



Technology Executive Committee

07 March 2023

Twenty-sixth meeting

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

**Approach to revising the TEC monitoring and evaluation system
to align with the 2023-2027 rolling work plan**

Background note

I. Introduction

A. Background

1. In response to decision 13/CP.24 and paragraphs 24 and 25 of the Annex to decision 15/CMA, the Technology Executive Committee (TEC) developed a monitoring and evaluation framework¹ (hereinafter referred to as the M&E system) under its 2018–2022 rolling workplan to monitor and evaluate the impacts of its work. The M&E system was developed in collaboration with the Climate Technology Centre and Network (CTCN) to ensure a coherent approach within the Technology Mechanism. While the activities and outputs of the TEC and CTCN differ, owing to their respective mandates and functions, the two systems are aligned through common high-level outcomes and overall impact sought by the technology framework.²

2. The two central building blocks that underpin the TEC's M&E system are a theory of change and a performance measurement framework (PMF) which defines indicators required to monitor and gauge the performance of the TEC in meeting the objectives outlined in its workplan. In addition, the TEC and CTCN developed a joint survey to collect comprehensive feedback from National Designated Entities (NDEs) on the impact of their activities. The survey, carried out bi-annually, serves as the TEC's primary tool for assessing its outcomes.

3. The TEC implemented its M&E system in 2020 on a trial basis and reviewed experiences and lessons learned from its implementation at TEC 21³ following which adjustments were made by the secretariat.⁴

4. Recent evaluations of the work of the TEC and COP decisions have provided guidance to the TEC to improve its M&E system, namely:

(a) Recommendation 3 of the first periodic assessment of the effectiveness and adequacy of the support provided to the Technology Mechanism⁵ (herewith referred to as the periodic assessment) noted the absence of impact indicators in the TEC's M&E system and recommended that the TEC review it in light of the experiences and lessons learned from its implementation.

(b) The same recommendation noted that, although the TEC and CTCN have already aligned their M&E systems, both bodies could explore the opportunity of developing a common and integrated M&E system considering the development of the first joint work programme of the Technology Mechanism for 2023–2027.⁶ The assessment further noted that such an overarching

¹ Available at <https://unfccc.int/ttclear/tec>.

² Technology framework under Article 10, paragraph 4, of the Paris Agreement Available at <https://unfccc.int/ttclear/tec/documents.html>.

³ See document available at <https://bit.ly/37bmF5A>.

⁴ See document TEC/2021/22/Information Note available at <https://unfccc.int/ttclear/tec/meetings.html>.

⁵ Available at <https://unfccc.int/documents/611561>.

⁶ Available at <https://unfccc.int/ttclear/tec>.

system would support the reporting on collaboration between the two bodies and the assessment of transformational change that would consider the connections between the activities of both bodies.

(c) Decision -/CP.27, paragraph 11,⁷ and decision -/CMA.4, paragraph 10,⁸ requested the TEC and CTCN to continue to enhance their efforts to monitor and evaluate the impacts of their work, including by identifying new ways to invite feedback from NDEs on the impact of the work of the Technology Mechanism such as through more practical and effective surveys.

5. At TEC 25, the TEC agreed on its new rolling workplan for 2023–2027.⁹ While the TEC’s previous workplan was structured according to the five key themes of the technology framework, the new rolling workplan introduces four strategic workstreams. Nevertheless, the structure of the new workplan continues to be guided by the principles of the technology framework, and all proposed outputs have been mapped against those of the framework.¹⁰

B. Scope of the note

6. This note aims to provide suggestions for possible revisions to the TEC’s M&E system to align with the structure of the TEC’s new rolling workplan for 2023–2027 and facilitate continuous monitoring and evaluation of TEC activities while responding to recent recommendations and COP decisions.

C. Possible action by the Technology Executive Committee

7. The TEC will be invited to consider the suggestions for possible revisions to its M&E system and provide guidance to ensure adequate reporting on outputs and impacts.

II. Process for revising the monitoring and evaluation system

8. Based on the workplan of the TEC for 2023–2027 and the introduction of new workstreams and outputs, it is necessary to adjust the existing PMF to ensure adequate data collection methods are in place to record the implementation of activities and their results (see section A below). Furthermore, revisions to the PMF should take into account the recommendations of the periodic assessment and recent COP decisions (addressed in sections A, D and E below), as well as ensuring alignment with the five key themes of the technology framework mandated by decision 13/CP.24 (see section B below), as well as with the M&E framework of the CTCN (see section C below).

A. Updating the performance management framework

9. The annex to this document provides illustrative suggestions on how the TEC’s PMF might be revised to enable effective monitoring and reporting of the TEC’s activities under its rolling workplan for 2023- 2027. Baseline and target values will be determined upon finalisation of the updated PMF. The following revisions are suggested:

(a) Restructure the PMF around the four workstreams of the new rolling workplan so that activities and outcomes can be monitored and reported on. In doing so, the TEC may consider simplifying the language for describing its expected outcomes while simultaneously facilitating alignment with the intended outcomes of the CTCN. To this end, suggestions have been proposed in the Annex as “indicative results”, and an example is shown below:

⁷ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

⁸ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

⁹ Available at <https://unfccc.int/tclear/tec/documents.html>.

¹⁰ See the TEC workplan 2023–2027 table with outputs available at <https://unfccc.int/tclear/tec/documents.html>. The numbers in brackets next to the outputs indicate applicable provision(s) of the Technology Framework.

Expected Outcome (as per the TEC workplan for 2023–2027)	Enabling policies to incentivise and nurture a supportive environment for technological innovation and innovative climate solutions enabled by general-purpose technologies are introduced and promoted, including policies that seek to strengthen NSI and the increased participation of developing countries in international cooperation in innovation and RD&D.
Intended results (suggestion for use in the PMF)	Countries have enhanced enabling environments for technological innovation and innovative climate solutions at different stages of the technology cycle through collaborative approaches.
CTCN expected outcome (as per the CTCN programme of work for 2023–2027)	Countries can accelerate innovation at different stages of the technology cycle through collaborative approaches.

(b) Adapt the indicators to reflect planned outputs under the new rolling workplan, while maintaining a relatively simple M&E system and ensuring continuity with existing indicators as much as possible, allowing progress to be measured across time and across work plans;

(c) Consider introducing new indicators to reflect recommendations from recent evaluations and COP decisions, such as:

(i) Consider adding an indicator on the TEC’s engagement with NDEs (see proposed indicator 5.2) to measure and report on progress in response to mandates from decision -/CP.27 paragraphs 6, 7 and 16;¹¹ decision -/CMA.4 paragraph 16;¹² and decision -/CMA.4 paragraph 7;¹³ and considering the TEC background note on strengthening engagement with NDEs;¹⁴

(ii) Consider adding an indicator on resource mobilisation efforts (see proposed indicator 5.7) to measure and report progress in response to recommendation 7 of the periodic assessment¹⁵ and decision -/CMA.4, paragraph 6.¹⁶

Guiding question for the TEC: Do you agree with the principles and the proposed methodology to update the TEC’s performance management framework?

B. Ensuring continued alignment with the technology framework

10. As shown in Figure 1, the workstreams, outputs, and intended results of the TEC’s rolling workplan for 2023-2027 continue to feed into the five key themes of the technology framework and the intended impact sought by the framework.

¹¹ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

¹² See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

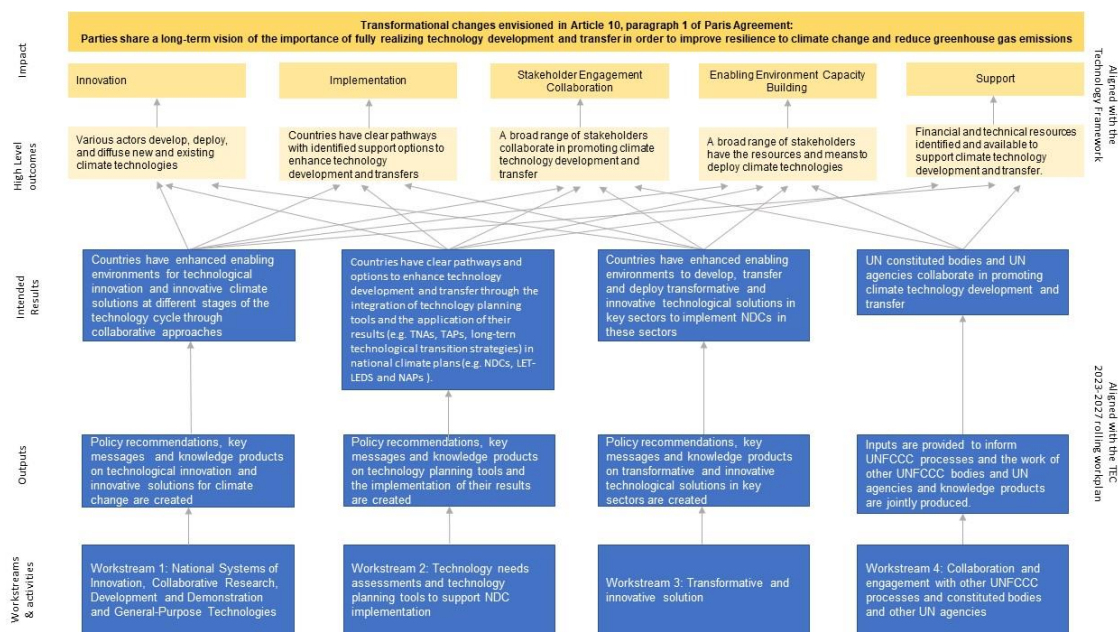
¹³ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

¹⁴ See document TEC/2023/26/04

¹⁵ Recommendation 7 of the first periodic assessment of the technology mechanism encourages the TEC and the CTCN to continue efforts to enhance resource mobilisation to meet the costs associated with their activities and to report on the lack of resources for implementing their respective mandates.

¹⁶ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

Figure 1
Alignment of the TEC workplan for 2023-2027 with the technology framework



Guiding question for the TEC: Are you in agreement that the suggested approach allows for continued reporting of progress along the five key themes of the technology framework while adjusting to the new workstreams?

C. Maintaining coherence with the CTCN's M&E system

11. The CTCN's new Programme of Work for 2023–2027¹⁷ introduces a new approach to delivery structured around two technology enablers and five system transformation areas. Embedded in the programme of work are an updated theory of change and revised outcome indicators and impact statement. Nevertheless, expected activities, outputs and outcomes have been mapped to the corresponding technology framework themes and actions. This, in turn, facilitates continued coherence between the TEC and CTCN's revised M&E systems in terms of assessing their joint contribution to the five key themes of the technology framework.

12. Table 1 below illustrates the joint contributions of the TEC and the CTCN through their respective workplan and programme of work for 2023–2027 to the five key themes of the technology framework.

¹⁷ Available at <https://www.ctc-n.org/resources/ctcn-third-programme-work-2023-2027>.

Table 1

Illustration of the continued coherence between the TEC the CTCN M&E systems

CTCN Intended Outcomes (2023–2027)	TEC Intended Results (2023–2027)	Alignment with the key themes of the Technology Framework				
		Innovation	Implementation	Collaboration	Enabling Env. & Capacity Building	Support
Countries can accelerate innovation at different stages of the technology cycle through collaborative approaches.	Countries have enhanced enabling environments for technological innovation and innovative climate solutions at different stages of the technology cycle through collaborative approaches.	TEC & CTCN			TEC	
Countries have clear pathways and options to enhance inclusive, gender-responsive technology development and transfer, including endogenous and indigenous technologies.	Countries have clear pathways and options to enhance technology development and transfer through the integration of technology planning tools and the application of their results (e.g. TNAs, TAPs, long-term technological transition strategies) in national climate plans (e.g. NDCs, LET-LEDS and NAPs).	TEC	TEC & CTCN			
Countries have enhanced enabling environments, including policy and regulatory environments to develop, transfer and deploy climate technologies.	Countries have enhanced enabling environments to develop, transfer and deploy transformative and innovative technological solutions in key sectors to implement NDCs in these sectors.	TEC & CTCN	TEC	TEC & CTCN		
Stakeholders are actively engaged and have strengthened capacity to implement climate action through collaboration.	UN constituted bodies and UN agencies collaborate in promoting climate technology development and transfer.		CTCN	TEC	TEC & CTCN	
Countries have access to Technical Assistance and financial support to enhance development and transfer of gender responsive technologies.			CTCN		CTCN	

*TEC: Boxes marked with TEC reflect technology framework themes covered by TEC activities and outputs under the TEC's 2023-2027 rolling workplan
*CTCN: Boxes marked with CTCN reflect technology framework themes covered by CTCN activities and outputs under the CTCN's 2023-2027 PoW
*TEC & CTCN: Boxes marked with TEC&CTCN reflect technology framework themes covered by both TEC and CTCN activities under their respective rolling workplan and PoW

D. Improving existing methods of assessing the impacts of the TEC's work

13. The TEC's M&E system may be assessed in relation to the evaluation processes it is intended to feed into, such as the Periodic Assessment and the UNFCCC Global Stocktake, and whether or not it is fit for purpose in this regard. While the proposed changes to the TEC's M&E system detailed in this document do not address this question exclusively, we note nevertheless that both evaluations consider the impact of the TEC's work to be a key factor. The first periodic assessment, however, draws attention to challenges in accessing impact level data and measuring the TEC's contribution to transformational change. To become fit for purpose for future evaluations, efforts may be directed towards making impact level indicators more readily available, as well as enhancing the dissemination of TEC products so that their reach and impact may increase.

14. Mindful of the resources that would be required to assess the impacts of the TEC's work more comprehensively, as highlighted in the periodic assessment,¹⁸ the TEC may continue using the NDE survey as a relatively low resource-intensive method of gauging the uptake and impact of its work. However, as mandated by decision -/CP.27, paragraph 11¹⁹ and decision -/CMA.4, paragraph 10,²⁰ efforts should be made to improve the usefulness and effectiveness of the survey in order to enhance the response rate and quality of the data and insights.

15. While the data collected through the two biannual surveys carried out to date have provided valuable indicators and highlighted areas for improvement, the survey methodology could be refined

¹⁸ See paragraph 68 (b).

¹⁹ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

²⁰ See the [advanced unedited version](#) of the decision (available at the date of publication of this document).

to avoid some issues that were identified during the compilation and analysis. Some of the proposals for responses could be considered ambiguous, with participants having to choose between responses such as "somewhat" and "slightly" or "medium" and "moderate". Purely numerical based responses that are clearly defined at the beginning of the survey could mitigate such ambiguity. And, while the surveys were concise, with a little more than 30% respondent rate on the 2022 survey, further consideration should be made in order to mitigate possible nonresponse bias that could be imparted by such a small pool of respondents in future.

16. It is expected that the next biannual NDE survey will take place in Q2 of 2024. Prior to this, the TEC may consider aligning the TEC-related questions in the survey with the new workplan outcomes and making adjustments based on lessons learned and feedback from the survey.

E. Developing M&E indicators in collaboration with the CTCN for monitoring and reporting on the Joint Work Programme of the Technology Mechanism (2023-2027).

17. During their joint session in September 2022, the TEC and CTCN Advisory Board approved the first joint work programme of the UNFCCC Technology Mechanism for 2023–2027. The joint work programme is composed of the joint activities and common areas of work of the TEC and CTCN, the new rolling workplan of the TEC and Programme of Work of the CTCN for the period 2023–2027.

18. As part of the operationalisation of the new joint work programme, the TEC may wish to pursue discussions with the CTCN at their next joint session on modalities for monitoring and reporting on joint activities and areas of collaboration, taking into consideration the recommendations of the periodic assessment which encourage the two bodies to explore developing a common and integrated M&E system and improve the measurement of the impacts of the Technology Mechanism as a whole.²¹

III. Next steps

19. The TEC is invited to provide guidance for finalising the revision to the TEC's M&E system, which will be presented at TEC 27 along with potential new guidance for operationalising the monitoring and evaluation of the TEC and CTCN joint work programme. To ensure that there are no gaps in monitoring TEC activities under its new workplan, the secretariat will collect data based on the PMF in Annex 1 until TEC 27.

²¹ See paragraph 71, recommendation 3.

Annex

Illustrative suggestions for possible revisions to the TEC's Performance Management Framework

Workstream 1

National Systems of Innovation, Collaborative Research, Development and Demonstration and General-Purpose Technologies

Indicator	Baseline	Targets by 2027	Method/Source/ Definition	Frequency	Technology Framework ^a	
Intended result 1: Countries have enhanced enabling environments for technological innovation and innovative climate solutions at different stages of the technology cycle through collaborative approaches						
1. Evidence of stakeholders using TEC policy recommendations and publications on technological innovation and innovative climate solutions	(N/A)	(N/A)	NDE feedback form List of examples ^b Total views of publications	Every 2 years	Innovation, Implementation, Collaboration, Enabling Environment, Support	
TEC outputs: Policy recommendations, key messages and knowledge products on technological innovation and innovative solutions for climate change are created						
1.1 Number of sets of policy recommendations (comprising multiple policy recommendations) developed on technological innovation and innovative climate solutions	xx	yy	TT: CLEAR ^c	Yearly		
1.2 Number of key messages developed on technological innovation and innovative climate solutions	xx	yy	TT: CLEAR ^d	Yearly		
1.3 Number of publications (including policy briefs, executive summaries, papers and compilation of good practices) developed on technological innovation and innovative climate solutions	xx	yy	TT: CLEAR ^e	Yearly		
1.4 Number of events (including workshops and webinars) organised by the TEC on technological innovation and innovative climate solutions	xx	yy	TT: CLEAR ^f	Yearly		
<u>Activities under workstream 1:</u> A.1. Identify and analyse ways to support countries in establishing and/or strengthening national systems of innovation to incentivise innovation, including by improving enabling environments, capacity building, and access to funding for innovation. A.2. Stimulate climate technology RD&D through partnerships, strengthening the roles of innovators and incubators and accelerators, and the participation of developing country Parties in collaborative approaches to RD&D. A.3. Identify and analyse emerging and transformational adaptation technologies that contribute to reducing vulnerabilities and strengthening resilience. A.4. Explore innovative climate solutions enabled by general-purpose technologies.						

^a Activities under this workstream feed into all five key themes of the Technology Framework.

^b Anecdotal evidence collected through an internet search and through TEC members themselves as valuable sources of information on publications in which the TECs work is referred to.

^c Policy recommendations can be found [here](#).

^d Key messages can be found [here](#) under outcomes.

^e TEC publications can be found [here](#).

^f A full list of events organised by the TEC can be found [here](#).

Workstream 2

Technology needs assessments and technology planning tools to support NDC implementation

Indicator	Baseline	Targets by 2027	Method/Source/Definition	Frequency	Technology Framework ^a	
Intended result 2: Countries have clear pathways and options to enhance technology development and transfer through the integration of technology planning tools and the application of their results (TNAs, TAPs, long-term technological transition strategies) in national climate plans (NDCs, LET-LEDS and NAPs)						
2. Evidence of stakeholders using TEC policy recommendations and publications on TNA and technology planning tools	(N/A)	(N/A)	NDE feedback form List of examples Total views of publications	Every 2 years	Innovation, Implementation, Collaboration, Enabling Environment, Support	
TEC outputs: Policy recommendations, key messages and knowledge products on technology planning tools and the implementation of their results are created						
2.1 Number of sets of policy recommendations (comprising multiple policy recommendations) on TNAs and technology planning tools	xx	yy	TT:CLEAR	Yearly		
2.2 Number of key messages developed on TNAs and technology planning tools	xx	yy	TT:CLEAR	Yearly		
2.3 Number of publications (including policy briefs, executive summaries, papers and compilation of good practices) developed on TNAs and technology planning tools	xx	yy	TT:CLEAR	Yearly		
2.4 Number of events (including workshops and webinars) organised by the TEC on TNAs and technology planning tools	xx	yy	TT:CLEAR	Yearly		
Activities under workstream 2: B.1. Facilitate the undertaking and updating of TNAs, as well as enhancing the implementation of their results, and promote the links between TNAs and NDCs and NAPs and LT-LEDS. B.2. Promote the role of long-term technological pathways in order to implement countries' NDC actions on mitigation and adaptation.						

^a Activities under this workstream feed into all five key themes of the Technology Framework.

Workstream 3

Transformative and innovative solutions

Indicator	Baseline	Targets by 2027	Method/Source/Definition	Frequency	Technology Framework ^a	
Intended results 3: Countries have enhanced enabling environments to develop, transfer and deploy transformative and innovative technological solutions in key sectors to implement NDCs in these sectors						
3. Evidence of stakeholders using TEC policy recommendations and publications on transformative and innovative technological solutions in key sectors	(N/A)	(N/A)	NDE feedback form List of examples Total views of publications	Every 2 years	Innovation, Implementation, Collaboration, Enabling Environment	
TEC outputs: Policy recommendations, key messages and knowledge products on transformative and innovative technological solutions in key sectors are created						
3.1 Number of sets of policy recommendations (comprising multiple policy recommendations) developed on transformative and innovative technological solutions in key sectors	xx	yy	TT:CLEAR	Yearly		
3.2 Number of key messages developed on transformative and innovative technological solutions in key sectors	xx	yy	TT:CLEAR	Yearly		
3.3 Number of publications (including policy briefs, executive summaries, papers and compilation of good practices) developed on transformative and innovative technological solutions in key sectors	xx	yy	TT:CLEAR	Yearly		
3.4 Number of events (including workshops and webinars) organised by the TEC on transformative and innovative technological solutions in key sectors	xx	yy	TT:CLEAR	Yearly		

Activities under workstream 3:

- C.1. Promote innovative technology practices and solutions related to water-energy-food systems to support countries in the implementation of their NDCs in these sectors, to build inclusive agrifood systems and achieve food security.
- C.2. Promote innovative technology practices and solutions related to sustainable buildings and infrastructure to strengthen resilience and support countries in the implementation of their NDCs in these sectors.
- C.3. Promote innovative technology practices and solutions related to hard-to-abate industrial sectors to support countries in the implementation of their NDCs in these sectors.
- C.4. Promote innovative technology solutions related to nature and ecosystems.

^a Activities under this workstream feed into four key themes of the Technology Framework. No activities directly related to the support theme are envisioned.

Workstream 4

Collaboration and engagement with other UNFCCC processes and constituted bodies and other UN agencies

Indicator	Baseline	Targets by 2027	Method/Source/Definition	Frequency	Technology Framework ^a	
Intended results 4: UN constituted bodies and UN agencies collaborate in promoting climate technology development and transfer						
4. Evidence of other stakeholders using TEC policy recommendations and publications on technology development and transfer	(N/A)	(N/A)	GCF, GEF, and SCF annual reports to the COP List of examples	Every 2 years	Collaboration, Enabling Environment, Support	
TEC outputs: Inputs are provided to inform UNFCCC processes, and the work of other UNFCCC bodies and UN agencies and knowledge products are jointly produced.						
4.1 Number of inputs and recommendations provided to inform UNFCCC processes and the work of other UNFCCC bodies and UN agencies	xx	yy	List of inputs and recommendations to GCF, GEF, SCF and PCCB, as well as inputs into the GST process	Yearly		
4.2 Number of joint publications (including policy briefs, executive summaries, papers and compilation of good practices) developed with other UNFCCC bodies and UN agencies	xx	yy	TT: CLEAR	Yearly		
4.3 Number of joint events (including workshops and webinars) organised with other UNFCCC bodies and UN agencies	xx	yy	TT: CLEAR	Yearly		
Activities under workstream 4:						
D.1. Collaborate and engage with the Standing Committee on Finance and the operating entities of the Financial Mechanism.						
D.2. Collaborate and engage with the Adaptation Committee and LDC Expert Group.						
D.3. Collaborate and engage with the Paris Committee on Capacity Building.						
D.4. Collaborate and engage with the UNFCCC Gender Team.						
D.5. Provide input to the Global Stocktake of the Paris Agreement.						
D.6. Collaborate and engage with the UNEP-Copenhagen Climate Centre.						

^a Activities under this workstream feed into three key themes of the Technology Framework. No activities directly related to the innovation and implementation theme are envisioned.

Cross-Cutting

Indicator	Baseline	Targets by 2027	Method/Source/Definition	Frequency
5. Evidence of the reach of the TEC				
5.1 Number of stakeholders engaged in the implementation of the TEC workplan (disaggregated by type of stakeholder)	xx	yy	List of partners on TEC activities TT: CLEAR	Every 2 years
5.2 Number of NDEs engaged in TEC activities (includes NDEs participating in TEC events and contributing to TEC knowledge products)	xx	xx	Lists of NDE participants to events and NDE contributions to TEC knowledge products	Yearly
5.3 Number of people who follow TEC events (virtual and in-person) (men, women)	xx	yy	Lists of participants to events	Yearly

5.4 Amount of UNFCCC social media engagement (retweets, shares, likes, etc.) regarding various activities (events, publication launches, etc.)	xx	yy	UNFCCC CO channels	Yearly
5.5 Google Analytics (pageviews) for the TECs content posted in UNFCCC newsroom	xx	yy	Google Analytics	Yearly
5.6 Google Analytics (pageviews) for the TEC's content posted on TT:Clear pages	xx	yy	Google Analytics	Yearly
5.7 Number of new donors and partners ^a supporting the financing of the implementation of the TEC workplan (in kind, pro-bono and grant financing)	xx	yy	TT:CLEAR (TBC)	Yearly
6. Gender considerations				
6.1 Number of policy recommendations containing gender considerations	xx	yy	Lists of recommendations	Yearly
6.2 Distribution of invited speakers to TEC events disaggregated by gender (in %)	xx	yy	TT:CLEAR	Yearly

^a Outside core funding.