



Financing climate technology transfer

Lessons from efforts under the UNFCCC

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Key messages

- This paper highlights opportunities to encourage and finance technology transfer in developing countries, informed by the experience of the Global Environment Facility (GEF)
- While the international community has set up an increasingly intricate infrastructure to enable technology transfer, investment in these systems has been modest.
- Technology transfer projects must set realistic assumptions on the time and effort required to achieve success.
- New networks that have been created to support technology transfer can better foster collaboration between investors and technology developers.
- Support for technology transfer under the UNFCCC will continue to be small in comparison to wider technology investment flows. In order to make best use of these limited funds, interventions must address systemic factors affecting technology development and uptake alongside discrete hardware investments

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Introduction

Mitigating dangerous climate change and adapting to its impacts will rely in large part on the application of new technologies, for uses ranging from producing renewable energy to reducing farmers' reliance on dwindling water resources. A vibrant global industry for climate technologies is emerging, but it has been largely concentrated in richer countries where markets, infrastructure and education systems to support cutting edge research and development are better established. As poorer countries develop, their ability to do so in a manner that is compatible with a low-carbon and climate-resilient future will depend considerably on the extent to which they can make use of appropriate technologies.

The United Nations Framework Convention on Climate Change (UNFCCC), the official international forum for addressing climate change, has recognised technology transfer as a key issue since its adoption in 1994. The convention states that developed countries '...shall take all practicable steps to promote, facilitate and finance, as appropriate, the transfer of, or access to, environmentally sound technologies and knowhow to other Parties, particularly developing country Parties.'¹

There is a strong interest in better understanding how development partners can most effectively encourage and finance technology transfer in developing countries. This paper presents key insights on this question drawing on the experience of the Global Environment Facility (GEF), an operating entity of the financial mechanism of the UNFCCC.

Finance for technology transfer under the UNFCCC

Operationalising the commitment to support technology transfer under the UNFCCC has been a complex process. As a first step, developing countries were invited to submit reports detailing their priorities with respect to technology needs. The GEF provided finance for these Technology Needs Assessments (TNAs). Wider activity on technology under the UNFCCC beyond TNAs was limited until 2007 when the COP requested the GEF to develop a program to promote investment in technology transfer. The GEF proposal offered in response was adopted by the COP a year later as the Poznan Strategic Program on Technology

Transfer (PSP). It initially focused on funding a group of pilot projects seeking to enable the transfer of priority technologies to recipient countries, supporting a new round of TNAs and enhancing the GEF's dissemination role on best practices for technology transfer. These activities were subsequently expanded in 2010 to include support to a number of regional technology centres housed in the four main regional development banks². The total amount of funding provided under this program is US\$250 million. The GEF also supported public-private partnerships that included climate technology related elements.³

Shortly after the expanded GEF strategy for the PSP was agreed by its governing council, the COP began work to establish a Technology Mechanism under the Convention comprising of a policy-focused Technology Executive Committee and the Climate Technology Centre and Network (CTCN). The selection of a host for the CTCN was a competitive process, in which the bidders included the GEF and its regional development bank partners. Ultimately the COP elected to have the centre and network hosted through a consortium led by the United Nations Environment Program (UNEP) and United Nations Industrial Development Organisation (UNIDO). The CTCN is now operational and seeks to deliver three core services through its network of partner organisations: providing technical assistance in response to country requests; facilitating access to information on climate technologies; and promoting collaboration amongst diverse climate technology stakeholders. As of July 2015 the CTCN had succeeded in raising US\$43 million in funding from a combination of bilateral donors and the GEF, some way off its US\$100 million five year funding target.⁴

Emerging lessons

Processes of technology transfer are inherently complex and their success relies on the alignment of a number of cultural, economic and political factors. Many of the pilot projects the GEF financed have been held up significantly, for reasons including political changes that result in institutional shifts or staffing changes in the recipient country that took place in the time it took to get projects from initial design to approval.

1 Article 4.5

2 African Development Bank (AfDB), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD) and Inter-American Development Bank (IADB).

3 The element supporting public-private partnerships, which accounts for US\$71.2 million of this total, is not restricted solely to the GEF's climate mitigation focal area.

4 Advisory Board to the CTCN (2015). CTCN budget and financial situation. AB/2015/6/5.5. Copenhagen: CTCN.

Setting realistic expectations and being honest about potential trade-offs

The narrative around climate finance has placed an emphasis on supporting innovative technologies and approaches in developing countries in order to achieve transformational change. Implementers highlight the quandary that this presents, as it is for the less familiar and tested technologies that it is most difficult to achieve the necessary cultural and political acceptance, and technical capacity, in those countries most in need of assistance. Likewise it can be more difficult to attract finance for these options; private investors tend to equate “innovative” with “risky”.

These experiences emphasise the importance of ensuring that technology transfer projects and programmes are designed with realistic assumptions on the time and effort required to achieve success. In many cases it may be easier to execute projects that involve more established environmentally sustainable technologies that can be taken up more easily, or that seek to build on a neighbouring country’s experience with a particular technology rather than attempting to introduce something brand new. There may be trade-offs between investments that have a bigger immediate impact, and those that can have a greater demonstration effect. In turn this raises questions about the best use of grant finance such as that provided by the GEF.

Effective technology networks and reaching the right partners

Efforts to encourage developing countries to prioritise and implement their technology needs have tended to stall after the initial shortlisting stage. The methodology for TNAs has improved over the years, with recent TNAs producing technology action plans and project ideas in order to encourage implementation. But potential private and public investors still often find that these processes do not produce project proposals with the requisite detail to attract the interest or serious consideration of investors. Many investors hold the view that technology projects are often developed in way that is not sensitive to their needs. In turn the return or business case for investors to engage with technology development processes has not always been made clear.

Early initiatives to facilitate collaboration between the CTCN and GEF-supported regional technology centres housed in MDBs present an opportunity to combine a diversity of technical and financial expertise in order to facilitate greater implementation of technology investments. There is a need to help investors understand the benefits of the investment opportunities at hand,

including the potential for significant returns, or to properly understand risks that might otherwise deter their interest, and seek options to address these concerns through appropriate targeting of public finance. Recent experience with engaging the private sector through GEF supported projects also highlights the opportunity to target those small and medium sized entrepreneurs with slightly higher marginal ability to absorb risk, who can then act as champions to increase the confidence of other potential investors. Early adopters of new technologies can have a strong demonstration effect on the market. This means that while an individual investment may seem to have a small impact on the country, it may catalyse wider changes.

If they can attract the right actors, network-based approaches to promoting technology transfer have the potential to help international investors overcome the barriers they face in properly understanding local markets and identifying the right players to engage with in each context. These challenges are especially acute in developing countries where it is often more difficult to assess which actors have the requisite technical capacities (if they are present at all). Public support to improve such capacities can facilitate private investment. Private investors in turn will rarely fund such activities.

Public funds need to be more nimble and flexible

Climate funds must balance the pressure to get money out of the door quickly so that project implementation can begin and the need to ensure that supported programs are appropriately designed and adhere to requisite environmental and ethical standards. Nevertheless, projects tend to take several years to receive final fund approval. This poses a particular problem given the pressure on climate funds to involve private sector partners, who cannot commit to an investment whose approval may take several years.

Continued efforts to streamline and simplify the ways in which projects are reviewed and approved by Funds, and to diversify the range of implementing partners through which they channel funds hold substantial potential to help address this well recognised public climate finance challenge. Funds are already under substantial pressure to accelerate their screening, review and disbursement processes. New funds such as the Green Climate Fund for example are beginning to partner with private financial institutions as implementing partners, who may have systems and client networks in place that can be harnessed to engage private investors in technology transfer finance.

Where next for technology transfer financing?

The focus on opportunities to scale up investment in technology transfer through the UNFCCC negotiations are important. The volumes of funding that have been available to operating entities of the Convention for this purpose have been quite limited, and are very small when compared with wider flows of finance in clean technology. The GEF approved an average of US\$ 228 million per year between 2007 and 2014 for climate mitigation projects,⁵ which pales in comparison to the estimated US\$ 302 billion in global public and private investment in mitigation in 2013 alone.⁶

While efforts are underway to scale up the amount of finance for operating entities, such dedicated climate finance will remain small when compared to the industries and sectors in which change is sought. It is well recognised that finance for discrete projects and programs is likely to be most effective when used as part of efforts to strengthen national systems of innovation, institutional capacities and related infrastructure for technology innovation and deployment. External efforts to promote investments in new technologies without due regard for contributing to wider systemic impacts will likely to struggle to bear fruit.⁷ Efforts to scale up finance for technology transfer are therefore closely related to efforts to strengthen national systems of innovation, a linkage that UNFCCC processes and institutions have already acknowledged.⁸

While the GEF has historically been the primary funder of technology transfer activities under the UNFCCC, there is evidence to suggest that the focus on climate technology in its funding strategies is starting to wane. This is explained in part by the mixed reception that many Parties have given its efforts to be proactive on this agenda, most evident in the decision not to host the CTCN at the GEF. This creates a risk that a funding gap for technology transfer under the UNFCCC may emerge. Although the Green Climate Fund has the potential to help fill this gap, its mandate and programming approach may need some adjustment to realise this potential. At the same time the COP also confronts some big challenges with regards to prioritising how GCF resources should be spent: while its \$10 billion capitalisation is an order of magnitude larger than existing operating entities of the Convention, it is not enough money to deliver on all of the diverse expectations that Parties have of it. Parties must find ways to mobilise adequate resources to ensure that the considerable efforts that have been invested in establishing a new international architecture for technology transfer under the UNFCCC lead to real results. Given the importance of continued investment in climate technology and related systems of innovation in winning the battle against climate change, this may be an important priority of the international climate finance architecture in 2016.

5 Climate Funds Update (www.climatefundsupdate.org)

6 Buchner, B., Stadelmann, M., Wilkinson, J., Mazza, F., Rosenberg, A. and Abramskieln, D. (2014). *Global Landscape of Climate Finance 2014*. Venice: Climate Policy Initiative.

7 Ockwell, D. and Byrne, R. (2015) *Improving technology transfer through national systems of innovation: climate relevant innovation-system builders (CRIBs)*, Climate Policy.

8 <http://goo.gl/OfXcKC>



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