Framework Convention on
Climate Change

Technology Executive Committee

29 September 2022

Twenty-fifth meeting

Bonn, 6–8 September and 9 September 2022 (joint session with the Advisory Board of the Climate Technology Centre and Network)

Report on the 25th meeting of the Technology Executive Committee

I.   Opening of the meeting

1.   The Chair of the TEC[1] for 2022, Ambrosio Yobanolo del Real, opened TEC 25 at 9 a.m. on Tuesday, 6 September 2022.

2.   The table below lists the TEC members who attended TEC 25. Observers present at the meeting are listed in annex I.

TEC members attending TEC 25	
Jorge Castro	Stephen Minas
Kinga Csontos	Monique Motty
Muhammad Farooq	Dietram Oppelt
Mareer Mohamed Husny	Erwin Rose
Suil Kang	Stig Svenningsen (Vice-Chair)
Ladislaus Kyaruzi (virtually)	Kenichi Wada
Sergio La Motta	Ambrosio Yobanolo del Real (Chair)
Hamza Merabet	

II.   Organizational matters

(a)   **Adoption of the agenda**

3.   The Chair presented the draft provisional agenda for the meeting and the TEC adopted the agenda as contained in document TEC/2022/25/1.

(b)   **Organization of work**

4.   The Chair presented, and the TEC took note of, the tentative work schedule for the meeting, including the joint session with the CTCN Advisory Board, as contained in document TEC/2022/25/3.Rev.

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[1] A list of abbreviations and acronyms is available at the end of the document.

III. Update on relevant meetings, events and initiatives

(a) Outcomes of the fifty-sixth sessions of the subsidiary bodies

5. The TEC also took note of the information presented by the secretariat on the outcomes of the fifty-sixth sessions of the subsidiary bodies, held from 6 to 16 June 2022 in Bonn, on matters relating to technology development and transfer and relevant to the work of the TEC.

(b) Outlook for the United Nations Climate Change Conference 2022

6. The TEC further took note of the overview of the preparations for the United Nations Climate Change Conference to be held in Sharm el-Sheikh, Egypt, from 6 to 18 November 2022, including events relevant to the work of the TEC.

(c) Other

7. TEC members were invited to share information on other meetings, events and initiatives in which they participated in 2022 or that will take place in 2023 that may be relevant to the work of the TEC.

8. The TEC took note of the invitation from the Paris Committee on Capacity-building for a representative of the TEC to speak at the 2022 Durban Forum Deep Dive, on building capacities for green skills and climate innovation, on 29 September 2022, and agreed that Sergio La Motta would represent the TEC at the event.

IV. Implementation of the Technology Executive Committee rolling workplan for 2019–2022

(a) Innovation

i. National systems of innovation

9. The TEC welcomed with appreciation the first draft of a compilation of good practices and lessons learned from setting up and implementing national systems of innovation, prepared by the task force on innovation with the support of a consultant, and provided guidance on further work on the compilation, including improving the user-friendliness of the tables and figures, elaborating on the role of NDEs in the context of national systems of innovation and the mobilization of financial resources, and clustering recommendations by theme.

10. The TEC agreed to increase the number of case studies analysed in the compilation from four to six and provided guidance for selecting the additional cases, including on selecting NDEs and sectors of interest (such as industry, logistics, food manufacturing and supply chain, green public procurement and alternatives to sulphur hexafluoride), and on the importance of including a case study from a Party included in Annex I to the Convention.

(b) Implementation

ii. Technology needs assessment

11. The TEC considered a background paper on updating the TNA guidelines prepared by the task force on implementation and provided guidance on further work on the matter, including assessing gaps in the existing TNA guidelines with a focus on national stakeholders' ability to access financial resources for conducting TNAs and interlinkages between the TNA and NDC processes. The TEC agreed to include consideration of how developing countries can be supported in updating their TNAs and implementing their technology action plans and TNA outcomes as part of its rolling workplan for 2023–2027.[2]

iii. Linkages between the Technology Needs Assessment process and Nationally Determined Contribution process

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[2] Developed in accordance with the conclusions of the Subsidiary Body for Implementation at its fifty-sixth session (FCCC/SBI/2022/10, para 98).

12. The TEC also agreed on key messages and recommendations on linkages between the TNA and NDC processes for inclusion in its annual report for 2022 (see annex II).

(c) Enabling environment and capacity-building

i. **Incentivize the private and public sector in the development and transfer of technologies**

13. The TEC considered a draft policy brief containing a recommendation on enhancing enabling environments and addressing various challenges to technology development and transfer, including those related to capacity-building, presented by the task force on enabling environment and capacity-building, and provided guidance for its finalization, including on the role of government authorities and the private sector in enhancing enabling environments.

ii. **Enabling environment to enhance replicability and scalability of technologies for sustainable transport**

14. The TEC considered a revised paper on decarbonization technologies for sustainable road mobility, prepared by the task force on enabling environment and capacity-building with the support of a consultant, and provided guidance for its finalization, including on clarifying the audience for which the policy recommendations therein are intended and institutional capacity needs, and emphasizing the importance of ensuring that food security is not compromised as a result of policy efforts related to advanced biofuels.

15. The TEC also considered and agreed on the concept for a thematic dialogue, entitled "The future of mobility: advancing sustainable mobility to achieve climate and sustainable development goals", to be held at COP 27 in collaboration with the BMW Foundation.

16. The TEC also agreed on key messages and recommendations on technologies for sustainable transport for inclusion in its annual report for 2022 (see annex III).

(d) Support

i. **Experiences, lessons learned and good practices from the GCF and GEF's support for technology**

17. The TEC considered a draft policy brief prepared by the task force on support on experience and lessons learned from the support for climate technologies provided by the operating entities of the Financial Mechanism and requested the task force to finalize the paper after the meeting.

18. The TEC agreed on key messages and recommendations on support for climate technologies for inclusion in its annual report for 2022 (see annex IV).

ii. **Inputs to the Standing Committee on Finance on draft guidance for the operating entities of the Financial Mechanism**

19. The TEC agreed on its inputs to the Standing Committee on Finance for the draft guidance for the operating entities of the Financial Mechanism (see annex V).

V. Gender mainstreaming

20. The TEC considered a concept note prepared by its gender focal points on a policy brief on gender and technology, and agreed to prepare a policy brief on gender-inclusive technology and infrastructure for sustainable road mobility, including information on modelling approaches that consider transport-related behaviour of women and youth.

21. The TEC also agreed on a two-year term of office for its gender focal point and appointed Stephen Minas as gender focal point for 2023–2024 and the TEC Chair, Ambrosio Yobanolo del Real, as interim gender focal point for until TEC 26.

VI. Joint annual report of the Technology Executive Committee and the Climate Technology Centre and Network for 2022

(a) Joint chapter of the joint annual report

22. At their joint session, on Friday, 9 September 2022, the TEC and the CTCN Advisory Board considered the draft joint chapter, prepared by their Chairs and Vice-Chairs, of the joint annual report of the TEC and the CTCN for 2022. The TEC and the CTCN Advisory Board requested their Chairs and Vice-Chairs to finalize the chapter in accordance with the relevant procedure taking into account comments made by members during the session.

(b) Annual report of the Technology Executive Committee for 2022

23. The TEC considered its draft annual report for 2022, noting in particular the lessons learned and challenges encountered, and requested its Chair and Vice-Chair to finalize the report after the meeting, taking into account comments made by members during the meeting, for it to be included in the joint annual report of the TEC and the CTCN for 2022 for consideration at COP 27 and CMA 4.

VII. Development of the rolling workplan of the Technology Executive Committee for 2023–2027

24. To inform the preparation of its rolling workplan for 2023-2027, the TEC took note with appreciation of:

(a) A presentation on chapter 16, on innovation and technology development and transfer, of the contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change delivered by Gabriel Blanco, one of the coordinating lead authors of the chapter.

(b) A progress update on the preparation of the first climate technology progress report by United Nations Environment Programme Copenhagen Climate Centre, followed by discussions about further engagement of the TEC in relation to the 2022 and future reports.

25. The Chair presented the draft rolling workplan of the TEC for 2023–2027, consisting of four activity workstreams and including modalities for its implementation (e.g. means of engagement with the CTCN and other stakeholders, approaches to communications and outreach, gender mainstreaming, and monitoring and evaluation).

26. The TEC requested its Chair and Vice-Chair to finalize the rolling workplan taking into account the inputs provided at the meeting, including during the breakout groups. The rolling workplan will be published on TT:CLEAR.[3]

27. The TEC agreed to continue its consideration at TEC 26 of:

(a) Modalities of work for implementing its rolling workplan for 2023–2027, including task force arrangements;

(b) Different types of knowledge product as TEC outputs, and key messages and recommendations to Parties that may arise from the knowledge products.

VIII. Joint session of the Technology Executive Committee and the Advisory Board of the Climate Technology Centre and Network

28. The TEC and the CTCN Advisory Board took stock of progress in implementing their joint activities for 2022 and considered the elaboration of the first joint work programme under the Technology Mechanism.

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[3] https://unfccc.int/ttclear/tec.

(a) **Matters related to the TEC Technology Executive Committee and the Climate Technology Centre and Network**

29. The TEC and the CTCN Advisory Board took note of the information provided by their Chairs on the progress of work of the bodies since their previous meetings in March 2022 and on the possibility of enhancing coherence and synergy between the policy work of the TEC and the implementation support provided by the CTCN, in particular by developing and operationalizing the joint work programme under the Technology Mechanism and the engagement and systematic feedback processes between the two bodies envisaged therein.

30. Suggestions were provided for strengthening collaboration between the bodies, including by improving coordination and intersessional exchanges through virtual means, enhancing TEC engagement with NDEs, strengthening linkages with the operating entities of the Financial Mechanism and their NDAs and operational focal points, and conducting coordinated communication and outreach efforts. The bodies were invited by observers to consider further incorporating cross-cutting issues, such as gender mainstreaming, youth engagement and indigenous peoples' knowledge, into their individual and joint efforts.

(b) **Implementation of the joint activities of the Technology Executive Committee and the Climate Technology Centre and Network for 2022–2023**

i. **Gender and technology**

31. The TEC and the CTCN Advisory Board took note of the update on the development of the global roster of female experts on climate technologies and female and male gender experts, including on challenges encountered in terms of the infrastructure for hosting the roster and resources to support the work and the consequent postponement of the launch of the roster to the first half of 2023.

ii. **Technology and nationally determined contributions**

32. The TEC and the CTCN Advisory Board considered a draft outline of the updated joint publication on technology and NDCs and provided guidance for developing the updated publication, which is to include information on gender-responsive approaches and indigenous knowledge and practices, relevant information from reports of the Intergovernmental Panel on Climate Change and other reports, methodological challenges and data gaps with regard to including technology-related elements in NDCs and recommendations targeting various stakeholder groups.

iii. **Monitoring and evaluation**

33. The TEC and the CTCN Advisory Board considered the results of the 2022 NDE survey conducted jointly by the bodies as part of implementing their monitoring and evaluation system.

34. The TEC and the CTCN Advisory Board took note of the low response rate to the survey and highlighted the importance of understanding the reasons for it in order to identify new engagement approaches and increase NDE participation in future surveys. Improvements may include amending the framing and scope of the questions, taking a more targeted and coordinated approach to related outreach efforts and making use of regional NDE forums for distributing the survey.

iv. **Joint communications and outreach**

35. The TEC and the CTCN Advisory Board considered a draft plan for joint communication and outreach activities at COP 27, which includes a Technology Mechanism pavilion, a Technology Mechanism side event and promoting the joint work programme under the Technology Mechanism.

36. The TEC and the CTCN Advisory Board highlighted the importance of focusing communication efforts on the joint work programme under the Technology Mechanism and provided suggestions for boosting the impact of such efforts.

37. The TEC and the CTCN Advisory Board took note of the information provided by members regarding other relevant activities taking place at COP 27, including the 2022 Gender Just Climate Solutions Awards.

(c) **Preparation of the Joint work programme of the Technology Mechanism**

38. The Chairs of the TEC and the CTCN Advisory Board presented the draft joint work programme under the Technology Mechanism for 2023–2027. The draft was developed by the joint

task force of the TEC and the CTCN Advisory Board and identifies opportunities for complementary and joint work in priority areas such as national innovation systems, technology road maps, the food-water-energy nexus and digitalization. The joint work programme brings together in one document the TEC rolling workplan for 2023–2027 and the programme of work of the CTCN for 2023–2027 in an attempt to further enhance coherence of work between the bodies and amplify the impact of the work under the Technology Mechanism as a whole.

39. The TEC and the CTCN Advisory Board requested their Chairs and Vice-Chairs to finalize the draft joint work programme taking into account the inputs provided by members during the joint session and the outcomes of the discussions on the TEC rolling workplan and the programme of work of the CTCN for 2023-2027.

IX. Other matters

40. The TEC was invited by its Vice-Chair to consider nominating a new focal point to participate in the Adaptation Committee task force on national adaptation plans. The TEC agreed to continue consultations on this matter intersessionally.

41. The TEC agreed to make all documents of future meetings publicly available.

42. The TEC also agreed to invite representatives of the women and gender constituency to participate in the task forces that will be established for implementing the TEC rolling workplan for 2023–2027.

43. The TEC further agreed to include in the agenda for its future meetings a presentation by the secretariat on key findings, lessons learned and best practices from the process to strengthen observer engagement in the UNFCCC process.

44. In response to an invitation from observers, the TEC Chair and Vice-Chair agreed to consult with the secretariat on options for enhancing virtual participation of observers in future meetings of the TEC.

X. Date and venue of next meeting

45. The TEC took note that TEC 26 is tentatively scheduled to take place from 21 to 23 March 2023 in Songdo, Republic of Korea, back-to-back with the 21st meeting of the CTCN Advisory Board.

XI. Closure of the meeting

46. The TEC Chair summarized the key outcomes of the meeting and closed it at 7.50 p.m. on Friday, 9 September 2022.

Annex I

Observers registered to participate in the 25th meeting of the Technology Executive Committee

Party observers

Michal Novotný (Czechia)
Kaoru Yamaguchi (Japan)
Taeyoon Kim (Republic of Korea)
Abdelaziz AlTunaiji (United Arab Emirates)
Fatima AlHallami (United Arab Emirates)

Observers from United Nations organizations and specialized agencies

Omedi Moses Jura (Vice-Chair, CTCN Advisory Board)
Rose Mwebaza (CTCN Director)
Emerson Resende (GCF)
Patricia Marcos Huidobro (GEF) (virtually)
Sara Trærup (United Nations Environment Programme)

Non-governmental organization observers

Amr Seleem (Youthinkgreen Egypt – constituency of business and industry non-governmental organizations)
Eduardo Noboa (BMW Foundation –constituency of business and industry non-governmental organization)
Ans Irfan (Harvard University – constituency of research and independent organizations)
Cathy Yitong Li (CliMates – women and gender constituency)
Mariam Tamer Fahmy (constituency of youth non-governmental organizations)

Resource persons

Jonn Axsen (independent consultant)
Joyce Miller (independent consultant)
Dian Phylipsen (independent consultant)
Ambuj Sagar (independent consultant)
Gabriel Blanco (resource person)

Annex II

Draft recommendations on linkages between the technology needs assessment and nationally determined contribution processes for consideration by the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

1. Drawing on its paper[1] and policy brief on linkages between the TNA and NDC processes (TEC, 2022), the TEC highlights the following:

(a) There are many linkages between the TNA and NDC processes. For example, comparison of possible steps in designing and implementing NDCs with those in the TNA guidance demonstrates that outputs from one process could serve as inputs to the other. In addition, recent synthesis reports on NDCs[2] and TNAs[3] highlight linkages at several stages of the processes. Moreover, for most of the recent TNAs the NDC has been used as a starting point for the analysis;

(b) TNAs could play a vital role in filling gaps in NDCs, specifically those relating to prioritizing climate technologies and their required enabling framework conditions, and preparing implementation plans for technology transfer and diffusion;

(c) TNAs and TAPs help countries to build capacity for gathering information on climate technologies, assessing what is feasible within their national context and determining how to implement prioritized technology solutions. Making use of this capacity within the NDC process could result in more robust NDCs, which could be particularly beneficial for the LDCs and SIDS, where many recent TNAs have been conducted;

(d) TNAs may be used to add bottom-up technology realism to a country's NDC planning, such as through TAPs that help NDC planners to consider detailed implementation actions that have been checked and brokered with country stakeholders in terms of feasibility and affordability. This could lead to a holistic approach in countries that combines formulation of NDC targets with bottom-up assessment of technology options, including detailed implementation actions. TNAs could thus be updated in support of NDC planning by using the TNA process for organizing stakeholder consultations, barrier analysis and TAP preparation;

(e) The 2022 TEC policy brief on linkages between the TNA and NDC processes identifies tools from the TNA process that developing countries can use in designing and planning NDCs, such as for identifying and overcoming barriers, enabling actions, implementing TAP guidance, and enhancing stakeholder engagement;

(f) With regard to updating the results of previously conducted TNAs in support of NDC planning, countries sought further guidance on how to make better use of the vast knowledge base from TNAs and to keep it up to date for NDC development;

(g) TNAs play a fundamental role in identifying technology needs, including financial and capacity-building needs for technology implementation. The implementation of TNA results, including TAPs, should be supported to facilitate NDC implementation.

2. The TEC recommends that the COP and the CMA encourage Parties to promote linkages between the TNA and NDC processes by:

(a) Using solutions identified in TNAs for climate policies in developing countries, including identified and prioritized soft and hard technology solutions for mitigation and adaptation, which are also relevant for NDCs and national adaptation plans;

(b) Enhancing the contribution of TNAs to NDC preparation through the creation of joint working groups or other information-sharing and coordination arrangements between TNA and NDC country teams and through tools from the TNA process that countries can use in designing and

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[1] TEC document TEC/2021/23/7.
[2] FCCC/PA/CMA/2021/8/Rev.1.
[3] FCCC/SBI/2020/INF.1.

planning NDCs, such as for engaging stakeholders, identifying barriers, enabling actions and preparing TAPs;

(c) Building capacity for gathering knowledge on climate technologies in order to help stakeholders in assessing whether technologies are feasible for their countries and advise them on how to implement prioritized technology solutions. Such capacity within the NDC process could help to enhance the robustness of NDCs, especially those of the LDCs and SIDS;

(d) Incorporating into the NDC process the experience of implementing the adaptation and mitigation technologies identified in TNAs that require overcoming barriers, as well as employing sectoral and multisectoral expert teams for planning, budgeting, financing, and technology operation and maintenance;

(e) Assisting NDEs, as the contact points for TNAs, in enhancing their efforts to coordinate the TNA and NDC teams with a view to exchanging information and enhancing implementation of the results of both processes;

(f) Using TAPs to strengthen national enabling environments for promoting market-based mechanisms, trade and investment, and fostering innovation, so as to reduce costs and accelerate deployment of climate technology solutions, in order to support enhanced NDC ambition and implementation;

(g) Reporting TNA results in national communications and biennial transparency reports as part of the information necessary to track progress in implementing and achieving NDCs, and the information on climate change impacts and adaptation, as appropriate.

Annex III

Draft key messages and recommendations on technologies for sustainable road mobility for consideration by the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

1.   Key insights from TEC work on the development, diffusion and impacts of advanced decarbonization technologies for road transport, which includes plug-in electric vehicles, hydrogen-powered fuel-cell electric vehicles, advanced liquid biofuels, shared mobility modes and full vehicle automation, are as follows:

(a)   Deployment of zero-emission electric vehicles should be aligned with support for low-carbon fuels, namely zero-emission electricity, green or blue hydrogen and/or advanced biofuels that do not threaten food security;

(b)   Plug-in electric vehicles offer the highest technology readiness and low-carbon potential for light-duty vehicles, as well as some medium- and heavy-duty applications, and they may also offer a strong opportunity for two- and three-wheeler applications in some developing countries;

(c)   Hydrogen and advanced biofuels have lower technology readiness and higher adoption barriers than electrification and are not expected to play as large a role in deep decarbonization of road transportation;

(d)   More research and policy efforts are needed to improve the sustainability impacts of zero-emission electric vehicle manufacturing, operation and disposal, including extracting metals for advanced batteries and battery end-of-life reuse or recycling, using oxidation catalysts in fuel cells and green hydrogen production, dramatically increasing carbon capture from blue hydrogen production, and ensuring that biofuels are not a source of deforestation;

(e)   Shared mobility is likely to play a minor role in deep decarbonization and may be more effective through increased use of pooling and coordination to improve public transit services and uptake;

(f)   Full vehicle automation involves a highly uncertain set of technologies that could increase or decrease greenhouse gas emissions owing to efficiency gains being offset by deadheading, more driving and other rebound effects.

2.   The TEC recommends that the COP and the CMA invite Parties and stakeholders seeking to achieve deep decarbonization by accelerating the uptake of technologies for sustainable road mobility to consider, at the regional, national or subnational level, as appropriate:

(a)   Planning a mix of policies that can offer different and complementary benefits to induce further emission reductions while improving or achieving policy cost-effectiveness or efficiency, equity, political acceptability or transformative signal, and addressing technical and social barriers;

(b)   Establishing zero-emission electric vehicle sales standards or requirements that can help to channel research and development and innovation activities towards zero-emission electric vehicle technologies;

(c)   Complementary policies, namely a low-carbon fuel standard, carbon or road pricing, support for charging and fuelling stations, building standards that require charging infrastructure, financial incentives for infrastructure installation and phasing down subsidies and exemptions that benefit fossil fuel powered technologies with their associated emissions;

(d)   Complementary policies that help to reduce demand for transportation or private driving, such as public transportation, urban planning and teleworking;

(e)   Guiding low-carbon innovation with direct research and development support to stimulate domestic innovation activities, including use of public–private partnerships;

(f)   Ensuring institutional capacity, including for understanding potential uptake of technologies for sustainable road mobility and developing research-oriented institutions that track the development of low-carbon technologies, progress in overcoming social and technical barriers, and lessons learned for designing a climate policy mix.

Annex IV

Draft key messages and recommendations on experience and lessons learned from the support for climate technologies provided by the operating entities of the Financial Mechanism for consideration by the Conference of the Parties and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement

1.   Drawing on its work on experience and lessons learned from the support for climate technologies provided by the operating entities of the Financial Mechanism,[1] the TEC highlights the following:

(a)   There is shared consensus across stakeholders regarding the value of technology as a key enabler for addressing climate change;

(b)   The support for climate technologies provided by the operating entities of the Financial Mechanism demonstrates a shared commitment to address the climate emergency, help vulnerable societies to adapt to the adverse impacts of climate change and support developing country Parties in raising and realizing their climate-related ambition;

(c)   Support available from the GEF and the GCF for TNAs and the development of associated TAPs has helped to lay the foundation for effective technology development and transfer;

(d)   The CTCN has provided crucial early-stage technology support and is actively responding to growing demand from countries for its services owing to its strong sectoral expertise, agility, responsiveness and strength in filling a gap by funding projects that support countries with their technology planning processes, development of national policies and standards, and technology road maps, particularly through specialized teams (the Network) and facilitation processes that ensure national ownership of the planning process;

(e)   Irrespective of whether technology is transferred or endogenously developed, having the right people in place with the right set of skills to operate and maintain technology represents an ongoing challenge;

(f)   Consensus is growing regarding the need to promote critical transformational climate technologies to support the development of more ambitious NDCs, and the implementation of current NDCs and to track their level of adoption and progression at a sectoral level towards achieving emission reduction targets and the purpose and long-term goals of the Paris Agreement;

(g)   GEF and GCF implementing agencies have placed more attention on gender mainstreaming; its treatment came through more convincingly in adaptation projects than in those aimed at mitigation. Increased traction in this regard relates to further enhancing understanding on the part of project designers and implementers of how gendered technology development and transfer projects could drive transformative impact;

(h)   The potential of private sector actors to support innovation and technology development and transfer has not yet been fully tapped;

(i)   Successful implementation and scaling up of technology initiatives depends on absorptive capacity and market size;

(j)   There is a need to understand the role of national policy in enabling and hindering technology development and transfer and prioritizing the creation of enabling environments. Prospects for technology adoption and replication can be heightened through influence in the policy space leading to a correction of market conditions (e.g. alignment incentives).

2.   In order to enhance the relevance and impact of the support for technology provided by the GCF and the GEF, it is recommended that:

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[1]   See https://unfccc.int/ttclear/tec/support.html.

(a)   Developing country Parties use the CTCN and UNFCCC mechanisms to leverage technical assistance and to support their TNAs, as such mechanisms ensure that there is strong alignment with NDC commitments;

(b)   A balanced focus on equipment and soft aspects of climate technologies (i.e. techniques, practical knowledge and skills, workforce training and development) be pursued under the Technology Mechanism, irrespective of whether technology is transferred or endogenously developed;

(c)   The secretariats of the CTCN and operating entities of the Financial Mechanism collaborate in identifying ways to further streamline the process for facilitating linkages and readiness support for sectoral transformation through climate technologies (e.g. through adopting a more programmatic approach), thereby strengthening proposals and support for building developing country Parties' capacity for undertaking technology-oriented projects;

(d)   NDEs take the lead in coordinating national technology efforts and in engaging with the focal points of the operating entities of the Financial Mechanism in order to overcome gaps in national-level coordination;

(e)   The secretariats of the CTCN and the operating entities of the Financial Mechanism encourage coordination among relevant focal points for implementing climate technology related projects.

3.   In order to accelerate technology-driven progress in limiting global warming and enhancing resilience, it is recommended that:

(a)   Countries include considerations related to transformative technologies in priority sectors in their NDCs in pursuing mitigation objectives, improve systematic and harmonized reporting on the level of technology adoption towards achieving the purpose and long-term goals of the Paris Agreement, and strengthen their work on climate-resilient development pathways in pursuing adaptation objectives;

(b)   International development entities involved in promoting technology development and transfer strengthen their promotion of transformative technologies;

(c)   The operating entities of the Financial Mechanism and the CTCN, as well as other national and international climate funds, in line with their respective mandates, consider how transformative technologies in priority sectors and measurement of their adoption support the long-term goals of the Paris Agreement.

4.   In order to deepen understanding of the specific ways in which gender mainstreaming and engaging stakeholders – including youth and indigenous peoples – can add value in supporting technology development and transfer, it is recommended that:

(a)   The operating entities of the Financial Mechanism and the CTCN encourage their project implementers to pursue approaches that involve engagement of stakeholders in key steps of project design and implementation and help to strengthen national and local ownership of technology interventions;

(b)   Stakeholders enhance reporting on experience, good practices, and specific measures and strategies that have meaningfully increased both women's and men's power to participate in climate technology action;

(c)   The operating entities of the Financial Mechanism and the CTCN, through their project design and reporting protocols (e.g. disaggregated data collection on gender in governance structures, stakeholder participation, and documentation of relevant good practices and lessons learned), continue sharing best practices and building awareness among delivery partners of the positive contributions of gender mainstreaming and stakeholder engagement to accelerating technology development and transfer;

(d)   The CTCN and the operating entities of the Financial Mechanism promote gender balance in the technical teams that implement technology projects, in line with fostering women's and girls' full participation and leadership in science, technology, research and development, and share experience of gender budgeting;

(e)   The TEC and the CTCN and the operational entities of the Financial Mechanism raise awareness of the financial and technical support available for gender integration in climate technology policies, plans, strategies and action, as appropriate, including good practices for facilitating access to climate finance for grass-roots women's organizations and indigenous peoples and local communities for technology projects.

5.   In order to enhance the likelihood of successful implementation, replication and scaling up of initiatives with technology components, it is recommended that:

(a)   A programmatic approach be proposed under the Technology Mechanism for scaling up technology initiatives that focuses on the adoption of policies and standards, on the basis of an analysis of the experience and good practices of the CTCN;

(b)   The CTCN pursue partnerships through the GCF Project Preparation Facility and explore opportunities to support GEF projects;

(c)   National designated authorities for the GCF and NDEs for the CTCN enhance collaboration on developing programmatic approaches to scaling up technology actions;

(d)   Stakeholders consider programmatic approaches whereby technologies that require little adaptation for implementation in additional settings can be deployed, replicated and used more systematically to spread transformative climate technologies in key sectors.

Annex V

Draft inputs for the draft guidance for the operating entities of the Financial Mechanism

Guidelines on providing inputs:

- "Sub-element": Describe the specific area of the proposed input (e.g. policies relating to access, gender, environmental and social safeguards, etc.);
- "Proposed inputs": Propose the inputs in draft decision text format;
- "To be considered by": Choose whether the proposed inputs need to be considered jointly by the COP and the CMA or specifically by the CMA;
- "Rationale for inputs": Provide the reason for proposing the inputs so that the rationale can be clearly understood;
- "Source of information/reference": Refer to annual report(s) of the GEF or the GCF or decision(s) of the GEF Council or GCF Board;
- Some examples from previous years can be found in the annexes to the following documents:
  - https://unfccc.int/sites/default/files/resource/SCF19_draft%20guidance.pdf#page=3
  - https://unfccc.int/sites/default/files/draft_scf_bn_draft_guidance_scf16_13sept_1700.pdf#page=5
  - https://unfccc.int/sites/default/files/draft_scf_bn_draft_guidance_28sept.pdf#page=4

Annotated inputs for the draft guidance for the Green Climate Fund

Element	Sub-element	Proposed inputs	To be considered by: (1) The COP and the CMA jointly (2) The CMA specifically	Rationale for inputs	Source of information/reference
Programme priorities	Linkages between the Technology Mechanism and the Financial Mechanism	Encourages the GCF to further strengthen linkages with the Technology Mechanism by considering input of the Technology Mechanism bodies in relation to the second GCF replenishment process	(1)	By decision 14/CP.22, paragraph 9, the COP invited the operating entities of the Financial Mechanism to provide information on their actions in strengthening the linkages between the Technology Mechanism and the Financial Mechanism in their annual reports to the COP. By GCF decision B.14/02, paragraph (d), the GCF Board requested the GCF secretariat to provide recommendations on further steps for enhancing cooperation and coherence for consideration by the Board, in the context of the GCF operational framework on complementarity and coherence and the annual event with the thematic bodies of the UNFCCC. By decision 14/CP.24, paragraph 7, the COP invited the CTCN to consult with the GCF	GCF report to COP 27 (FCCC/CP/2022/4), paragraph 39
		Encourages the GCF to continue to actively participate in strengthening the linkages between the Technology Mechanism and the Financial Mechanism, including through the CTCN Partnership and Liaison Office	(1)		

Element	Sub-element	Proposed inputs	To be considered by: *(1) The COP and the CMA jointly* *(2) The CMA specifically*	Rationale for inputs	Source of information/reference
				and the GEF to identify ways to enhance information-sharing among NDEs, NDAs and GEF operational focal points. Document FCCC/CP/2020/5, annex, paragraph 141, underlines the importance of coordination between NDEs and NDAs to guarantee continuation from readiness support to funding proposal development, noting its fundamental importance for including technology priorities in GCF country programmes (programming priorities of developing countries submitted to the GCF), NDCs and GCF entity work programmes (programming priorities of accredited entities submitted to the GCF).	
Programme priorities	Support for technology through the GCF Readiness and Preparatory Support Programme	Encourages the GCF to explore ways to improve collaboration with the CTCN on the readiness portfolio	(1)	By GCF decision B.18/03, paragraph (d), the GCF Board requested the GCF secretariat to continue collaborating with the TEC and the CTCN in implementing support for technology. Beyond capacity-building for technology through existing readiness activities, the GCF is strengthening its support by, inter alia, enhancing and introducing innovative features in its Readiness Programme (e.g. programmatic, multi-country/regional and multiple-year strategic readiness approaches) as well as financing proposals that contain support for technology that provides a window for enhancing coordination between the NDA and NDEs.	GCF report to COP 27, paragraphs 38-40
Programme priorities	Support for technology, including collaborative research and development	Encourages the GCF to further develop the work on the request for proposals for establishing technology incubators and accelerators in developing countries, taking into account the interest of the TEC in the Technology Mechanism continuing to contribute to this work	(1)	Despite the references included in the GCF report to COP 27 (paragraph below), the matter was not included in the agenda for the GCF Board's last meeting in 2022. By GCF decision B.18/03, paragraph (a), the GCF Board took note of options presented by	GCF report to COP 27, paragraphs 88–91

Element	Sub-element	Proposed inputs	To be considered by: (1) The COP and the CMA jointly (2) The CMA specifically	Rationale for inputs	Source of information/reference
				the GCF secretariat on support for technology collaborative research, development and demonstration, in respect of two approaches: climate technology innovation systems; and targeted climate technology research, development and demonstration support. By the same decision, paragraph (c), the Board subsequently requested the secretariat to develop the terms of reference for a request for proposals to support climate technology incubators and accelerators.	
Programme priorities	Support for technology, including collaborative research and development	Encourages the GCF to engage with NDAs and accredited entities to advance the private sector project pipeline with a focus on concept notes and proposals that cover support for climate technology incubators and accelerators, among others	(1)	By GCF decision B.18/03, paragraph (a), the GCF Board took note of options presented by the GCF secretariat on support for technology collaborative research, development and demonstration, in respect of two approaches: climate technology innovation systems; and targeted climate technology research, development and demonstration support. By the same decision, paragraph (c), the Board subsequently requested the secretariat to develop the terms of reference for a request for proposals to support climate technology incubators and accelerators.	GCF report to COP 27, paragraph 91

Annotated inputs for the draft guidance for the Global Environment Facility

Element	Sub-element	Proposed inputs	*To be considered by:* *(1) The COP and the CMA jointly* *(2) The CMA specifically*	Rationale for inputs	Source of information/reference
Programme priorities	Technology transfer	Encourages the GEF to inform its focal points about the potential for technical assistance from the CTCN in formulating technology-related project proposals	(1)	The transfer of low-carbon and climate-resilient technology has been a key cross-cutting theme for the GEF since its establishment. The GEF-7 climate change focal area strategy was specifically designed to support developing countries in making transformational shifts towards low-emission and climate-resilient development pathways. To achieve this goal, the strategy emphasizes three fundamental objectives, one of which is to promote innovation and technology transfer for sustainable energy breakthroughs. In GEF-7, partnership with the private sector was a key priority in promoting technology transfer and deployment.	GEF report to COP 27 (FCCC/CP/2022/5), paragraph 250
Programme priorities	Technology needs assessment	Encourages the GEF to inform its focal points about funding available for TNAs and reporting	(1)	Under the GEF-7 Programming Directions, support for TNAs is possible using national allocations through the system for the transparent allocation of resources. The least developed countries and small island developing States continue to be eligible to draw on the Country Coordinating Mechanisms of the Global Fund. Going forward, and following COP guidance, the GEF-8 Programming Directions are explicit in stating that support for TNAs is available for those least developed countries and small island developing States which have not yet undertaken a TNA and wish to do so. Other countries will continue to be able to use their national allocations through the	GEF report to COP 27, paragraphs 264–273

Element	Sub-element	Proposed inputs	*To be considered by:* *(1) The COP and the CMA jointly* *(2) The CMA specifically*	Rationale for inputs	Source of information/reference
				system for the transparent allocation of resources.	
	Technology needs assessment	Encourages the GEF to consult with the TEC and the CTCN regarding potential synergies between the joint work programme under the Technology Mechanism and the GEF-8 strategic programme	(1)		GEF report to COP 25, paragraphs 200–201 GEF report to COP 26, paragraphs 215–220 GEF report to COP 27 paragraphs 264–273

Abbreviations and acronyms

CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
COP	Conference of the Parties
CTCN	Climate Technology Centre and Network
GCF	Green Climate Fund
GEF	Global Environment Facility
GEF-7	seventh replenishment of the Global Environment Facility Trust Fund
GEF-8	eighth replenishment of the Global Environment Facility Trust Fund
NDA	national designated authority
NDC	nationally determined contribution
NDE	national designated entity
TEC	Technology Executive Committee
TNA	technology needs assessment