



How IP Plays a Role in Technology Transfer in the Montreal Protocol

In recent years, experts and academics have identified dozens of potential barriers that could stand in the way of technology transfer to low global warming potential (GWP) fluids. These barriers include cost, availability, various technical requirements, safety, and intellectual property (IP) rights. The success of the Montreal Protocol shows that once a reduction schedule is set for a class of compounds the fluorocarbon industry has responded with rapid development and deployment of safe and cost-effective alternatives.

From the earliest days of the Montreal Protocol, there was great concern that IP owners would extract monopoly profits from the sale of alternatives and substitutes to ozone-depleting substances (ODSs). There was particularly high concern that patents for producing new hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) would force countries to become dependent on foreign suppliers from a small number of multinational companies. At the same time there was concern that the inventors of necessary new technology be properly rewarded for their research and development investment and confident that their costs of commercialization would be recovered.

Some parties have concerns that low-GWP technologies will only be made widely available with substantive changes to the IP regime. Many believe that historically multinational enterprises were over-charging developing countries for access to new technologies, imposing unacceptable conditions, or short-changing developing countries in other ways.

However, several resources show that IP rights had an essentially neutral effect on the pace and cost of the phase-out of ozone-depleting substances (ODSs) and that:

- ✓ New HFCs and HCFCs were produced by multiple suppliers globally, including producers in developing countries, readily available at the time of transition, and marketed at competitive prices.
- ✓ More not-in-kind options came forward than originally expected.
- ✓ In some instances, companies in developed countries partnered and helped transfer patented technology and know-how to developing countries.

In cases where there were application patents that claimed exclusive rights for the specific use of new HCFCs and HFCs, there were very issues that needed to be resolved by the Multilateral Fund (MLF) for projects in developing countries. The problems did not exist because the technology was priced competitively, other alternatives were available, and in some cases the MLF paid some surcharge or licensing fees.^{1,3}

The past is not guaranteed to replicate itself in the future; however, a review of past technology transitions under the Protocol suggests that it is possible the next transition could play out in a similar fashion.

OBSERVATIONS ON TECHNOLOGY TRANSFER

“ *It is notable that intellectual property rights did not constitute as large a barrier to technology transfer as was feared. In many cases, the technologies needed to phase out the use of ozone-depleting substances were in the public domain. In a few cases, there were problems in obtaining technologies from some suppliers, but the problems were ultimately sorted out by going to others. In the two cases where intellectual property considerations constituted significant barriers to technology transfer, solutions were ultimately found.*”²

“ *Intellectual property protection did not constitute a major barrier to ozone layer protection because many of the most important technologies were in the public domain; because the Multilateral Fund and Global Environment Facility paid licensing and other technology transfer fees when necessary; and because in the few cases where intellectual property constituted barriers to technology transfer, some developing country enterprises ultimately developed their own technical solutions or found solutions from other suppliers.*”²

“ *The funding mandate (Article 10) of the Montreal Protocol establishing the Multilateral Fund includes explicit provisions making clear that the incremental costs of patents and royalty fees associated with shifting to alternatives are eligible for funding.*”⁴

“ *Over time, the costs of ... substitutes are likely to come down in price as worldwide production capacity increases. Moreover, to the extent that cross-licensing and other commercial arrangements continue to make these products widely available globally, issues of concern about availability are less likely to materialize.”*⁴

Sources:

¹ Anderson, S., Sarma, K., and Taddonio, K. (2007). *Technology Transfer for the Ozone Layer, Lessons for Climate Change*. London and Sterling, VA: Earthscan Publications Ltd.

² Anderson, S. and Sarma, K. (2002). *Protecting the Ozone Layer, The United Nations History*. London and Sterling, VA: Earthscan Publications Ltd.

³ Cogan, D. (1988). *Stones in a Glass House, CFCs and Ozone Depletion*. Washington, D.C.: Investor Responsibility Research Center Inc.

⁴ Seidel, S., Ye, J. (2015). *Patents and the Role of the Multilateral Fund*. Arlington, VA.: Center for Climate and Energy Solutions.