

TERMS OF REFERENCE

for the Expert Group on Technology Transfer for developing, for a long-term perspective beyond 2012, a strategy paper, including sectoral approaches, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention

A. Mandate

1. The Conference of the Parties (COP), by its decision 3/CP.13, requested the Expert Group on Technology Transfer (EGTT) to propose a two-year rolling programme of work, for endorsement by the subsidiary bodies at their twenty-eight session following consideration by a joint contact group of the subsidiary bodies, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention. The setting of this programme of work should, for the long-term perspective beyond 2012, develop the terms of reference for elaborating a strategy paper, including sectoral approaches, that could draw on the work undertaken by Parties in processes under the Convention and outside the Convention as well as the results of work undertaken by other international organizations and forums. The strategy paper should be considered by the subsidiary bodies at their thirtieth sessions.
2. The COP, by the same decision, annex I, paragraph 6 noted that work developed under each key theme of the technology framework has evolved to a more practical and results-oriented level and should continue to do so by promoting actions in specific sectors and regions.

B. Background

3. Several relevant activities were completed recently or are under way within the UNFCCC process:
 - (a) The COP, by its decision 4/CP.13, requested Parties to submit to the secretariat, by 15 February 2008, for synthesis and compilation, their views on elements for the terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraph 5, and Article 4, paragraph 1(c), of the Convention, in accordance with decision 13/CP.3. The submissions are contained in document FCCC/SBI/2008/MISC.1 and Add.1, and the synthesis of these submissions is contained in document FCCC/SBI/2008/7;
 - (b) The COP, by its decision 3/CP.13, agreed that the five themes listed in the technology transfer framework and the structure, definitions and purpose of this framework, continue to provide a solid basis for enhancing the implementation of Article 4, paragraph 5, of the Convention. It agreed to reconstitute the Expert Group on Technology Transfer (EGTT) for a further five years, adopted a set of actions for consideration by the EGTT in formulating its future work programmes and agreed that these activities would complement the actions in the technology transfer framework. The COP requested the EGTT:
 - (i) To develop a set of performance indicators that could be used by the SBI to regularly monitor and evaluate the effectiveness of the implementation of the technology transfer framework;
 - (ii) To identify, analyse and assess existing and potential new financing resources and relevant vehicles in supporting development, deployment, diffusion, and transfer of environmentally sound

technologies in developing countries and to assess, based on the above identification and analysis, gaps and barriers to the use of and access to these financing resources in order to provide information to Parties to consider their adequacy and predictability;

- (c) The COP, by its decision 4/CP.13, requested the Global Environment Facility (GEF) to elaborate a strategic programme to scale up the level of investment for technology transfer to help developing countries address their needs for ESTs and to report on its findings to the twenty-eighth session of the SBI. The SBI is expected to consider the report together with views from Parties on elements for the terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraph 5, and Article 4, paragraph 1(c), as mandated by decision 4/CP.13;
- (d) At the thirteenth session of the COP, Parties agreed to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long term cooperative action, now, up to and beyond 2012 by addressing, inter alia, enhanced action on technology development and transfer to effective national and international action on mitigation of climate change (decision 1/CP.13, paragraph 1 (d));
- (e) At its first session held in Bangkok, Thailand, the Ad-hoc Working Group on Long term Cooperation under the Convention (AWG-LCA), that was launched by the decision 1/CP.13, considered elements for developing its two-year work programme as mandated by paragraph 7 of decision 1/CP.13. In this context, Parties had an initial exchange of views on enhanced action on development and transfer of technology. A summary of these views is contained in document FCCC/AWGLCA/2008/6;
- (f) At its resumed fourth session, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) requested the secretariat, under the guidance of the Chair of the AWG, to organize an in-session thematic workshop on the analysis of means that may be available to Annex I Parties to reach their emission reduction targets and the identification of ways to enhance the effectiveness of these means and their contribution to sustainable development (FCCC/KP/AWG/2007/L.6);
- (g) The workshop was held in Bangkok, Thailand, from 1 to 3 April 2008, during the first part of the fifth session of the AWG and the aim of the workshop was to provide an opportunity for informal discussions on each of the possible means that may be available to Annex I Parties to reach their emission reduction targets, as identified by the AWG at its second session, and in particular to identify issues that the AWG may need to address under each of the means and start the identification of options to address these issues. One sessions addressed issues relating to possible approaches targeting sectoral emissions.¹

4. The work of EGTT on this matter would benefit from the findings of the activities undertaken by the secretariat and the Parties and from the findings of, and experiences and lessons learned from, activities undertaken outside the UNFCCC process.

¹ The Summary report by the Co-Chairs is available at <http://unfccc.int/files/meetings/intersessional/awg-lca_1_and_awg-kp_5/agendas/application/pdf/bkk_workshop_sumreport.pdf>.

C. Objectives of the work

5. The overall objective of this work is to develop, for a long-term perspective beyond 2012, a strategy paper, including sectoral approaches, to facilitate the development, deployment, diffusion and transfer of technologies under the Convention.
6. The outcome of this work could provide inputs to:
 - (a) Work on the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA), particularly on the activities mentioned in paragraph 3 (c) above;
 - (b) The work of the SBI to review and assess the effectiveness of the implementation of Article 4, paragraph 5, and Article 4, paragraph 1 (c), of the Convention, in accordance with decision 13/CP.3;
 - (c) The work of SBSTA and SBI on considering the role of new financing mechanisms and tools for scaling up development and transfer of technology.

A. Scope of the work

7. Technologies for the mitigation of, and adaptation to, climate change are important and both hard technologies and soft technologies should be taken into account. This work should be guided by, but not limited to, the provisions of the Bali Action Plan (BAP) on technology (decision 1/CP.13, paragraph 1 (d)):

“1. Decides to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action, now, up to and beyond 2012, in order to reach an agreed outcome and adopt a decision at its fifteenth session, by addressing, inter alia:

- (d) Enhanced action on technology development and transfer to support action on mitigation and adaptation, including, inter alia, consideration of:
 - (i) Effective mechanisms and enhanced means for the removal of obstacles to, and provision of financial and other incentives for, scaling up of the development and transfer of technology to developing country Parties in order to promote access to affordable environmentally sound technologies;
 - (ii) Ways to accelerate deployment, diffusion and transfer of affordable environmentally sound technologies;
 - (iii) Cooperation on research and development of current, new and innovative technology, including win-win solutions;
 - (iv) The effectiveness of mechanisms and tools for technology cooperation in specific sectors;”

8. One of the findings of the Dialogue on long-term cooperative action to address climate change by enhancing implementation of the convention was that, to realize the full potential of climate friendly technologies, their development and transfer needs to be approached in an integrated manner, by addressing all the stages of the technology development cycle from technology innovation to application and by considering funding and policy aspects specific to each stage (FCCC/CP/2007/8). Although most of the technologies that are transferred are in the deployment/diffusion stage, technology transfer could take place in each stage of the technology development cycle.

9. Technologies for adaptation have specific aspects that need to be addressed.
10. Specific sectoral, regional and national aspects should be addressed. For some sectors sub-sectoral aspects may be a need to be considered.
11. Some of the means and ways that the strategy could consider, include:²
 - (a) Establishing a mechanism and/or other means to promote technology development, deployment, diffusion and transfer in the context of both mitigation and adaptation, rewards those taking action on technologies for adaptation and mitigation, and reduce the cost of the transition to a low-carbon society (design required technology-focused financial vehicles and tools);
 - (b) Enhancing the work in partnerships, which is the cornerstone of a number of technology cooperation programmes and initiatives (e.g., supporting in-country demonstrations to enable learning-by-doing);
 - (c) Providing incentives to attract the private sector participation in technology cooperation activities for both mitigation and adaptation (e.g. incentives for public-private partnerships, capital allowances, depreciation schemes, taxation credits, certificates and tariffs, GHG reduction incentives) as an effective way to create a financial multiplier for development and transfer of technologies;
 - (d) Strengthening capacity building for example for enabling environments, development of legal and regulatory frameworks and preparation of project proposals, supporting energy efficiency and auditing programmes, capacity building of National Focal Points in coordinating and facilitating DTT at country level;
 - (e) Linking financial support and resource to enable mitigation actions by developing countries through technology and to make both, incentives and mitigation action measurable, reportable and verifiable;
 - (f) Strengthening institutional and organizational arrangements for development and transfer of technology (e.g. taking into account the example of Montreal Protocol,³ establishing technology committees, part of which could be developed in cooperation with relevant international expert organizations for DTT, such as FAO, WMO, WHO, UNIDO etc.);
 - (g) Strengthening the roles of financial mechanisms of UNFCCC;
 - (h) Further improve the TNA process and build on the results of the TNAs. The focus should be on how they can be serving all countries in need, and how they will act as base for and be developed into country programmes;
 - (i) Enhance access to up-to-date technology information, including on technical characteristics, economic data and environmental performances;
 - (j) Enhance development, transfer and deployment of technologies by articulating action in other international organizations not directly related to climate change or environmental issues.

² Many of these means and ways could be addressed under each stage of the technology development cycle.

³ Including in particular the Institutional Strengthening projects, Regional Networks of National Ozone Units and Information Clearinghouse.

(k) focussing on large scale emitters (e.g., a sector in a country);

12. Another important element of the long term strategy could be to clarify and develop the BAP concept of “measurable, reportable, and verifiable” (MRV) and how it relates to technology activities.

13. Considering the needs to address all the stages of the technology development cycle the work is divided into three tasks in line with the key stages of technology development cycle. These tasks could be conducted in parallel.

Task I: Identify and assess effective means and ways that could scale up diffusion and transfer of existing technologies for mitigation and adaptation

14. There are many barriers existing to successful transfer and diffusion of existing technology or already in use.⁴ The technologies themselves are usually cost effective while other barriers prevent these technologies distributed widely. Effective mechanism and enhanced means could be needed to remove these barriers and/or to provide financial incentives for technology diffusion and transfer. For some technologies specific ways and means could be needed to accelerate their diffusion and transfer.

15. The activities of this task should focus on practical strategy and solution to address the issue of overcoming these barriers to transfer of technologies for mitigation and adaptation. The elements that could be considered, among other elements, include:

- (a) Ways and means to provide additional financial incentives to overcome these barriers;
- (b) Standards on energy efficiency;
- (c) Packages of financial assistance to developing countries for phasing out old and/or introducing new technologies based on energy efficiency or performance standards;
- (d) Enhancement of country technology absorptive capacity in line with the WB document on Global Economic Prospects: Technology Diffusion in the Developing World (2008), and addressing the assessment of developing countries absorptive capacity constrains and means overcome them (e.g., public education and awareness programmes);
- (e) Continued and strengthen access to and sharing of technology information and raise technology awareness;
- (f) Ways to address the IPR barrier and licensing.

Task II: Identify and assess effective means and ways that could accelerate deployment and demonstration mitigation and adaptation technologies

16. Scaling up the deployment of near commercialisation technologies would accelerate progress of technology maturity and cost decreasing, therefore be crucial to further reduce the GHG emissions and reduce vulnerability in mid-term. Financial support may be a key issue to be addressed for these technologies that are not yet commercially viable.

17. The elements that need to be elaborated for the strategy of scale up the deployment and demonstration of new technologies could include:

⁴ See the technical papers on enabling environments and innovative financing.

- (a) Identification of priority technologies for deployment;
- (b) To strengthen technical assistance and limited finance for implementing technology policies and measures (T-PAMs) to support prioritised technology needs,;
- (c) Incentives to countries to develop and commit to relevant national strategies;
- (d) International cooperation on technology deployment schemes;
- (e) International platforms for collaboration, including support for developing countries ‘in country demonstration’ to enable learning-by-doing and implementation and sharing of technology roadmaps by groups of countries;
- (f) Risk mitigation strategies that could address financing curve of new and near to commercialisation technologies

Task III: Identify and assess ways and means that could greatly enhance investments in research, development and demonstration of innovative technologies

18. Research and development is important for development of new technologies and associated skills and capacity to address climate change in long term. Public sector usually plays a dominant role in this field. Although the public sector plays an predominant role, the private sector, academia and research networks are important.

19. The elements that could be considered include:

- (a) International collaboration, involving public and private sector, is needed to strengthen the research base and develop of key technologies;
- (b) Collaborative R&D (e.g., investments in well-structured R&D and joint R&D activities for mitigation and adaptation technologies, coordination of R&D programmes and approaches for pooling of risks and rewards, exchange of university researchers and students as well as joint ventures);
- (c) Assessing potential contribution of national systems of innovation;
- (d) Identification of options for triangular cooperation on technology R&D;

Task IV: Prepare an consolidated strategy for development and transfer of technologies and make recommendations for its implementation

20. This task will integrate the strategies developed in tasks 1 to 3 in a coherent long term strategy, will address crosscutting issues and will take into account other general elements included in the ToR (e.g., paragraph 9 and 10 above). It will aim to develop a vision of where the issue of development and transfer of technologies will be, for example, in ten years time and the associated action plans. It could provide one or several strategies to achieve this vision, with options for consideration.

21. The elements that could be considered include:

- (a) Integrating various mechanisms, tools and framework identified in previous tasks;
- (b) Considering crosscutting issues such as, enabling environments, capacity building, technology information and technology needs assessments;
- (c) Consolidating recommendations;

(d) ...

B. Approach for organizing the work

22. The approach for conducting this work should take into account:
- (a) The need to avoid duplication and to develop synergy with relevant activities. This work should draw on the work undertaken by Parties in processes under the Convention and outside the Convention as well as the results of work undertaken by other international organizations and forums;
 - (b) This work should provide innovative ideas that could lead to practical breakthrough solutions to scale up development and transfer of technologies (thinking out of the box);
 - (c) Address the issue of technologies in an integrated manner linking elements relating to technology development cycle with policies and investment flows and have information and capacity building as cross cutting;
 - (d) The EGTT would be actively involved in guiding the work and in finalizing the paper. The consultant(s) will be invited to present progress of work at the EGTT meetings and is encouraged to seek advice from the EGTT, as needed;
 - (e) Address specific sectoral, technology and regional aspects taking into account the level of economic development of countries;⁵
 - (f) Strategies that could be implemented in various circumstances (practical approaches);
 - (g) Cross-references could be made to the other ongoing and upcoming activities under relevant agenda items, including:
 - (i) The strategic programme to scale up investment on technology transfer by the GEF;
 - (ii) The work of the EGTT on identification, analysis and assessment of financing support for development, deployment, diffusion and transfer of environmentally sound technologies in developing countries;
 - (iii) Information provided in the AWG-LCA documents on technology and finance.
 - (h) The views submitted by Parties on elements for the terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraphs 1 (c) and 5, of the Convention.
23. Elements for conducting the work could include:
- (a) Preparing three background papers focusing on the diffusion and transfer; deployment and demonstration; and research and development of technologies;⁶

⁵ Does this mean that the author(s) will pick and choose sectors that he/they like to address or he will only address the selected sectors indicated earlier? Who decide which sector is specific and which is not?.

⁶ These papers will be reviewed by EGTT and a reasonable period of time will be given for this review.

- (b) A process for the EGTT to review the background papers and to prepare:
 - (i) An interim report to the subsidiary bodies at their twenty-ninth sessions;
 - (ii) An final report to the subsidiary bodies at their thirtieth sessions.
 - (c) Organizing event that may include:
 - (i) An expert meeting, back-to-back with the EGTT special meeting, to develop the long term strategy paper, bringing together experts, representatives of the private sector, the EGTT, and interested Parties to share information and examine practicable approaches and options;
 - (ii) A EGTT side event at COP 14 to present interim results of the work.
24. The secretariat shall facilitate the work of the expert group on this matter.
25. The following are some relevant documents:
- (a) Recommendations of the Expert Group on Technology Transfer for enhancing the implementation of the framework for meaningful and effective actions to enhance the implementation of Article 4, paragraph 5, of the Convention (FCCC/SBSTA/2006/INF.4);
 - (b) Synthesis report on technology needs identified by Parties not included in Annex I to the Convention (FCCC/SBSTA/2006/INF.1);
 - (c) Synthesis report on technologies for adaptation identified in the submissions from Parties and relevant organizations (FCCC/SBSTA/2007/6);
 - (d) Development and transfer of technologies: Technology and technology information needs arising from the survey of developing country Parties (FCCC/SBSTA/1998/INF.5);
 - (e) Results of the survey on the effectiveness of the use of the UNFCCC technology information clearing house (TT:CLEAR) (FCCC/SBSTA/2004/INF.8);
 - (f) Enabling environments for technology transfer (FCCC/TP/2003/2);
 - (g) Innovative options for financing the development and transfer of technologies (FCCC/TP/2006/1);
 - (h) Synthesis of views on elements for the terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention (FCCC/SBI/2008/7);
 - (i) Application of environmentally sound technologies for adaptation to climate change (FCCC/TP/2006/2);
 - (j) Views on elements for the terms of reference for the review and assessment of the effectiveness of the implementation of Article 4, paragraphs 1(c) and 5, of the Convention. Submissions from Parties (FCCC/SBI/2008/MISC.1 and Add.1);

- (k) A possible format for reporting on the regular monitoring of the implementation of the capacity-building framework in accordance with decision 2/CP.7, paragraph 9 (FCCC/SBI/2007/5).
 - (l) Investment and financial flows paper
 - (m)
26. This work should also draw on other relevant documents such as:
- (a) IPCC Third Assessment Report, Climate Change 2001: Synthesis Report. IPCC Fourth Assessment Report, Climate Change 2007: Synthesis Report;
 - (b) IEA World Energy Outlook 2007;
 - (c) IEA Energy Technology Perspectives 2008: Scenarios and Strategies to 2050;
 - (d) WBCSD Energy and Climate Trilogy (Facts and Trends, Pathways, Policy Directions to 2050);
 - (e) The Stern Review on the Economics of Climate Change.
27. It is essential that the EGTT be kept abreast of progress on this paper on an ongoing basis beginning with the initial briefly annotated outline of the paper that provides enough information to know the direction that is being taken and the expected content of the paper.

C. Deliverables and key dates

28. The time frame for the completion of the work, based on the mandated deadlines, is shown in the table below.

Schedule of key activities

Activity ^a	Time frame	Comments
Review and finalize the proposed terms of reference	SBSTA 28	Possible input AWG-LCA discussions on technology
Task I - Identify and assess effective means and ways that could scale up diffusion and transfer of existing climate friendly technologies	Late June 2008 – End December 2008	Interaction with options for financing technology transfer, SBI work on the review of 4.5 and 4.1 (c) Possible input from the AWG-LCA 2 workshop Possible input to inform the AWG-LCA process
Review by EGTT	Early October 2008	Input to the expert meeting
Task II - : Identify and assess effective means and ways that could accelerate deployment and demonstration of new and near commercial climate friendly technologies	Late June 2008 – End December 2008	Interaction with options for financing technology transfer Possible input to inform the AWG-LCA 3 workshop on sectoral approaches and the AWG-LCA process
Task III - Identify and assess ways and means that could greatly enhance investments in research,	Late June 2008 – End December 2008	Interaction with options for financing technology transfer Possible input to inform the AWG-LCA

Activity ^a	Time frame	Comments
development and demonstration of innovative technologies		workshop on technology R& in Poznan and to the AWG-LCA process
Expert meeting	October / November 2008	Review of status of work and make recommendations
Interim report	COP 14 SBSTA 29/ SBI 29	
EGTT side event at COP 14	COP14 SBSTA 29/ SBI 29	The side event will provide an opportunity to present the progress of this work
Task IV - Prepare an consolidated strategy for development and transfer of technologies and make recommendations for its implementation Final report	October 2008 – March 2009	Final report to SBSTA 30 Possible input to inform the AWG-LCA

^a The EGTT would be actively involved in guiding the work and in finalizing the paper. The consultant(s) will be invited to present progress of work at the EGTT meetings and is encouraged to seek advice from the EGTT, as needed.

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