

**GREEN
CLIMATE
FUND**

Meeting of the Board
12 – 14 October 2016
Songdo, Incheon, Republic of Korea
Provisional agenda item 8(a)

GCF/B.14/02

30 September 2016

Support for facilitating access to environmentally sound technologies and for collaborative research and development

Summary

This document outlines the potential support for technology development and transfer by the GCF, and possible linkages between the GCF and the Technology Mechanism of the United Nations Framework Convention on Climate Change. It also presents options that could strengthen the current approach of the GCF to technology. The draft decision provides a suggested approach that the GCF could follow in financing technology development and transfer.

I. Guidance from the Conference of the Parties to the United Nations Framework Convention on Climate Change

1. The Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC), by UNFCCC decision 7/CP.20, requested the Board of the GCF to ensure adequate resources for capacity-building and technology transfer, consistent with paragraph 38 of the Governing Instrument for the GCF.
2. By UNFCCC decision 7/CP.21, the COP invited the Board of the GCF to consider ways to provide support, pursuant to the modalities of the GCF, for facilitating access to environmentally sound technologies in developing country Parties, and for undertaking collaborative research and development for enabling developing country Parties to enhance their mitigation and adaptation action.
3. By UNFCCC decision 13/CP.21, the COP recognized the importance of and the need for defined, mutually beneficial and functional linkages between the Technology Mechanism and the Financial Mechanism through its operating entities. It further requested the Technology Executive Committee, the Climate Technology Centre and Network and the operating entities of the Financial Mechanism to continue to consult on and further elaborate, including through an in-session workshop at the forty-fourth sessions of the subsidiary bodies (May 2016), the linkages between the Technology Mechanism and the Financial Mechanism.
4. In order to address the COP guidance, the Board of the GCF, in decision B.12/07, requested the Secretariat to prepare a document for consideration by the Board at its fourteenth meeting that outlines ways to provide support pursuant to the existing modalities of the GCF, for facilitating access to environmentally sound technologies in developing countries, and for undertaking collaborative research and development for enabling developing countries to enhance their mitigation and adaptation action.
5. This document is intended to provide potential options for enhancing support for facilitating access to technology development and transfer through existing GCF modalities and further explores how to strengthen linkages between the GCF and the arms of the Technology Mechanism, including the Technology Executive Committee (TEC), and the operating arm of the Technology Mechanism, the Climate Technology Centre and Network (CTCN). The Board is invited to consider the draft decision presented in annex I.

II. Existing mandates for financing technology

6. The Governing Instrument states that the GCF will finance agreed full and agreed incremental costs for activities to enable and support enhanced action on adaptation, mitigation (including REDD-plus), technology development and transfer (including carbon capture and storage), capacity-building and the preparation of national reports by developing countries,¹ and that the Board shall ensure adequate resources for capacity-building and technology development and transfer, including support for innovative and replicable approaches.²
7. The GCF strategic plan further highlights the importance of financing innovative projects and programmes, inter alia supporting the application and dissemination of cutting-edge climate technologies, which are characterized by the highest levels of mitigation/adaptation ambition, that can be scaled up and/or replicated or lead to fundamental changes in behaviours and/or investment patterns.
8. Article 10, paragraph 5, of the Paris Agreement states that accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change and

¹ Paragraph 35 of the Governing Instrument.

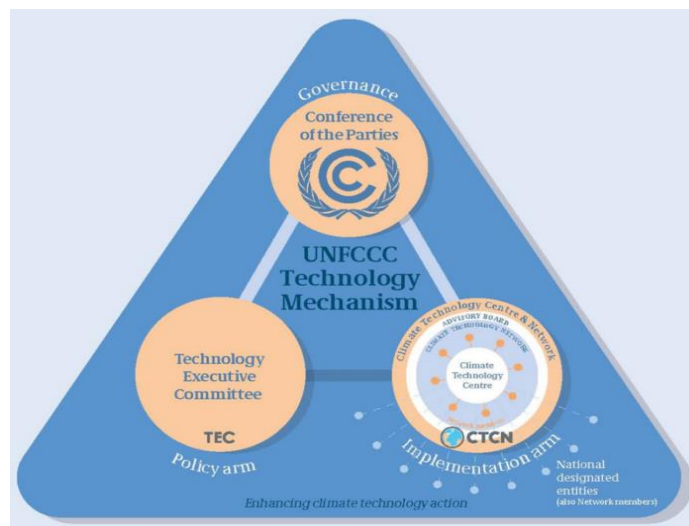
² Paragraph 38 of the Governing Instrument.

promoting economic growth and sustainable development. Such effort shall be, as appropriate, supported, including by the Technology Mechanism and, through financial means, by the Financial Mechanism of the Convention, for collaborative approaches to research and development, and facilitating access to technology, in particular for early stages of the technology cycle, to developing country Parties.

III. Technology Mechanism of the United Nations Framework Convention on Climate Change and financing by other entities of the Financial Mechanism

9. The Technology Mechanism was created at COP 16, and established both the TEC and the CTCN (see figure 1), with the objective of facilitating enhanced action on technology development and transfer. It mandated the TEC and the CTCN, in accordance with their respective functions, to facilitate the effective implementation of the Technology Mechanism, under the guidance of the COP.³

Figure 1: The Technology Mechanism of the United Nations Framework Convention on Climate Change



Source: The United Nations Framework Convention on Climate Change.

10. The TEC, as the policy component of the Technology Mechanism, addresses policy issues related to climate technology development and transfer. By delivering annual key messages and recommendations to the COP, the TEC highlights measures that countries may take to accelerate climate technology development and transfer at the national, regional and international levels through collaboration with relevant stakeholders. Focus areas of the TEC include: climate technology financing; innovation and research, development and demonstration; mitigation; adaptation; Technology Needs Assessments (TNAs); and cross cutting emerging issues⁴.

11. The CTCN, as the operational component of the Technology Mechanism, promotes the accelerated development and transfer of climate technologies for energy efficiency, and low-carbon and climate-resilient development at the request of developing countries. It provides free technical assistance and capacity-building support to developing countries, creates access

³ Further information on the UNFCCC Technology Mechanism is available at http://unfccc.int/ttclear/templates/render_cms_page?TEM_home.

⁴ UNFCCC, "Technology Mechanism – Enhancing Climate Technology Development and Transfer", From: http://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TEM/0b78d652279e411ab5c397e496027f4c/643613b0bd5f4f728ccc8a904c0e2f8e.pdf. Accessed on August 9, 2016

to information and knowledge on climate technology, and scales up international collaboration among climate technology stakeholders.⁵ National Designated Entities (NDEs) serve as national entities for the development and transfer of technologies and act as focal points for interacting with the CTCN regarding requests from developing country Parties about their technology needs.

12. The two operating entities of the Convention that constitute the Financial Mechanism (GCF and Global Environment Facility (GEF)) are tasked with addressing the financing of technology. At COP 13, the GEF was requested to develop a strategic programme to scale up the level of investment for technology transfer,⁶ with the aim of helping developing countries to adopt environmentally sound technologies. Furthermore, COP 14 renamed the programme the Poznan strategic programme on technology transfer and further requested the GEF to consider the long-term implementation of the programme. Following the guidance of the COP, the long-term implementation of the programme was shaped, with the following five roles:

- (a) Support for climate technology centres and a climate technology network;
- (b) Piloting priority technology projects to foster innovation and investments;
- (c) Public–private partnerships for technology transfer;
- (d) TNAs; and
- (e) The GEF as a catalytic supporting institution for technology transfer.⁷

IV. The GCF and technology: Options for further advancing technology development and transfer and facilitating access to technology

13. The GCF has the capacity to support technology development and transfer through its existing mitigation and adaptation windows. The investment criteria encourage financing innovative project and programmes through the application and dissemination of cutting-edge climate technologies, which are characterized by the highest levels of ambition, that can be scaled-up or replicated or lead to fundamental changes in behaviours and/or investment patterns. Among the approved funding proposals to date, the projects submitted to the Board requested financing for early warning systems, funding for small-scale off-grid solar technology and support for resilient water infrastructure.

14. In line with the Governing Instrument, support for facilitating access to environmentally sound technologies in developing country Parties and for undertaking collaborative research and development for enabling developing country Parties to enhance their mitigation and adaptation action could be enhanced by:

- (a) Providing readiness support for countries to identify technology options, building on TNA processes where countries choose to do so;
- (b) Supporting the development of the technology components of project/programme proposals through the Project Preparation Facility (PPF);
- (c) Fostering the transfer of technology through financing of projects and programmes via the funding proposal process;
- (d) Dedicating resources for collaborative research and development for developing countries;

⁵ See <https://www.ctc-n.org/>.

⁶ UNFCCC decision 4/CP.13, paragraph 3.

⁷ See <https://www.thegef.org/content/poznan-strategic-program>.

- (e) Strengthening existing linkages with the thematic bodies, including the Technology Mechanism, through enhanced cooperation;
- (f) Enhancing collaboration with other climate finance delivery channels on technology-related matters as part of the operational framework on complementarity and coherence.

4.1 Support for the identification of technology options through the Readiness and Preparatory Support Programme

15. The GCF Readiness and Preparatory Support Programme (Readiness Programme) provides support for countries to build their capacities to engage with the GCF. The aim of the programme is to provide support for countries to establish the necessary strategies and policies for engagement with the GCF (e.g. country programmes or strategic frameworks), which are built on the existing strategies and plans of the country, such as intended nationally determined contributions (INDCs), national adaptation plans (NAPs), nationally appropriate mitigation actions (NAMAs) and TNAs.

16. The Readiness Programme could support countries to develop technology related country programs and strategic frameworks, including TNAs and technology action plans (TAPs). TNAs are an important policy document to assist countries in identifying their climate technology priorities and needs. The GEF is mandated to provide support for development of TNAs, however, it has limited its TNA support in GEF-6 to SIDS and LDCs. Upon request, the GCF could support countries to undertake TNAs that have not been able to access GEF support.

17. The Readiness Programme could also be used to support the development of technology elements of broader country programmes and strategic frameworks, such as INDCs, NAPs and NAMAs. The CTCN is well placed to assist countries to undertake technology related readiness work, should countries be inclined to seek its support.

4.2 Promoting technology options through the Project Preparation Facility

18. Following the thirteenth meeting of the Board, modalities for the PPF have been approved, which allow for proposals of up to USD 1.5 million for project/programme preparation to be submitted to the GCF by accredited entities. The PPF can support the development of climate technology specific projects/programmes, or climate technology components of broader projects/programmes. PPF requests should be country-driven, whereby the accredited entity identifies the support provider, the technological elements to be financed and the expected results that are consistent with countries strategies.

19. The CTCN could assist accredited entities with project preparation activities for technology elements of projects/programmes, such as pre-feasibility and feasibility studies, project design. The CTCN could also provide technical expert reviews of PPF proposals. Given that many of the PPF proposals received will require expertise on specific industries/technologies, the GCF Secretariat has initiated discussions with the CTCN on how to draw on such expertise from within its Network.

4.3 Fostering technology transfer through financing of innovative projects/programmes

20. The GCF is able to fund a wide spectrum of climate technology projects and programmes submitted to it by accredited entities, in line with GCF investment criteria, strategic impact areas, and the initial result areas.⁸

21. The initial investment framework has a set of activity-specific sub-criteria and indicative assessment factors,⁹ some of which are oriented towards technology development and transfer, in particular the investment criteria related to “impact potential”, “paradigm shift potential” and “efficiency and effectiveness”. The framework allows for the measurement of particular indicators that promote certain technological solutions, such as:

- (a) The degree to which the activity avoids lock-in of long-lived, high-emission infrastructure;
- (b) The expected number of MW of low-emission energy capacity installed, generated and/or rehabilitated;
- (c) The expected increase in the number of small, medium and large low-emission power suppliers (PMF-M 6.0 and related indicator(s)), and installed effective capacity;
- (d) The expected decrease in the energy intensity of buildings, cities, industries and appliances (PMF-M 7.0 and related indicator(s));
- (e) The expected increase in the use of low-carbon transport (PMF-M 8.0 and related indicator(s));
- (f) The expected improvement in the management of land or forest areas contributing to emission reductions (PMF-M 9.0 and related indicator(s));
- (g) The expected improvement in waste management contributing to emission reductions (e.g. the change in the share of waste managed using low-carbon strategies and/or the change in the share of waste that is recovered through recycling and composting);
- (h) Opportunities for targeting innovative solutions, new market segments, developing or adopting new technologies, business models, modal shifts and/or processes;
- (i) A theory of change for replication of the proposed activities in the project/programme in other sectors, institutions, geographical areas or regions, communities or countries; and
- (j) Explanations of how best available technologies and/or best practices, including those of indigenous peoples and local communities, are considered and applied.

22. Projects approved by the Board contain technology components, such as providing early warning weather and climate information systems to vulnerable communities in Malawi, and investing in off-grid household solar technologies in Rwanda and Kenya. In addition, more projects that are currently in the pipeline also address technology development and transfer, which is identified in the funding proposals as part of the Secretariat’s assessment and then submitted to the Board.

4.4 Support for collaborative research and development

23. The transformational potential of research and development is recognized in the Paris Agreement. Additionally, at COP 21, the Board was invited to consider ways to provide support

⁸ Annex IX to decision B.07/04.

⁹ Annex III to decision B.09/05 (annex III to document GCF/B.09/23).

for undertaking collaborative research and development for enabling developing country Parties to enhance their mitigation and adaptation action pursuant to the modalities of the GCF.

24. The benefits of research and development can help countries to address their climate and sustainable development in the longer term. Even though research and development as an activity poses many risks, it is only through this process that new technologies are developed and brought to the market.¹⁰ Financing of projects and programmes aimed at supporting the deployment of climate technologies can in itself promote research and development activities. Funding proposals may be brought to the Fund which identify activities to be undertaken by the accredited entities that spur research and development.

25. GCF could provide financing for research and development activities and help countries tackle the challenges faced in the early stages of the technology development cycle. Some possible activities could include:

- (a) Competitive GCF innovation funding to stimulate local/regional interest and investment through the tailored request for proposals;
- (b) Promoting micro-finance for research and development projects in developing countries;
- (c) Working with governments to strengthen national innovation systems;
- (d) Facilitating the establishment of research center networks on environmentally sound technologies; and
- (e) Catalyzing research partnerships with relevant stakeholders, including collaboration with the private sector.

26. The above-mentioned proposed activities could be further explored by identifying certain criteria that would apply to financing for research and development, such as specific sectors, types of technologies, or expected results. Building on these possible activities and consistent with the modalities of the GCF, the Board may wish to consider the following options for providing such support for research and development:

- (a) Business incubation and financial support for viable, new technologies to be deployed in developing countries; or
- (b) Capacity-building programmes/request for proposals for developing countries to enhance endogenous capacities related to climate technologies.

27. The first option would focus on bringing new, viable technologies to market through business incubation,¹¹ and early and growth stage financing.¹² The Private Sector Facility could potentially play an important role in this area, attracting venture capital and angel investors to deploy their capital in developing countries.

28. The second option would focus on knowledge sharing and learning through various capacity-building activities. It would provide an allocation for agreed activities, as well as modalities for providing such support, including the types of entities that may apply for funding, the minimum results, or expected outcomes. The Board may wish to request the Secretariat to

¹⁰ See the TEC scoping paper titled "Climate technology research, development and demonstration" at http://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TEM_TEC_meetings/a37fc9c64c884412bb228c700306e3ca/9a1b5f20cdcc4817bbaf57a6dcf95f25.pdf.

¹¹ An incubator is designed to assist with the start-up process of nascent business ventures. Incubators are generally of use after the research and development phase has created a successful product or service, and focuses on the development of the business enterprise itself.

¹² Once a business has achieved proof of concept and evidence of profitability, the next phase is early investment for bringing the idea to scale. This tends to be the terrain of high-risk investors, including a mix of angel investment, mezzanine financing and in some cases government grants.

prepare terms of reference for such request for proposals to be presented to the Board for its consideration at future meetings.

4.5 Linkages with the Technology Mechanism and coherence and coordination with other funds

29. The COP requested the Board to initiate a process of collaboration with the Adaptation Committee and the Technology Executive Committee to define linkages with the GCF and those bodies, as appropriate.¹³ The COP agreed to further elaborate on the linkages between the Technology Mechanism and the Financial Mechanism, taking into account the recommendations of the Board of the CGF, at COP 20.¹⁴

30. The Board, through its decision B.13/11, has set important milestones for the Board's relationship with the thematic bodies of the UNFCCC, including the TEC and the CTCN. The Board decided to hold an annual meeting in order to enhance cooperation and coherence of engagement between the GCF and the UNFCCC thematic bodies. Those meetings will be chaired by the Co-Chairs of the GCF Board, be organized by the Secretariat on an annual basis, and be held in conjunction with the COP. The meetings will include the Chairs of the various thematic bodies and the Chairs of the subsidiary bodies and the Presidency of the COP, and will be open to all members of the GCF Board and the thematic bodies.

31. In addition, the Board has adopted decision B.13/12 on complementarity and coherence with other funds, in order to ensure that financing at the project level is complementing the existing efforts of other financial institutions.

32. The Secretariat has proactively engaged with the CTCN to identify concrete options for collaboration such as those detailed in paragraph 16 and 19 above. In particular, coordination could be strengthened between the NDAs and the National designated entities (NDEs), as in some countries those are often same focal points or same institutions. Furthermore, the GCF Secretariat will continue to strengthen its current approach to engaging with the TEC, in accordance with decision B.13/11.

33. Moreover, there is a potential for collaboration with the climate finance delivery channels that support technology development and transfer, such as the GEF. However, in order to ensure complementarity, avoid overlaps and strengthen coordination, there is a need to establish the operational framework referred to in decision B.13/12.

¹³ UNFCCC decision 3/CP.17.

¹⁴ UNFCCC decision 1/CP.18.

Annex I: Draft decision of the Board

The Board, having reviewed document GCF/B.14/02 titled “Support for facilitating access to environmentally sound technologies and for collaborative research and development”,

- (a) Agrees that current GCF modalities enable support for facilitating access to environmentally sound technologies and for collaborative research and development;
 - (b) Encourages national designated authorities and focal points to collaborate with readiness delivery partners and accredited entities in order to submit proposals that will facilitate access to environmental sound technologies and provide support to advance their countries’ respective technology options;
 - (c) Also encourages accredited entities to collaborate with developing country Parties to the United Nations Framework Convention on Climate Change in preparing project and programme concept notes, funding proposals and Project Preparation Facility requests, in order to facilitate access to environmentally sound technologies in such countries, and for undertaking collaborative research and development for enabling developing country Parties to enhance their mitigation and adaptation action;
 - (d) Decides to continue enhancing cooperation and coherence of engagement with the Technology Executive Committee and the Climate Technology Centre and Network, pursuant to decision B.13/11 and in the context of the Fund’s operational framework on complementarity and coherence; and
 - (e) Requests the Secretariat to present a document to the Board identifying concrete options on how GCF can support collaborative research and development in developing countries at B.16, taking into account decisions B.13/11, B.13/12, and in the context of operational framework for complementarity and coherence with climate finance delivery channels.
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