**Technology Executive Committee**

09 March 2023

**Twenty-sixth meeting**

**21–23 March and 24 March 2023 (TEC-CTCN Joint session)**

# Proposed modalities for implementing the Joint Work Programme of the Technology Mechanism for 2023–2027

**Background note**

## I.  Introduction

### A.  Background

1.      The Technology Mechanism comprises the policy arm, Technology Executive Committee (TEC) and the implementation arm, Climate Technology Centre and Network (CTCN), and was established by Parties through decision 1/CP.16 to facilitate enhanced action on technology development and transfer to support mitigation and adaptation. The TEC and CTCN have undertaken their mandated functions through their respective rolling workplans and Programmes of Work. In addition, the CTCN implements annual operating plans, which provide detail on the specific activities to be carried out annually, in line with its Programme of Work and the resources available to support its operations. Parties have mandated the TEC and CTCN to ensure coherence and synergy of their work.

2.      In response to Parties' invitation to the TEC and the CTCN (through decision 9/CP.26, paragraph 2 and decision 15/CMA.3, paragraph 2) to strengthen their collaboration, *inter alia*, by exploring the preparation of a joint programme, the two bodies agreed to a joint work programme of the UNFCCC Technology Mechanism for 2023–2027[1] in September 2022.

3.      The joint work programme was officially launched with the presence of high-level representatives of Parties, UNFCCC, and UNEP at COP27 in Sharm el-Sheikh, Egypt.[2] At COP27, the COP and CMA further welcomed the current joint activities of the TEC and CTCN, as well as the Joint Work Programme of the Technology Mechanism for 2023–2027 in the Sharm el-Sheikh Implementation Plan.[3]

4.      The joint work programme lays out the Technology Mechanism's strategy for the five-year period of 2023–2027. It is composed of the joint activities and common areas of work of the TEC and the CTCN, the rolling workplan of the TEC, and the Programme of Work of the CTCN (PoW). It brings together, for the first time, the long-term strategies of the TEC and the CTCN and defines areas of focus for the mechanism as a whole, in order to elevate the performance of the Technology Mechanism and increase its impact.

5.      The joint work programme outlines the following understanding (as per paragraph 29 of the document):

(a)      **Joint activities**: activities to be carried out jointly, where both bodies agree on the scope and modalities and jointly lead on the work;

(b)      **Common areas of work**: distinct, yet complementary, activities carried out by each body (as per their respective work plan and programme of work), on the same or similar topic and areas.

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[1]   Joint Work Programme of the UNFCCC Technology Mechanism for 2023–2027.
[2]   https://unfccc.int/ttclear/events/2022/2022_event07.
[3]   https://unfccc.int/cop27/auv.

### B.    Scope of the note

6.    This note elaborates on current modalities that the TEC and the CTCN have used to date to implement the joint activities and to enhance the synergy of their work. The note also proposes modalities to implement new joint activities and collaborate on common areas of work as outlined in the joint work programme. These are:

(a)    New joint activities: technology roadmaps and digitalization;

(b)    Common areas of work: National systems of innovation (NSI); water-energy-food systems; energy systems; buildings and resilient infrastructure; business and industry, and Technology Needs Assessments (TNA).

7.    Continuing joint activities carried over from 2022 and currently being undertaken by the TEC and CTCN, are not within the scope of this note, since the modalities for implementing these joint activities have already been established: the work has been led by a joint task force comprising members of the TEC and CTCN Advisory Board. These activities include: 1) the development of the global rosters of experts in the area of climate technology and experts on gender and climate change; and 2) an update of the joint publication on technology and nationally determined contributions (NDCs).

### C.    Possible action by the Technology Executive Committee and CTCN Advisory Board

8.    The TEC and the CTCN Advisory Board will be invited to consider the information presented in the note and provide guidance on the modalities for future work of the TEC and CTCN with regard to new joint activities and common areas of work under the joint work programme.

## II.    Current modalities for enhancing coherence and synergy between the work of TEC and CTCN

9.    To ensure enhanced coherence and synergy under the Technology Mechanism, the TEC and CTCN have already established several modalities for implementing joint activities and collaboration, namely:

(a)    **Joint sessions** of the TEC and the CTCN Advisory Board: Joint sessions organised as part of the bi-annual TEC and CTCN Advisory Board meetings have provided valuable venues for the exchange of experiences, knowledge and feedback arising from the work of each body;

(b)    **Joint communication and outreach efforts**: The TEC and CTCN have undertaken joint communication and outreach activities to ensure coherent communication under the Technology Mechanism and Technology Framework. Examples include joint Technology Mechanism events organised during the SBs and COPs, such as the latest event to launch the joint work programme in Sharm el-Sheikh, which provide valuable opportunities for the TEC and the CTCN to speak with one voice as the Technology Mechanism;

(c)    **Participation in each other's events**: TEC members have been invited to moderate and present the findings of their work during the regional forums for national designated entities (NDEs) organised by the CTCN as part of the UNFCCC regional climate weeks. The CTCN has also facilitated the participation of stakeholders in TEC events held during the regional climate weeks;

(d)    **Coherent approach to monitoring and evaluation system**: In 2019, the TEC and the CTCN jointly implemented a consistent and robust monitoring and evaluation system to report on their respective activities and their contributions to the transformational changes envisioned in the Paris Agreement. The system includes a biennial NDE survey which is carried out jointly to track the impacts of activities under the Technology Mechanism;

(e)    **Establishment of a joint task force**: The joint taskforce, comprising interested TEC and CTCN Advisory Board members, was established in 2021 to lead and provide guidance on the joint activities of the TEC and CTCN, including:

(i)　　Joint work on technology and NDCs which provided a comprehensive analysis and synthesis of information on technology needs and challenges; linkages between policy and implementation; and linkages between NDCs and national adaptation plans (NAPs). The joint work resulted in the first Technology Mechanism publication[4] and the first joint key messages and recommendations to the CMA on this topic;[5]

(ii)　　The preparation of an updated publication of technology and NDC to be published in 2023 (see document TEC/2023/26/16); and

(iii)　　The development of the global roster of experts in the areas of climate technology and gender and climate change;

(f)　　**Exchange of technical data and information**: At the technical level, the TEC and the CTCN have worked closely through the exchange of technical data and information across different areas of work of the TEC and the CTCN to ensure synergy and overall coherence of the work of the Technology Mechanism. For example, CTCN technical assistance data has been used by the TEC to analyse enablers and barriers in technology development and transfer, while TEC policy briefs have been used by countries to identify priorities and enable them to develop requests for technical assistance from the CTCN;

(g)　　**Stakeholder engagement:** On several occasions, the TEC and CTCN have jointly engaged with potential partners and stakeholders, including the private sector, civil society and academia, to promote the development and deployment of sustainable and effective technology solutions;

(h)　　**Gender mainstreaming**: The TEC and the CTCN, in collaboration with the gender team of the UNFCCC secretariat, supported the integration of gender considerations into the UNFCCC process, including by disseminating briefs on gender integration under the UNFCCC process, raising awareness of gender equality issues on International Women's Day and organizing a meeting with other UNFCCC constituted bodies to share experience on gender-mainstreaming;

(i)　　**Retreat of TEC and CTCN secretariats**: the secretariats supporting the work of the TEC and CTCN organised annual joint retreats to discuss lessons learned from implementation of various joint activities and ways to improve coordination and communication among different secretariat staff supporting various work of the two bodies.

## III.　Proposed modalities to implement the joint work programme

10.　　When implementing the joint work programme, the TEC and the CTCN will ensure the mainstreaming and progression of systematic feedback on an ongoing basis and continue to improve upon the good practices already established, as elaborated above in section II.

11.　　The TEC and CTCN will also work together to socialise the new joint work programme, including on the new joint activities and common areas of work, by conducting joint webinars for technology stakeholders. Further, the TEC and the CTCN will endeavour to jointly plan and implement various high-level and regional events, knowledge-sharing activities on available technologies and highlighting key thematic issues. Both bodies will also strive to speak with one voice as the Technology Mechanism, and submit joint submissions, as appropriate.

12.　　The proposed modalities for new joint activities and common areas of work are presented in Box 1 and Box 2, respectively.

### A.　New joint activities

#### 1.　Technology roadmaps

13.　　As elaborated in the joint work programme, the joint activity on technology roadmaps (TRMs) will start with the preparation of a background paper on TRMs building on, inter alia, the previous

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4　https://unfccc.int/ttclear/tec/techandndc.html.
5　https://unfccc.int/documents/306935.

work of the TEC on roadmaps, the CTCN's experience to date implementing technical assistance projects, and publications from international organisations on TRMs at the global scale.

14.     A separate concept note elaborating the potential scope of this background paper is available in meeting document TEC/2023/26/18[6] and will be considered at the next TEC-CTCN joint session in March 2023 under item 5.2.2.1 of the draft provisional agenda.

15.     In a brainstorming discussion held among the TEC and CTCN Advisory Board in February 2022, members expressed the **following ideas** for consideration when undertaking joint work on technology roadmaps:

        (a)     Jointly develop a guideline, particularly targeted to developing countries, on how to prepare a technology road map. The guideline may be used as a means to raise awareness among countries; include information on good practices; and could seek engagement and inputs of NDEs in its development process. Work on this could be launched at COP28;

        (b)     Follow a step-by-step process, starting with the preparation of a guideline for developing a technology road map, and may be expanded into sectoral and eventually global road maps;

        (c)     Be mindful that existing global roadmaps (such as those developed by IEA) may be missing components of NDCs and NAPs;

        (d)     Take into account lessons learned from CTCN technical assistance that developed TRMs on circular economies in a number of Latin American countries and other TRM work in Africa.

## 2.     Digitalization

16.     The joint work program indicates that both bodies plan to engage in digitalization activities as part of their respective work plans. The TEC will explore the role of ***artificial intelligence*** (AI) and ***applied machine learning*** as enablers of climate solutions. Outputs under this activity are expected to be delivered in 2023 and include introductory presentations and/or events and workshops to raise awareness of the role of AI and applied machine learning as technologies that can be used to address specific climate challenge.

17.     The CTCN PoW identifies digitalization as an enabler that can accelerate and amplify the impact of system transformations and bring more transparency to climate governance and decision-making. The PoW will explore how digital technologies can bring significant reductions in the global carbon footprint, specifically through promoting access to digital public goods.

18.     As a joint activity, the joint work programme further notes that the TEC and CTCN could explore the role of distributed ledgers and green technology databases as supporting tools and resources for innovation cooperation. This specific joint activity will be considered under item 5.2.2.2 of the draft provisional agenda for TEC-CTCN joint session.

19.     In a brainstorming discussion held among TEC and CTCN AB members in February 2022, members expressed the **following ideas** for consideration when undertaking joint work on digitalization:

        (a)     Consider mainstreaming digitalization in other areas of work of Technology Mechanism;

        (b)     Optimize engagement of youth in this specific activity; and

        (c)     Take into account lessons learned from CTCN capacity building activity on blockchain technology and technical assistance request on digitalization.

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Box 1
**Proposed modalities for new joint activities**

The following modalities are proposed to implement the above joint activities:

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(a)    Explore the interest of the incoming COP presidencies in working together on the technology road map and/or digitalization and to showcase the work at COP28;

(b)    Explore collaboration with relevant organisations and initiatives relevant to the topics above, particularly working with other UNFCCC bodies as well as other international organizations and private sector partners.  To facilitate this, the TEC and CTCN will develop a strategy plan that outlines the work for each joint activity and establish partnerships with major international organizations as well as the private sector;

(c)    Jointly launch a call for expressions of interest to solicit potential partnerships;

(d)    Establish a joint task force to lead each or both joint activity(ies). The membership of the task force(s) is open to interested TEC and CTCN Advisory Board, as well as representation of observer organizations. The joint taskforce(s) will propose the scope of work, outputs, timelines of the deliverables, arrangements to conduct the work inter-sessionally, tracking progress of work, and be guided and finalized by the TEC and CTCN Advisory Board;

(e)    Consider the development of joint indicators to measure progress on joint activities and collaboration moving forward;

(f)    Each body will seek to allocate staff resource(s) to support the joint activities, including raising necessary financial resources.

## B.    Common areas of work

### 1.    National systems of innovation

20.    The TEC's work on national systems of innovation (NSI) envisages the finalisation of a compilation of good practices and lessons learned from the setup and implementation of NSIs at TEC26 in 2023; the dissemination of NSI findings through regional events in 2024; and the development of a knowledge product in 2025. In the following years, the TEC intends to carry out a mapping of country needs for the set-up and implementation of NSIs. Furthermore, the TEC will explore ways, in collaboration with the operating entities of the Financial Mechanism and the Adaptation Fund, to support readiness and capacity building processes to facilitate access to funding for innovation.

21.    As one of the enablers through which the CTCN catalyses progress and achieves impact in its areas of work, the CTCN will employ approaches that include support to policies, institutional and regulatory frameworks and planning processes to support the development and strengthening of NSIs  The CTCN PoW also highlights the importance of engagement and collaboration with academic and research institutions that are key actors in strengthening NSIs.

### 2.    Water-Energy-Food systems

22.    The TEC work on Water-Energy-Food systems envisages a thematic dialogue to be held in collaboration with the FAO in conjunction with the SB58 June session in Bonn. The dialogue aims to identify knowledge gaps regarding the nexus of agriculture, water, food security, energy and climate, and plans to identify relevant adaptation technologies (including indigenous), innovations, and digital solutions that can strengthen adaptation planning (NAP) and NDCs in agriculture. The concept note of the dialogue is presented in document TEC/2023/26/11 available at TEC26 meeting page. In 2024, the TEC plans to develop a knowledge product on a specific topic derived from the outcomes of the dialogue.

23.    The CTCN Programme of Work highlights the "Water-Energy-Food nexus" as one of five areas where countries seek system-wide transformations (see Figure 11 of the CTCN Programme of Work). The CTCN's efforts in this area will focus on supporting climate smart agriculture, post-harvest management, land management and sustainable irrigation and food security.

### 3.    Energy systems

24.    Energy-related considerations have been integrated across different areas of work of the TEC's new workplan. In 2023, the TEC plans to analyse country needs for RD&D for high-impact

emission-reduction technologies, considering the need to ensure long-term environmentally sustainable supplies of energy. This work will be conducted in collaboration with Future Clean Architects through a joint survey on RD&D needs. The concept and draft of the survey is presented in document TEC/2023/26/08 available at TEC26 meeting page.

25.    Many developing countries are impeded in their efforts to a clean energy transition due to lack of a supportive policy and regulatory environment to propel rapid energy transitions. By working to improve such enabling environments supported by digital technologies, as well as promoting systemic innovation; and providing guidance on appropriate financing schemes, the CTCN, through provision of technical assistance and other efforts, will contribute toward enabling countries to activate a sustainable energy sector that integrates , renewable energy solutions, smart grids including green hydrogen and energy efficiency in their energy mix.

## 4.    Buildings and resilient infrastructure

26.    In 2024 the TEC plans to explore the use of low carbon materials in buildings, green building codes and green zoning systems that promote energy efficiency and resilience. An event (thematic dialogue or workshop) is planned to be held in 2024 on green building codes and green public procurement.

27.    In its new programme of work, the CTCN will focus on supporting efficient and resilient buildings and infrastructure through the development of enabling environments (including regulations and efficiency standards), sectoral roadmaps for urban and rural planning, smart cities and buildings, knowledge sharing and training, and planning for deployment of green infrastructure.

## 5.    Business and Industry

28.    In the area of transformative industry, the TEC will dig deeper into hard-to-abate industrial sectors, in particular the steel and cement industries, to promote low and near zero emission production and products. In 2023 the TEC in collaboration with UNIDO plans to initial mapping of existing initiatives to identify areas where the TEC can add value. The concept note of this mapping is presented in document TEC/2023/26/12 available at TEC26 meeting page.

29.    The CTCN plans to support decarbonization initiatives for carbon intensive business and industry, optimizing material flows and reducing life-cycle emissions, costs, and policies. It would also support implementation of innovative GHG neutral technologies and technology upgradation in the small and medium industrial sector. It would continue to support enhancing circularity in economy through material and waste recycling. In part, this will be achieved through active partnerships facilitated by the CTCN to provide matchmaking services (between the scientific community, private sector, cooperatives, and financial institutions), and through regional fora to assist beneficiaries with new and innovative technology solutions and business models.  Circular economy efforts will continue with technical assistance in South Africa, for example.

## 6.    Technology needs assessment

30.    In 2023, building on its recent work on linkages between the TNA and NDC processes, the TEC will carry out an initial gap assessment of existing guidance on TNAs, in addition to an analysis of success stories of implemented TAPs, as the basis for initiating an update of the TEC's TNA guidance. The concept note of updating the guidance is presented in document TEC/2023/26/09 available at TEC26 meeting page. In 2024, the TEC will develop a knowledge product on how developing countries can be supported in updating their TNAs and implementing their TAPs.

31.    The CTCN has supported countries in undertaking their TNAs to strengthen their abilities to analyse and prioritize climate technologies, as well as enhancing the implementation of their results. As NDCs are updated, the CTCN anticipates a greater need to support countries in identifying what technologies are best suited to implement the priorities defined in NDCs. The CTCN will continue to support countries in prioritising climate technologies through TNAs and TAPs and its alignment with the NDCs taking into account the TEC's work. It would also facilitate implementation of the TNAs and the TAPs through developing linkages with the bodies under the finance mechanism.

Box 2

**Proposed modalities for common areas of work**

The following are general modalities that can be applied to implement the above common areas of work:

(a)     Every activity will be implemented with the engagement of the other body, to the greatest extent possible. Engagement between the two bodies can take multiple forms, for example: the provision of inputs, consultations to ensure coherent approaches, exchange of information on planned activities, etc;

(b)     The use of CTCN technical assistance data to inform the TEC's analytical work, and vice versa, the use of TEC policy findings and recommendations to inform the implementation of CTCN activities, in particular activities targeting NDEs;

(c)     Systematically collect policy and implementation issues encountered by developing countries on various topics above;

(d)     Engage NDEs across activities under the common areas of work;

(e)     Use Technology Mechanism events (in conjunction with COPs and/or SBs) to showcase the work of both bodies on a topic of common areas of work. For example, at SB58 in June 2023 the topic of the Technology Mechanism event could be NSI: the TEC could launch its finalised compilation on the set-up and implementation of NSIs and the CTCN could share its approach to using NSI as an enabler in its PoW;

(f)     Organise a series of webinars and events during the regional climate weeks on topics of common interests;

(g)     Explore collaboration and synergy with High-Level Champion work and Marrakesh Partnership Global Climate Action, in particular with regard to the Climate Action Pathways on relevant areas: energy, land use, water, infrastructure, and industry;*

(h)     Explore collaboration with other initiatives and organizations relevant to the topics above, particularly working with other UNFCCC bodies as well as other international organizations and private sector partners.  To facilitate this, the TEC and CTCN will develop a strategy plan that outlines the work for each activity under common areas of work and establish partnerships with major international organizations as well as the private sector;

(i)     Jointly launch a call for expressions of interest to solicit potential partnerships;

(j)     Employ cross-promotion of TEC and CTCN activities within the common areas of work in order to generate greater awareness through diverse communication channels;

(k)     Explore opportunities to collaborate or promote the work of the Technology Mechanism work in the broader UN context and fora on SDGs, considering the relevance of topics of common areas of work (water-food-energy, industry, infrastructure, etc.);

(l)     The Chairs and Vice Chairs of the TEC and CTCN Advisory Board and/or members designated by the TEC and CTCN will work together to ensure coherence and synergy in the implementation of the common areas of work, and closely liaise with the secretariats and/or groups undertaking the work for respective body;

(m)     Each body will seek to allocate staff resource(s) to support the activities of common areas of work, including raising necessary financial resources.

* The Climate Action Pathways are a vital part of the Marrakech Partnership tools to enhance climate action and ambition towards fully implementing the Paris Agreement. First launched in 2019, they set out sectoral visions for achieving a 1.5° C resilient world in 2050, with overarching transformational milestones, and key impacts that need to be achieved to realize them. More information is available at: https://unfccc.int/climate-action/marrakech-partnership/reporting-and-tracking/climate_action_pathways.