

**AD HOC WORKING GROUP ON LONG-TERM COOPERATIVE
ACTION
UNDER THE CONVENTION
Resumed seventh session
Barcelona, 2–6 November 2009**

Non-paper No. 36*

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**CONTACT GROUP ON ENHANCED ACTION ON
DEVELOPMENT AND TRANSFER OF TECHNOLOGY**

Draft text

Proposed by the co-chairs¹

Preambular paragraphs...

1. A Technology Mechanism is hereby established to address all aspects of cooperation among Parties on technology research, development, demonstration, deployment, diffusion and transfer with the objective of enhancing the implementation of Article 2, Article 4, paragraphs 1(c), 3, 5, 8 and 9, of the Convention, in the context of Article 4, paragraph 7, of the Convention, in order to enable action on mitigation and adaptation;
2. The Technology Mechanism shall be guided by the following principles:
 - (a) Aim to remove barriers and ensure accessibility, affordability, appropriateness and adaptability of the technologies required by developing country Parties;
 - (b) Ensure adequacy and predictability of financial support for technology development and transfer, taking into account the important role of public finance in supporting technology outcomes, including research and development needs, and in leveraging private-sector investment in the demonstration, deployment, diffusion and transfer of technologies to the developing country Parties;
 - (c) Address country specific needs and priorities, particularly the urgent need for the development and transfer of technologies for adaptation in developing country Parties, particular in least developed and most vulnerable countries;
 - (d) Provide Parties with pathways to a low greenhouse gases emission and climate resilient society;
 - (e) [Address][Recognise] the need for economic diversification to meet the specific needs and concerns of developing countries whose economies are affected by the adverse impacts of response measures;
 - (f) Recognise the circumstances of Parties included in Annex I to the Convention undergoing the process of transition to a market economy;
3. The Technology Mechanism will operate under the guidance and authority of the COP and its implementation will build upon existing activities within the Convention, including the work of the Expert Group on Technology Transfer, promote coherence by integrating and expanding ongoing activities related to technology, and support action on mitigation and adaptation;
4. The Technology Mechanism will comprise:

* This non-paper supersedes non-paper No. 29.

¹ An appendix has been created to capture details that are not referred to in the draft text so that this text is not lost and can be used to inform subsequent negotiations and implementation.

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(a) [A technology body], to facilitate the operation of the Technology Mechanism, with a structure and functions as contained in Annex I;

(b) An International Technology Action Plan[s] to accelerate short-, medium-, and long-term action across all stages of the technology development cycle, including research, development, demonstration, diffusion, transfer and the use of existing and new environmentally safe and sound technologies to support action on mitigation and adaptation and to promote sustainable development paths, to be elaborated by the [technology body] with possible elements, as specified in Annex II;

(c) National and regional technology innovation centres and networks, including centre-to-centre twinning arrangements, to accelerate the development, demonstration, deployment, diffusion and transfer of environmentally safe and sound technologies to support action on mitigation and adaptation by developing country Parties with detailed modalities and functions [as contained in Annex III][to be further elaborated by the [SBSTA with the support of the Expert Group on Technology Transfer][technology body] for consideration by the COP at its X session];

(d) [A financial arrangement established as part of the overall financial arrangements under decision X/CP.15 and other means to support the implementation and operation of this Technology Mechanism].

(e) An incentive mechanism for enhanced cooperative action on technology development, deployment, transfer and diffusion for mitigation and adaptation projects and programmes to stimulate accelerated diffusion and transfer of existing and new environmentally safe and sound technologies to developing country Parties, with detailed modalities and functions of the mechanism to be further elaborated by the [SBI][technology body] with the support of the Expert Group on Technology Transfer, for consideration by the COP at its X session;

5. The [technology body] shall provide guidance on the establishment of networks of centres, referred to in paragraph 4 (c) above, with a view to enhancing cooperative research and development and North-South, South-South, and triangular technology cooperation.

6. [Developed country Parties [and other developed country Parties included in Annex II to the Convention]], in a position to do so, are encouraged to provide appropriate financial and technical support through bilateral and multilateral channels to developing country Parties to scale up technology research, development and demonstration and to support cooperative research and development programmes and initiatives.

7. A technology capacity building programme to support action on mitigation and adaptation by developing countries shall be further elaborated by the [technology body], referred to in paragraph 4 (a) above, taking into account the elements contained in Annex IV, for consideration by the COP at its XX session.

8. A technology development and transfer [facility][service][hub][Advisory Group for Technology Cooperation] is hereby established, with elements specified in Annex V, to accelerate the global penetration of environmentally safe and sound technologies by enhancing technology cooperation through the provision, upon request, of technical assistance and training to support developing countries mitigation and adaptation actions, including assisting in the development of rigorous technology development and transfer project proposals and in matching with the most appropriate form of investment support, particularly with a view to leveraging private-sector funding.

9. The [technology body] is requested to identify appropriate actions to address barriers to technology development and transfer encountered by developing countries Parties, including those related to intellectual property rights, to enable action on mitigation and adaptation;

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10. The [technology body] is requested to develop and implement, as part of its programme of work, practical and concrete actions that address specific needs of developing countries on the development and transfer of technologies for adaptation, taking into account the indicative list of priorities contained in Annex VI;

11. A technology information platform for environmentally safe and sound technologies including a global technology database, building on existing platforms, should be developed and be continually updated to collect information on sector-specific technologies and best practices, including on intellectual property rights and licensing, costs, abatement potentials, barriers and manufacturers of technologies;

12. Developed country Parties are encouraged to:

(a) Double expenditure on research, development and demonstration of technologies for mitigation and adaptation by 2012 and quadruple expenditure on research, development and demonstration of technologies for mitigation and adaptation by 2020;

(b) Enhance national policies and incentives to stimulate increased investment by the private sector in research, development and demonstration of new technologies for mitigation and adaptation;

(c) Enhance national policies and incentives to promote the transfer and diffusion of the environmentally safe and sound technologies to developing countries;

13. All Parties are encouraged to:

(a) Promote and support the development and transfer of innovative climate-friendly technologies including through the formulation and sharing of national technology action plans, incorporating elements contained in Annex VII, that should be integrated into national adaptation and mitigation plans, and where appropriate, build on and include technology needs assessments as established by decision 4/CP.7;

(b) Implement actions, consistent with relevant national social, economic, energy and environmental policies, that establish conditions which promote the development, deployment and diffusion of environmentally safe and sound technologies;

(c) Promote greater public and private sector investment in research, development and demonstration for targeted environmentally sound technology areas through enhanced support and strengthened incentives for private-sector participation;

(d) Consistent with international obligations, enhance enabling environments, including technology-specific policies and measures with both adaptation and mitigation benefits, that create the conditions conducive to private- and public-sector technology development, deployment, transfer and diffusion. Policies and measures should include national social, economic, energy and environmental policies, and deployment schemes to address barriers to technology development, deployment, diffusion, and transfer of technologies for mitigation and adaptation;

(e) Participate, to the extent possible, in international programmes that support the development and use of common performance standards, testing, verification and certification programmes;

(f) Participate in international partnerships to advance the development, demonstration, deployment, diffusion and transfer of environmentally safe and sound technologies;

(g) Establish voluntary technology [agreements][arrangements] and partnerships with intergovernmental organisations, the private-sector, academia, civil society organizations and local and sub-national governments for enhancing cooperative action amongst Parties on adaptation and mitigation by developing countries. Such [agreements][arrangements] and partnerships could include cooperative research and development, large-scale demonstration and deployment projects on key technologies for mitigation and adaptation, cooperation on specific

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sectors or greenhouse gases, and cooperation on climate observation and warning systems for enhancing resilience, consistent with Article 11, paragraph 5 of the Convention;

(h) Engage the private business and financial sectors by providing incentives to mobilize private capital and enhance and/or establish incentives at the national level, through the provision of financial support as appropriate, such as concessional loans and risk guarantees, tax exemption and subsidies for the owners of patented technologies, with a view to promoting transfer and diffusion of environmentally safe and sound technologies to developing country Parties;

14. Developing country Parties shall be provided with the necessary and immediate financial and capacity building support to prepare national technology action plans, including through the support of the technology development and transfer [facility][service][hub] and technology innovation centres, and will be assisted to implement the actions identified within these plans, for enhancing the implementation of Article 4, paragraph 1(c) and 5, of the Convention;

15. The Conference of the Parties shall periodically monitor and assess the effectiveness of the implementation of Articles 4, paragraphs 5 and 1 (c), of the Convention and of the Technology Mechanism referred to in paragraph 1 above.

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Annex I

Possible functions and structure of proposed institutional arrangements

Option 1 (Executive Body on Technology)

Functions

- (a) Develop a Technology Action Plan to serve as a starting point for the work of the Executive Body;
- (b) Accelerate the development, demonstration, deployment, adoption, diffusion and transfer of environmentally sound technologies from Annex II Parties to developing country Parties, in order to avoid the lock-in effects of technologies that are not environmentally sound, and to promote sustainable development in developing country Parties;
- (c) Provide access to technology for adaptation at national, subregional and regional levels, enabled by capacity-building, and the provision of new and additional, adequate and predictable financing resources to meet the costs of both integration of adaptation into the development process and stand-alone adaptation activities;
- (d) Remove barriers to technology transfer and enhance the means of facilitating this transfer in order to promote urgent access to advanced environmentally sound technologies while balancing rewards for innovators with the common good of humankind, including, inter alia, jointly-developed technology and sharing of intellectual property rights;
- (e) Enhance enabling environments to facilitate access to technology, including through financing environments that leverage private-sector financial resources, including policy dialogues and involvement in development, demonstration, deployment, adoption, diffusion and transfer of environmentally sound technologies;
- (f) Build on existing activities under the Convention and coordinate action by different stakeholders at international, regional and national levels to promote coherence through the integration of ongoing activities related to development and transfer of technologies;
- (g) Provide the means for the full implementation of Convention commitments on development, deployment, adoption, diffusion and transfer of environmentally sound technologies, and related financing and capacity-building;
- (h) Develop strategy and technology action plans and monitor and verify the implementation of the specific operational policies, guidelines and administrative arrangements, including the disbursement of resources, for the purpose of achieving the objectives of the multilateral technology fund, taking into account the cost-effectiveness of the proposed activities as well as the potential for their replicability;
- (i) Monitor and assess the performance of development and transfer of environmentally sound technologies in terms of speed, range and size of the technological flow and provide advice and recommendations on the overall implementation of technology action under the Convention;
- (j) Provide technical and technology-related financing and policy advice, including on technology needs assessments, technology development plans or low-emission development strategies, to Parties as requested.

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Structure

A Strategic Planning Committee to:

- a) Develop strategy;
- b) Provide regular guidance;
- c) Assess and elaborate technology-related matters;
- d) Continuously evaluate progress, including financial and technological flows and range and effectiveness of technologies transferred;
- e) Develop updates for the Technology Action Plan (TAP) at regular intervals;
- f) Perform any other functions to be assigned to it by the EBT;
- g) Capacity-building.

Technical Panels to generate and compile current expert information related to, inter alia:

- a) Policies and measures;
- b) Intellectual property cooperation, sharing and partnership;
- c) Sectoral, cross-sectoral and cross-cutting cooperation;
- d) Assessment, monitoring and compliance related matters;
- e) Dissemination of knowledge;
- f) Documenting, scaling up and diffusion of indigenous adaptation technologies which already exist in developing countries.

A Verification Group to put in place a measurement, reporting and verification system for compliance with the provision of financing and the development, demonstration, deployment, adoption, diffusion, and transfer of environmentally-sound technologies by Annex I Parties to developing countries under the mechanism, and the overall compliance with financing and technology commitments under the Convention, including the MRV requirements under the Bali Action Plan.

A Secretariat to:

- a) Support and facilitate the activities of the Executive Body of Technology;
- b) Compile and prepare a final report on the financial and technological contributions made and reported by Parties to the technology mechanism, including the overall MRV requirements under the Bali Action Plan.

Option 2 (Technology Executive [Committee][Panel])

Functions

- a) Develop and facilitate the implementation of an international Technology Action Plan;
- b) Advise other bodies under the Convention, as appropriate, on financing of technology development and transfer, including on the implementation of the Action Plan on Technology and other technology financing arrangements that form part of the Copenhagen agreed outcome;
- c) Seek cooperation and coordination with relevant international technology initiatives and organizations, including on financing technology deployment, diffusion and transfer, and advice on issues related to IPR;

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- d) Encourage and strengthen collaborative partnership arrangements with national and international public- and private-sector institutions and initiatives, and stimulate the establishment of facilitative mechanisms to leverage private-sector financing to help meet developing countries' needs;
- e) Identify areas of cooperation and approve procedures and modalities for technology cooperation with the private-sector and make recommendations to the COP for action;
- f) Elaborate policy documents, terms of reference, criteria and guidance, and develop special reviews on existing technologies, including maintaining an inventory of existing adaptation technologies in developing countries, including information on their state of development, deployment, diffusion and transfer;
- g) Provide guidance and support including technical and technology-related financing and policy advice, including on technology needs assessments, technology action plans and low-emission development strategies, to Parties on request and assist the coordinating mechanism with the assessment of NAMAs and other relevant bodies as required;
- h) Monitor and assess performance and progress, using performance indicators, and provide advice and recommendations on the overall implementation of technology action under the Convention.

Structure

Strengthen cooperation and make efficient use of the current institutional arrangements and establish a Technology Executive [Board][Committee] to advise the COP on technology policy issues. The [Board][Committee] should be serviced by a strengthened professional secretariat and advised by a technology panel, building upon and replacing the Expert Group on Technology Transfer, and comprising experts nominated by Parties. To enhance the involvement of the private sector and relevant international organizations, a consultative group for sectoral technology cooperation is established to assist the technical panel in the provision of advice to the [Board][Committee]. The consultative group is comprised of representatives of national and regional technology innovation centres and sectoral technology cooperation bodies.

The consultative group for sectoral technology cooperation will support the Technical Panel to provide advice to the Technology Executive [Committee][Board] on:

- (a) options for cooperation and coordination with relevant sectoral, regional and international technology initiatives and organizations, including on financing technology deployment, diffusion and transfer, and advice on issues related to IPR;
- (b) opportunities for collaborative public-private partnership arrangements with national and international public- and private-sector institutions and initiatives, and stimulate the establishment of facilitative mechanisms to leverage private-sector financing to help meet developing countries' needs;
- (c) Identify and promote best practices and best available technologies, through analysing emission reduction potentials and setting indicators, and advise on appropriate ways of promoting the transfer and diffusion of existing best available technologies and those that will be available in the short-term, medium-term and long-term in all relevant sectors.

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Option 3 (Executive Body on Finance and Technology)

- (a) Organize, coordinate, monitor and evaluate the implementation of the comprehensive framework for adaptation and mitigation, including the enabling means of financing, technology and capacity-building;
- (b) Guide and supervise the disbursement of the Adaptation Fund and a Mitigation Fund to be created under the Convention;
- (c) Coordinate disbursements from the Adaptation Fund according to the needs as indicated in national plans for adaptation submitted by developing countries, and from the Mitigation Fund according to the needs for NAMAs and REDD+ activities as requested by developing countries;
- (d) Provide financial and technical support, available on request by developing countries, for the preparation of REDD+ activities and for the elaboration of national plans for adaptation and NAMAs;
- (e) Manage a registry and certification system for receiving financial resources related to mitigation and adaptation in compliance with the financial commitments of developed country Parties under Article 4.3 of the Convention;
- (f) Coordinate with regional development banks concessional loan arrangements for the private-sector in developing countries for the implementation of specific mitigation activities;
- (g) Articulate technology transfer and financing mechanisms under the Convention with other United Nations organizations, multilateral financial institutions established under bilateral or multilateral development programmes and other relevant international forums not directly related to climate change, with the assistance of technical panels to be created.

Structure

Executive Body on Finance and Technology for Adaptation (EBFTA) and an Executive Body on Finance and Technology for Mitigation (EBFTM), supported by technical panels on research and development, capacity-building, transfer of technologies, observation systems and information management, REDD+ and market mechanism, and accountable to the COP. The technical panels shall comprise government representatives elected by the COP with balanced regional representation, who are experts on matters related to each of the technical panels, and be open to input from other experts.

Technical Panels

1. Both Technical Panels on Research and Development (TPRDA and TPRDM) shall, inter alia, coordinate multilateral technology research, development and demonstration programs and provide appropriate support to developing country Parties through North-South and South-South cooperation schemes, and promote joint ventures to accelerate deployment, diffusion and effective transfer of technologies.
2. Both Technical Panels on Capacity Building (TPCBA and TPCBM) shall organize, coordinate, monitor, evaluate and retrofit the implementation of capacity-building activities for adaptation and mitigation and the respective financing and technology development and transfer, in developing countries. TPCBs shall also provide information and views on the fulfillment of support commitments for capacity-building by developed countries. The TPCBs shall create mechanisms for sharing lessons learned, promote South-South cooperation as well as for the dissemination of successful capacity-building activities in developing countries.
3. Both Technical Panels on Transfer of Technologies (TPTTA and TPTTM) shall, inter alia:
 - (a) Provide advice and recommendations to the Executive Bodies on Finance and Technology on the overall implementation of technology;

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- (b) Promote communication and information/knowledge sharing;
- (c) Monitor and assess the performance and progress of technological research, development, demonstration, diffusion, and deployment, using performance indicators, and report to the COP;

In addition, this technical panel shall develop reviews on existing technologies, including information on estimated cost, risks, benefits and limitations, taking into account the circumstances of the host Party.

4. The Technical Panel on Observation Systems and Information Management (TPOSIM) shall, inter alia, organize, coordinate, monitor, evaluate and retrofit the implementation of systematic observation and information management (including data collection and archiving, analysis, modelling, downscaling and dissemination) activities for adaptation in developing countries. The TPOSIM shall create mechanisms for sharing lessons learned, promote south-south cooperation as well as for the dissemination of successful systematic observation and information management activities for adaptation in developing countries.

5. The Technical Panel on REDD+ (TPREDD+) shall, inter alia, determine reference levels methodologies, support enhancement of REDD project activities within countries, and other general methodological issues.

6. The Technical Panel on Market Mechanisms (TPMM) shall, inter alia, organize, coordinate, monitor, evaluate, and retrofit the implementation of mitigation activities in developing countries that are carried out under the market mechanisms. The TPMM will deal with issues such as country-specific sectoral baselines, additionality, monitoring and verification plans, registration of mitigation activities and actions, issuance of credits, etc.

7. In addition, an MRV Panel to be created under the COP shall be in charge of establishing methodologies for MRV, measuring, reporting and verifying mitigation actions and the support received as required by paragraph 1.(b)(ii) of decision 1/CP.13, and keeping records of mitigation and adaptation activities implemented by developing countries with their own resources.

The UNFCCC Secretariat shall support and facilitate the activities of the EBFTA, EBFTM, and the technical panels.]

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**Annex II
Elements of the international Technology Action Plan**

Option 1

1. Define specific institutional arrangements, policies, actions and funding requirements for all relevant technologies under the following classifications: public domain technologies, [IPR protected] [patented] technologies and know-how, future technologies;
2. Include specific actions and timelines for the first three years, and be reviewed and updated for successive three-year periods in the light of lessons learned;
3. Support the establishment of and/or strengthen existing national and regional technology innovation centres;
4. Accelerate research, development, demonstration, diffusion and transfer of environmentally sound technologies for mitigation and adaptation;
5. Develop an effective strategy that identifies and proposes specific measures to overcome the barriers to technology development and transfer.

Option 2

1. The plan for technology action should build on and enhance coordination and collaboration with relevant international and national efforts and be informed by national technology action plans.
2. The plan for technology action shall be implemented with financial support through the financial mechanism of the Convention and other financial arrangements as part of the Copenhagen agreed outcome, including all the available means to ensure the affordability of technologies, products and related services.
3. Technology action plans shall be informed and supported by comprehensive global technology road maps that provide an overview of what needs to be done to promote wider and more rapid development and deployment of key technologies, and which shall identify:
 - b) The current state of development of the technology, including technologies for adaptation;
 - c) Key stakeholders and relevant existing and emerging efforts contributing to the development of the technology;
 - d) Gaps and barriers to commercial maturity;
 - e) Opportunities for cooperation between developed and developing country Parties, including their respective private-sectors.
4. Technology action plans and technology road maps should build on and work collaboratively with other relevant international and national efforts and institutions to maximize efficiency of effort and avoid duplication.

Option 3

1. The plan for technology action should build on and enhance coordination and collaboration with relevant international and national efforts and be informed by national technology action plans.
2. The plan for technology action shall be implemented with financial support through the financial mechanism of the Convention and other financial arrangements as part of the Copenhagen agreed outcome, including all the available means to ensure the affordability of technologies, products and related services.

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3. The international technology action plan will be based upon a regular assessment of global technology needs for long term action on climate change with the aim of accelerating short-, medium-, and long-term action across all stages of the technology development cycle, including research, development, demonstration, diffusion, transfer and use of existing and new environmentally safe and sound technologies, in order to achieve the ultimate objective of the Convention and support action on mitigation and adaptation and to promote a shift to sustainable development paths. The Plan shall specify actions for an initial period of three years and be regularly updated every successive three years. It will:
- (a) assess the steps required to accelerate research, development, demonstration, diffusion and transfer of environmentally sound technologies for mitigation and adaptation, through developing a comprehensive overview of what needs to be done to promote wider and more rapid development and deployment of key technologies, and which shall identify:
 - (i) The current state of development of technologies for mitigation and adaptation;
 - (ii) Key stakeholders and relevant existing and emerging efforts contributing to the development of these technology;
 - (iii) Gaps and barriers that prevent technologies from reaching commercial maturity;
 - (iv) Opportunities for cooperation between developed and developing country Parties, including their respective private sectors;
 - (v) Prioritized technologies that should be the focus for specific programmes of action to accelerate the development and transfer of technology.
 - (b) define specific, time-bound actions and associated funding requirements with specific programmes of action developed for each prioritized technology, encompassing:
 - (i) Measures to overcome the barriers to technology development and transfer;
 - (ii) Policies and measures to enhance enabling environments;
 - (iii) Capacity-building activities;
 - (iv) Actions to promote cooperative research and development;
 - (v) Measures to address intellectual property rights;
 - (vi) Incentive mechanisms;
 - (vii) Actions to enhance the development and transfer of technologies for adaptation;
 - (viii) The establishment and/or strengthen of existing national and regional technology innovation centres.

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**Annex III
Functions of Technology Innovation Centres**

1. Be coordinating nodal centres to facilitate and enable:
 - (a) The identification of key technological products that have strong sustainable development and climate change benefits along with their projected price and performance targets;
 - (b) The development of such products;
 - (c) The development of markets for these products, in partnership with appropriate public- and private-sector organizations.
2. Promote joint research and development and technology cooperation activities between developing countries and between developed and developing countries, which may include the sharing of intellectual property rights.
3. Promote the deployment, diffusion and transfer of environmentally sound technologies for mitigation and adaptation to developing country Parties.
4. Stimulate capacity-building, in particular for endogenous technologies, including by providing cooperative training and development facilities and training opportunities, supported by public-private partnerships, to develop and deploy renewable energy and energy efficiency technologies and environmentally sound adaptation technologies.
5. Improve access to information on existing and new technologies.
6. Stimulate the establishment of twinning centres agreements between centres in developing and developed country Parties, including South-South-North partnership, as a means of exchanging experiences and promoting joint R&D and technology cooperation activities.

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Annex IV

Possible Elements of a Technology capacity building programme

- (a) Analysis, information, training activities and advice on development and implementation of relevant policies, institutional and regulatory frameworks that promote the development and use of environmentally sound technologies;
- (b) Advice and support for the development and implementation of national technology actions, including for the preparation and implementation of national technology action plans (para. x);
- (c) Advice and technical assistance, to facilitate increased private investment in key greenhouse gas emitting sectors, including advice on the establishment of public–private partnerships for promoting environmentally sound technologies;
- (d) Advice and support for the identification of policy instruments and infrastructure required for the deployment, diffusion and transfer of identified technological options for the implementation of NAMAs and adaptation actions;
- (e) Training, information and workforce development programmes to build capacity, including national technology innovation systems, to ensure that all market actors understand the costs, performance and benefits of climate change technologies.

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**Annex V
Elements of the technology development and transfer [facility][service][hub][Advisory
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Technology Development and Transfer Leveraging [Facility][service]

1. Identify and help facilitate the transfer of low greenhouse gas emitting technologies, particularly renewable energy and energy efficiency technologies.
2. Assist particularly vulnerable developing countries to identify and help facilitate the transfer of appropriate adaptation technologies.
3. Provide an interactive facilitation service for actions identified through low-emission development strategy, TNA, NAMA, and/or national adaptation planning processes.
4. On a voluntary basis, assess potential actions, assist in the development of rigorous projects proposals and assist in matching with the most appropriate form of investment support, particularly with a view to leveraging private-sector funding.
5. Assist in the undertaking of nationally appropriate mitigation actions.

A Climate Technology Hub and Corps

1. To be operated by full-time Hub staff and comprised of and supported by technology experts and practitioners, to undertake the following functions:
 - (a) provide technical assistance and consultation, training, and the development and customization of analytical tools, policies and best practices for conducting country-driven planning to support the dissemination of environmentally sound technologies;
 - (b) promote close collaboration on deployment of technologies for climate mitigation and adaptation between governments, industries, and research communities of developed and developing countries;
 - (c) act as a clearinghouse to promote the broad exchange and diffusion of information on technologies for mitigation and adaptation;
 - (d) seek cooperation and coordination with relevant international technology initiatives and organizations and liaise with other bodies under the Convention, as appropriate.
2. A Climate Technology Corps comprised of and supported by technology experts and practitioners that will undertake the following functions on a country-specific basis:
 - (a) provide advice and support to Parties and their domestic stakeholders for the identification of needs and implementation of responsive technologies, practices and processes, and opportunities for technology cooperation to support mitigation and adaptation actions that further implementation of the Convention;
 - (b) provide training, information and workforce development programmes to build and/or strengthen domestic capacity in developing countries to identify technology options, make technology choices, and operate, maintain, and adapt technologies, including through training of trainers and on-the-job technical and vocational training.

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Advisory Group for Technology Cooperation

1. Advisory Group for Technology Cooperation (AGTC) comprises three facilities under the form of public-private partnership: Regional Hubs for Technology Transfer (RHTT), Sectoral Innovation Centers (SIC) and Executive Coordinating Council (ECC).
 - (a) The RHTTs provide services such as support for actions for mitigation and adaptation and promoting technology transfer and diffusion to developing country Parties.
 - (b) The SICs develop technology roadmaps, initiate R&D and identify best available technologies and best practices in relevant sectors.
 - (c) The ECC coordinates overall activities of the AGTC and communicates their activities to the COP.

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Annex VI

Indicative list of priorities for practical and concrete action on technologies for adaptation

- (a) Strengthen national institutional and personnel capacity of Parties, particular developing country parties, to identify and explore technologies for adaptation including indigenous technologies and further enhance the implementation of outcome the NAPAs and TNAs;
- (b) Strengthen collaboration among and expertise of regional excellence centres in order to provide technological support for adaptation to address regional specific needs;
- (c) Identify and prompt development and transfer of common technologies for adaptation including early warning and observation technologies;
- (d) Providing funding opportunities to research and development activities regarding technologies for adaptation in national level;
- (e) Facilitate the information sharing on technologies for adaptation among parties [through, inter alia, the technology information platform as referred to in paragraph 11];
- (f) Improving the understanding of the role of oceans in climate change and vice versa, and the effects of climate change on marine ecosystems, marine biodiversity and coastal communities, especially in developing countries and small island States, and including marine scientific research and sustained integrated ocean observatory systems.

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**Annex VII
Elements of a national Technology Action Plan**

- (a) A national technology needs assessment;
- (b) Identification of technological options for [specific] [all] [sectors] [greenhouse gases] [priority areas by sector and by technology];
- (c) Identification and removal of barriers to the development, deployment, diffusion and transfer of [win-win technological options such as carbon dioxide capture and storage, clean fossil fuel and non-energy use of fossil fuel technologies][identified technological options];
- (d) Priority areas shall be identified sector by sector and technology by technology. For the most GHG-intensive sectors, nationally appropriate deployment schemes should be developed within the context of TNAs and low-emission development strategies, taking into account specific barriers for technology deployment in these sectors.
- (e) Policy instruments, enabling environments and infrastructure required for the deployment, diffusion and transfer of identified technological options;
- (f) Identification of capacity-building needs;
- (g) Opportunities for joint research and development between developing country Parties, and between developed and developing country Parties to be financed by developed country Parties;
- (h) For the most greenhouse gas intensive sectors, nationally appropriate deployment schemes should be developed, taking into account specific barriers to technology deployment in these sectors;
- (i) Measures that promote wide diffusion of existing and emerging adaptation technologies in similar climates;
- (j) Measures to address intellectual property rights;
- (k) Incentive mechanisms;
- (l) Voluntary partnerships and agreements;
- (m) Actions to enhance the development and transfer of technologies for adaptation;
- (n) The establishment and/or strengthen of existing national and regional technology innovation centres;
- (o) Within the context of the national adaptation and mitigation planning, identification of actions that, in order to be implemented, require international support;
- (p) Periodic review of progress to identify areas where international cooperation should be strengthened.

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Appendix²

Indicative eligible activities for support

Option 1

- (a) Activities eligible for support from the technology mechanism include, inter alia:
- (b) Promotion, facilitation and implementation of activities along the entire technology cycle to enable the accelerated adoption of ESTs;
- (c) Support for research, development, manufacture, commercialization, deployment and diffusion of technologies for adaptation and mitigation in accordance with decision 1/CP.13.
- (d) Adaptation technologies to address the adverse effects of climate change and finance the removal of barriers to the large-scale transfer of technologies for adaptation;
- (e) Technologies to address the adverse impact of response measures, and finance the removal of barriers to the large-scale transfer of technologies for reducing the adverse impact of response measures;
- (f) Capacity-building to manage and generate technological change, enhance absorptive capacity, create enabling conditions in developing countries, inter alia, costs of:
 - i. Research, development and demonstration of new technologies;
 - ii. Enhancing human and institutional capacity;
 - iii. Guarantees on foreign direct investment for environmentally sound technologies.
- (g) Commercialization of new and emerging technologies, inter alia:
 - i. Venture capital, with public investment leveraging private capital markets for emerging technologies;
 - ii. Research, development, and demonstration of new technologies, financed by venture capital and other sources;
 - iii. Joint technology development
- (h) Creation of manufacturing facilities for EST, including low-GHG emission technologies, inter alia, costs of:
 - i. Compulsory licensing, cost associated with patents, designs, and royalties;
 - ii. Conversion of existing manufacturing facilities or of establishing new facilities;
 - iii. Research and development activities, including joint research, development, design, and demonstration;
 - iv. Technology adaptation;
 - v. Retraining and dissemination of know-how;
 - vi. Operation;
 - vii. Monitoring and verification.
- (i) Procurement of low-GHG emission technologies, including software and hardware, inter alia:
 - i. Cost of premature modification or of replacement of existing equipment, as well as the cost of new equipment;
 - ii. Cost of retraining and dissemination of know-how;
 - iii. Cost of technical assistance for the design, installation, and stable operation of the technology;

² Based on the precedent of Decision 22/CP.7, an appendix could be used to locate elements of the text that cannot be agreed or are of a detailed nature that will be considered by Parties after Copenhagen. This approach prevents the loss of text.

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- iv. Cost of fuel and other operational costs;
 - v. Cost of technologies for fuel switching;
 - vi. Cost of monitoring and verification.
- (j) Actions related to developing and transferring win-win environmentally safe and sound technologies and know-how that have a great potential to reduce GHG emissions substantively and simultaneously address the adverse impacts of climate change and the adverse impacts of response measures in developing country Parties.

Option 2³

Activities eligible for support shall be primarily determined by country driven processes and defined through technology action plans, nationally appropriate mitigation actions and national adaptation plans. Indicative activities eligible support, will include but not be limited to:

- Cooperative research, development and demonstration programmes as set out in paragraph 24 (b)
- Deployment and diffusion of environmentally safe and sound technologies and know-how that have a great potential to reduce GHG emissions substantively and simultaneously address the adverse impacts of climate change and the adverse impacts of response measures in developing country Parties;
- Incentives to engage the private sector
- Incremental costs of soft and hard technologies for implementation of adaptation and mitigation actions;
- Climate change observation systems and related information management;
- Purchasing of licenses and other intellectual property rights issues (para. x);
- Technology innovation centres (para. x)
- Actions on deployment of technologies
- Capacity building actions (para. x) including technical training and training for technology action planning in the context of actions on mitigation and adaptation
- Development and implementation of national technology plans for mitigation and adaptation (para. x)
- Support for the enabling environments, in the context of the implementation of national adaptation and mitigation plans (para. x)

Incentive mechanism for technology development and transfer

1. An incentive mechanism for enhanced cooperative action on technology development, deployment, transfer and diffusion for mitigation and adaptation projects and programmes [shall][should] be established in order to stimulate accelerated diffusion and transfer of existing and new environmentally safe and sound technologies to developing country Parties.
2. For the purpose of meeting its commitments for measurable, reportable and verifiable support for environmentally sound technologies and know-how in accordance with Article 4, paragraph 5, of the Convention, a [an Annex II] Party may transfer to, or acquire from, other Parties, Environmentally Sound Technology Rewards (ESTR) resulting from projects and programmes, including sectoral actions, that accelerate the deployment, diffusion or transfer of environmentally sound technologies for mitigation or adaptation in any sector of the economy, provided that the following conditions are met.

³ This option represents suggestions from Parties of what activities should be eligible for financial support.

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- (a) Host Parties establish technology targets or objectives;
- (b) Voluntary participation is approved by each Party involved;
- (c) Any such project or programme results in measurable, reportable and verifiable reductions of greenhouse gas emissions by sources, storage or capture, enhancement of removals by sinks, or increases in climate resilience that is additional to any that would otherwise occur;
- (d) The project or programme contributes to the achievement of the technology targets and objectives of the host Party in receipt of that technology;
- (e) The host Party has allocated ESTRs to the project or programme, proportionate to the volume of emissions reduced or removed or increase in climate resilience;
- (f) Participants in the ESTR mechanism may involve private and public companies;
- (g) The acquisition of ESTRs is recognized as a contribution towards the efforts of Parties to meet their commitments under Article 4, paragraph 5, of the Convention.

Measures regarding IPR

1. Option 1: Technology development, diffusion and transfer [shall] be promoted by operating the intellectual property regime in a balanced manner. Parties shall cooperate to develop and deploy patent sharing and/or intellectual property free renewable energy and energy efficiency technologies. Financial support to buy down the full or partial cost of technologies for developing country Parties, taking into account the ability to pay, should be provided by financial mechanism under the Convention.

Option 2: Any international agreement on intellectual property [shall][should] not be interpreted or implemented in a manner that limits or prevents any Party from taking any measures to address adaptation or mitigation of climate change, in particular the development and transfer of, and access to, technologies. Specific and urgent measures include:

- (a) Creation of a Global Technology Pool for Climate Change;
- (b) Use of the full flexibilities contained in the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement, including compulsory licensing;
- (c) Differential pricing between developed and developing countries;
- (d) Reviewing all existing relevant intellectual property rights regulations in order to provide certain information to remove the barriers and constraints affecting environmentally sound technologies;
- (e) Promoting innovative intellectual property rights sharing arrangements for joint development of environmentally sound technologies;
- (f) Limited/reduced time patents on climate-friendly technologies.

Option 3: All necessary steps required to be immediately taken in all relevant forums to exclude patents and revoke existing patents in [developing countries] [least developed countries][Countries vulnerable to the adverse effects of climate change] on essential/urgent environmentally sound technologies to adapt to and mitigate climate change, including those developed through funding by governments or international agencies and genetic resources and biological resources that are used for adaptation and mitigation of climate change.

Option 4: The Executive Body on Technology (para. 32) should establish a committee or an advisory panel or designate some other body to proactively address patents and related intellectual property issues to ensure both increased innovation and increased access for both mitigation technologies and adaptation technologies.

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Option 5: Consistent with their obligations under international treaties and agreements, Parties may compulsorily license specific technologies for the purpose of mitigation and adaptation to climate change, where it can be demonstrated that those patents and licenses act as a barrier to technology transfer and prevent the deployment or diffusion of that technology within a given country.