

Input to the Secretary General's report on technology transfer mechanisms

Economic and Social Commission for Asia and the Pacific (ESCAP)

I. Functions, format and working methods

Technology transfer may be facilitated by;

- a) Inter-governmental or expert fora / dialogue mechanisms often set up with specific sectoral focus. (see II c, d)
- b) Identification, collection, analysis, documentation, dissemination, and adapted replication of good practices (see II e)
- c) Conduct of pilot/demonstration projects, under specific regional /subregional initiatives (see II , f, g):
- d) online technology transfer facilitation mechanism (see II b i, ii)
- e) intermediary services (see II b iii)
- f) Training and capacity building (see II b iv, v)
- g) Technology Development Fund (see II h)
- h) UN system can play a key role will be significant in facilitating the intergovernmental dialogues on transfer of publicly-owned or –funded technologies.

II. Contributions from ESCAP

- a) ESCAP's regional institutions, i.e. Asia Pacific Centre for Transfer of Technology (APCTT), Asia-Pacific Centre for Agricultural Engineering and Machinery (APCAEM), Centre for Alleviation of Poverty through Sustainable Agriculture (CAPSA) are active in the relevant field.
- b) The Asian and Pacific Centre for Technology of ESCAP (APCTT-ESCAP) could provide the following facilitation mechanisms.
 - i) APCTT's web-based online technology transfer facilitation mechanism called Technology4sme.net (<http://technology4sme.net>) - This mechanism which brings together buyers and seekers of technology could be expanded, with suitable adaptations, to serve as a repository of clean and environmentally sound

- technologies that are being sought by member countries as well as those that are available for transfer by owners of technology. Popularisation of this mechanism among countries could enable various entities to express their needs for clean and environmentally sound technologies by uploading their requests online.
- ii) APCTT's web-based online Renewable Energy Cooperation-Network for the Asia-Pacific (RECAP) (<http://recap.apctt.org>). - This mechanism focuses exclusively on renewable energy. Here again, RECAP can be expanded to serve as a repository of renewable energy technologies that are being sought by member countries as well as those that are available for transfer by owners of technology. Popularisation of this mechanism among countries could enable various entities to express their needs for renewable energy technologies. RECAP plans to incorporate a Renewable Energy Technology Bank (RET-Bank) which will focus exclusively on renewable energy technologies with a pro-poor, rural and remote area focus.
 - iii) Acting as an intermediary for bringing together buyers and sellers of clean and environmentally sound technologies.
 - iv) Provide training on the use of these above mentioned web-based mechanisms
 - v) Capacity building to plan and implement technology transfer projects.
- c) Under the Collaborative Mechanism on Energy Cooperation in North-East Asia, the Working Group on Coal is currently implementing a joint study with a view to identify scope for regional cooperation on coal technologies, with a focus on clean coal technologies. The joint study is implemented on an annual basis to provide energy policy makers opportunities to hold dialogues at the Working Group Meetings. In 2012, the Working Group will be convened in Kemerovo, Russian Federation, in conjunction with the Kemerovo Expo-Coal 2012. At this meeting, it is expected that specific opportunities for cooperation in the field of coal technologies will be identified. The potential for technology and knowledge transfer will be discussed, and it is expected that ECE and APCTT to contribute to this meeting given their views and experience on this topic.
- d) The mechanism on Energy Cooperation in North-East Asia is currently funded by the Government of the Russian Federation and the Republic of Korea. As it meets on an annual basis, it provides a good platform to discuss a wide range of issues with a view to enhance energy security and contribute towards sustainable development in the subregion. In future, proposals to implement multi-country projects on clean coal technologies could be developed through this mechanism.

- e) ESCAP Environment and Development Division (EDD) is active in Identification, collection, analysis, documentation, dissemination, and adapted replication of good practices in i) Municipal solid waste management, including carbon financing and waste to energy, ii) Green buildings, including green and resilient building codes as well as green building materials, and iii) Sustainable urban transport
- f) The Seoul Initiative on Green Growth, which was launched in 2005 and is an ongoing programme, has resulted in a number of pilot projects and a collection of policy options to support green growth. The initiative has been providing a regional cooperation framework for Green Growth taking into account the economic, social, cultural and geographical features of the region. The initiative also provides a framework for policy consultations, capacity building and networking for the promotion of Green Growth at the regional level. This could be utilized as a platform to support technology transfer and the sharing of good practices across countries.
- g) The project "Building the capacity of SPECA member countries to adopt and apply innovative clean technologies for climate change adaptation and sustainable knowledge-driven growth" is to be implemented jointly in 2012-2015 by UNECE and ESCAP Subregional Office for North and Central Asia (SONCA) financed from Development Account.
- h) ESCAP's theme study for its sixty-eighth session, entitled Growing Together: Economic Integration for an Inclusive and Sustainable Asia-Pacific Century, included a proposal for establishment of the Asia-Pacific Technology Development Fund (Chapter 5: Economic Cooperation for Addressing Common Vulnerabilities and Risks; www.unescap.org/publications/detail.asp?id=1500, a copy attached in Annex) ESCAP resolution 68/10 decided, among others, to convene the Asia-Pacific Ministerial Conference on Regional Economic Integration in 2013, to review the theme study.
- i) ESCAP published a report on Promoting the Development and Transfer of Environmentally-Sound Technologies in 2009 highlighting the importance and feasibility of transfer of Publicly-owned or –funded technologies.

iii. Possible partner organizations

The issue of technology transfer mechanisms is currently under discussion among IPCC experts, and any recommendations on the functions, format or working methods should coordinate and synergize with these discussions to greatest extent possible. ESCAP has been participating in these discussions and will continue to do so.

Other potential partners at the country level include:

- UN Country Teams in member countries.
- National agencies in member countries that focus on the promotion of clean and environmentally sound technologies, including renewable energy technologies
- Leading Chambers of Business and Commerce in member countries.
- Regional Financial Institutions (e.g. Asian Development Bank)

Annex

The Asia-Pacific Technology Development Fund

Proposal in ESCAP CS68 Theme Study

The Asia-Pacific Technology Development Fund could provide assistance to joint research and development programmes of Asia-Pacific enterprises based in a least two countries, one of which should be a developing country. The fund would be administered by APTECH, as proposed above. An important objective of this fund could be to assist enterprises based in relatively lower-income countries of the region in accessing modern technologies and developing productive capacities. The assistance from the fund could be limited to 50 per cent of the total project cost.

Setting priorities

In conclusion, regional cooperation could help promote environmentally sustainable technologies in SMEs in the following areas:

Skills - Creating a critical mass of skills to help firms, especially SMEs, plan and implement technology transfer with a business focus, particularly those for which there are no intellectual property constraints. This could provide opportunities for PPPs.

Supply chains - Enabling the growth of effective supply chains and marketing networks, which can manufacture, market, and service low-carbon technologies.

Research and development - Encouraging international collaboration in research, design, development and deployment. This should aim to reduce the risks associated with capital costs through government demonstration activities, and would help prevent innovations lying dormant without being commercialized.

Available technologies - It is important to identify, for SMEs in particular, the potential of mature low carbon technologies for which there are no intellectual property issues. Such information can be publicized widely through government and international agencies and through private-sector participation.

Intellectual property - Introducing guarantees for strong intellectual property enforcement while also developing locally appropriate versions.

Innovation hubs - Establishing regional hubs, based on the “open innovation” principle for instance, in the ASEAN or SAARC regions, to develop critical low carbon technologies.

Financial incentives - Designing market transformation incentives to overcome costs that prevent firms from switching to low carbon technologies.

Clean development mechanism - Providing comprehensive information on the Clean Development Mechanism with respect to eligibility criteria and potential emission reduction opportunities.

Micro-finance - This currently appears to be operating only in niche markets. Scaling up its use will require management of transaction costs and credit risk, and offering low-cost, long-term financial resources.

Bank Finance - Building capacity in the finance and banking sector, in areas such as low-carbon energy finance, including models for the effective use of available finance and economic and feasibility analysis.

In the Asian and Pacific region it has been demonstrated that among the most effective means of technology transfer are regional and interregional partnerships. In Asia and the Pacific they have included the Kitakyushu Initiative for Clean Environment, and the Seoul Initiative Network on Green Growth. The Astana Green Bridge Initiative is evolving as another driver fostering regional and intraregional cooperation for technological innovation and transfer of green technologies.

ESCAP has been supporting the widespread sharing of knowledge and transfer, adaptation and replication of environmentally sound technologies, with the support of its Asian and Pacific Centre for Transfer of Technology (APCTT) and its subregional offices, particularly in the Pacific.

ESCAP has also been building regional cooperation for transferring low-cost, low-tech, locally affordable and applicable technologies throughout the region. One of its activities was to conduct a regional study on the promotion of publicly funded environmentally sustainable technologies (EST) in the Asia-Pacific region, initiated in 2007. The study recommended that national systems of innovation be enhanced and called for boosting regional cooperation through the creation of a regional network of national innovation centers or agencies closely involved in the full cycle of EST development and transfer.

Since its inception in 1977, APCTT has been helping to upgrade capacity in technology transfer and innovation management. Its experience suggests that while certain countries have developed sophisticated insights into the structuring and operation of national innovation systems others lack this capacity. The Centre has also worked extensively on identifying barriers to the transfer of green technologies, in particular low-carbon technologies.

In general, national efforts in building capacity to plan and implement technology transfer activities in SMEs are weak in many developing countries. As a result, ESCAP has implemented a number of projects to support them. For example, a training center in Samoa has developed low-cost, locally appropriate technologies for capturing biogas for cooking and heating from human sanitation units and animal husbandry.

Similarly, local adaptations and improvements of technology applied in Viet Nam with the assistance of Thai experts were successfully replicated in Fiji and Vanuatu. Another example has been the use of solar renewable energy in Cambodia, where Sunlabob, a Lao People's Democratic Republic-based private company, set up local cooperatives to provide solar lantern rental systems in floating villages of the Thonle Sap lake area.

In 2011, APCTT organized a business-to-business forum on "Fostering Business Partnerships to Promote the Adoption and Utilization of Renewable Energy Technologies" in Colombo, Sri Lanka. It was organized in association with the National Engineering Research and Development Centre of Sri Lanka, the National Cleaner Production Centre of Sri Lanka (NCPCSL), and the Ceylon Chamber of Commerce. As part of the forum, one-to-one meetings were set up between renewable-energy business firms and technology transfer intermediaries in Sri Lanka and firms from six other participating countries, namely Fiji, India, Mongolia, Nepal, the Philippines and Thailand. One outcome of this meeting is negotiations between a

company in the Philippines and NCPCSL on transferring solar-assisted air conditioning technology to Sri Lankan companies.