

# Intellectual property rights and low carbon technology transfer: Conflicting discourses of diffusion and development

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## A B S T R A C T

Intellectual property rights (IPRs) and the transfer of low carbon technologies to developing countries have been the focus of sustained disagreement between many developed and developing country Parties to the United Nations Framework Convention on Climate Change (UNFCCC). We argue that this disagreement stems from two conflicting political discourses of economic development and low carbon technology diffusion which tend to underpin developing and developed countries' respective motivations for becoming party to the Convention. We illustrate the policy implications of these discourses by examining empirical evidence on IPRs and low carbon technology transfer and highlight how the two discourses are based on an incomplete understanding of the role of technological capacity in either economic development or technology diffusion. This has important implication for the success of post-2012 international climate agreements.

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## 1. Introduction

Low carbon technology transfer to developing countries has a central role to play in mitigating<sup>1</sup> carbon emissions from future economic growth and is a key issue in the international climate negotiations under the United Nations Framework Convention on Climate Change (UNFCCC). Although it was nominally designed to facilitate low carbon technology transfer, the success of the Convention in achieving this (Feldman, 1992) has been widely questioned with many developing nations left feeling frustrated at the lack of progress that has been made in achieving technology transfer in practice<sup>2</sup> (Khor, 2008). Negotiations on the issue have become increasingly fraught, with clean technology nearly falling off the agenda in Bali 2007 due to disagreements between the United States (US) and G77/China.<sup>3</sup>

Some progress has been made since then, most recently at the Copenhagen Conference of the Parties (COP) to the UNFCCC. The final Copenhagen Accord (UNFCCC, 2010) is not binding, and it only has the status of a political declaration. However, it has support from both developing and developed countries, and includes new and specific commitments to significant financial assistance to developing countries for mitigation, adaptation and avoided deforestation. These include funding 'approaching \$30bn for the period 2010–2012' (UNFCCC, 2010), and a commitment by developed countries to 'a goal of mobilizing jointly USD 100 billion dollars a year by 2020' (UNFCCC, 2010). It was also agreed that a Copenhagen Green Climate Fund would be established, with several aims including facilitating technology transfer.

Despite this continuing high profile of technology transfer within international negotiations, inadequate empirical evidence exists upon which to base policy. The different stages of development of low carbon technologies, from research and development (R&D) through to commercial diffusion, introduce new and unique barriers, opportunities and policy challenges which are not yet properly understood (Ockwell et al., 2008). These challenges are confounded by the need for urgent action if dangerous climate change is to be avoided (Stern, 2006; IPCC, 2007).

**One issue in the area of low carbon technology transfer that has provoked particularly thorny debate between developed and developing countries, and which epitomises the lack of empirical evidence available to guide decision making, is the issue of intellectual property rights or IPRs.**

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## ... 2. Two sides of the IPR debate

As mentioned above there are essentially two sides to the IPR debate in relation to low carbon technology transfer. Firstly, drawing on assumed parallels with the pharmaceutical industry and access to, for example, anti-retroviral drugs,<sup>4</sup> some observers claim that a lack of access to IPRs for new low carbon technologies is a key barrier to their transfer and deployment in developing countries. **This argument sees low carbon technologies as public goods (due to their contributing to avoiding future carbon emissions) that should be freely available.** Proponents of this argument highlight how IPRs can prohibit access to new technologies by, for example, enabling firms that own patented technologies to keep prices prohibitively high. They also observe how IPRs can reduce the scope for imitation which, in countries such as South Korea and Japan, and even the US, has been a key source of learning and technological change (UNCTAD-ICTSD, 2003, p. 85).

Such arguments have played out in the negotiations under the auspices of the UNFCCC where calls have been made for multilateral funds to be created to buy up IPRs for low carbon technologies and make them freely available to developing countries (see, for example, Third World Network, 2008). **Critics of such a fund, however, highlight the fact that access to a patent is unlikely to prove sufficient to enable access to that technology. There is often a lot of undisclosed tacit knowledge associated with patents that is essential to understanding and working with new technologies (UNCTAD-ICTSD, 2003, p. 86).** Nevertheless, patent ownership is strongly skewed towards the North (IPCC, 2000, p. 98) suggesting that, especially within the context of stronger IPR regulations under TRIPS,<sup>5</sup> it may become increasingly difficult for developing countries to access clean technologies with favourable terms.

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**The opposite end of the IPR debate revolves around a claim that a lack of IPR law or the enforcement thereof in developing countries is the main barrier to low carbon technology transfer. Further, IPRs are asserted to be central to innovation and encouraging the diffusion of technologies as patents force inventors to disclose their technology publicly (Harvey, 2008, p. 6).** The argument is made that trans-national companies (TNCs) are unlikely to deploy cutting-edge technologies that they have spent significant resources developing in countries where they cannot ensure adequate patent protection. IPRs are seen as a catalyst rather than a barrier to the creation and deployment of low carbon technologies, providing the incentive needed for businesses to invest in risky ventures, giving legal clarity and certainty, and stopping others from blocking the use of a technology by follow-on derivative inventions (Harvey, 2008, p. 3). **This argument is reflected in the TRIPS agreement, one of its stated rationales being that the protection and enforcement of IPRs will contribute to both increased FDI and the transfer and dissemination of technology (UNCTAD-ICTSD, 2003, p. 85).**

Others see this as simple protectionism on behalf of powerful western economies.

... It is our argument in this paper that political support for ideas such as creating a multilateral acquisition fund to buy up IPRs for low carbon technologies, or, at the opposite polarity, support for tightening IPR regimes a la TRIPS, or neither, depends on which of the two conflicting political discourses (described below) is being subscribed to.

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### ... 3.1. *Developing country discourses*

**Developing country governments understand that increased access to technology is one of the prerequisites of industrialization, self-reliant development, and poverty alleviation. By becoming Parties to the UNFCCC, developing countries therefore saw an opportunity to access new, low carbon technology and thus contribute to reducing their technological dependency on the north (Roberts and Parks, 2007) and become technology producers and innovators in their own right.** They recognise the role that new technologies and technological change within existing industries can play in improving competitive advantage through increased factor productivity and/or the development of new, competitive products (Murphy et al., 2004) and broadening the industrial base of a country via the establishment of new industry sectors with associated employment benefits, profits and public income through taxes (Lall, 1998; Gereffi, 2001).<sup>7</sup> Access to new technology not only offers the possibility of moving up the value chain, it also provides opportunities to diversify into new products similar to the ones originally imported (Bell, 1997).

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**The negotiating positions of developing countries (represented by G77/China) on technology transfer focus on policy mechanisms that prioritise access to advanced technologies. Recent proposals have included funds for technology acquisition, obligatory licensing and funds for buying up IPRs relating to cutting-edge technologies and making them publicly available (e.g. Kogan, 2010). They also emphasise the importance of government intervention in the transfer process and argue that transfer should take place at nonmarket rates in order to overcome the higher costs associated with new, low carbon technologies.**

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### ...References

... Kim, L., 1998. Crisis construction and organizational learning: capability building in catching-up at Hyundai Motor. *Organization Science* 9, 506–521.

Kim, J.A., 2001. Institutions in conflict? The climate change flexibility mechanisms and the multinational trading system. *Global Environmental Change* 11, 251–255.

Khor, M., 2008. Access to Technology, IPRs and Climate Change, Day One Session, European Patent Forum. <http://www.epo.org/about-us/events/epf2008/forum/details1/kohr.html>.

**Kogan, L.A., 2010. Climate change: technology transfer or compulsory license? In: Presentation to the American National Standards Institute Monthly Caucus Luncheon, National Press Club, Washington, DC, USA, 15th January.**

Lall, S., 1998. Investment, technology and international competitiveness. In: Dunning, J.H., Hamdan, K.A. (Eds.), *The New Globalism and Developing Countries*. United Nations University, Tokyo, New York, Paris.

Lewis, J.I., 2007. Technology acquisition and innovation in the developing world: wind turbine development in China and India. *Studies in Comparative International Development* 42, 208–232.

Mallett, A., Ockwell, D.G., Pal, P., Kumar, A., Abbi, Y., Haum, R., MacKerron, G., Watson, J., Sethi, G., 2009. UK-India Collaborative Study on the Transfer of Low Carbon Technology: Phase II Final Report. SPRU, University of Sussex, IDS and TERI, Brighton, March.

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