

Establishing a framework to facilitate the transfer of clean technologies from developed countries to developing countries is one of the most challenging tasks that the international community.

Technology transfer is included in both the United Nations Framework Convention on Climate Change (UNFCCC) and Kyoto Protocol. Article 4.1 of the Convention requires all Parties to promote and cooperate in the development, application and diffusion, including transfer, of GHG mitigation technologies. Articles 4.3 and 4.5 stipulate that developed country Parties should provide additional financial resources to support the transfer of technology and take all practicable steps to promote, facilitate and finance the transfer of, or access to, environmentally sound technologies and know-how to developing country Parties. EU also hopes to use the sectoral mechanism as a means of facilitating technology transfer from industrialized countries to the developing world (EurActiv 16/10/09).

According to the International Council for High Technology (2003, Geneva) to the list of high-tech concerns group "Clean Technology and Alternative Energy", which includes recycling, nuclear energy, solar energy, hydrogen energy, energy saving technologies. Inclusion of these groups, despite some not corresponding to the criterion of knowledge-intensive and the cost of research and development in production costs due to the importance of these areas for global development. Green technologies cover a broad range of fundamentally different types of innovation, including alternative energy resources, technologies employing alternative energy sources, energy storage, distribution and management technologies, recycling and waste technologies, industrial processes, and technologies for capture, storage, and sequestration or disposal of greenhouse gases. The underlying technology behind green innovations differ greatly, and range from high-tech innovation such as genetically modified crops to low-tech innovations such as mechanical farming techniques. These technologies differ in other ways as well, for example the fixed costs of innovation and adoption involved and their applicability across industries and climatic zones.

According to classic economic theory, market forces provide insufficient incentives for investment in the development of climate-friendly technologies. The cost of carbon emissions associated with the production of goods is not normally included in their price, so neither firms nor consumers have any incentive to reduce emissions. Technologies with benefits that are immediately apparent to the consumer are exceptions: for example, when people switch to more fuel-efficient cars, they can cut their gasoline costs, although they are not rewarded monetarily for the emissions-saving benefits of their actions.

Technology transfer in the international context commonly refers to sale or licensing of intellectual property, but the term includes any process by which users in one country gain access to and utilizes technology developed in another country. The term technology implies any practical application of knowledge in a particular area, but it is usually associated with machines and related infrastructure, and technology is often discussed in this constricted sense. This narrow view combined with developing countries' large-scale import of knowledge based machinery, products, and process licenses creates the perception of developing countries as technology users" and "passive recipients" of developed country technologies. As poorer countries develop economically, their ecological footprint will grow. Developing countries will need clean technologies, if they are to play an active role in combating climate change. These mechanisms lie in genuine cooperative technology transfer between the developed and developing world.

As the developed world begins efforts to limit its emissions of greenhouse gases, economic growth in developing countries is causing increased emissions from the developing world. Reducing these emissions while still enabling developing countries to grow requires the use of climate-friendly technologies in these countries. In most cases, these technologies are first created in high-income countries. Thus, the challenge for climate policy is to encourage the transfer of these climate-friendly technologies to the developing world. This article reviews the economic literature on environmental technology transfer and discusses the implications of this literature for climate policy, focusing on the CDM.

A key point is that technology diffusion is gradual. Early adoption of policy by developed countries leads to the development of new technologies that make it easier for developing countries to reduce pollution as well. Since clean technologies are first developed in the world's leading economies, international trade and foreign investments provide access to these technologies. Moreover, evidence suggests that some technologies, such as those enhancing energy efficiency, will diffuse to developing countries even without the aid of policy prescriptions, such as the CDM.

The issue of technology transfer from industrialized to developing countries, a contentious issue in the ongoing climate change negotiations, should be seen as a win-win situation by both blocs. It can be resolved by developing innovative financial mechanisms, which reward the innovator without putting the financial burden on technology users. While developing countries have suggested measures like intellectual property rights (IPRs) related to clean technology to be treated as public goods or buying them down to get around the issue of financing estimated by UNFCCC to cost \$200 billion by 2020, most business leaders of developing countries are in favour of market mechanisms supported by incentives for managing technology transfer and deployment.

References:

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