



# INNOVATION AND TECHNOLOGY TRANSFER TO ADDRESS CLIMATE CHANGE: LESSONS FROM THE GLOBAL DEBATE ON INTELLECTUAL PROPERTY AND PUBLIC HEALTH

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## EXECUTIVE SUMMARY

**This study seeks to identify lessons that may be derived from the development and implementation of policies at the international level regarding innovation, technology transfer and access to medicines, and to suggest how those lessons might be useful to consider in current discussions on innovation, technology transfer and access to alternative energy resources (AERs) and climate change mitigation technologies (MTs).**

All of these economic and trade-related issues have implications for the on-going negotiations on: 1) mitigation, 2) adaptation, 3) technology development and 4) financing under the UN Framework Convention on Climate Change.

### IPRs and the Development of Technology

Intellectual property rights (IPRs) establish legal boundaries that permit technology developers to control innovations, reducing third-party appropriation or free riding and thereby encouraging investment in innovation.

The paper provides an overview of IPRs and the development of technology by reviewing the differences and usages for various IPRs, including patents, trade secret, utility models and industrial designs, copyright, and plan variety protection, as well as flexibilities and exceptions to these rights. It also addresses alternative policy mechanisms for encouraging innovation such as subsidies and prizes.

### Patents in Pharmaceuticals and Alternative Energy Resources and Mitigation Technologies

It is widely considered that the role played by patents in the AERs/MTs field is significantly different from that in the pharmaceutical field. First, a wide range of technological solutions is used in the various subject matter areas of AERs/ MTs. Second, much of the foundational technology of the AERs/MTs field is presumed to be well known. Third, pharmaceutical innovators very typically seek to maintain direct control of manufacturing and distribution of their products worldwide, without out-licensing their patented technologies to third parties. It is not clear

that AERs/MTs innovators are equally reluctant to out license their technologies.

Assuming that patents currently play a lesser role in the AER/MTs arena than in the pharmaceutical sector, this does not mean that IPRs such as patents might not act as an obstacle to the diffusion of AERs/MTs. The financial advantages that accrue to technological "first movers" may become embedded by different mechanisms than patents alone, such as agreements among potential competitors to share markets. Historically, patents have been used as a mechanism for market allocation even when, conceptually, market entry by third parties would otherwise be feasible. This occurred, for example, in the case of electric lamps through the use of restrictive patent pools.

### Key Negotiating Lessons from Public Health and Intellectual Property

Examination of the public health-related negotiations suggests some key lessons for negotiation with respect to climate change:

1. Economic and political power matters. Developed countries are more equal than others when it comes to determining the outcome of negotiations. Innovation requires funding, and developing countries are relying on the OECD countries to transfer technology and fund technology research and development.
2. Stakeholder involvement is essential. NGO involvement is important in the formulation of policy proposals for consideration by governments. It is not clear that NGOs have so far gravitated to the climate change and IPRs issue as they did to the access to medicines campaign.
3. Zero-sum bargaining is unlikely to be successful. Inducing meaningful change is most likely a matter of finding solutions in which all parties perceive themselves to benefit -- that is, non-zero-sum solutions. It is thus important to envision and establish technology joint venturing agreements under which all sides benefit.
4. Technology transfer requires concrete mechanisms. Advanced technologies must be acquired by governments and transferred under well-defined programs. These hard technology transfer commitments can be established as part of treaty bargaining. Soft commitments on technology

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transfer are not a substitute for concrete projects. Public private partnerships could play a useful role in favor of the diffusion of climate change technologies and their potential should be more fully utilized in this area and on a wider scale.

5. Communication, especially through the internet, is crucial to gaining public support for negotiations.
6. Forum shifting can undermine gains. Forum shifting may take place between multilateral institutions and between multilateral, regional and bilateral forums. Although climate change is a global problem and logic suggests that global solutions are preferable, there are bilateral and regional arrangements that could nonetheless have a substantial impact.
7. Competition law is under employed especially by developing countries. As a general rule, developing countries have been less active than OECD authorities in making use of competition law. This is of importance because competition law may prove quite important in the context of transfer of technology for AERs/MTs.
8. Human rights values influence the dialogue. International human rights values without doubt influenced the overall negotiating environment in the context of public health. International human rights rules have the capacity to exert a persuasive influence at the international level.

## The Role of IPRS in Innovation and Technology Transfer of Alternative Energy Resources and Mitigation Technologies

An important lesson from public health negotiations and debates at the international level with respect to IPRs may be that it is necessary to identify precise obstacles and negotiating objectives prior to initiating negotiations.

Studies undertaken so far with regard to specific technologies suggest that patents and other IPRs may not be acting as barriers to market entry. The studies undertaken to date are by no means conclusive, but suggest that further work must be done to identify specific barriers and potential barriers as a predicate to developing policy solutions.

In the meantime, proposals for transfer of technology to address climate change should seek to take advantage of private incentive mechanisms.

## A Declaration on IPRs and Climate Change?

A number of developing countries and NGOs have proposed that a declaration comparable to the Doha Declaration on the TRIPS Agreement and Public Health be adopted with respect to IPRs and Climate Change. Even if current multilateral IPRs rules incorporate flexibilities and exceptions adequate to address most foreseeable obstacles to technology transfer, a declaration may be useful in the progressive development of international law so that it properly balances the rights of innovators and access by the public to the benefits arising from new technologies.

## Balancing Public and Private Interests

While it is premature to come to a definitive conclusion because researchers are only now focusing on the evidence, there is some basis for anticipating that IPRs will present fewer risks for developing countries in the context of climate change than for public health

The international community is at a relatively early stage in seeking to reconcile the public interest in ameliorating and mitigating the effects of climate change through the development and application of improved technologies, on one side, and the interests of the private sector in profitably developing and implementing technical solutions protected by IPRs, on the other. The struggle on the issue of public health and technology reveals a compelling need to find solutions that simultaneously benefit the public and the private sectors in developed and developing countries. Keeping an optimistic frame of mind, the present winds of creative destruction brought by the 2008-2009 global economic crisis may encourage a stronger and more collective approach to addressing climate change through the development and transfer of technology.

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