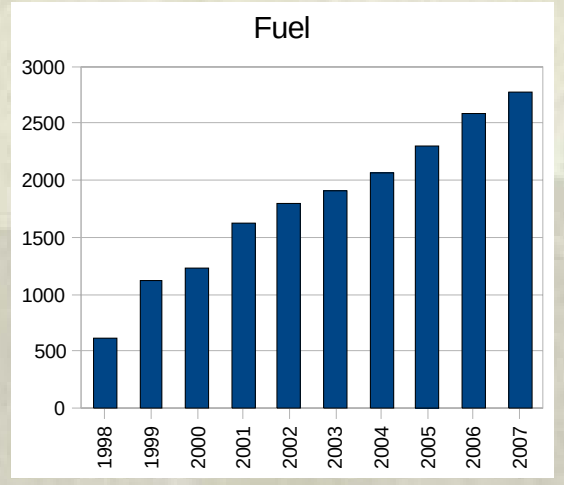


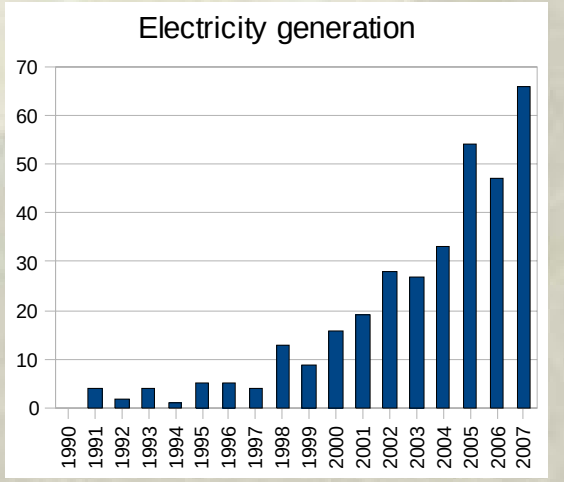


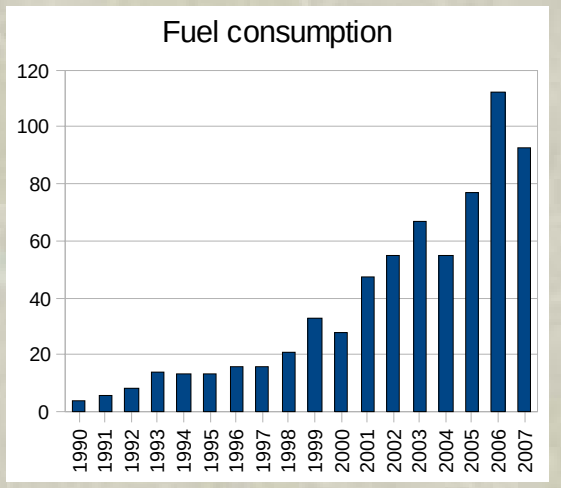


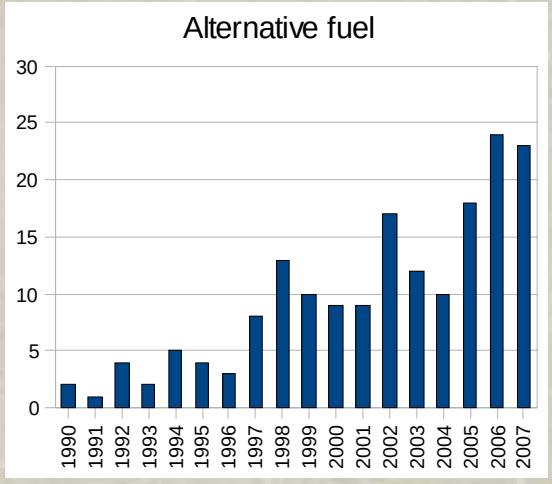


WIPO PCT patent filings, 4

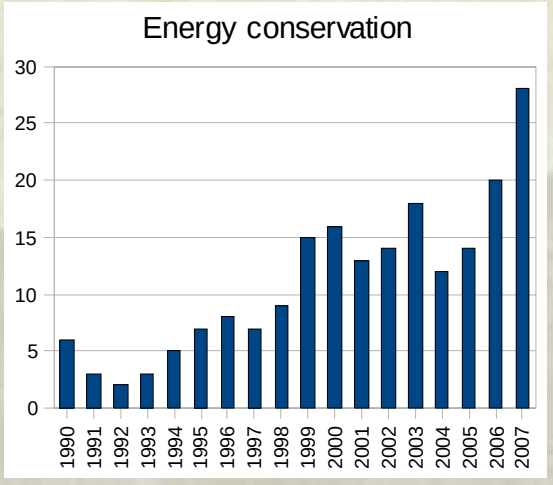


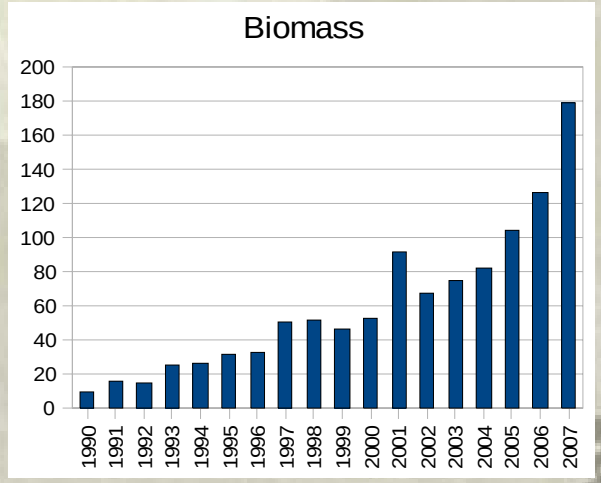


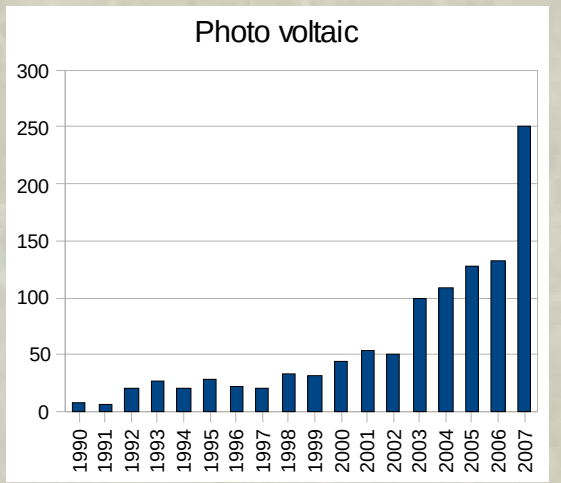


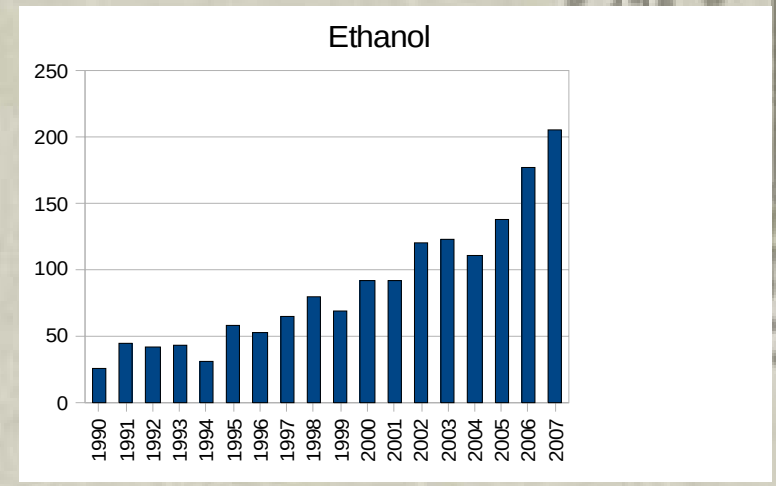


WIPO PCT patent filings, 5

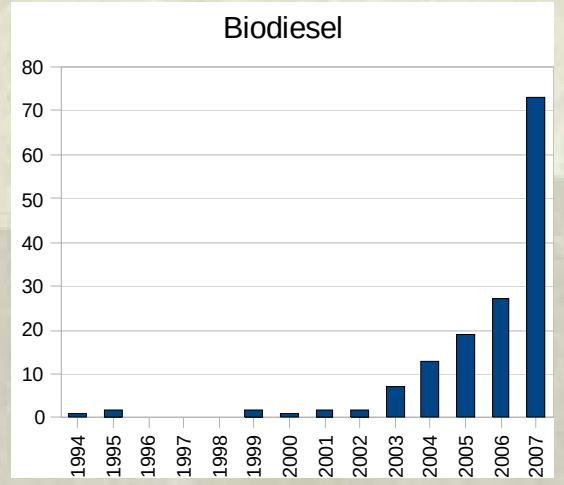


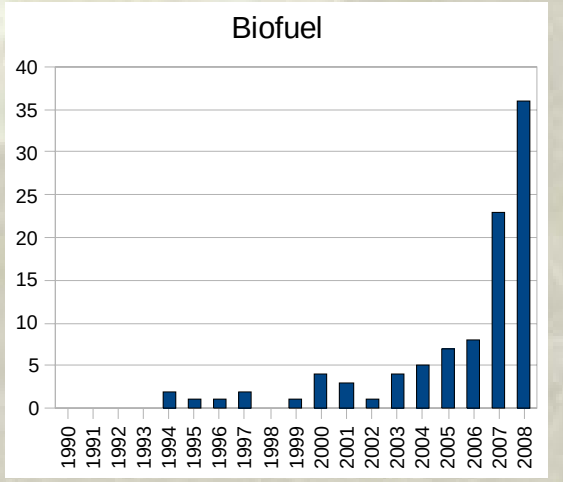


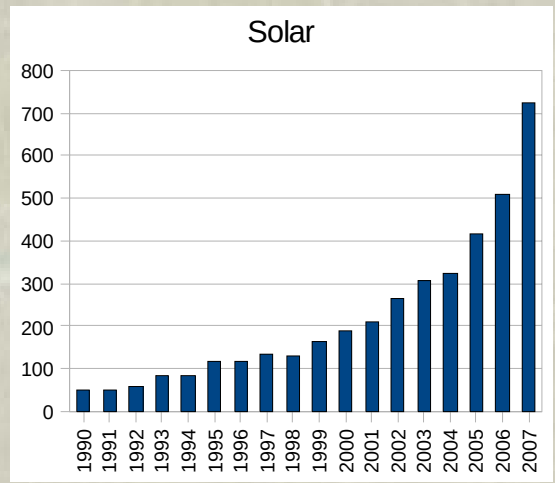


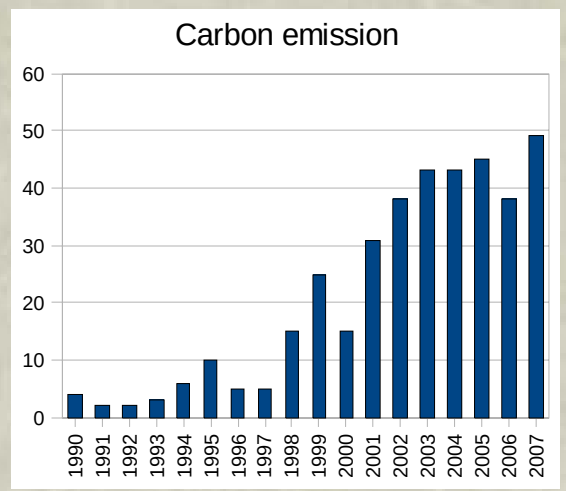


WIPO PCT patent filings, 6

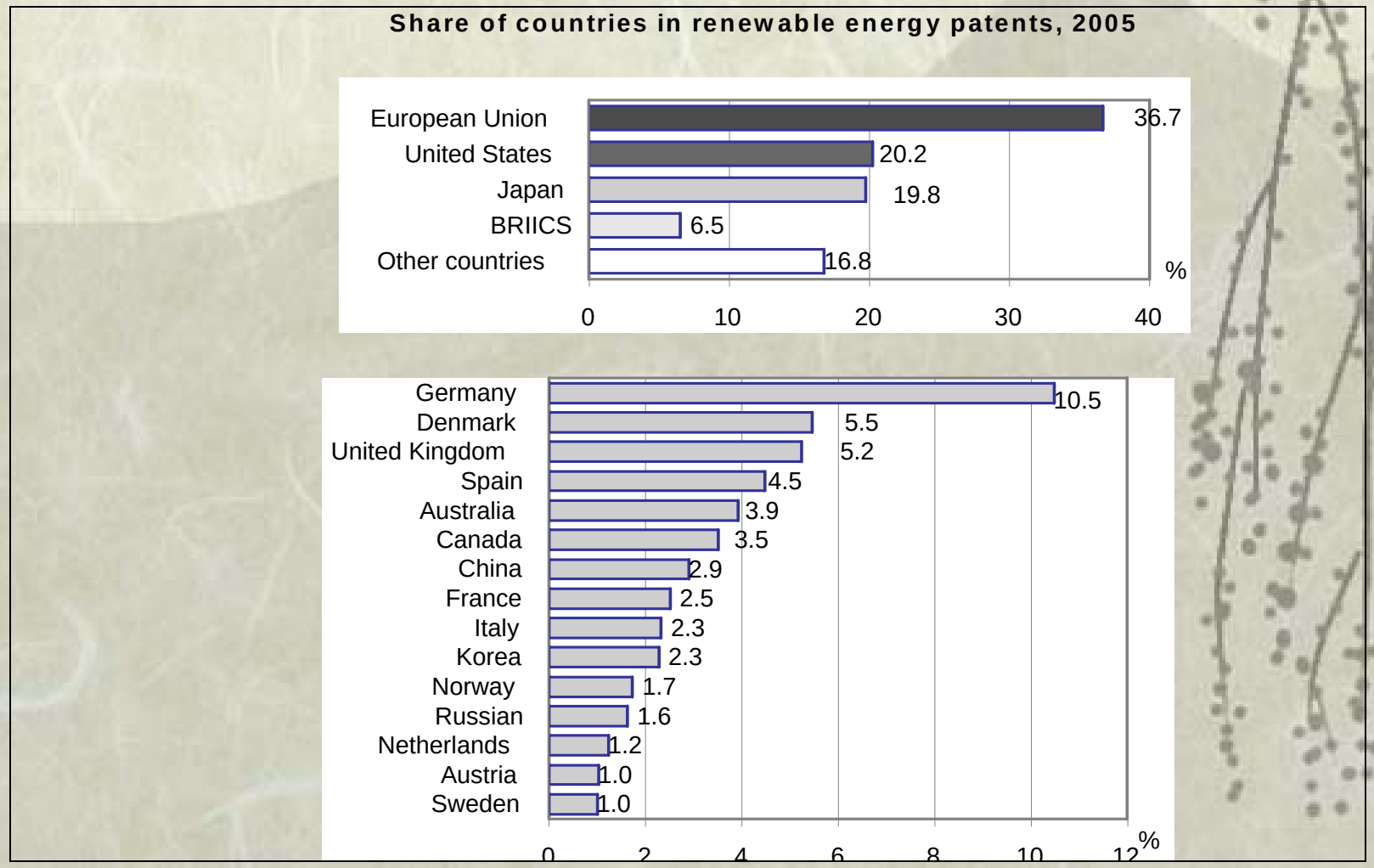




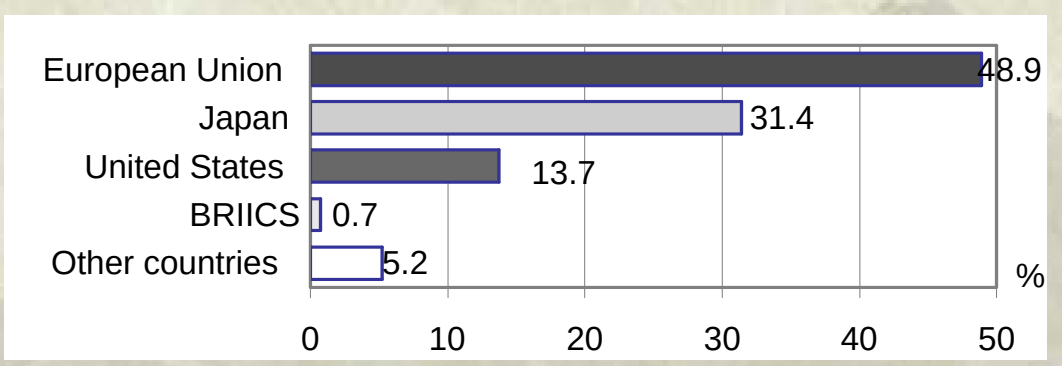


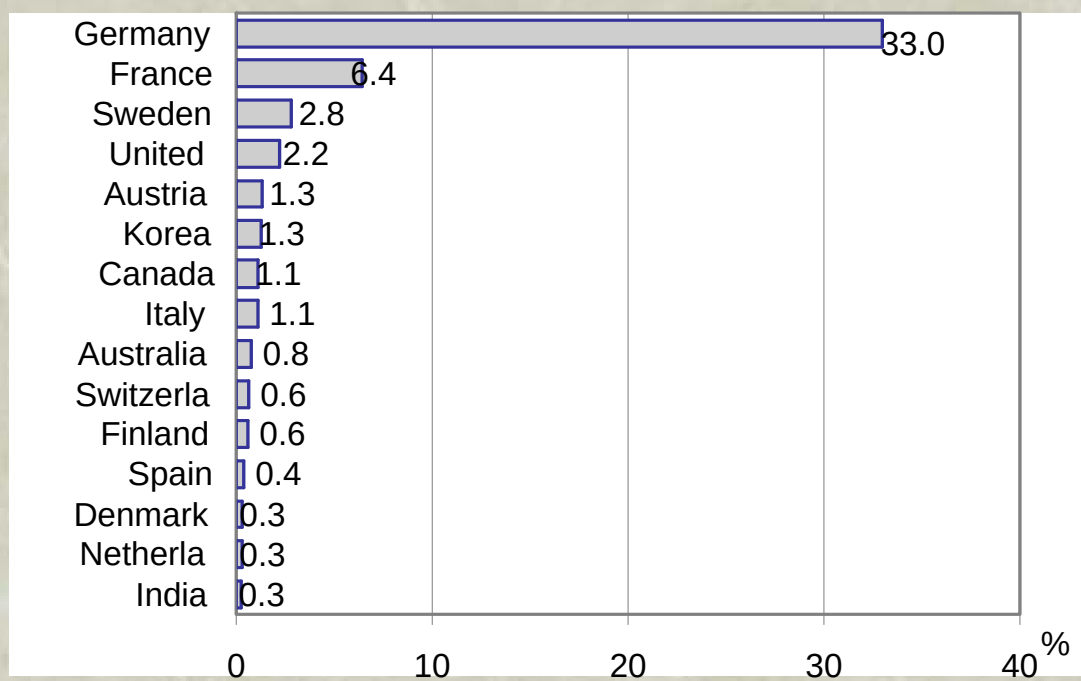


Who owns the technologies?



Share of countries in patents for automobile pollution control technologies, 2005





Climate tolerant crops

- On climate tolerant crops serious concerns have been expressed over the monopoly a few companies hold over genes in plant.

- According to ETC (2008), BASF (Germany), Monsanto (USA), Bayer(Germany), Syngenta (Switzerland), Dupont (USA) and other biotech companies (known as "Gene Giants") have filed 532 patent documents (a total of 55 patent families) on "climate ready" genes at patent offices around the world.

- Gene giants are "staking sweeping patent claims on genes related to environmental stresses, not just those in a single engineered plant species but also to a substantially similar genetic sequence in virtually all engineered food crops".

- Developed (US, Europe) and developing countries such as Argentina, Brazil, China, South Africa (major food producing countries) are swamped with such patent filings.

- Concerns that the proprietary technologies will concentrate corporate power, drive up costs, inhibit independent research and undermine farmers rights' to save and exchange seeds.

Patents as barriers to access

In the context of Montreal Protocol:

- Indian companies wanted to use chemical HFC-134a (substitute for CFC) in refrigerators and air-conditioners. US company owning the patent wanted (a) very high price $25 mil for license (b) majority equity in Indian companies (c) restrictions on export of Indian products. These were unacceptable to Indian producers.

- Indian firms tried to acquire technology that is an alternative to halon 1301 but found patent owner uninterested in licensing the technology to wholly owned companies The patent holder was interested only in joint ventures in which it would hold a majority share.

Opportunistic & Anti-competitive lawsuits: Hampering access to climate Technologies

- In 1996 Enercon was barred from importing wind turbines into the US through a proceeding before the US International Trade Commission (ITC) for it was alleged to be violating a US patent

  The patent involved covered a particular method of controlling the inverter in order to provide power most effectively to the grid, and was held by Kinetech, a technology investment and patent holding company managed by Lachman Goldman Ventures.

- In 2004 Toyota was engaged in a patent infringement battle related to Hybrid Synergy Drive brought by Paice LLC, (that doesn't manufacture such engines). The court awarded Paice compensation. Toyota will have to continue paying royalties for future vehicles it produces using the disputed technology. But Paice's request for a permanent injunction was denied.

- In 2005, Toyota faced another legal challenge from Solomon Technologies claiming infringement of its patent primarily relating to Toyota's use of the Hybrid Synergy Drive technology. In 2006 Solomon also filed an additional complaint against Toyota with the ITC seeking to exclude importation of the infringing technology.

Options under TRIPS Agreement

TRIPS contains minimum standards of IP protection as well as flexibilities that countries could use to prevent the abuse of intellectual property by the IP holder:

- **Pre-Grant measures**

  (i) Strict application of patentability criteria, (novelty, inventive step, industrial applicability);

  (ii) Exclusions from patentability

- **Post-grant measures:**

  (i) compulsory licensing, government use order

  : grds for CL could include (eg public interest, health, nutrition, environment protection, national emergency or situations of extreme urgency). Up to each country to determine the grounds for CL.

  :TRIPS states the conditions on which CL should be issued. e.g. need to show prior negotiations with patent holder has failed (except in cases of national emergency, situations of extreme urgency, and public non-commercial use); & payment of adequate remuneration.

  : Developed and developing countries have used CL for a variety of reasons

  (ii) exception to patent rights (e.g. research, teaching, experimental purposes) including parallel importation

Options Inadequate

- Limitations to flexibilities…. e.g. one condition for CL is that it should be “predominantly for the supply of the domestic market”;
- Many national patent laws particularly of developing countries do not incorporate the full range of TRIPS flexibilities
- Lack of patent application examination capacity in many developing countries to ensure strict application of patentability criteria;
- Pressure not to use TRIPS flexibilities e.g. exceptions, compulsory license;
- Litigation threatened, deters use of flexibilities;
- Flexibilities more of value in countries with reverse engineering capacity…may not facilitate access to know-how…..;

Possible Measures to Address Patent issues

- Expansion of exemptions for climate-friendly technologies using existing or new TRIPS provisions. Possibility of different status of exemption or implementation periods etc in developing countries vis-à-vis developed countries.
  - Several proposals have been made to exclude climate friendly technologies from patenting (G77 & China, Philippines, Bolivia proposals)

- Clarification of flexibilities through Declaration on TRIPS and Climate Change in relevant fora e.g. WTO, UNFCCC (along the lines of Doha Declaration on TRIPS and Public Health).
  - This would be a political declaration on CL, but it can reaffirm the use of flexibilities for dealing with climate change, could recognise the problem of diffusion of technologies to developing countries with no manufacturing capacity as a result of Article 31(f) of TRIPS that conditions CL to "predominantly for the supply of the domestic market" and initiate a process to find a solution as it did for medicines

- Technology Pool for Climate Change: Fast track and one-stop centre under UNFCCC for obtaining licenses for technologies on specified terms and conditions and royalties to facilitate licensing especially where to use a technology, there needs to be licensing of multiple patents. (proposed by G77 & China)
  - The pool should also faciliate sharing of know-how.

Future technologies

- Model of R & D and its financing can influence transfer of and access to climate-friendly technologies.
- Governments play an important role in providing funding for R&D. e.g. in 2001 half of the expenditure for R&D in renewable energy came from the EU governments.
- It is common practise for developed country governments to grant ownership of IPRs to the recipient research institutions due to Bayh Dole type acts…..policy aimed at improving the industrial competitiveness of their industries.
- Imperative to explore modalities for the transfer of publicly funded climate friendly technologies
- Government can have major influence over terms of patenting if it has funded R&D, eg if it funded 70% of R&D costs, it should have 70% of royalty rights, which can be waived when used in developing countries.
- E.g. mandatory Public Access policy of the National Institutes of Health which requires investigators funded by the NIH to make the publicly funded research publicly available no later than 12 months after the date of publication. Compliance is a statutory requirement and a condition of the grant award.

R&D models for affordable access to technologies

- -- Technology Mechanism and Fund under UNFCCC can have strong R&D component.

- Fund for R&D with (a) Council setting priorities of technology needs and allocation of funds; (b) Expert panel to assess grant applications; (c) Grants for innovation given, with payments by installments, and only those with success in each stage obtaining next tranche of grant. (d) Final product will not be patented or the patent is assigned to the Technology Fund. (e) Fund can license the technology to various users freely. E.g. Example of Drugs for Neglected Diseases Initiative

- Alternative R&D incentive schemes are available: grants, prizes, regulation. Patent system itself is an insufficient incentive scheme to generate R&D, and may hamper innovation.

Conclusions

- Both I +A are important.
- UNFCCC is based on equity principle, with developed countries obliged to provide technology transfer to developing countries.
- Technology is vital way to fill gap between economic growth need, and reduction of emission.
- We need to find more alternative ways to promote innovation and creative ways to manage IPRs so that it does not hamper I + A.