The Energy Research Centre of the Netherlands (ECN) & the University of Sussex present

Innovation and technology transfer for sustainable energy systems in developing countries

Summary of Discussion

7th December 2011, 16.45 – 18.15, Hex River Room, Durban Exhibition Centre, COP17.

Chaired by Ahmed Abdel Latif, International Centre for Trade and Sustainable Development

Summary

This event presented analysis of existing mechanisms for technology transfer for sustainable energy systems in developing countries, such as the Clean Development Mechanism (CDM), as well as critical aspects that need to be addressed if technology and innovation are to deliver their potential, such as governance, and the need to move beyond a narrow focus on technology hardware and finance. Building on this, the event presented latest thinking on recent policy initiatives: i.e. how technology transfer can form part of a low carbon development strategy and on the implementation framework for the UNFCCC Climate Technology Centre and Network (CTC&N). A panel of speakers then discussed if and how these more recent initiatives can be structured to meet developing county needs for innovation and technology transfer.

The attendants generally agreed on the following conclusions:

- The CTCN should work with stakeholders to build local innovation systems that are pro-poor as well as low carbon.
- Despite important differences, the CDM can provide lessons for the Technology Mechanism.
- Technology transfer is not an aim in itself.
- Activities under the UNFCCC should be integrated with low carbon development planning, which could require no more separate technology needs assessments (TNAs).
- The CTC&N should start "light", but the mandate from Durban should not limit the ambitions for the future.

Presentations

Rob Byrne, University of Sussex: Technology for low carbon development: from technology transfer to socio-technical transformation

Rob presented conceptual approaches to technology using empirical examples of technology transfer in China and East Africa, which require a broader view of technology transfer beyond 'hardware and finance' to include the 'software' of technology, including tacit knowledge, social and cultural dimensions. He argued that innovation system building is more likely than 'technology transfer' to lead to *technology and development* pathways, but that long term commitment to building local capabilities is required if the economic and social benefits of low carbon technologies are to be captured by developing countries. Rob concluded with the statement that *The CTCN should work with stakeholders to build local innovation systems that are pro-poor as well as low carbon*.

Peter Newell, University of Sussex: The Governance of Low Carbon Development
Peter drew lessons for the Technology Executive Committee (TEC) from the governance of technology transfer under the CDM. He suggested that many of the governance challenges will be similar and emphasised the role of power, participation, and the ways that governments can prioritise sustainable development benefits. He presented research indicating that technology transfer under the CDM has been limited to operational aspects of technological knowledge and suggested reasons for this including the lack of value attached to sustainable development and the question of who approves and evaluates technologies and institutions. Peter also suggested lessons for the TEC, including the role of local institutions in ensuring broad participation in technological priority setting, the additional governance challenges for small project developers and Less Developed Countries, and how governments can align national strategy with new and existing initiatives. Peter concluded with the statement that *despite important differences, the CDM can provide lessons for the Technology Mechanism.* One audience member disagreed on the basis that the CDM provides projects for established technologies, rather than cutting edge new technologies.

Laura Würtenberger, Energy Research Centre of the Netherlands (ECN): Technology transfer in low carbon development planning
Laura outlined the concept of low carbon development strategies, which may promote climate co-benefits to development rather than development co-benefits to climate policy. Lessons from the formation of such policies to date include the importance of different national contexts which countries can address by taking a 'building blocks' approach, and of the iterative process of forming the strategies, such that countries can begin the process even if the ideal conditions of buy-in and sufficient capacity are lacking. Laura suggested that where possible technology transfer of climate technologies should be linked to the low carbon development strategy processes. She concluded with the proposition that *technology transfer is not an aim in itself and activities under the UNFCCC should be integrated with low carbon development planning*, further suggesting that *this could require no more separate technology needs assessments (TNAs).* One audience member disagreed, suggesting that the capacity available in developing countries may make the proposal unworkable in practice.

Heleen de Coninck, Energy Research Centre of the Netherlands (ECN): The Climate Technology Centre and Network - A Necessary Catalyst for Clean Development
Heleen suggested ways for UNFCCC mechanisms to enhance technology development and transfer based on several components of an enabling environment in developing countries where institutions may be weak and innovation systems underdeveloped. These include government policy, market knowledge and data, investment conditions, entrepreneurial skills and the capabilities and skills of workers. She presented a possible structure of the CTC&N in line with the mandate in the Cancun Agreements with information and funding flows between a Secretariat, Developing Country Technology Focal Points & Innovation Centres, Knowledge and Learning Platforms, and Collaboration and Implementation Networks. Heleen concluded that the role of the CTC&N can be a catalyst by strengthening climate technology capabilities in existing institutions in developing countries and proposed that *The CTC&N should start "light", but the mandate from Durban should not limit the ambitions for the future.*

General discussion: One audience member took issue with the case study of technology transfer under the CDM presented by Professor Newell based on the work of Kasturi Das.[1] He suggested that technology transfer in practice is greater than that outlined in CDM Project Design Documents and that technology transfer should not necessarily be the aim of all projects. Presenters responded with interest and emphasised that technology transfer is not an aim in itself but a means to an end.

Panellist Discussion: The Chair asked a set of panellists to consider how new policy initiatives on technology such as the CTC&N can be structured in a way that meets the needs of developing countries for innovation and technology transfer.

Jonathan Coony, World Bank, shared experience from Kenya of the World Bank's recent efforts to set up Climate Innovation Centres in developing countries. The Centres provide services tailored to host country needs, but include the provision of financing and access to the latest market information. Jonathan emphasised that small and medium enterprises will be key to driving clean technology innovation but require support to do so.

Moses Omedi, Kenya, Member of Technology Executive Committee, outlined Kenya's efforts to lay the groundwork for technology transfer and development through an eight point national planning process for climate and development in line with the Cancun agreements. Once the strategy is finalised by June 2012, the focus will be on operationalising its content.

Javier Garcia, Chile, described the difficulty of promoting integrated climate change and development plans when energy planning is formally separate from environmental concerns. Significant time and effort will be required to integrate the two. The financial sector in Chile presents a significant barrier, transferring all of the risk of clean technology innovation onto project developers. Mr Garcia emphasised the importance of an enabling environment for clean technology both locally and internationally.

Ron Benioff, **National Renewable Energy Laboratory (NREL)**, outlined lessons from two NREL initiatives: First, working in renewable energy and energy efficiency cooperation with developing countries requires long term collaboration, strong buy-in from host countries, strong stakeholder engagement processes, host country capacity building and a comprehensive scope with flexibility to adapt to host country needs. Second, lessons from *The Clean Energy Solution Centre* suggest that it is easier to supply policy advice, training and best practice examples than to create demand, with implications for the CTC&N when working with developing countries in a few key areas on a sustainable basis. Web services should be interactive, rapidly updated and flexible for users.

Discussion with the floor

In response to questions from the floor, **Ron Benioff** suggested that the challenges of selecting nationally appropriate environmentally sound technologies (ESTs) should be met with good knowledge of the impacts of technologies (such as biofuels), including the use of life cycle analysis. **Jonathan Coony** indicated that the World Bank is in conversation with India over an appropriate institutional home for its Climate Innovation Centre, stressing the positive experience in Kenya that collaborative working within host country governments is essential. The panel was also encouraged to consider how issues of technological capacity in developing countries can be addressed considering that it is a persistent problem.

[1] Kasturi Das (2011) 'Technology Transfer under the Clean Development Mechanism: An empirical study of 1000 CDM projects' *The Governance of Clean Development* Working Paper 014 – July 2011 Available at: http://www.uea.ac.uk/dev/gcd/working-paper-series.