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**United Arab Emirates just transition work programme**

# Dialogues under the United Arab Emirates just transition work programme

## Annual summary report by the Chairs of the subsidiary bodies

*Summary*

The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, at its fifth session, requested the Chairs of the subsidiary bodies to prepare in a timely manner, with the assistance of the secretariat, an annual summary report on the dialogues held each year as part of the United Arab Emirates just transition work programme. This second annual summary report contains information on the two dialogues held in 2025 under the work programme, which focused on approaches to enhancing adaptation and climate resilience in the context of just transitions, and just energy transition pathways and holistic approaches to just transitions including socioeconomic, workforce, social protection and other dimensions, based on nationally defined development priorities. The summaries of each dialogue aim to reflect, in a comprehensive and balanced manner, the discussions held and key findings identified, as well as information on opportunities, best practices, actionable solutions, challenges and barriers relevant to the respective topics.

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# I. Introduction

## A. Mandate

1. At its fourth session the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) decided to establish a work programme on just transition for discussion of pathways to achieving the goals of the Paris Agreement outlined in Article 2, paragraph 1, in the context of Article 2, paragraph 2.[1]

2. CMA 5 established the scope and modalities of the United Arab Emirates just transition work programme, including deciding that it shall be implemented under the guidance of the subsidiary bodies through a joint contact group to be convened at each of their sessions, starting at their sixtieth sessions.[2]

3. CMA 5 also decided that at least two dialogues shall be held each year as part of the work programme, with one to be held prior to the first regular sessions of the subsidiary bodies, starting at their sixtieth sessions, and one prior to the second regular sessions of the subsidiary bodies, starting with their sixty-first sessions, and that such dialogues should be conducted in hybrid format to allow both in-person and virtual participation.[3]

4. Furthermore, CMA 5 requested the Chairs of the subsidiary bodies to prepare in a timely manner, with the assistance of the secretariat, an annual summary report on the dialogues.[4]

## B. Scope

5. At their sixtieth sessions the subsidiary bodies encouraged their Chairs to prepare and publish, starting from the first dialogue and immediately following each dialogue under the work programme, an informal summary of the discussions at that dialogue, including information on opportunities, best practices, actionable solutions, challenges and barriers relevant to the dialogue topic, ensuring that those discussions are reflected in a comprehensive and balanced manner.[5]

6. Pursuant to this mandate, the secretariat prepared and published, under the guidance of the Chairs of the subsidiary bodies, informal summary reports on the first,[6] second,[7] third[8] and fourth[9] dialogues under the work programme. The information on the first and second dialogues is also included in the first annual summary report on the dialogues by the Chairs of the subsidiary bodies.[10]

7. This second annual summary report presents a compilation of the proceedings of and the summaries of the discussions, including key findings, opportunities and barriers identified, at the third and fourth dialogues under the work programme in annexes I and II respectively.

[1] Decision 1/CMA.4, para. 52.
[2] Decision 3/CMA.5, para. 4.
[3] Decision 3/CMA.5, para. 5.
[4] Decision 3/CMA.5, para. 10.
[5] FCCC/SBSTA/2024/7, para. 98, and FCCC/SBI/2024/13, para. 45.
[6] Available at https://unfccc.int/documents/640155.
[7] Available at https://unfccc.int/documents/642594.
[8] Available at https://unfccc.int/documents/650431.
[9] Available at https://unfccc.int/documents/652861.
[10] FCCC/SB/2024/7.

# II. Topics of the dialogues held in 2025 under the United Arab Emirates just transition work programme

8. CMA 5 invited Parties, observers and other non-Party stakeholders to submit possible topics for the dialogues under the work programme by 15 February each year, beginning in 2024. Taking into consideration the submissions, the Chairs of the subsidiary bodies are to decide on and communicate the topics to be discussed at each dialogue to be held in that year no later than eight weeks before each dialogue in advance of the respective regular sessions of the subsidiary bodies.[11]

9. Following informal virtual consultations among Parties convened by the Chairs of the subsidiary bodies on 20 March 2025, and taking into consideration the submissions from Parties, observers and other non-Party stakeholders on work to be undertaken and topics for the dialogues under the work programme in 2025, as well as the views expressed during those informal virtual consultations, the Chairs of the subsidiary bodies decided that the third dialogue under the work programme would focus on approaches to enhancing adaptation and climate resilience in the context of just transitions.

10. Following informal virtual consultations among Parties convened by the Chairs of the subsidiary bodies on 10 July 2025, and taking into consideration the submissions from Parties, observers and other non-Party stakeholders on work to be undertaken and topics for the dialogues under the work programme in 2025, as well as the views expressed during those informal virtual consultations, the Chairs of the subsidiary bodies decided that the fourth dialogue under the work programme would focus on just energy transition pathways and holistic approaches to just transitions, including socioeconomic, workforce, social protection and other dimensions, based on nationally defined development priorities.

[11] Decision 3/CMA.5, paras. 6–7.

# Annex I

## Informal summary of the third dialogue under the United Arab Emirates just transition work programme*

## I. Introduction

### A. Mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its fourth session decided to establish a work programme on just transition for discussion of pathways to achieving the goals of the Paris Agreement outlined in Article 2, paragraph 1, in the context of Article 2, paragraph 2.[1]

2. CMA 5 established the scope and modalities of the United Arab Emirates just transition work programme, deciding that it shall be implemented under the guidance of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) through a joint contact group to be convened at each of their sessions, starting at the sixtieth sessions of the subsidiary bodies (SB 60).[2]

3. CMA 5 also decided that at least two dialogues shall be held each year as part of the work programme, with one to be held prior to the first regular sessions of the subsidiary bodies, starting with SB 60, and one prior to the second regular sessions of the subsidiary bodies, starting with SB 61, and that such dialogues should be conducted in hybrid format to allow both in-person and virtual participation.[3]

4. Furthermore, CMA 5 requested the Chairs of the subsidiary bodies to prepare in a timely manner, with the assistance of the secretariat, an annual summary report on the dialogues.[4] At SB 60, the SBSTA and the SBI encouraged their Chairs to prepare and publish, starting from the first dialogue and immediately following each dialogue under the work programme, an informal summary of the discussions at that dialogue, including information on opportunities, best practices, actionable solutions, challenges and barriers, ensuring that those discussions are reflected in a comprehensive and balanced manner.[5]

5. Pursuant to this mandate, the secretariat prepared and published, under the guidance of the Chairs of the subsidiary bodies, informal summary reports on the first and second dialogues held under the work programme, which took place in 2024.[6] The information contained in those two informal summaries is included in the first annual summary report on the dialogues by the Chairs of the subsidiary bodies.[7]

6. This informal summary on the third dialogue held under the work programme was prepared under the guidance of the Chairs of the subsidiary bodies, reflecting the discussions held at the third dialogue in a comprehensive and balanced manner, and includes a summary of the discussions and the key findings from and opportunities and barriers identified in each world café session, breakout discussion session and plenary discussion.

7. This informal summary, which is aimed at capturing and summarizing views shared during the third dialogue, does not provide an exhaustive summary of all interventions.

* Not formally edited.

[1] Decision 1/CMA.4, para. 52.

[2] Decision 3/CMA.5, para. 4.

[3] Decision 3/CMA.5, para. 5.

[4] Decision 3/CMA.5, para. 10.

[5] FCCC/SBSTA/2024/7, para. 98, and FCCC/SBI/2024/13, para. 45.

[6] Available at https://unfccc.int/documents/640155 and https://unfccc.int/documents/642594 respectively.

[7] FCCC/SB/2024/7.

## B. Proceedings

8. The third dialogue under the United Arab Emirates just transition work programme took place in Panama City from 22 to 23 May 2025. The third dialogue took place in hybrid format, with 111 in-person and 118 virtual participants, totalling 229 participants from Parties, United Nations and other intergovernmental organizations and non-governmental organizations.[8] The dialogue was hosted by the Government of Panama as part of the first Climate Week of 2025.

9. As communicated by the Chairs of the subsidiary bodies, the topic of the third dialogue was **approaches to enhancing adaptation and climate resilience in the context of just transitions**.

10. In the opening plenary participants were welcomed by remarks delivered by Noura Hamladji, Deputy Executive Secretary of the secretariat; Ana Aguilar, Lead Negotiator, Ministry of Environment of Panama; and Elchin Allahverdiyev, Director of Climate Diplomacy Department at the Ministry of Foreign Affairs, Azerbaijan. Following the welcoming remarks, Julia Gardiner, Chair of the SBI, provided participants with an introduction to the scope and format of the third dialogue under the work programme.

11. Following the welcoming and introductory segment, a world café session was held to provide the opportunity for focused interactions within small groups of participants. Three world café tables, two in-person and one virtual, were set up for each of the three subtopics. After 40 minutes of discussion, participants moved to a table on a different subtopic, thus allowing all participants to participate in discussions on each of the three subtopics over the course of the three rounds of the world café session.

12. The discussions at the world café tables were guided by facilitators, who used guiding questions to provide a framework for the discussions:

a) The topic of **peoples and communities: addressing vulnerabilities and strengthening leadership: community-based and locally led adaptation and traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems** was discussed at tables 1, 2 and 3, focusing on the following guiding questions:

   (i) What approaches, including community-based approaches, can be used to ensure the most inclusive design, implementation, communication, monitoring and evaluation of locally led adaptation policies that are rights based and gender responsive?

   (ii) How can adaptation and climate resilience measures be developed to minimize any negative social, environmental or economic impacts of transitions, avoiding the reinforcement or deepening of vulnerabilities while maximizing benefits for those disproportionately affected?

   (iii) How can the role of Indigenous Peoples', their values, world views and knowledge systems be better integrated in the design, implementation, communication, monitoring and evaluation of adaptation policies and initiatives?

   (iv) What are examples of incorporating traditional knowledge and Indigenous practices in just transition pathways that contribute to enhancing adaptation and climate resilience?

b) The topic of **economic drivers and workforce: workforce considerations in the context of just transition pathways that enhance adaptation and climate resilience and the role of the private sector in contributing to climate resilience while leaving no one behind** was discussed at tables 4, 5 and 6, focusing on the following guiding questions:

[8] The agenda, webcast recordings and presentations are available at https://unfccc.int/event/third-dialogue-under-the-united-arab-emirates-just-transition-work-programme

(i) What are the essential workforce considerations, including upskilling and reskilling, in the context of enhancing adaptation and climate resilience?

(ii) How can workers in the informal economy be included in the development, implementation and monitoring of adaptation policies and resilience-building initiatives?

(iii) What is the role of the private sector, including microenterprises and small and medium-sized enterprises, in the context of just transition pathways that enhance adaptation and climate resilience?

(iv) How can adaptation and climate resilience measures leverage social, economic, and other benefits in the context of just transitions?

c) The topic of **enabling systems and protection: social protection systems as a tool for enhancing adaptation and climate resilience** was discussed at tables 7, 8 and 9, focusing on the following guiding questions:

(i) What are the best practices for developing and implementing robust social protection systems that contribute to enhancing adaptation and climate resilience (as outlined in target 9 of the United Arab Emirates Framework for Global Climate Resilience) which can support and are aligned with just transition pathways?

(ii) What are some of the best practices in leveraging social protection systems in a way that contributes to disaster risk reduction measures and early warning systems that leave no one behind?

(iii) How can social protection systems incentivize sustainable and green decisions and investments, and economic diversification, including transition from sectors that are particularly vulnerable to the impacts of climate change, while serving as a tool for reducing systemic risk and enhancing adaptation and climate resilience in the context of just transitions?

13. Following the world café session, the facilitators reported back on the discussions to the plenary, where participants had the opportunity to reflect on those discussions and then engage in an open exchange to react to and supplement the information reported back.

14. In the afternoon of the first day, there were breakout group discussions focusing on unpacking the full range of means of implementation for enhancing adaptation and climate resilience in the context of just transitions. Before engaging in the discussions, participants had the opportunity to hear two scene-setting presentations, the first delivered by Carlon Mendoza from Palau on behalf of the Alliance of Small Island States, and the second delivered by Aditi Mukherji from CGIAR, with the aim of framing and inspiring subsequent discussions.

15. The breakout group discussions on the afternoon of the first day were divided into three distinct thematic discussions, running parallel to one another. Participants, both those who attended in person and virtually, were assigned to one of three hybrid breakout discussion rooms. After each round of discussions, which lasted 45 minutes, facilitators were rotated to a different breakout room, allowing all participants to attend each thematic discussion over the full day. The three discussion themes were:

(a) Theme 1: **Climate finance and international cooperation**, which was framed by the following guiding questions:

(i) What are the lessons learned for financing just transition pathways that include adaptation and climate resilience measures, including innovative finance, direct access and financing for social protection systems?

(ii) How can just transition pathways ensure that they support the identification of a ‘value case’ for adaptation and facilitate the crowding-in of the private sector in a way that complements public finance and ensures equitable access to vulnerable communities?

(b) Theme 2: **Innovation and technology transfer**, which was framed by the following guiding questions:

(i) How can innovation and technology transfer foster transformational and long-term approaches to adaptation that leave no one behind, including through inclusive innovation, local knowledge integration and the identification of scalable solutions?

(ii) How can innovation and technology transfer support adaptation measures, including ecosystem-based adaptation, nature-based solutions, food security, water security and energy access?

(c) Theme 3: **Capacity-building and knowledge-sharing**, which was framed by the following guiding questions:

(i) How can capacity-building initiatives support countries in identifying key challenges and opportunities in fostering context-specific, inclusive adaptation planning, implementation and evaluation that effectively addresses local needs?

(ii) How can capacity-building initiatives facilitate the minimization of the risk of maladaptation?

16. Following three breakout group discussion rotations, the facilitators reported back on the discussions to the plenary. The first day of the dialogue concluded with an open plenary discussion on the three themes.

17. The second day of the dialogue started with an introduction of the schedule for the second day. Held prior to breakout group discussions, three scene-setting presentations provided an initial framing for the three themes. Maryam Navi from the secretariat delivered a scene-setting presentation on building on synergies under the UNFCCC process, with a focus on the global goal on adaptation; Camilla Roman from the International Labour Organization (ILO) delivered a scene-setting presentation focusing on building on synergies outside the UNFCCC process; and Damon Jones from the secretariat delivered a framing presentation focused on identifying concrete and actionable outcomes for the work programme in the context of adaptation and climate resilience.

18. The breakout group discussions on the three different topics ran in parallel. Participants were assigned to one of three breakout discussion rooms. After each round of discussions, which lasted 45 minutes, facilitators were rotated to a different breakout room, allowing all participants to attend discussions on each of the three topics. The three discussion themes were:

(a) **Building on synergies under the UNFCCC process**, framed by the following guiding question: in the context of adaptation and climate resilience, how can the United Arab Emirates just transition work programme maximize synergies with relevant workstreams under the UNFCCC process, maximizing benefits and avoiding duplication of efforts?

(b) **Building on synergies outside the UNFCCC process**, framed by the following guiding question: in the context of adaptation and climate resilience, how can the work programme, including through its dialogues, explore synergies with initiatives outside the UNFCCC process, avoiding duplication and including all relevant voices?

(c) **Identifying concrete and actionable outcomes for the work programme in the context of adaptation and climate resilience**, framed by the following guiding question: what could be some concrete and actionable outcomes of the work programme in the context of adaptation and climate resilience?

19. Following three breakout group discussion rotations, the facilitators reported back on the breakout group discussions to the plenary. Participants then had the opportunity to reflect on the information reported back and engage in an open discussion on the three topics. The third dialogue concluded with closing addresses made by Adonia Ayebare, Chair of the SBSTA, and Liliam Chagas, lead negotiator of the COP 30 Presidency.

# II. Summary of discussions and key findings

## A. Peoples and communities: addressing vulnerabilities and strengthening leadership: community-based and locally led adaptation and traditional knowledge, Indigenous Peoples' knowledge and local knowledge systems

20. The world café discussions on this subtopic were facilitated by John Valdez from the Office of the United Nations High Commissioner for Human Rights (table 1, in person), Jenifer Lasimbang from the Indigenous Peoples of Asia Solidarity Fund (table 2, in person) and Felicitus Okoko from the women and gender constituency (table 3, virtual).

### 2. Summary of discussions and key findings

21. Participants highlighted the importance of participatory approaches and of involving affected communities in the development of adaptation measures is key. Some participants further emphasized that affected communities must be at the centre of the design and implementation of adaptation and climate resilience measures aligned with just transitions. Others underlined the importance of ensuring that adaptation and resilience measures are designed in a way that does not exacerbate existing inequalities, particularly for vulnerable groups, women, Indigenous Peoples, youth, older persons, persons with disabilities and those living in areas particularly vulnerable to climate change such as small island developing States (SIDS) and the least developed countries (LDCs). Some participants also drew attention to the importance of understanding the intersectionality and interconnectedness of effective solutions in the context of adaptation and climate resilience.

22. Participants highlighted the importance of a multidimensional, holistic approach to adaptation and climate resilience in a just transition context; one which fully encompasses social dimensions, including health, education, cultural identity and consideration of future generations. Some participants highlighted the value of Indigenous world views in this sense, underscoring their focus on harmony, balance and intergenerational equity.

23. Several participants highlighted the risk of maladaptation, especially in the context of relocation, noting that policies in this area, if not carefully designed, may risk deepening social exclusion and may result in the loss of spiritual and cultural capital, as well as Indigenous and traditional knowledge. Some participants underscored the need for legal and policy frameworks that embed social dialogue and protect human rights in the context of adaptation and climate resilience. Participants also reflected on the importance of Indigenous Peoples' rights in this context.

24. Some participants also reflected on the need to balance bottom-up approaches with a strategic top-down long-term vision on adaptation and just transition, stressing that affected communities should have a voice in designing and implementing adaptation measures. Some participants cited examples of participatory processes at the local level where governments, civil society actors and workers' organizations jointly developed transition plans. Others noted that such processes remain uneven, with gaps in consultation, accessibility and inclusion. A number of participants reflected on the importance of taking into account the diversity of affected communities and their interests, without equating them to a homogeneous group.

25. Many participants stressed the importance of nuanced, context-specific approaches that avoid 'one-size-fits-all' solutions. Some participants drew attention to the importance of addressing psychosocial dimensions of transitions in an adaptation context, noting that uncertainty, fear of loss, and social tensions can undermine trust in institutions and hinder ambition. Multi-stakeholder, whole-of-society and whole-of-community approaches, and approaches that allow for a deeper understanding of intracommunity and intercommunity relationships were identified by many participants as key enablers in this sense.

### 3. Opportunities, best practices, actionable solutions, challenges and barriers

26. Several participants underscored the opportunity to embed human rights, including labour rights and the rights of Indigenous Peoples, into adaptation planning and national and local just transition frameworks. They noted that where such rights are explicitly recognized, communities report higher levels of trust and willingness to engage constructively in policy processes. Participants also highlighted broader stakeholder engagement and collaborative and locally led approaches in developing, designing and implementing adaptation measures as a key opportunity. Some participants highlighted examples of processes that incorporated gender-responsive approaches in planning and implementing adaptation measures, thereby ensuring that women, often disproportionately affected by transition measures, can also benefit from new opportunities. These practices were seen as replicable models that could be scaled across diverse national contexts. Another opportunity identified by some participants in this context was the recognition of care work.

27. Some participants pointed to best practices in participatory decision-making. They noted cases where inclusive platforms brought together workers, employers, community representatives and local authorities to co-design adaptation and climate resilience measures. In these cases, decisions reflected both economic and social priorities, such as job creation, cultural continuity and environmental protection. Others emphasized that meaningful inclusion requires more than consultation; it requires mechanisms for communities to shape outcomes and hold institutions accountable. This was viewed by many participants as essential for ensuring that just transition processes are not perceived as imposed, but rather as co-created pathways.

28. Many participants noted that traditional and Indigenous knowledge systems offer valuable insights into effective adaptation measures and for managing natural resources sustainably. Several participants emphasized that recognizing these knowledge systems and integrating them into adaptation planning can strengthen climate resilience and ensure the preservation of cultural and spiritual values for affected communities.

29. The use of domestic legal frameworks, including subnational ones, mandating consultation with and participation of affected communities, including Indigenous Peoples, was seen as an actionable solution by many participants. In the context of Indigenous Peoples' rights and participation, many participants reflected on the importance of ensuring the full implementation of the principle of Free, Prior, and Informed Consent (FPIC) and the rights of Indigenous Peoples in voluntary isolation and initial contact. Other participants identified capacity-building initiatives targeting community representatives and enabling them to engage effectively in national and international policy dialogues as another effective actionable solution.

30. Despite these opportunities, participants acknowledged persistent challenges and barriers. Limited institutional capacity at both the national and local level was frequently mentioned, with some participants noting that even where policies exist, implementation gaps remain significant. Other participants stressed that financial and technical constraints continue to hinder community-led initiatives, especially in SIDS and the LDCs. A number of participants raised concerns about the accessibility of information and the digital divide, stressing that access to open and up-to-date climate data is necessary for evidence-based decision-making and noting that vulnerable groups often lack the knowledge or tools to meaningfully engage in decision-making processes. Inequalities and trust deficits between communities and national authorities, rooted in past experience of exclusion, were identified as barriers by some participants. Lack of data or lack of access to data, including disaggregated data, was also mentioned as a potential challenge by some participants.

31. Some participants observed that gender disparities, marginalization of Indigenous Peoples and systemic exclusion of persons with disabilities often persist in adaptation planning. Other participants cautioned against 'tokenistic' consultations that create the appearance of participation without influencing outcomes. Many participants noted that without deliberate policy interventions, these issues risk undermining both climate ambition and social cohesion.

## B. Economic drivers and workforce: workforce considerations in the context of just transition pathways that enhance adaptation and climate resilience and the role of the private sector in contributing to climate resilience while leaving no one behind

The world café discussions on this subtopic were facilitated by Bert De Wel from the International Trade Union Confederation (table 4, in person), Katie Louise Swan-Nelson from the United Nations Conference on Trade and Development (table 5, in person) and Robert Marinković from the International Organisation of Employers (table 6, virtual).

### 1. Summary of discussions and key findings

32. Participants stressed that just transition pathways that enhance adaptation and climate resilience should prioritize decent work in all its dimensions, including occupational safety, fair wages and job security. Some participants highlighted the ILO guidelines for a just transition towards environmentally sustainable economies and societies for all[9] as a useful reference in this context. Several participants highlighted the importance of considering all workers, formal and informal, paid and unpaid, and of recognizing care work. Some participants remarked that this is especially important in the context of adaptation and resilience and highlighted the significant, and often unpaid, work by front-line communities in adapting to climate change. Some participants highlighted the importance of also considering health co-benefits in the context of just transition pathways that enhance adaptation and climate resilience, especially for sectors that are especially vulnerable to heat stress.

33. Some participants highlighted the importance of the creation of green and decent jobs, while noting the issue of skills mismatch. Some participants observed that many vocational training and higher education systems are not yet aligned with the demands of climate-resilient societies and that curricula can be outdated, with workers lacking access to reskilling or upskilling opportunities. Some participants highlighted the role, in this context, of ensuring coordination and coherence between climate and environmental policies on the one hand, and labour and social policies on the other and noted that nationally determined contributions (NDCs) can be an opportunity for alignment across these areas.

34. Some participants highlighted the important role of, and challenges faced by, microenterprises and small and medium-sized enterprises in the context of just transition pathways that enhance adaptation and climate resilience. Participants highlighted limited financial resources, lack of access to technology, and uncertain policy environments as barriers, while noting the potential of microenterprises and small and medium-sized enterprises to drive local innovation and employment if adequately supported. Some participants highlighted the role of microenterprises and small and medium-sized enterprises not only in supporting adaptation action, but also in contributing to job creation and identifying adaptation as an economic opportunity. While some participants reflected on the challenge related to developing a convincing investment or business case for adaptation, other participants highlighted the potential role of government incentives in this context.

35. Many participants stressed that successful just transition pathways require integrated economic planning, where approaches to labour, industry, finance and social policies are aligned. Policy coherence, predictability and long-term vision were identified as essential enablers by many participants.

36. Some participants highlighted the importance of using workforce planning in the context of just transition pathways that enhance adaptation and climate resilience to tackle and avoid exacerbating existing inequalities, and to identify possible inequalities created unintentionally and mitigate them. In this context participants reflected on the issue of labour conditions, the role of trade unions and the importance of robust data, social dialogue,

[9] International Labour Organization. 2016. *Guidelines for a just transition towards environmentally sustainable economies and societies for all*. Available at https://www.ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang--en/index.htm.

stakeholder consultations, building trust among social actors, relying on the expertise of local communities and aligning workforce strategies with national contexts and priorities.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

37. Several participants reflected on the fact that just transition pathways that enhance adaptation and climate resilience offer a wide range of opportunities to build more resilient, inclusive and sustainable labour markets. Participants noted that well-designed just transition pathways can generate new green jobs across sectors, including energy systems, sustainable agriculture, circular economy industries and ecosystem restoration.

38. Several participants stressed that transitions could present a chance to redress long-standing inequalities by intentionally directing investments and job creation towards vulnerable groups, including women, youth, Indigenous Peoples, and workers in the informal economy. Some participants noted that by focusing on inclusivity and broadening participation, just transition pathways can become vehicles of social mobility and empowerment rather than sources of disruption. Other participants highlighted the need to adopt a broad definition with regard to the workforce and the impact of both climate change and policies on workers, including rural workers, informal workers and unpaid carers. Some participants noted that well-planned just transition pathways can enhance climate ambition, including in the context of adaptation and climate resilience.

39. In terms of best practices, several participants shared experience and examples, with many noting that countries and regions that have successfully navigated transitions have done so through proactive planning, robust social dialogue and strong institutional frameworks, highlighting that participatory governance, adequate funding and long-term planning can be important success factors. Some participants suggested that the use of national development plans and strategies that integrate climate and environmental dimensions with labour and social dimensions, or interministerial commissions capable of adopting a holistic view of these aspects could represent best practices in this sense.

40. In terms of challenges, some participants noted that many countries face structural mismatches between current skills and those that are expected to be needed in the context of just transition pathways that enhance adaptation and climate resilience. In this regard some participants noted that many existing reskilling and upskilling programmes may be too limited in scale or poorly aligned with labour-market realities. Other participants noted that there is a lack of reliable labour-market data, which makes it difficult for governments to anticipate where job losses and opportunities will occur and design appropriate policy responses, posing a significant challenge.

41. With regard to actionable solutions, many participants highlighted the importance of holistic, multisectoral, tailor-made solutions adapted to diverse contexts. Several participants noted that social protection systems, including measures such as unemployment insurance, and conditional cash transfers or reskilling or upskilling programmes can play an important role in just transition pathways that enhance adaptation and climate resilience, mitigating possible negative impacts on individuals and communities. Other participants stressed the value of education systems and skills training programmes that are able to anticipate future labour needs, while remaining responsive to local realities. Some participants underlined, in particular, the importance of equipping young people with digital, technical and green skills.

## C. Enabling systems and protection: social protection systems as a tool for enhancing adaptation and climate resilience

42. The world café discussions on this subtopic were facilitated by Jazmin Burgess from C40 (table 7, in person), Pablo Escribano from the International Organization for Migration (table 8, in person) and Maria Porras from the United Nations Children’s Fund (table 9, virtual).

### 1. Summary of discussions and key findings

43. Several participants emphasized that enabling systems are the foundation upon which all just transition strategies rest. Some participants stressed that without strong institutions, effective governance systems and resilient social protection mechanisms, even the most ambitious climate policies risk being ineffective or exacerbating existing or creating new inequalities. Several participants noted that enabling systems should not be considered as 'supportive add-ons', but as core pillars of just transition processes. Many participants highlighted the role that enabling systems can play in, for example, mitigating negative impacts on affected workers and communities, enabling vulnerable groups to gain equitable access to new opportunities, and ensuring that transition processes gain and maintain public legitimacy and approval.

44. Many participants highlighted the global dimension of enabling systems, noting that many developing countries lack the fiscal space or institutional capacity to provide comprehensive protections and that in such contexts, international cooperation and climate finance play a decisive role in strengthening enabling systems.

45. Many participants shared challenges with regard to policy coherence and institutional coordination. Some participants noted that climate, labour, social and fiscal policies are too often designed in silos, leading to duplication, inefficiencies or even contradictory measures. Participants also discussed the role of domestic legal frameworks in anchoring just transition principles. Some participants observed that in contexts where social protections, labour rights and environmental safeguards are codified into law, the mainstreaming of just transition pathways tends to be more widely accepted and insulated from short-term political cycles.

46. Some participants highlighted the importance of trust in institutions. Several participants emphasized that communities' willingness to accept disruptive transitions depends heavily on whether they perceive governments and employers as fair, transparent and accountable. Corruption, lack of consultation and opaque decision-making processes erode confidence and can fuel opposition to reforms that might be beneficial.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

47. Many participants recognized that the development of enabling systems and social protection systems provides significant opportunities to safeguard the social contract during transitions. Some participants observed that well-designed social protection systems, such as unemployment insurance or benefits, universal health coverage and pensions, can help to mitigate negative impacts for individuals, households and communities. Participants noted that in contexts where such systems are already robust, their existence creates confidence among workers and communities, enabling them to embrace change with less fear of exclusion or abandonment. Several participants noted that strengthening social safety nets was seen not only as a protective measure, but also as a long-term investment in climate resilience and human capital.

48. Some participants noted that the digitalization of social services, when inclusive, can present an opportunity to expand coverage of social protection systems and reduce administrative bottlenecks. In discussing best practices, participants highlighted examples where governments combined social protections with proactive planning. Some participants noted that countries with well-established labour inspection systems and grievance mechanisms are better equipped to monitor compliance with labour rights and prevent exploitation in new and emerging industries.

49. Reflecting on experience shared and lessons learned, some participants suggested possible actionable solutions, such as establishing national just transition funds that could finance social protections and upskilling and reskilling initiatives. Some participants suggested that the integration of just transition principles into national development strategies could ensure that protective measures are not designed in isolation, but rather as part of broader economic and social planning. Some participants also suggested that expanding partnerships between governments, social partners and multilateral organizations, particularly to share technical expertise and mobilize financing, could also represent an actionable solution. In addition, several participants emphasized the importance of inclusive

domestic legal frameworks that guarantee social dialogue, protect vulnerable groups and establish accountability for transition measures.

50. Many participants highlighted challenges in this context. Examples given include limited fiscal space, which often prevents governments from extending social protection to all affected communities, and the frequent exclusion of informal workers, who constitute a large share of the labour force in many developing economies, from unemployment insurance or benefits and pension systems. Some participants noted that even where programmes exist, administrative complexity and weak delivery capacity can hinder their effectiveness and implementation.

51. Some participants identified challenges related to data gaps, noting that governments often lack reliable information and data, making it difficult to develop evidence-based policies and target interventions effectively. Some participants also noted that fragmented institutions can result in duplication or gaps, limiting the coherence and effectiveness of protective frameworks. Some participants reflected on more entrenched barriers beyond immediate challenges and noted that political resistance to redistributive policies remains a significant obstacle in some contexts, particularly where vested interests oppose progressive taxation or social spending.

52. Some participants identified the global financial system, with its asymmetries in access to credit and debt servicing pressures, as a structural barrier that limits developing countries' ability to invest adequately in social protection. Several participants underscored the fact that enabling systems and protections are not secondary to just transitions, but crucial to making transitions socially viable, noting that without robust social protection systems, transitions risk deepening inequality and increasing social fragmentation rather than fostering resilience and cohesion.

## D. Climate finance and international cooperation

53. The breakout group discussions on the topic of climate finance and international cooperation were facilitated by Ana Martinez from the World Food Programme.

### 1. Summary of discussions and key findings

54. Several participants emphasized that climate finance is crucial for advancing on just transition pathways that enhance adaptation and resilience, particularly for developing countries that face structural vulnerabilities and limited fiscal space, stressing that without adequate and predictable finance, an increase in climate ambition cannot be realized. Other participants noted that finance alone is not sufficient, pointing out that it must be accompanied by governance reforms, capacity-building and national ownership to ensure effectiveness and efficiency. Several participants highlighted the importance of delivering on existing commitments, including the USD 100 billion annual climate finance goal, and called for progress towards the new collective quantified goal on climate finance by scaling up contributions to at least USD 300 billion annually by 2035. Other participants drew attention to the quality of finance, underlining the need for more concessional and grant-based finance and debt relief, cautioning against an overreliance on loans.

55. Some participants encouraged a stronger focus on private sector mobilization and innovative tools, including blended finance and carbon markets, emphasizing the need to broaden the scope of financial instruments and partnerships to effectively support climate change adaptation, especially in the context of limited public climate finance and national capacity constraints. A number of participants highlighted how instruments such as green bonds, debt-for-climate swaps and insurance have already been used effectively in this sense. Other participants expressed caution about innovative financing, citing concerns about fairness, integrity and accessibility for vulnerable communities. A number of participants stressed that while blended finance might be helpful in mobilizing resources for adaptation measures, it does not negate the need for grant-based and concessional, non-debt-inducing finance, especially for countries with limited fiscal space. Other participants highlighted how innovative finance tools can bring in a wider range of stakeholders, such as international

financial institutions, philanthropic actors and non-governmental organizations, thereby helping to build a broader response to climate risks.

56. Some participants underscored what they view as the chronic underfunding of adaptation. Some participants highlighted how just transition pathways can help make the value case for investing in adaptation by highlighting social, health, security and development co-benefits, as well as possible mitigation co-benefits. Many participants reflected on the importance of ensuring that supported adaptation measures are locally led, inclusive, appropriate for the local context, aligned with national development priorities and leave no one behind. Several participants highlighted the need for more bankable projects that are aligned with just transition pathways that enhance adaptation and climate resilience, highlighting the need for technical assistance in this context.

57. On international cooperation, some participants pointed to positive examples of South–South collaboration, regional initiatives and technology transfer platforms. Others emphasized ongoing barriers, including intellectual property restrictions, limited participation of non-state actors, and geopolitical tensions that undermine cooperation. Some participants highlighted the need for systemic reforms of international financial institutions, including multilateral development banks, to align their operations with just transition priorities in the context of adaptation and climate resilience. Others argued that more incremental improvements, such as simplifying access procedures or supporting direct access initiatives, may offer faster results.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

58. Many participants observed that climate finance and international cooperation are pivotal to operationalizing just transitions in the context of adaptation and climate resilience, especially in developing countries where fiscal space is limited. Many noted that climate finance can catalyse structural transformation when aligned with national priorities and implemented transparently. A just transition lens applied to finance opens the door to blending mitigation, adaptation and social equity goals, thereby ensuring that funds benefit both people and the planet. Several best practices were cited from existing international and regional initiatives.

59. Some participants highlighted the need to simplify and improve access procedures for multilateral funds by simplifying application requirements and enhancing readiness support for vulnerable countries with weak institutional capacities. Some participants also highlighted the importance of scaling up concessional lending and grant finance, as opposed to loans that might exacerbate debt burdens. The use of innovative instruments, such as debt-for-climate swaps, green bonds tied to social safeguards, and blended finance structures, were also highlighted by some participants as a way to mobilize resources while addressing systemic inequalities.

60. Several participants acknowledged that despite pledges, climate finance flows remain insufficient relative to needs, with only a very small fraction allocated to adaptation and climate resilience initiatives related to just transition. Several participants criticized existing mechanisms for their complexity, noting the difficulties faced by some developing countries in accessing funding. Other participants underscored what they perceived as an uneven geographical distribution of finance, with some countries, especially the LDCs and SIDS, struggling to access climate finance commensurate to need. Some participants also raised concerns about the lack of monitoring and accountability in ensuring that funds reach front-line communities rather than being absorbed by intermediaries or diverted into projects with limited social benefits.

61. Some participants underscored structural inequities in the global financial architecture as a core impediment to just transitions, with high debt servicing costs crowding out climate investments in many developing countries. Some participants also flagged that climate finance flows are still predominantly mitigation focused, leaving adaptation, social protection and capacity-building underfunded. Other participants identified the insufficient integration of just transition principles into trade, investment and development cooperation frameworks, which often prioritize growth metrics over equity and resilience, as another barrier.

## E. Innovation and technology transfer

62. The breakout group discussions on the topic of innovation and technology transfer were facilitated by Valeria Palaez Cardona from Women Engage for a Common Future.

### 1. Summary of discussions and key findings

63. Some participants underscored the essential role of innovation and technology transfer in enabling just transitions in the context of adaptation and climate resilience, emphasizing that access to affordable and context-appropriate technologies can accelerate progress on just transition pathways while maximizing the creation of jobs and opportunities and ensuring that no one is left behind. Other participants noted that technological solutions alone cannot guarantee justice or inclusivity, and stressed the importance of combining innovation with policies that safeguard communities, protect workers and prevent inequalities from deepening. Several participants reflected on aspects of equity and accessibility, underlining the importance, in the context of just transitions, of ensuring that technology transfer is equitable, demand driven, context appropriate and accessible to developing countries.

64. Several participants pointed to barriers in accessing clean technologies, including high costs, limited infrastructure and restrictive intellectual property regimes. They underlined the importance of open access models, local production and cooperative licensing arrangements. Some participants highlighted examples of successful community-driven innovation, while other participants cautioned that digitalization may exacerbate divides, especially for rural or marginalized groups with limited connectivity or technical skills.

65. Several participants noted that innovation ecosystems should be rooted in local knowledge and skills, with many highlighting the need to integrate Indigenous and local knowledge, and the need to combine modern technologies with Indigenous, gender-responsive and community-based knowledge systems and innovations. Some participants suggested that partnerships between research institutions, microenterprises and small and medium-sized enterprises, and Indigenous communities can foster context-specific solutions that enhance ownership and sustainability. Others stressed the role of international cooperation, noting that North–South and South–South technology partnerships are critical for scaling up deployment. At the same time, some participants expressed concern that global technology markets remain skewed, with developing countries often reliant on external suppliers.

66. Some participants emphasized that innovation and technology transfer are critical levers for enabling just transitions in a holistic, multisectoral manner and across sectors. Other participants highlighted synergies with capacity-building and skills transfer, noting that technology transfer should go hand in hand with capacity-building, training and education, ensuring that local communities are skilled in using and adapting technologies. A number of participants noted that the benefits of technological progress are not evenly distributed, cautioning that without deliberate equity considerations, transitions risk reinforcing global divides, leaving many developing countries dependent on imported technologies and external expertise.

67. A number of participants highlighted the role of digital technologies, including artificial intelligence, big data and remote sensing, in advancing climate monitoring, early warning systems, and adaptive planning. Other participants voiced concerns about digital divides, stressing that marginalized groups, rural communities and low-income countries often lack the infrastructure, skills and access needed to benefit. They emphasized that, if it is not inclusive, digitalization could exacerbate inequalities and undermine trust in transition processes.

68. Several participants underscored the importance of international cooperation in ensuring that technology transfer is accompanied by capacity-building, financial and institutional support. Some participants noted that intellectual property regimes, high licensing fees and trade restrictions remain key obstacles to equitable access. Others suggested that innovation should be guided by principles of solidarity and human rights, ensuring that transitions are not only technologically advanced, but also socially just and culturally appropriate.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

69. Some participants highlighted opportunities in fostering South–South and triangular cooperation to share locally developed technologies and innovations that have already been piloted and might be scaled up in other contexts. Other participants emphasized the potential of regional innovation hubs to connect researchers, entrepreneurs and communities across borders.

70. Some participants highlighted cases where Indigenous knowledge systems were used alongside with modern technologies to deliver more sustainable, context-specific solutions. Other participants underscored the importance of local context and local governance, recognizing the role of local governments and informal settlements in implementing solutions, and the need for data, tools and governance at the local level.

71. With regard to actionable solutions, some participants identified the need for public–private partnerships, de-risking mechanisms and innovative financing to accelerate investment in emerging technologies and support early-stage deployment in developing countries. Other participants underscored the importance of climate finance, including concessional and grant-based finance, and technical assistance in terms of ensuring that new technologies are both affordable and accessible. Several participants highlighted the role of technology transfer in increasing the uptake of nature-based solutions, including with regard to ecosystem-based adaptation, coastal resilience measures and blue carbon.

72. With regard to challenges, some participants stressed that intellectual property rights and licensing costs can pose barriers to equitable technology transfer, observing that restrictive regimes often lock developing countries out of affordable access to critical technologies. Others raised concerns about insufficient absorptive capacity, where recipient countries may lack the skills, infrastructure or institutions to effectively adopt and adapt imported technologies.

73. Some participants cautioned against technological lock-in, warning that large-scale deployment of certain technologies could perpetuate existing inequities, create stranded assets or even trigger new environmental risks. Others stressed the risks of digital exclusion, noting that without targeted capacity-building, women, rural populations and marginalized groups could be left behind.

74. Despite these challenges, participants identified important enabling conditions. Some participants emphasized open-source platforms, collaborative research programmes and inclusive innovation policies as avenues for democratizing access. Other participants underlined the importance of using multi-stakeholder dialogues involving representatives of governments, the private sector, academia, workers' organizations and civil society to ensure that technological pathways align with the priorities and rights of affected communities.

75. Several participants underscored the work of the Technology Executive Committee and the Climate Technology Centre and Network, highlighting the importance of exploring synergies across relevant constituted bodies and work programmes, creating linkages that can help reduce overlap and increasing coherence within the process.

## F. Capacity-building and knowledge-sharing

76. The breakout group discussions on the topic of capacity-building and knowledge-sharing were facilitated by Miriam Garcia from the World Resources Institute.

### 1. Summary of discussions and key findings

77. Several participants emphasized the importance of capacity-building and knowledge-sharing for just transitions in the context of adaptation and resilience, which have the potential to enable governments, communities and workers to co-design and co-implement climate policies that are both ambitious and socially equitable. Other participants noted that capacity-building must be understood in a broad sense, encompassing technical expertise, policy design skills, institutional strengthening and social dialogue mechanisms. Some participants stated that in order to be effective, capacity-building must be locally led, context specific and long term, and emphasized that a 'one-size-fits-all' approach would not be

effective. Many participants emphasized that capacity-building initiatives should aligned with local realities, cultures and ecosystems, highlighting the importance of country and community ownership, from design to implementation.

78. Some participants noted that capacity-building and knowledge-sharing should be multidirectional and conducted in a transparent and accountable manner. They also highlighted the importance of 'learning by doing' and participatory approaches, underlining how the former can be effective in building a practical skill set and trust, and how inclusive, multidirectional engagement that includes formal and informal workers, as well as women, youth, Indigenous Peoples and other vulnerable groups, can be essential in underpinning effective adaptation and minimizing the risk of maladaptation. Several participants highlighted the importance of peer-to-peer learning and South–South exchanges, noting that many valuable lessons are emerging from developing countries that are piloting transition strategies under challenging conditions.

79. A number of participants pointed to education and training systems as critical arenas for embedding just transition principles. Some participants emphasized the need to update curricula in universities, vocational schools and lifelong learning programmes so that workers and students alike are better prepared for just transition pathways that enhance adaptation and climate resilience. Some participants highlighted the essential role of Indigenous Peoples and local communities in incorporating diverse knowledge systems in an ethical way, combining scientific, Indigenous and local knowledge and giving them an equal footing.

80. Some participants noted that capacity-building in the context of just transition pathways should simultaneously advance adaptation, resilience and social equity. Other participants pointed out that upskilling and reskilling, especially when targeted to informal and front-line workers in rural and urban settings, can play an essential role in this context. A number of participants felt that, in the context of just transition, adaptation actions should not just focus on bouncing back, but rather on leaping forward, and that capacity-building can be an enabling factor in this sense.

81. A number of participants reflected on the role of local ownership in preventing maladaptation, stressing that maladaptation risk tends to decrease when local actors lead planning, data interpretation and decision-making, and that tailored monitoring and evaluation and iterative learning can protect against unintended consequences of adaptation measures.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

82. Some participants highlighted the opportunity to mainstream just transition into national training and education systems, noting that embedding climate and sustainability skills in formal curricula could ensure that future generations enter the workforce prepared for labour markets aligned with just transition pathways that enhance adaptation and climate resilience.

83. Several participants highlighted the importance of enabling environments and policy coherence, highlighting how coherent policies and predictable implementation can play a role in facilitating finance flows and private sector engagement. Other participants noted that coordination across sectors and government levels can play an important role in breaking silos, in addition to maximizing co-benefits. Many participants reflected on the synergistic role of finance, technology and South–South cooperation, reporting that easy, equitable access to climate finance and appropriate technologies remains essential for effective adaptation planning and implementation and that South–South and triangular cooperation can accelerate peer learning and resource pooling. Some participants emphasized the role of international cooperation and South–South exchange. Some participants cited regional centres of excellence and cross-country partnerships as mechanisms that help countries learn from one another's experience, avoiding duplication and accelerating uptake of successful approaches. Some participants also noted that these centres and partnerships can also foster solidarity and trust, particularly among countries facing similar vulnerabilities.

84. Some participants drew attention to knowledge-sharing platforms as enablers of collective learning. Some cited examples of online portals, networks of practitioners, and

regional centres of excellence that facilitate the dissemination of best practices and policy innovations. At the same time, other participants noted that language barriers, digital divides and lack of reliable financing often hinder equitable participation in such platforms.

85. Several participants discussed digital platforms and knowledge hubs as promising tools for democratizing access to information. They shared examples of open access repositories of case studies, toolkits and training materials developed by international organizations and civil society networks. However, others cautioned that digital inequalities, including in relation to limited connectivity, high costs and language barriers, remain significant obstacles to equitable participation.

86. A number of participants stressed the importance of locally driven capacity-building initiatives, which ensure that training reflects cultural contexts, Indigenous knowledge and community priorities. They noted that participatory design can enhance ownership and trust and increase the relevance of capacity-building programmes. At the same time, some participants warned that such initiatives often lack sufficient and predictable funding, which limits continuity and impact.

87. Participants also identified challenges in sustaining institutional capacities over time. While many short-term projects successfully deliver workshops or training sessions, the knowledge and networks built often dissipate once external funding ends. Some proposed embedding capacity-building efforts within national institutions, thereby ensuring continuity, while others suggested establishing multi-stakeholder governance mechanisms to oversee and evaluate capacity-building strategies.

88. Some participants noted that in some contexts, limited recognition of the importance of capacity-building leads to underinvestment and weak institutional mandates. Other participants emphasized the challenge of integrating just transition principles into existing capacity-building frameworks, which often focus narrowly on technical skills without considering the social dimensions of transitions. Several participants suggested leveraging existing work under various constituted bodies and work programmes under the UNFCCC, including the Paris Committee on Capacity-building (PCCB), the Adaptation Committee (AC) and the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures (KCI), to maximize the role of capacity-building as an enabler.

## G. Building on synergies under the UNFCCC process

89. The breakout group discussions focusing on synergies under the UNFCCC process were facilitated by Chad Tudenggongbu from the secretariat.

### 1. Summary of discussions and key findings

90. Some participants emphasized the importance of understanding the United Arab Emirates just transition work programme as a cross-cutting agenda within the UNFCCC process, and not as a siloed process. A number of participants stressed that according to its mandate, the work programme is to inform the second global stocktake (GST). Some participants noted the potential of the work programme with regard to providing insights into the implementation of the principle of common but differentiated responsibilities and respective capabilities, as well as into equity dimensions, labour impacts and social protection needs, pointing out that such information is not always well captured in technical mitigation and adaptation assessments. Others suggested that the GST could serve as a benchmark for assessing whether Parties are integrating just transition principles into their national climate plans.

91. Other participants stressed the importance of linkages with the global goal on adaptation. They noted that some adaptation measures, such as planned relocation, measures related to climate-resilient agriculture, and coastal protection interventions, have direct implications for communities and workers. According to some participants, just transition considerations could help to ensure that adaptation interventions strengthen, rather than undermine, livelihoods and cultural continuity while avoiding the risk of exacerbating existing vulnerabilities.

92. Several participants pointed to opportunities to engage with the work of the Technology Mechanism under the UNFCCC, which consists of the Technology Executive Committee and the Climate Technology Centre and Network, as well as with constituted bodies and under work programmes, such as the Standing Committee on Finance (SCF), the AC, the KCI, the PCCB and the Nairobi work programme on impacts, vulnerability and adaptation to climate change. Some participants argued that these bodies could, for example, better incorporate just transition pathways in the implementation of their respective activities. Others, however, expressed caution, noting that these bodies already have clearly defined mandates and limited capacity.

93. Some participants drew attention to the Local Communities and Indigenous Peoples Platform (LCIPP) and the work of its Facilitative Working Group, noting that it offers a precedent for inclusive governance under the UNFCCC. They argued that the United Arab Emirates just transition work programme could learn from the LCIPP modalities of ensuring Indigenous knowledge systems, community voices and participatory mechanisms are recognized within global decision-making. Others questioned whether the work programme should replicate such structures or if it would be more effective for the work programme to collaborate with the LCIPP on specific thematic workstreams.

94. Many participants noted the need for a mapping exercise for existing UNFCCC workstreams and decision mandates to clarify where just transition considerations can be integrated. While some favoured a formal mandate for coordination across constituted bodies and work programmes, others advocated for a more organic, dialogue-driven approach. Regardless of their perspective, many participants expressed the view that identifying concrete entry points for potential synergies is necessary to avoid duplication, address fragmentation and enhance the overall coherence of the UNFCCC process.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

95. Some participants highlighted opportunities to integrate just transition considerations into ongoing UNFCCC workstreams. Some participants suggested that the second GST could provide an opportunity to systematically assess whether Parties are incorporating social dialogue, human rights and equity safeguards in their NDCs and national adaptation plans (NAPs) and in other climate plans and strategies.

96. Other participants pointed to best practices from the LCIPP, where modalities of participation have enabled marginalized groups to actively engage in the UNFCCC intergovernmental process. They argued that similar approaches could be piloted under the United Arab Emirates just transition work programme, particularly through regional dialogues or thematic workshops designed to ensure inclusive participation. Still, some cautioned that the LCIPP model may not be directly transferrable and that duplicating structures could create institutional complexity.

97. Several participants saw actionable solutions in enhancing cross-body coordination. For example, they proposed formal liaisons between the United Arab Emirates just transition work programme and the AC, the SCF and the Technology Mechanism. Some participants argued that such coordination could allow just transition pathways to be considered under the guidance to the Financial Mechanism, technology needs assessments and adaptation planning. Others, however, expressed concern that these proposals might blur mandates and slow down progress under existing workstreams, especially where resources and staffing are already overstretched.

98. On challenges, some participants underscored fragmentation and mandate fatigue. They noted that the proliferation of work programmes under the UNFCCC has sometimes resulted in overlap and inefficiency, with Parties and observers struggling to meaningfully engage across multiple parallel tracks. Other participants observed that while just transition is widely endorsed as a principle, there is no shared operational framework for how it should be integrated across mechanisms, creating risks of inconsistency and the potential for superficial references without real implementation.

99. Barriers were also identified in terms of political sensitivities and divergent priorities. Some participants pointed out that while many Parties support embedding just transition language in COP and CMA decisions, others prefer to keep the concept within the confines

of the United Arab Emirates just transition work programme. According to these views, institutionalizing cross-cutting linkages could face resistance from Parties that are wary of expanding mandates. At the same time, participants noted opportunities to build momentum through pilot initiatives. Some suggested that Parties could voluntarily report on actions related to just transition in their biennial transparency reports, creating a de facto space for accountability without requiring new formal mandates. Others emphasized the potential for collaboration with non-Party stakeholders, including trade unions, Indigenous Peoples' organizations and local governments, to test participatory models that could later be scaled up within the UNFCCC.

## H. Building on synergies outside the UNFCCC process

100. The breakout group discussions focusing on synergies outside of the UNFCCC process were facilitated by María Noel Estrada from the United Nations Research Institute for Social Development.

### 1. Summary of discussions and key findings

101. Some participants emphasized that synergies outside the UNFCCC are particularly valuable for advancing adaptation dimensions of just transitions. They pointed to ongoing work under the Sendai Framework for Disaster Risk Reduction 2015–2030, the Convention on Biological Diversity and the 2030 Agenda for Sustainable Development which offers tools and frameworks that could strengthen resilience, reduce vulnerability and support community-led adaptation measures. Other participants highlighted the role of regional adaptation initiatives, such as initiatives related to basin-level water governance, African Union climate resilience programmes and Caribbean disaster preparedness networks. They stressed that these platforms provide context-specific knowledge and support mechanisms that the UNFCCC alone cannot fully deliver.

102. Several participants pointed to the importance of aligning adaptation finance across institutions. They noted that development banks, bilateral donors and private investors are already channelling resources into adaptation and climate resilience projects, and that closer coordination with the UNFCCC process could help scale these efforts while avoiding duplication. Some also called for further integration of social protection systems and labour policies in adaptation planning to ensure that communities dependent on climate-sensitive livelihoods, such as agriculture, fisheries and tourism, are supported during transitions.

103. Civil society organizations, Indigenous Peoples' groups and youth networks were also mentioned as key actors shaping adaptation strategies outside the UNFCCC. Some participants noted that these groups often lead on locally grounded knowledge and innovative practices that can be scaled or shared internationally. Others, however, cautioned that global adaptation initiatives must not crowd out or overwrite community-driven approaches.

104. While many participants supported stronger linkages between the UNFCCC and external adaptation processes, others warned of potential risks, expressing concerns about overlapping mandates, loss of Party-driven accountability or fragmentation of adaptation governance. A recurring theme for many participants was that external synergies should complement the central role of the UNFCCC in advancing the integration of just transition pathways in climate adaptation action, especially in anchoring adaptation within the Paris Agreement framework, while adding value in areas like disaster risk reduction, development cooperation and ecosystem resilience.

105. Some participants emphasized that leveraging synergies outside the UNFCCC could help build momentum for just transitions by connecting with broader development, human rights and labour frameworks. They pointed to the relevance of ILO and international labour standards, and highlighted processes under the Group of 20, the World Bank and other multilateral institutions as complementary vehicles for advancing action. Other participants reiterated the importance of the centrality of Party-driven, consensus-based processes such as those under the UNFCCC.

106. However, differing views emerged on how far synergies outside the UNFCCC should be integrated into the United Arab Emirates just transition work programme itself. Some participants welcomed stronger linkages, arguing that coherence across institutions would strengthen outcomes. Others expressed concern that expanding too far outside the UNFCCC could dilute focus, create duplication or undermine the Party-driven nature of the process. Several participants noted that while synergies could provide critical resources and learning, the UNFCCC remains the central anchor for guiding climate action under the Paris Agreement. Many stressed that outside efforts should be seen as complementary to the core mandate of the work programme, rather than substitutive.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

107. Some participants noted that existing adaptation-relevant frameworks outside the UNFCCC already provide strong entry points for just transition considerations. They referred to the Sendai Framework as an example of how adaptation can be mainstreamed through early warning systems, local preparedness planning and resilience-oriented infrastructure. They stressed that closer alignment in implementing the Sendai Framework and just transition policies could reduce duplication while ensuring that resilience-building also supports social justice goals. Other participants underlined opportunities in regional cooperation. They pointed to examples such as cross-border water management agreements, coastal protection initiatives in SIDS, and regional disaster insurance pools. These, some participants argued, demonstrate how adaptation challenges do not respect political boundaries and can be more effectively tackled through shared governance, knowledge exchange and pooled resources. In their view, regional initiatives often move faster than global processes and may be more responsive to local needs.

108. Some participants emphasized that financing mechanisms outside the UNFCCC, including under multilateral development banks, bilateral development cooperation and regional funds, offer opportunities to integrate just transition principles into adaptation finance. Several participants stressed that these actors should consider prioritizing vulnerable groups, funding social protection and livelihood diversification, and introducing conditions on safeguards for human rights, gender equality and community participation. A number of participants noted that without coordination, parallel financing streams risk creating fragmentation and administrative burdens for recipient countries.

109. Other participants focused on civil society networks and community-based organizations, sharing examples of best practices where Indigenous Peoples' knowledge systems, women's cooperatives or youth-led initiatives have shaped adaptation strategies. Examples include locally driven monitoring of climate impacts, adaptation practices rooted in traditional ecological knowledge, and community-run risk-sharing schemes such as cooperative insurance models. Several participants argued that empowering these networks through recognition, funding and technical support could significantly strengthen adaptation outcomes. Other participants expressed concerns about fragmentation and duplication, noting that adaptation-related initiatives are proliferating across humanitarian, development, trade, and environmental institutions, often with overlapping mandates. Some participants warned that this could dilute accountability, increase reporting fatigue and create inefficiencies for governments with limited institutional capacity.

110. Several participants pointed to governance challenges, stressing that synergies outside the UNFCCC must not weaken the role of the Paris Agreement or allow Parties to shift obligations elsewhere. Others noted that while cooperation is valuable, there is a danger of confusing responsibilities and diffusing political accountability. Participants stressed that efforts outside the UNFCCC should add value without replacing or undermining the central role of the Convention and Paris Agreement.

111. Some participants emphasized barriers of access and coherence. They observed that many developing countries lack the resources and institutional capacity to engage effectively in multiple parallel forums. This can lead to missed opportunities for alignment or benefits. They suggested that practical solutions could include streamlined reporting, improved knowledge-sharing platforms and stronger coordination across institutions. Others proposed capacity-building programmes to enable developing countries to participate fully and strategically in both UNFCCC and non-UNFCCC processes.

# I. Identifying concrete and actionable outcomes for the United Arab Emirates just transition work programme in the context of adaptation and climate resilience

112. The breakout group discussions focusing on identifying concrete and actionable outcomes for the work programme in the context of adaptation and climate resilience were facilitated by Ana Vukoje from the secretariat.

## 1. Summary of discussions and key findings

113. Some participants highlighted the relevance of just transition pathways to all aspects of climate action, including mitigation, adaptation, loss and damage and means of implementation, emphasizing that, in the adaptation context, the work programme should provide clear and practical tools that Parties and non-Party stakeholders can use in integrating just transition into adaptation planning. They suggested developing a menu of options, ranging from policy frameworks and consultation mechanisms to financing instruments, that countries could adapt to their own contexts. Several noted that without actionable outputs, the work programme risks remaining only a platform for dialogue rather than a driver of change. Other participants focused on the integration of just transition into NAPs, NDCs and other climate plans and strategies. They suggested that the work programme could compile lessons learned from Parties that have already experimented with inclusive adaptation measures and prepare technical guidance on how equity, participation and human rights can be embedded into adaptation planning cycles. Some noted that specific references to just transition in NAPs and NDCs could help to signal political commitment and mobilize international support.

114. Some participants suggested that existing UNFCCC constituted bodies, such as the AC, the SCF and the PCCB, could be tasked with mainstreaming just transition considerations into their mandates. Other participants shared doubts regarding the feasibility of such approaches and argued that these bodies already face heavy workloads and limited capacity.

115. Some participants proposed the creation of institutional arrangements or mechanisms dedicated to mainstreaming just transition pathways into climate action under the UNFCCC, such as a dedicated expert group, coordination mechanism or platform, to ensure coherence between adaptation, finance and just transition. Some participants suggested that a guidance framework could also deliver on the same objectives. At the same time, other participants cautioned against creating new structures, noting risks of duplication and fragmentation. They emphasized strengthening linkages among existing institutions and making better use of existing mandates, and highlighted the important role that key messages that emerge from the dialogues held under the work programme could play in this context. Some suggested that the work programme itself could play a convening role, providing a space for regular exchange among different bodies.

116. Several participants stressed the role of social protection systems as enablers of resilience. They noted that adaptation often involves structural changes in livelihoods, resource use and settlement patterns, which can generate risks of income loss, food insecurity or health impacts. Examples mentioned include adaptive social safety nets, such as cash transfers indexed to climate shocks, public works programmes that create green infrastructure, and insurance schemes designed to protect vulnerable households. They suggested that documenting such approaches and sharing them through the work programme could strengthen policy coherence between climate and social sectors.

117. Some participants highlighted the importance of community-led and locally driven adaptation practices. They observed that many Indigenous Peoples, women’s groups and youth-led organizations are already implementing adaptation measures, including in relation to traditional water management, crop diversification and community-based early warning systems, that not only reduce risks, but also reinforce social cohesion. They suggested that the work programme could serve as a channel to bring the perspectives of these stakeholders into global discussions, as well as a mechanism for disseminating good practices more widely.

118. A number of participants pointed to the need for robust monitoring, evaluation and indicators. They suggested that outcomes of the work programme could include guidance on how to track whether adaptation actions are just and inclusive. Possible indicators mentioned include the extent of participation of vulnerable groups in decision-making, the share of adaptation finance reaching local communities, and measures of protection of cultural identity and traditional knowledge. Others cautioned that indicators should be flexible and context specific, rather than prescriptive.

119. Several participants highlighted the critical role of climate finance for turning principles into practice. They noted that adaptation finance remains insufficient and fragmented and is often inaccessible to the most vulnerable communities. Suggestions included exploring mechanisms to earmark a share of limited finance for the mainstreaming of just transition pathways, ensuring that funding supports participatory planning processes, and encouraging multilateral development banks and bilateral donors to integrate just transition criteria in their adaptation portfolios. Some participants also raised the issue of capacity-building and knowledge-sharing as concrete outcomes. They suggested that the work programme could establish regional hubs or networks to facilitate exchange of good practices, training of policymakers, and technical assistance tailored to different national and local contexts. Others added that capacity-building should not be limited to governments, but should also extend to workers' organizations, civil society and community-based actors.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

120. Some participants emphasized that enhanced cooperation should start with stronger coordination among UNFCCC constituted bodies that deal with adaptation, finance, technology and capacity-building. They noted that the AC, the SCF and the PCCB already have relevant mandates and suggested that the work programme could provide a space and signals for mainstreaming just transition pathways in their respective mandates. Other participants underscored the risk of overlap and urged clarity on the division of roles, proposing that synergies be achieved through better information exchange rather than new mandates.

121. Some participants proposed the creation of new institutional arrangements or mechanisms under the UNFCCC that could support Parties with mainstreaming just transition pathways into climate action, including by providing technical assistance, or financial or capacity-building support. Other participants cautioned against the creation of new institutional arrangements or mechanisms, underscoring the risk of inefficiencies and duplication that may be associated with such an approach.

122. A number of participants also raised the need for knowledge-sharing platforms. Several participants noted that the work programme could facilitate sharing of best practices and lessons learned, including on topics of relevance for just transition pathways that enhance adaptation and climate resilience, such as social protection systems, participatory and locally led adaptation planning, and inclusive governance models. Some participants proposed developing repositories of case studies and methodologies that Parties and non-Party stakeholders could access, while other participants suggested joint capacity-building programmes at the regional and subregional level.

123. Some participants focused on regional and cross-border cooperation, suggesting that countries facing similar adaptation challenges could benefit from joint platforms for exchanging experience, pooling resources and sharing best practices. Some participants suggested that regional organizations and development banks might have a role in operationalizing these forms of cooperation by supporting pilot projects and scaling up good practices.

124. Several participants highlighted the importance of multi-stakeholder partnerships. They noted that adaptation often requires collaboration across government ministries, local authorities, workers' organizations, civil society, Indigenous Peoples and the private sector. Some emphasized the role of employers' and workers' organizations in ensuring fair labour outcomes in adaptation projects, while others drew attention to the contribution of local communities in shaping context-appropriate responses. A few participants cautioned,

however, that participation is often limited in practice, and stressed that cooperation must be structured in ways that ensure genuine inclusion and accountability.

125. Some participants pointed to opportunities for synergies beyond the UNFCCC. They mentioned the 2030 Agenda for Sustainable Development, the Sendai Framework and conventions related to human rights, labour and biodiversity as relevant entry points for just transitions. According to some of the views expressed, linking the work programme to these global frameworks could help to avoid fragmentation, leverage existing knowledge and mobilize broader political support. Others cautioned that excessive reliance on external processes might dilute the focus and mandate of the UNFCCC process.

# Annex II

## Informal summary of the fourth dialogue under the United Arab Emirates just transition work programme*

## I. Introduction

### A. Mandate

1. The Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its fourth session decided to establish a work programme on just transition for discussion of pathways to achieving the goals of the Paris Agreement outlined in Article 2, paragraph 1, in the context of Article 2, paragraph 2.[1]

2. CMA 5 established the scope and modalities of the United Arab Emirates just transition work programme, deciding that it shall be implemented under the guidance of the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) through a joint contact group to be convened at each of their sessions, starting at the sixtieth sessions of the subsidiary bodies (SB 60).[2]

3. CMA 5 also decided that at least two dialogues shall be held each year as part of the work programme, with one to be held prior to the first regular sessions of the subsidiary bodies, starting with SB 60, and one prior to the second regular sessions of the subsidiary bodies, starting with SB 61, and that such dialogues should be conducted in hybrid format to allow both in-person and virtual participation.[3]

4. Furthermore, CMA 5 requested the Chairs of the subsidiary bodies to prepare in a timely manner, with the assistance of the secretariat, an annual summary report on the dialogues.[4] At SB 60, the SBSTA and the SBI encouraged their Chairs to prepare and publish, starting from the first dialogue and immediately following each dialogue under the work programme, an informal summary of the discussions at that dialogue, including on opportunities, best practices, actionable solutions, challenges and barriers, ensuring that those discussions are reflected in a comprehensive and balanced manner.[5]

5. Pursuant to this mandate, the secretariat prepared and published, under the guidance of the Chairs of the subsidiary bodies, informal summary reports on the first,[6] second[7] and third[8] dialogues held under the work programme. The information contained in the two informal summaries on the first and second dialogues held in 2024 under the work programme is included in the first annual summary report on the dialogues by the Chairs of the subsidiary bodies.[9]

6. This informal summary on the fourth dialogue held under the work programme was prepared under the guidance of the Chairs of the subsidiary bodies, aimed at reflecting the discussions held at the fourth dialogue in a comprehensive and balanced manner, and includes a summary of the discussions and the key findings, as well as opportunities, best practices, actionable solutions, challenges and barriers identified in the breakout discussions and plenary sessions.

* Not formally edited.

[1] Decision 1/CMA.4, para. 52.

[2] Decision 3/CMA.5, para. 4.

[3] Decision 3/CMA.5, para. 5.

[4] Decision 3/CMA.5, para. 10.

[5] FCCC/SBSTA/2024/7, para. 98, and FCCC/SBI/2024/13, para. 45.

[6] Available at https://unfccc.int/documents/640155.

[7] Available at https://unfccc.int/documents/642594.

[8] Available at https://unfccc.int/documents/650431.

[9] FCCC/SB/2024/7.

7. This informal summary captures and summarizes views shared during the fourth dialogue but may not represent an exhaustive summary of all interventions.

## B. Proceedings

8. The fourth dialogue under the United Arab Emirates just transition work programme took place in Addis Ababa, Ethiopia, from 1 to 2 September 2025. The fourth dialogue took place in hybrid format, with 135 in-person and 112 virtual participants, totalling 247 participants from Parties, United Nations and other intergovernmental organizations and non-governmental organizations.[10] The dialogue was hosted by the Government of Ethiopia as part of the second Climate Week of 2025.

9. The topic of the fourth dialogue was **on just energy transition pathways and holistic approaches to just transitions including socioeconomic, workforce, social protection and other dimensions, based on nationally defined development priorities**.

10. In the opening plenary, participants were welcomed by remarks delivered by Noura Hamladji, Deputy Executive Secretary of the secretariat; Abas Mohammed Ali, UNFCCC national focal point, Ministry of Planning and Development of Ethiopia; and Elchin Allahverdiyev, Director of Climate Diplomacy Department at the Ministry of Foreign Affairs, Azerbaijan. Following the welcoming remarks, Julia Gardiner, Chair of the SBI, provided participants with an introduction to the scope and format of the fourth dialogue under the work programme.

11. Following the welcoming and introductory segment, participants had the opportunity to exchange views on understanding the holistic and multisectoral nature of just transitions: socioeconomic, workforce, social protection and other dimensions underpinning nationally defined just energy transition pathway. Participants engaged around three subtopics in hybrid plenary sessions that provided an opportunity for both in-person and virtual interventions. These sessions were moderated by three facilitators who used the following guiding questions to provide a framework for the discussions:

a) The topic of **nationally defined just energy transition pathways as a tool to enhance energy access and affordability** focused on the following guiding questions:

**(i)** How can nationally defined just energy transition pathways and holistic and multisectoral approaches to just transitions be designed to advance the implementation of the goals of the Paris Agreement and expand access to affordable, reliable and sustainable energy for all, particularly in addressing persistent energy poverty and inequalities in access?

(ii) What policies, financing mechanisms and approaches could be most effective in ensuring universal access to clean cooking solutions, including through the development of innovative and fair financial and technological solutions to increase access, while safeguarding vulnerable communities from the social and economic risks of energy transitions?

(iii) How could renewable energy deployment and energy efficiency be upscaled through nationally determined just energy transition pathways and harnessed to improve energy access and affordability, empowering local communities and ensuring that benefits are equitably shared across different social groups, including women, youth and marginalized populations?

(iv) How can subsidies be (re)designed to best support nationally defined just energy transition pathways through supporting enhanced energy access, scaled-up deployment of renewable energy, energy efficiency, clean cooking solutions and other measures, including through phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions?

[10] The agenda, webcast recordings and presentations are available at https://unfccc.int/event/fourth-dialogue-under-the-united-arab-emirates-just-transition-work-programme.

b) The topic of **socioeconomic risks and opportunities associated with energy transition pathways** focused on the following guiding questions:

**(v)** How can nationally defined just energy transition pathways be designed to maximize opportunities associated with workforce transitions, including through the reskilling and upskilling of workers, while ensuring a fair transition for informal workers who may lack access to formal protections? What could be the role of the private sector, including micro, small and medium-sized enterprises (MSMEs), in this context?

(vi) How can social protection systems be strengthened or adapted to address the socioeconomic risks faced by workers and communities affected by energy transition pathways?

**(vii)** How can just energy transition pathways be designed to maximize health and environmental co-benefits, and how can these benefits be equitably distributed across society?

**(viii)** What are the key social and economic considerations related to the extraction and use of critical minerals for clean energy technologies, and how can policies ensure that their development supports sustainable livelihoods, protects workers and avoids exacerbating existing or creating new forms of vulnerability?

c) The topic of **energy security in the context of just energy transition pathway**s focused on the following guiding questions:

**(ix)** How can nationally defined just energy transition pathways strengthen energy security and reliability while accelerating efforts globally towards net zero emission energy systems?

(x) How can nationally defined just energy transition pathways be designed to ensure that future energy systems are resilient to climate impacts, supply chain disruptions and geopolitical risks, while also remaining affordable and accessible to all?

**(xi)** In what ways can human rights-based and gender-responsive approaches be integrated into nationally defined just energy transition pathways to ensure that secure and reliable energy systems are also equitable and inclusive?

(xii) How can cooperation at the national, regional and international level support the development of resilient, secure and just energy systems that safeguard both people and ecosystems?

12. In the afternoon of the first day and before engaging in breakout group discussions focused on unpacking the full range of means of implementation for a multisectoral approach to just energy transition pathways, participants had the opportunity to hear three scene-setting presentations. These were delivered by Richard Muyungi from the United Republic of Tanzania, Chair of the African Group of Negotiators; Stig Svenningsen from Norway, former Chair of the Technology Executive Committee (TEC); and Princess Abze Djigma, Co-Chair of the Paris Committee on Capacity-building (PCCB) and were aimed at framing and inspiring subsequent discussions.

13. The breakout group segment was divided into three distinct thematic discussions running in parallel. Participants were assigned to one of three hybrid breakout discussion rooms. After each round of discussions lasting 45 minutes, the facilitators rotated to a different breakout room, allowing all participants to attend each thematic discussion over the remainder of the day. The three discussion themes were:

a) Theme 1: **Climate finance for just energy transition pathways**, which was framed by the following guiding questions:

(i) What lessons are being learned on financing nationally defined just energy transition pathways aligned with the outcome of the first global stocktake, including through enhancing access to climate finance, and innovative and blended finance, crowding-in of the private sector in a way that complements public finance, and financing for social protection systems?

**(ii)** What innovative financing mechanisms and policy frameworks could support enhancing the provision of climate finance for transitioning away from fossil fuels in a just, orderly and equitable manner, in line with national development priorities while safeguarding affected workers and communities?

b) Theme 2: **Innovation and technology transfer**, which was framed by the following guiding questions:

(iii) How can innovation and technology transfer foster holistic and multisectoral approaches to just energy transition pathways that leave no one behind, including through inclusive innovation, local knowledge integration and identification of scalable solutions?

(iv) How can innovation and technology transfer best support the implementation of nationally defined just energy transition pathways, including through energy efficiency, clean cooking solutions, scaling up of renewable energy and enhancing energy access?

c) Theme 3: **Capacity-building and knowledge-sharing**, which was framed by the following guiding questions:

(v) How can capacity-building and knowledge-sharing initiatives under nationally defined just energy transition pathways ensure that Indigenous Peoples and local communities are empowered as active partners, with their cultural heritage, traditional knowledge and practices recognized, valued and protected?

(vi) What mechanisms or platforms could strengthen the exchange of experience, skills and resources to build capacities for just energy transition pathways that reflect diverse local contexts and leave no one behind?

14. The second day of the dialogue started with the facilitators reporting back on the discussions that took place in the three hybrid breakout groups in the afternoon of the first day, followed by an open discussion allowing all participants to react to the report back and share additional reflections in plenary session.

15. Prior to the breakout group discussions on fostering just energy transition pathways and holistic approaches to just transitions focusing on enabling conditions and environments at global and national level planned for the morning of the second day, three scene-setting presentations provided an initial framing for the three themes. Damon Jones from the secretariat delivered a scene-setting presentation on identifying concrete and actionable outcomes for the work programme in the context of just energy transition pathways and holistic approaches to just transitions, including through synergies within and outside the UNFCCC; Katie Swan-Nelson from the United Nations Conference on Trade and Development delivered a scene-setting presentation focusing on the role of trade and international cooperation in supporting just energy transition pathways; and Jane Cohen from the International Energy Agency delivered a framing presentation focused on policy frameworks for just energy transition pathways and holistic approaches to just transitions that leave no one behind.

16. The breakout group discussions on the three different subtopics ran in parallel. Participants were assigned to one of three breakout discussion rooms. After each round of discussions lasting 45 minutes, the facilitators rotated to a different breakout room, allowing all participants to attend the discussions on each of the three subtopics. The three discussion themes were:

a) Topic 1: **Identifying concrete and actionable outcomes for the United Arab Emirates just transition work programme in the context of just energy transition pathways and holistic approaches to just transitions, including through synergies within and outside the UNFCCC**, framed by the following guiding questions:

(i) What could be some concrete and actionable outcomes for the work programme in the context of just energy transition pathways and holistic approaches to just transitions?

(ii) How can the work programme best capitalize on synergies within and outside the UNFCCC in this context, including through its dialogues?

b) Topic 2: **The role of trade and international cooperation in supporting just energy transition pathways**, framed by the following guiding questions:

(iii) What lessons are being learned in terms of cross-border impacts of climate measures, including trade impacts, and what could be the role of trade in supporting nationally determined just energy transition pathways?

(iv) How can international cooperation and partnerships enhance and expand support for nationally determined just energy transition pathways?

c) Topic 3: **Sharing experience on policy frameworks for just energy transition pathways and holistic approaches to just transitions that leave no one behind**, framed by the following guiding questions:

(v) How can enabling environments for just energy transition pathways, holistic approaches to just transitions and economic diversification be designed to reflect nationally defined development priorities?

(vi) What are some examples of bottom-up, community-led and participatory governance frameworks and approaches for just energy transition pathways that could be replicated and adapted to different contexts?

17. Following three breakout group discussion rotations, the facilitators reported back on the discussions to the plenary. Participants then had the opportunity to reflect on the information reported back and engage in an open discussion on the three subtopics.

18. The fourth dialogue concluded with closing addresses by Julia Gardiner, Chair of the SBI, and Mario Mottin, Head of the Climate Action Division at the Ministry of Foreign Affairs, Brazil.

# II. Summary of discussions and key findings

## A. Nationally defined just energy transition pathways as a tool to enhance energy access and affordability

19. The session on this subtopic was facilitated by Felicitus Okoko from the women and gender constituency.

### 2. Summary of discussions and key findings

20. Some participants emphasized that nationally defined just energy transition pathways should place universal, affordable and reliable energy access at the centre of holistic just transition efforts, noting that for many developing countries the immediate priority is the need to address energy poverty, enabling sustainable development, energy security and improved well-being, and that access to all energy sources is important to these priorities. Other participants highlighted that the urgent decarbonization of energy systems in a manner consistent with pursuing efforts to limit the global temperature increase to 1.5 °C is a key aspect of just transitions and that this effort can be complementary to addressing energy poverty and improving energy access, affordability and reliability. Other participants stated that there can be more trade-offs than synergies between these priorities. Most participants noted the need for just transition pathways to be country-driven and grounded in national circumstances and development priorities. Some noted that the principles of equity and common but differentiated responsibilities and respective capabilities should guide just transition efforts. Some participants underlined that the framing of the dialogue and its guiding questions should have more explicitly reflected these principles in order to ensure that the discussions remain balanced, fair and grounded in different national circumstances.

21. Many participants highlighted the need for scaling up access to clean cooking, highlighting the many co-benefits of this including in terms of health benefits, gender equality and impacts on the environment and livelihoods. Some participants observed that

clean cooking should be given dedicated policy attention and recognized as a fundamental need, rather than considered as ancillary of broader energy transitions. Some participants further noted that progress in this area often depends on public and concessional finance, as well as context-appropriate technologies and delivery models tailored to local realities, while other participants highlighted the possible role of innovative financing, including blended finance, micro credit, 'pay as you go' models and concessional loans in scaling up access to clean cooking. A number of participants pointed to ongoing national and regional initiatives to elevate clean cooking within climate and development strategies, emphasizing that predictable support, inclusive planning and community buy-in are important determinants of sustained uptake.

22. In discussing the contribution of renewable energy and energy efficiency to access and affordability, participants observed that many renewable technologies are increasingly cost-effective, modular and rapidly deployable, including in remote settings, with potential to reduce import dependence and enhance energy sovereignty. At the same time, other participants noted that scaling up access at pace requires complementary investment in enabling infrastructure — such as grids, storage, system flexibility and demand-side management —together with appropriate regulatory and planning frameworks, cautioning that renewable energy deployment alone does not automatically deliver universal access absent these supporting measures. Some participants noted the need to consider issues of energy consumption and energy savings.

23. Several participants underscored that just energy transitions should be people-centred, rights-based and gender-responsive and should incorporate robust mechanisms for social dialogue, as well as meaningful engagement and participation of affected workers and communities. The importance of recognizing and protecting the rights of Indigenous Peoples – including with respect to lands, territories and resources – and ensuring their full and effective participation and free, prior and informed consent in decision-making processes was emphasized. Others noted the relevance, where appropriate, of community-owned and decentralized energy solutions to reinforce local ownership, community buy-in and long-term sustainability.

24. Some participants highlighted the importance of transitioning away from fossil fuels and phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transitions, also noting that well thought out approaches to this issue could have positive repercussions in terms of affordability, fiscal space and investment signals. Other participants noted that subsidy design falls within national sovereignty and, in certain contexts, supports poverty eradication and basic needs. Some participants also argued for the need for policies to consider the role of a range of options and all available and cost-effective technologies for reducing emissions, including transitional fuels, in a manner consistent with national circumstances and energy security and reliability considerations. In this context, some participants specifically referred to natural gas as a transitional fuel, nuclear power generation, hydro energy and other resources.

25. Many participants observed that energy transitions present both socioeconomic risks and opportunities. The potential for job creation, local value addition and economic diversification were highlighted by some participants alongside the need for reskilling and upskilling, inclusion of informal workers and targeted support for MSMEs. Some participants stressed the need for policy interventions and measures to ensure that benefits are equitably shared and that vulnerable groups are not left behind, and that these considerations should be integrated from the outset into both policy design and implementation.

26. Some participants drew attention to the cross-border impacts of climate measures, including trade-related effects, and emphasized the importance of international cooperation that supports nationally defined just transition pathways and sustainable development while respecting national sovereignty. Participants expressed different views regarding the framing of these issues, with some participants framing them as climate change related trade-restrictive unilateral measures. Other participants refuted such framing and noted the importance of ensuring that discussions relating to the intersection between climate and trade should be neutrally framed to allow for an open discussion on the opportunities and implications of aligning trade and climate measures. Some participants also noted that discussion of specific to domestic measures need to be conducted in a non-intrusive, non-

punitive manner and in full respect of national sovereignty and it is not the role of the UNFCCC process to assess the policies or measures of individual Parties. A number of participants noted that discussions on energy access and affordability should remain non-prescriptive and sensitive to differing national starting points, with attention given to the specific constraints faced by the least developed countries (LDCs) and small island developing States (SIDS).

### 3. Opportunities, best practices, actionable solutions, challenges and barriers

27. Participants identified opportunities to embed universal access to energy, including clean cooking, within nationally defined just transition pathways through integrated policy interventions that combine inclusive planning, rights-based participation, targeted social protection and dedicated public and concessional finance. Several participants highlighted the potential of decentralized renewable solutions and energy efficiency measures in improving affordability, particularly in remote or underserved areas, in particular when paired with investments in grid reinforcement, storage and system flexibility and supported by clear and predictable regulatory frameworks. Some participants reiterated the need to urgently decarbonize energy systems, and in a manner that achieves just transitions to net zero and climate resilient societies. In this context they highlighted the outcome of the first global stocktake and the call for tripling global renewable energy capacity, doubling the global average annual rate of energy efficiency improvements by 2030, transitioning away from fossil fuels, rapidly scaling up zero and low emission technologies and phasing out inefficient fossil fuel subsidies that do not address energy poverty or just transition as soon as possible.

28. In terms of best practices, participants reiterated the holistic nature of just transition and the importance of whole-of-society and whole-of-economy approaches. Many participants referred to the need for whole-of-government approaches that align energy, social and industrial policies; structured social dialogue with workers and employers organizations; governance frameworks that recognize Indigenous Peoples' rights; and promotion of community-centric models where appropriate. Some participants also pointed to data-driven planning, territorial approaches and targeted programmes for women, youth and marginalized groups as enablers of equitable outcomes and durable public support for just energy transition measures.

29. Actionable solutions highlighted by participants included elevating clean cooking as a core component of national climate and development strategies; designing affordability measures to protect vulnerable households; advancing skills strategies and support for MSMEs; and deploying blended finance, where appropriate, while scaling up grant-based and concessional support to de-risk investment and avoid new debt burdens. Some participants proposed realigning public expenditures to catalyse access and affordability, while others noted the need to preserve policy space over subsidies and to sequence any reforms carefully to prevent adverse social impacts and maintain public confidence.

30. Some participants recognized persistent challenges and barriers, including limited fiscal space, high upfront capital costs, grid and storage constraints, affordability pressures for low-income households, data gaps and capacity limitations in planning and implementation. Several participants emphasized that predictable access to means of implementation (finance, technology transfer and capacity-building) remains essential to enable nationally defined just energy transition pathways that effectively enhance access and affordability while safeguarding social outcomes.

## B. Socioeconomic risks and opportunities associated with energy transition pathways

31. The session on this subtopic was facilitated by Bryan Bixcul from Indigenous Peoples organizations.

### 1. Summary of discussions and key findings

32. Many participants emphasized that the socioeconomic dimensions of nationally defined just energy transition pathways require approaches that are people-centred, gender-responsive and rights-based, with justice embedded in the details of policy design, institutional arrangements, resource allocation and participation. Several participants underscored that meaningful involvement of workers, Indigenous Peoples, youth and local communities through social dialogue and inclusive governance strengthens legitimacy, safeguards and the fair distribution of benefits, and helps anticipate distributional impacts across sectors and regions.

33. Many participants highlighted the centrality of decent work in just transitions, observing that workforce outcomes depend on the quality of jobs created, not only their quantity. They pointed to risks of subcontracting, informalization of the workforce, low wages and unsafe conditions in some emerging sectors and emphasized that reskilling and upskilling are necessary but not sufficient without robust labour standards, social protection and structured social dialogue consistent with International Labour Organization guidelines. Other participants noted that just transition pathways are highly context-specific, requiring tailored responses for regions dependent on fossil-related activities and for MSMEs.

34. Several participants observed that loss of employment in industries that are dependent on fossil fuels does not automatically translate into equivalent employment in renewable energy and related value chains, noting potential differences in labour intensity across technologies and stages of deployment. These participants underlined that governments have a primary role in safeguarding workers and communities through policy, planning and public investment, while the private sector can contribute where appropriate within clear frameworks that protect rights and livelihoods. Others stressed the importance of aligning national skills strategies with industrial policy to support orderly redeployment and regional economic diversification.

35. Some participants stressed the need to address social and environmental risks associated with scaling up supply chains for clean energy technologies, including the extraction and processing of critical minerals. These participants emphasized the importance of respect for human rights, including the rights of Indigenous Peoples; free, prior and informed consent; protection of peoples in voluntary isolation and initial contact; effective and culturally appropriate grievance and redress mechanisms; and, where appropriate, exclusion zones to safeguard particularly vulnerable territories and sacred sites. Some participants also called for disaggregated data to capture differentiated impacts on Indigenous Peoples and local communities.

36. Some participants highlighted that responsible governance of critical minerals is essential to avoid exacerbating existing or creating new forms of inequality risks. They noted opportunities for value addition, economic diversification and decent work in producing countries when robust standards, transparency and accountability mechanisms are in place, and suggested that international cooperation could help embed critical information on mineral-related best practices, solutions, challenges and barriers in future work under the work programme. Others proposed drawing on existing expert guidance and multilateral initiatives and exploring options for cooperation and knowledge-sharing mechanisms that reflect the perspectives of producing countries.

37. Some participants pointed to significant health and environmental co-benefits from cleaner energy systems and reduced air pollution, while noting that these co-benefits accrue unevenly without deliberate policy choices. A number of participants stressed that measures should prioritize groups in vulnerable situations, including informal workers and those in geographically remote or underserved areas, and be accompanied by occupational safety and health provisions. Some participants underscored that giving attention to these co-benefits can strengthen public support for measures related to energy transition and reduce long-term social costs.

38. Some participants noted that nationally defined just energy transition pathways should reflect diverse starting points and structural constraints, including fiscal space and access to finance, and called for predictable support in the form of finance, technology transfer and capacity-building to enable worker-focused and community-centred just energy transitions.

A number of participants underlined that circular economy approaches such as recycling, material efficiency and energy sufficiency can reduce pressure towards new extraction activities and help align industrial strategies with social and environmental objectives.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

39. Some participants identified opportunities to operationalize decent work through integrated policy packages that combine anticipatory skills strategies, enforcement of labour standards, social protection and active labour market policies with regional development plans. Approaches cited included national coordination bodies for just energy transition planning, sectoral road maps and locally led implementation that engages workers, employers and communities in line with established social dialogue practices. Other participants highlighted benefit-sharing arrangements and frameworks that recognize the rights and roles of Indigenous Peoples, together with mechanisms for early and continuous participation in policy and/or project design, implementation and monitoring.

40. In terms of best practices, participants pointed to a number of approaches including structured tripartite dialogue aligned with international labour standards; targeted programmes for women, youth and persons in vulnerable situations, including entry pathways into clean energy occupations and support for MSMEs; territorial approaches that integrate industrial policy, infrastructure planning and community services; and data and evaluation systems capable of tracking distributional impacts, including health outcomes. Some participants shared examples of experience in which grid reinforcement, storage and interconnection, paired with workforce and community measures, supported energy system reliability while delivering local employment outcomes.

41. Actionable solutions discussed included launching or strengthening national just transition frameworks that align energy, labour, social and industrial policies; establishing skills compacts and apprenticeship programmes tied to forecast demand in clean energy and related sectors; and deploying affordability measures and targeted social protection to cushion households during transition. Some participants also referred to circular economy policies across the full value chain – from responsible mineral extraction and local processing to recycling and end-of-life management – together with safeguards that ensure free, prior and informed consent, grievance mechanisms and, where appropriate, exclusion zones to protect particularly vulnerable territories.

42. Participants noted a number of challenges and barriers including uneven job quality and informality in emerging sectors; limited fiscal space for active labour market policies; gaps in training systems relative to evolving technology needs; and the complexity of coordination across institutions and levels of government. Other participants highlighted risks linked to rapid scaling up of mineral supply chains, including social conflict, environmental degradation and inequitable benefit-sharing, underscoring the need for robust standards, transparency and accountability. Some participants highlighted that predictable access to means of implementation (finance, technology transfer and capacity-building) is critical to addressing these barriers and enabling nationally determined, socially inclusive just transition pathways in developing countries.

## C. Energy security in the context of just energy transition pathways

43. The session on this subtopic was facilitated by Soenke Kreft from the United Nations University.

### 2. Summary of discussions and key findings

44. Many participants emphasized that nationally defined just energy transition pathways can strengthen energy security when they are designed to ensure reliability, affordability and sustainability. Some participants highlighted that nationally determined just energy transitions offer a mechanism to simultaneously enhance energy security and accelerate the transition toward net-zero emissions consistent with pursuing efforts to limit the global temperature increase to 1.5 °C. A number of participants highlighted that the most effective approaches integrate long-term climate ambition with security-of-supply planning, including

through grid reinforcement, system flexibility, energy storage and diversified energy mixes appropriate to national circumstances. Several participants underlined that resilience to climate impacts, market volatility and geopolitical disruptions should be built into the design of just energy transition pathways from the outset, with clear provisions for continuity of essential services.

45. Some participants noted that high shares of renewable energy, when coupled with storage, interconnection and modern system operation, can enhance reliability and reduce exposure to the volatility of fossil fuel markets. A number of participants shared experience, pointing to the importance of planning for variability and adequacy, focusing less on one-for-one generation replacement and more on the enabling infrastructure, operational reserves and demand-side management that keep energy systems secure. Other participants observed that in isolated or remote energy systems, decentralized and hybrid configurations (e.g. mini-grids paired with storage) can support both security and access.

46. Some participants highlighted that energy security is ultimately delivered locally, noting the central role of cities and subnational authorities in electrifying transport fleets, scaling up distributed renewable energy generation, retrofitting buildings and implementing affordability measures such as social tariffs and clean cooking programmes. A number of participants emphasized that multilevel governance, clear mandates and adequate resourcing for local governments can translate national commitments into tangible improvements in energy reliability and access, particularly for low-income and underserved communities.

47. Several participants stressed that just energy transition pathways must remain country-driven and reflect national contexts, including development priorities, existing infrastructure and resources. Some participants referred to the importance of policy space to determine energy mixes, sequence reforms and, where applicable, plan and manage energy transition in a manner consistent with national energy security considerations. Other participants emphasized that rapid transition away from fossil fuels is indispensable to the long-term security and stability of energy systems, and that sustained reliance on imported fossil fuels can itself be a source of insecurity.

48. The need to embed human rights-based, gender-responsive and people-centred approaches within energy security planning was noted by several participants. Some participants pointed to the importance of mechanisms for participation, social dialogue, benefit-sharing and grievance redress and measures that protect workers and communities through just transition planning, targeted social protection and inclusion of women, youth and groups in vulnerable situations. Some participants observed that emergency preparedness and occupational safety are integral to resilient and secure energy systems.

49. Participants discussed risk management and energy system resilience, including disaster risk reduction and recovery capacities for energy infrastructure. Some participants described tools to assess and benchmark facility-level resilience across pillars such as infrastructure strengthening, financing and insurance, stockpiling, response and rehabilitation, and cyber resilience, noting that structured assessments can identify gaps and prioritize investment to reduce outage risks under climate and non-climate shocks.

50. Several participants underscored the value of regional integration, cross-border interconnection and coordinated planning to enhance energy security and affordability, while cautioning that cooperation should respect national sovereignty and differing starting points. Others raised concerns that certain framings of “energy security” can encourage securitization dynamics that marginalize communities or constrain equitable energy transition choices, and encouraged using access, sovereignty and rights-based lenses to guide international support consistent with the principle of equity.

51. Many participants highlighted that predictable means of implementation (climate finance, technology transfer and capacity-building) are essential to align energy security and transition objectives, particularly where fiscal space is constrained and upfront capital needs are high. Some participants noted that affordability measures for vulnerable households and carefully sequenced reforms can help sustain public confidence, and that clear governance arrangements can reduce risks of market shocks and stranded assets as energy systems evolve.

### 3. Opportunities, best practices, actionable solutions, challenges and barriers

52. Participants identified opportunities to incorporate energy security and reliability into transition planning through integrated resource and resilience planning that co-optimizes generation, networks, storage and demand-side resources. Some of the approaches discussed included capacity adequacy frameworks suited to highly variable renewables energy systems; investment in grid modernization, interconnection and digital system operation; and reserve and emergency response arrangements that maintain continuity of critical services during climate and non-climate shocks.

53. Some of the best practices highlighted included multilevel governance arrangements that mandate and enable subnational implementation of measures; local programmes for mini-grids and distributed generation in underserved areas; and affordability instruments such as targeted social tariffs and measures to prevent disconnection for vulnerable households. Some participants also pointed to the need for benefit-sharing frameworks and inclusion mechanisms that build social support for just energy transition measures, together with workforce measures such as reskilling, redeployment and support for MSMEs, to align energy security objectives with decent work and local development.

54. Participants discussed a number of actionable solutions including resilience assessment tools and scorecards that benchmark facility and system readiness; risk-layered financing approaches, including insurance and contingency facilities to manage extreme events; and programmes to accelerate storage deployment, grid-forming inverters and flexible demand. Some participants also highlighted the importance of territorial and regional cooperation platforms to coordinate planning, facilitate cross-border trade and share reserves, thereby lowering energy costs and enhancing reliability.

55. Some participants emphasized the need for policy and regulatory measures that enable secure decarbonization, including streamlined procedures for grid and storage projects; clear rules for the interconnection of distribution networks to ensure distributed energy resources; and standards for climate-resilient infrastructure. Other participants noted the potential of circular economy and end-of-life management for new technologies to address environmental risks, including hazardous waste streams as deployment is scaled up, thereby safeguarding communities while supporting system security.

56. Opportunities for international cooperation discussed included technical assistance for energy system planning; knowledge-sharing on sequencing the transition away from fossil fuels to avoid price spikes and stranded assets; and expanded access to concessional and blended finance for grid reinforcement, storage and community-level solutions. Participants noted that cooperation is most effective when it respects national sovereignty, supports local capacity and value addition and ensures that benefits reach people in vulnerable situations.

57. Some participants highlighted challenges and barriers, including limited fiscal space and high upfront capital requirements for networks and storage; exposure to supply chain volatility; data and capacity gaps for advanced system planning; and coordination complexity across institutions and levels of government. Participants also noted risks associated with narrowly framed “security” narratives that could marginalize communities or entrench inequities. Many participants highlighted that predictable access to the full range of means of implementation could play a critical role in addressing these barriers without jeopardizing energy reliability, affordability and access.

## D. Climate finance for just energy transition pathways

58. The session on this subtopic was facilitated by Fungai Matura from the United Nations Development Programme.

### 1. Summary of discussions and key findings

59. Many participants emphasized that climate finance is an indispensable enabler of nationally defined just energy transition pathways, noting that predictable, adequate and accessible climate finance is necessary to align energy reliability, affordability and decarbonization with social outcomes. Many participants underscored that when it comes to

climate finance, both quantity and quality matter, highlighting the importance of grant-based and highly concessional finance for measures that may lack commercial returns, such as last-mile access, distribution upgrades, clean cooking programmes, social protection and worker reskilling, cautioning against loan-heavy packages that might risk undermining fiscal space and just transition objectives.

60. Several participants recalled that, under the Paris Agreement, developed countries have obligations related to the provision and mobilization of climate finance, and expressed concern that a focus on blended or innovative finance may distract from this. Many participants noted that climate finance flows remain insufficient, fragmented and unpredictable relative to assessed needs, with high transaction costs, complex eligibility criteria and access modalities and slow disbursement processes. Some participants linked these constraints to elevated capital costs and debt burdens in many developing countries.

61. A number of participants highlighted the role of the private sector in delivering the investments needed to achieve net zero emissions. Many participants observed that while private finance can play an important role, it is not a substitute for public finance. Some participants shared experience, indicating that risk mitigation instruments and clear policy frameworks can help mobilize private capital for bankable investments (e.g. utility-scale renewables, storage, grids), but also highlighted that many just transition components, particularly people-centred measures and distributional policies, require public grants or highly concessional terms. Some participants questioned assumptions about the scale of private finance thar can be leveraged in low-income or high-risk contexts.

62. Views were expressed on existing initiatives and instruments. Some participants pointed to carbon pricing, emissions trading systems, green and transition bonds, and transition finance frameworks as mechanisms that can help align financial flows with just energy transition pathways and generate resources for just transition measures. Other participants shared lessons from country platforms and investment plans, noting the importance of nationally led pipelines, transparent prioritization and benefit-sharing to build social acceptance. At the same time, some participants raised concerns regarding debt-creating modalities and governance arrangements in which investment choices may not reflect local needs.

63. Some participants underscored the need for human rights-based, gender-responsive and inclusive approaches to financing. A number of participants underlined the need for direct access modalities, where appropriate, including for Indigenous Peoples and local communities; robust participation, consultation and grievance redress mechanisms; and safeguards that prevent social or environmental harm. Several participants stressed that finance should enable economic diversification, decent work and protection of workers and communities in sectors undergoing structural change.

64. Some participants pointed to opportunities for international cooperation to improve the effectiveness of finance, including through enhanced coordination among international financial institutions; streamlined access procedures; and consideration of debt relief or debt swap options. Some participants suggested the establishment of dedicated funding windows or mechanisms for just transition to ensure that social and distributional measures are treated as priorities in energy transition pathways.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

65. Some participants noted that aligning finance with just transition pathways requires focused attention on both the quantity and quality of available resources. Several participants highlighted the importance of increasing the share of grant-based and highly concessional finance for interventions such as social protection, worker support, measures related to energy affordability measures and community-level access to climate finance. Other participants referred to the need for concessional capital to be scaled up for grid infrastructure, storage and system flexibility investments, which were seen as essential to maintaining energy reliability. Some participants also mentioned the value of embedding just transition considerations in national planning and budgeting cycles to enhance policy coherence, transparency and accountability.

66. A number of participants shared examples of best practices in financing approaches. Some referred to the use of country platforms to present nationally determined project pipelines as a means of improving coordination and visibility. Other participants highlighted the role of clear taxonomies and transition finance standards in guiding financial flows and enhancing market confidence. Several participants noted that risk mitigation instruments, including guarantees, insurance facilities and first-loss tranches, can help reduce the cost of capital for priority investments while maintaining safeguards for social outcomes. Some participants mentioned programme designs that earmark a portion of revenues, including from carbon pricing where applicable, for worker reskilling and upskilling, community development and alleviation of energy poverty.

67. A number of participants discussed practical steps to expand access to finance and improve delivery. Suggestions included simplifying fiduciary, environmental and social procedures to accelerate disbursement while maintaining robust safeguards; strengthening readiness support for project preparation and pipeline development; and enhancing direct access modalities for subnational actors, including Indigenous Peoples and local communities, with corresponding protections for their rights and participation. Several participants drew attention to benefit-sharing frameworks, exclusion criteria for activities with significant social or environmental risks and grievance mechanisms to uphold human rights and gender equality.

68. Some participants referred to innovative financial instruments and sources that could complement existing financial flows. Examples mentioned included solidarity-oriented levies, fiscal reforms and subsidy redesign linked to strong just transition measures as potential means of mobilizing predictable domestic resources. Some participants highlighted the potential of green and transition bonds, sustainability-linked instruments and blended finance structures, emphasizing that their effectiveness depends on transparent regulation, credible metrics and safeguards to prevent debt distress and ensure that resources reach affected workers and communities. While some participants highlighted the role of the private sector in delivering the investments needed to achieve net zero emissions, other participants shared concerns regarding the potential deprioritization of social and justice considerations that might lack profitability.

69. Several participants highlighted cooperation opportunities among international financial institutions and development partners. References were made to coordinated support from multilateral development banks to de-risk grid and storage investments; enhanced technology cooperation to address intellectual property and supply chain barriers; and better alignment among operating entities of the Financial Mechanism and other finance providers to prioritize just transition components. Some participants mentioned proposals for dedicated just transition financing windows or debt relief and debt swap arrangements linked to energy access and social outcomes. Other participants highlighted the role that international finance institutions, including multilateral development banks, could play in enhancing the eligibility of projects that include just transition considerations under existing frameworks, as well as by offering guarantees for minimizing the potential risks for private co-financing. Some participants noted the possible value of incorporating transition and resilience benefits into prudential guidance and risk assessments to help moderate the cost of capital.

70. Participants also noted several challenges and barriers that continue to constrain progress. Some participants highlighted persistent gaps between identified needs and available concessional resources, high borrowing costs for many developing countries, limited institutional capacity to absorb and manage funds effectively and difficulties in generating and tracking data on distributional impacts. Some participants observed that narrowly designed financial instruments may inadvertently reinforce existing inequalities or create new debt vulnerabilities. Other participants underlined that access to finance should be predictable, fair and responsive to national circumstances, and that people-centred investments need to be recognized as integral components of just energy transition pathways. Several participants viewed the reduction of these barriers as important for ensuring that climate ambition, sustainable development and social inclusion advance in a mutually supportive manner.

## E. Innovation and technology transfer

71. The session on this subtopic was facilitated by Camilla Roman from the International Labour Organization.

### 1. Summary of discussions and key findings

72. Participants emphasized that innovation and technology transfer are indispensable enablers of nationally determined just energy transition pathways. Some participants underscored the need for changes in social systems that would allow for the creation of enabling environments for technology development and transfer through processes that are embedded in different social, economic and development contexts. Other participants highlighted that persistent barriers, such as high upfront costs, restrictive intellectual property regimes, limited technical capacity and weak enabling environments, continue to constrain deployment at the required scale and pace. Many participants stressed that technology cooperation must be firmly anchored in equity and the principles of the Convention and the Paris Agreement, with particular attention given to the circumstances of the LDCs and SIDS, whose absorptive capacities and institutional architectures often remain under-resourced.

73. A recurrent theme for many participants was the importance of context-appropriate and people-centred solutions. Many participants noted that technology transfer frequently overlooks local contexts, Indigenous knowledge systems and end user realities, increasing the risk of 'technology dumping' and poor social acceptance. Several interventions underlined that innovation should be co-designed with affected communities, workers, women, youth and Indigenous Peoples to ensure fitness for purpose, durability, decent work and long-term operation and maintenance. Other participants highlighted that technology choices are nationally determined and should support domestic development priorities, economic diversification and energy access.

74. Many participants highlighted the important role that the Technology Mechanism, through its TEC and the Climate Technology Centre and Network, as well as the forthcoming technology implementation programme, could play in moving from the provision of guidance to implementation at scale. Participants encouraged reinforced linkages between technology support and the Financial Mechanism, paired with capacity-building and skills pipelines, so that transferred technologies can be absorbed, adapted and manufactured locally where feasible. Several participants also noted that reliable innovation ecosystems also depend on standards, certification, safeguards and end-of-life management.

75. Multiple interventions underscored the centrality of distributed and modular approaches such as mini-grids, rooftop and community solar, efficient appliances and digital demand-side management alongside grid modernization, storage and energy efficiency. Some participants stressed the need to reduce reliance on primary extraction through circularity, repair, reuse and recycling. Other participants noted that a full technology scope remains relevant to nationally defined pathways, with some highlighting the role that carbon capture, utilization and storage could play in specific contexts within broader mitigation portfolios.

76. Many participants highlighted the need for innovation to safeguard human rights and avoid unintended harm, including through ensuring meaningful participation, preventing displacement, protecting biodiversity, managing e-waste and hazardous by-products and grievance and redress mechanisms. Many participants linked successful technology outcomes with coherent policies on skills, social protection and local value creation, so that innovation tangibly advances equity, energy access and resilience.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

77. Participants exchanged a wide range of perspectives on opportunities to accelerate inclusive innovation and technology transfer in support of just energy transitions. Many participants emphasized that innovation processes should be co-designed from the outset, integrating local and Indigenous knowledge with scientific and engineering expertise. A number of participants noted that such approaches can build trust, improve the contextual relevance of measures and interventions and lead to more durable outcomes. Some

participants also referred to participatory technology needs assessments aligned with national climate strategies as a means of linking local priorities with broader planning frameworks. Several participants pointed to modular and rapidly deployable technologies, such as solar mini-grids, efficient clean cooking systems, hybrid renewable energy systems with storage, and smart-grid controls, as offering adaptable solutions across diverse geographies. Other participants drew attention to demand-side innovation, including efficient lighting and cooling, productive use appliances and digital load management, which can enhance reliability and affordability while producing direct social and health benefits.

78. Some participants underscored the importance of developing national innovation ecosystems that connect universities, MSMEs, utilities, regulators, standards bodies and community organizations. These participants described these as frameworks that allow experimentation and feedback to occur within a coherent system. Some participants suggested the establishment or strengthening of national or regional innovation hubs and testing facilities that can validate technologies under local conditions while also serving as platforms for skills development, accreditation, and operation and maintenance training. Some participants noted that the development of clearer technical standards for mini-grids, clean cooking systems, battery technologies and other components could play an important role in improving safety, interoperability and investor confidence.

79. Several participants discussed opportunities to enhance the effectiveness of the Technology Mechanism in supporting implementation at scale. With regard to actionable solutions, some participants suggested expanding the scope of technical assistance provided through the Climate Technology Centre and Network and strengthening operational links with the Financial Mechanism to pair technology support with concessional and grant-based finance for public good elements such as standards, workforce training and social safeguards. Some participants also suggested the development of practical toolboxes containing adaptable model regulations, procurement templates and standard offer programmes to facilitate replication across diverse contexts.

80. Intellectual property and access issues were raised by a number of participants as key considerations for equitable technology deployment. Some participants noted that intellectual property constraints can affect deployment speed and affordability, particularly in developing countries, in particular the LDCs and SIDS. Some participants suggested actionable solutions such as voluntary licensing, patent pools and time-bound waivers for priority mitigation and adaptation technologies. Several participants also encouraged the promotion of open standards and open hardware designs for selected technologies, coupled with public–private partnerships that include local manufacturing, assembly and after-sales services.

81. Many participants stressed that innovation must be grounded in principles of justice and inclusion. Human rights due diligence, gender-responsive design and youth engagement were identified as integral to building social acceptance. A number of participants cited possible actionable solutions such as community benefit-sharing, local hiring and training, and accessible grievance and redress mechanisms. Some participants underscored the importance of avoiding new environmental or social harms, calling for robust safeguards, biodiversity protection and comprehensive end-of-life strategies to address e-waste and recycling, particularly as the scale of battery and electronics use increases.

82. Regional collaboration and South–South cooperation were mentioned by some participants as effective enablers of scale up technology deployment and cost reduction. Some participants shared ideas on developing regional standards for mini-grids and appliances, establishing shared testing laboratories and pooling procurement for key components to reduce costs and strengthen supply chains. Other participants highlighted the potential of data-sharing and transparency initiatives to track deployment, access, equity and reliability outcomes and disseminate lessons learned across regions.

83. In discussions on financing the innovation cycle, some participants underscored that technology transfer without accompanying finance and capacity-building often faces challenges at the deployment stage. Many participants called for predictable grant and highly concessional resources to support early-stage piloting, last-mile connectivity, workforce development and social protection measures. Some participants highlighted the role of blended finance in complementing public finance for public good elements, while other

participants highlighted the important role of public finance in this context. Some participants pointed to the usefulness of risk mitigation instruments, such as guarantees, insurance mechanisms and offtake arrangements, to help attract private investment once enabling conditions are in place.

84. Some participants pointed to barriers and challenges such as the high cost of capital, intellectual property restrictions, insufficient standards and certification, limited domestic manufacturing and supply chain capacity, shortages of technical skills and inadequate attention to end-of-life management. Several participants noted the challenge of fragmented initiatives and short-lived pilot projects that fail to progress to implementation at scale. Some participants made suggestions to overcome these barriers and challenges, such as coordinated pipelines that link demonstration and commercialization, monitoring frameworks tracking affordability, access and co-benefits, and closer integration between technology, finance and capacity-building processes.

## F. Capacity-building and knowledge-sharing

85. The session on this subtopic was facilitated by Chiagozie Udeh from the United Nations Population Fund.

### 1. Summary of discussions and key findings

86. Many participants emphasized that just transitions are nationally defined, reflecting unique circumstances, development priorities and socioeconomic contexts, and that pathways, targets and timelines must account for national realities. These participants highlighted that capacity-building and knowledge-sharing are preconditions for the legitimacy, effectiveness and durability of just energy transition pathways. Many participants underscored the need for capacity-building and knowledge-sharing efforts to be people-centred and gender-responsive, designed and implemented through inclusive consultation with local communities, Indigenous Peoples and traditional leaders, women, youth and workers. These participants underscored that meaningful participation ensures that technology choices fit the context, social protection measures are salient, and benefits, including affordable, reliable energy access and clean cooking, reach those that are most vulnerable.

87. Several interventions underscored that national circumstances shape both needs and modalities. Some participants described structural constraints in specific contexts, such as limited institutional architectures, skills gaps and difficulties adapting technologies to local conditions, and how these can impede their deployment at scale. Other participants emphasized the disadvantages of small markets and the risks of ‘technology dumping’. Many participants highlighted that capacity-building is not only required to implement interventions and measures effectively but also to assess socioeconomic trade-offs and distributional impacts.

88. Many participants noted their support for whole-of-society and whole-of-government approaches coordinated across ministries and levels of government, including institutionalization of social dialogue with unions and employers, and meaningful participation of civil society and academia. Several participants highlighted the value of culturally grounded approaches, such as utilising local and Indigenous languages and visual tools, valuing oral traditions and community protocols. A number of participants highlighted the importance of two-way communication and the benefits of governments and experts learning to communicate in ways that communities recognize as their own.

89. Several participants called for fit-for-purpose platforms that could help turn lessons learned into practice at scale. Proposals ranged from regional knowledge hubs, peer-to-peer networks and South–South cooperation to dedicated institutional arrangements under the UNFCCC with a technical assistance function dedicated to just transitions that is able to map needs, match countries with available support and monitor gaps. Other participants urged the United Arab Emirates just transition work programme to strengthen synergies with UNFCCC constituted bodies such as the TEC, the PCCB and the Katowice Committee of Experts on the Impacts of the Implementation of Response Measures (KCI).

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

90. Participants reflected on a range of opportunities and good practices to strengthen capacity-building and knowledge-sharing in support of just energy transition pathways. Many participants emphasized that capacity-building should be understood as a people-centred and continuous process rather than a series of isolated initiatives. These participants noted that capacity-building was essential for enabling just energy transition pathways and should be approached as an ongoing, country-driven process grounded in national circumstances and priorities. Other participants emphasized that support should be demand-driven and built on existing institutions and frameworks, with clear respect for the principles of equity and common but differentiated responsibilities and respective capabilities. Some participants highlighted the importance of embedding participation and co-creation throughout the entire policy cycle, from problem identification and solutions design to implementation and monitoring, using culturally appropriate methods.

91. Several participants highlighted that the United Arab Emirates just transition work programme could have a role in facilitating more systematic sharing of knowledge and experience by connecting needs with offers for capacity-building support and promoting the exchange of methodologies, lessons learned and tools developed under related UNFCCC processes. Some participants suggested possible functions the work programme could perform in this regard, such as serving as a platform to map capacity-building needs, identify available support and avoid duplication of efforts. Other participants suggested the establishment of a linked technical assistance network that could channel targeted expertise and provide hands-on support at the country and regional level. Several participants pointed to the importance of coordination with constituted bodies under the Convention and the Paris Agreement, including the TEC and the PCCB, to ensure complementarity and coherence across existing mandates.

92. A number of participants drew attention to the importance of regional and peer-learning mechanisms for advancing just energy transition pathways. Some participants mentioned that regional centres could serve as venues for training, knowledge exchange and South–South cooperation, while others referred to communities of practice where experience could be shared on topics such as clean cooking transitions, grid development, industrial diversification and waste management. Several participants noted that digital platforms could broaden access to training and good practices, allowing practitioners and policymakers to learn from comparable experience in different contexts. Some participants highlighted the need to strengthen support for front-line actors, including Indigenous Peoples organizations, local governments, women's associations, trade unions and youth networks. They noted that predictable and multi-year resources were necessary to enable participation, language translation, connectivity and travel, and that adequate technical support would help ensure effective engagement. Other participants pointed to the importance of safeguards to protect traditional knowledge and ensure that knowledge-sharing does not become extractive or one-sided.

93. A number of participants noted that building capacity should also involve strengthening institutions and systems of learning within countries, referencing the need for national frameworks that link ministries, universities, vocational training institutions and local authorities. Some participants suggested that curricula and training programmes could integrate both scientific and Indigenous knowledge and that accreditation and standardization processes would help build confidence in local skills and technologies. Other participants observed that embedding capacity-building within national budget and planning cycles could improve coordination and accountability. Several participants pointed to the potential for partnerships with industry and the private sector to link capacity-building with employment creation and diversification opportunities. Other participants suggested that social dialogue and tripartite mechanisms could be used to align training and investment strategies with national just transition objectives.

94. Participants also mentioned the importance of monitoring and learning. Some highlighted the possible development of voluntary indicators or metrics for tracking the social and economic outcomes of capacity-building activities, including indicators on decent work, gender equality, affordability and reliability of services, and participation of Indigenous Peoples. Others referred to the usefulness of knowledge-sharing platforms or

observatories to collect data and document experience across regions in a comparable and accessible manner.

95. A number of participants identified barriers that continue to limit the effectiveness of capacity-building. These included high staff turnover, limited institutional resources, short-term projects that do not build sustainable expertise, and difficulties in coordinating efforts across sectors and governance levels. Some participants proposed actionable solutions such as multi-year capacity-building compacts, embedding advisers who can mentor national counterparts, aligning projects with domestic budget cycles and developing incentives to retain trained personnel, particularly in underserved regions. A number of participants also underlined that capacity-building efforts should be holistic and extend beyond the energy sector to include industry, adaptation, circular economy development and other related areas. Others pointed out that coordination among national plans and strategies, such as nationally determined contributions (NDCs), long-term low-emission development strategies (LT-LEDS) and national adaptation plans (NAPs), could help reduce duplication and ensure efficient use of resources.

96. Several participants remarked that capacity-building support should equip countries with the tools and skills to design their own just energy transition pathways and assess distributional impacts and energy security trade-offs, rather than prescribing uniform models. Other participants emphasized that adequate and predictable resourcing is a precondition for effective capacity-building. References were made to the need for grants and highly concessional funding, as well as the importance of recognizing capacity-building as a core component of just energy transition pathways.

## G. Identifying concrete and actionable outcomes for the United Arab Emirates just transition work programme in the context of just energy transition pathways and holistic approaches to just transitions, including through synergies within and outside the UNFCCC

97. The session on this subtopic was facilitated by Ana Vukoje from the secretariat.

### 1. Summary of discussions and key findings

98. Many participants emphasized that discussions under the United Arab Emirates just transition work programme should advance towards identifying concrete, implementable and results-oriented outcomes. Many participants agreed that just transitions must be nationally defined and country-driven, reflecting each Party's unique circumstances, priorities and socioeconomic contexts. Several participants underscored that approaches should not be top-down, prescriptive, externally imposed or guided by uniform targets, and that they should uphold the principles of equity and common but differentiated responsibilities and respective capabilities. Many participants underlined that future outcomes under the work programme should be practical, non-prescriptive and designed to support countries in developing and implementing their own nationally determined just transition pathways.

99. A number of participants emphasized that the work programme should facilitate the translation of broad concepts into actionable measures while preserving national ownership and policy space. A number of interventions highlighted that existing experience, expertise and institutional structures within and outside the UNFCCC provide a strong foundation for action. Some participants suggested that the work programme should focus on identifying, synthesizing and linking current efforts, rather than creating parallel new processes. Mapping available tools, resources and initiatives and compiling lessons learned from ongoing programmes were seen as useful steps to guide future work.

100. In considering potential existing or new institutional arrangements, a number of participants reiterated the importance of first defining the functions that the work programme should perform before turning to questions of form. While some suggested exploring options for enhanced coordination or technical assistance functions under the work programme, others underlined that new structures should be considered only after clear needs and complementarities have been established. Some participants reflected on the usefulness of a toolbox of recommendations on how to root climate policies in just transition. A number of

participants highlighted the need for the establishment of new institutional arrangements, ranging from a guidance framework on the integration of equity and fairness in climate action to the establishment of a global just transition mechanism. Some participants proposed the establishment of a technical assistance network that could facilitate access to technical assistance, coordinate capacity-building initiatives, link developing countries with sources of support and monitor and assess gaps in just transition support.

101. Many participants highlighted the need to ensure synergies across relevant workstreams and institutions, emphasizing the value of enhanced cooperation among constituted bodies and work programmes under the Convention and the Paris Agreement, such as those dealing with technology, capacity-building and finance, while also engaging constructively with initiatives beyond the UNFCCC. At the same time, a number of participants stressed that outcomes under the work programme should retain the distinct, Party-driven character of the UNFCCC process, noting that while collaboration with external actors is important, it should not be a substitute for, nor predetermine, intergovernmental decision-making under the Convention.

102. A number of participants highlighted the importance of transparency and inclusiveness in shaping the next phase of work under the work programme. They emphasized the need to ensure the meaningful participation of workers, local governments, Indigenous Peoples, women and youth in discussions. Other participants underlined the role of continued open dialogue in building trust and mutual understanding among Parties and non-Party stakeholders. Many participants agreed on the importance of maintaining space for contributions from observer organizations and technical experts to share practical tools and approaches that could inform implementation.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

103. Participants offered a broad range of proposals for concrete and actionable outcomes to enhance the relevance and impact of the work programme. Several participants suggested developing a toolbox of recommendations to guide Parties in embedding just transition principles across climate policies, including through national policies and strategies, such as NDCs, LT-LEDS and NAPs. A number of participants suggested that the work programme could undertake a thematic mapping of available tools and initiatives, complemented by a repository of best practices and case studies from across regions, to identify gaps and support peer learning. A number of participants noted that such an exercise would be necessary and useful to ensure that available knowledge and experience are used effectively before any new mechanisms are considered.

104. Some participants suggested that the establishment of institutional arrangements, such as a dedicated technical assistance network, could be considered an actionable solution for facilitating access to technical assistance and support needed to implement just transition pathways at the national level. A number of participants suggested that a precondition of any new institutional arrangements should be a thorough assessment of support already available, actual needs and proposed functions.

105. Several participants underscored that enhanced synergies and coherence with relevant ongoing initiatives that could be of relevance to just energy transition pathways are essential to ensure complementarity and avoid duplication. Some participants encouraged structured engagement with relevant constituted bodies and workstreams under the Convention and the Paris Agreement, including the TEC, the PCCB, the KCI and the Sharm el-Sheikh mitigation ambition and implementation work programme, as well as with external organizations and initiatives working on just energy transition pathways, to align efforts and maximize collective impact. At the same time, a number of participants cautioned that any such efforts must respect the Party-driven nature of the process. These participants noted that while collaboration with external actors can add value, the uniqueness of the UNFCCC process lies in its legitimacy and inclusiveness.

106. A number of participants drew attention to the potential for two-way feedback loops between the work programme and the operating entities of the Financial Mechanism under the Convention and the Paris Agreement. These participants proposed that the work

programme could provide signals on just transition priorities while also receiving feedback on implementation progress and challenges experienced at the project level.

107. Capacity and resource constraints were frequently cited as barriers by many participants, particularly for developing countries. Participants highlighted the need for predictable and accessible means of implementation (finance, technology and capacity-building) to support countries in designing and implementing inclusive just energy transition pathways. In this context, participants reflected on ways in which potential outcomes under the work programme could help address these constraints. Some participants highlighted that key messages on just transitions are emerging from the advancement of technical work under the work programme. These participants noted that the work programme could have a role in exploring ways to provide guidance to Parties and non-Party stakeholders in implementing their climate policies, plans, strategies and actions towards climate-neutral resilient societies in a just and inclusive manner, in alignment with the outcomes of the first global stocktake, on a voluntary, non-prescriptive basis. Several participants reiterated that any outcomes under the work programme must reflect the holistic, multisectoral, whole-of-society nature of just transition, highlighting the importance of meaningful participation of workers, local communities, Indigenous Peoples, women, youth and vulnerable groups both at the planning and implementation stage.

## H. The role of trade and international cooperation in supporting just energy transition pathways

108. The session on this subtopic was facilitated by Katie Swan-Nelson from the United Nations Conference on Trade and Development.

### 1. Summary of discussions and key findings

109. Participants exchanged views on the role of trade and economic cooperation in advancing just transitions. Many interventions addressed the importance of framing, noting that discussions should encompass a wide range of trade-related and economic policy measures relevant to just transitions, rather than focusing narrowly on any single category. Several participants reflected on how policy design can influence distributional outcomes, including effects on competitiveness, export sectors and workers in sensitive industries. It was observed that such measures can have differentiated impacts depending on national circumstances, with some participants highlighting the challenges posed by limited administrative capacity and higher relative costs in the LDCs and SIDS.

110. Some participants emphasized that trade and investment policies can create opportunities to strengthen climate action when designed transparently and inclusively. They noted that early consultation with affected partners and stakeholders, dialogue and assessment of potential spillovers are important to ensure fair outcomes. Other participants referred to the potential for trade-related measures to encourage more accurate emissions reporting, enhance pricing signals and drive technological upgrading. Several interventions underlined that trade is not neutral in its effects on climate and development outcomes and that implications depend on design choices, cooperation modalities and the extent to which measures incorporate equity and support considerations.

111. Participants discussed the impacts of a number of climate change trade-related measures, including cross-border adjustment mechanisms designed to prevent so-called carbon leakage. Some participants noted that some approaches, which they framed as climate change related trade-restrictive unilateral measures, could have negative impacts on just transitions in developing countries by hindering international cooperation and access to means of implementation. Other participants cautioned against such characterizations, noting that the dialogue under the work programme is not an appropriate forum for the assessment of individual policies and that, when looking at the role of trade in advancing just energy transition pathways, all policies should be discussed in a balanced, transparent, non-adversarial and non-punitive manner in full respect of national sovereignty.

112. A number of participants emphasized that trade is an essential part of accelerating the clean energy transition and that the growth in clean energy, and green goods and services,

represents significant economic opportunities, including for inclusive, sustainable development.

113. A number of participants drew attention to structural barriers within existing trade and investment frameworks that may limit technological upgrading or local value addition, particularly for countries endowed with critical minerals. They noted that historical patterns of participation in global supply chains, often as suppliers of low-cost inputs, can hinder broader development and diversification objectives. In this context, some participants expressed concern about investment provisions that may constrain public interest regulation, while other participants underscored the need to ensure respect for Indigenous Peoples' rights, including free, prior and informed consent and access to judicial remedies across supply chains. Participants also shared perspectives on the role of trade in enabling countries to maintain export income, protect sensitive sectors and preserve competitiveness as economies transition to lower-emission pathways. Some participants highlighted that regional and cross-border cooperation can enhance energy security, reliability and affordability. Some participants suggested peer-to-peer learning among critical mineral producers as a potentially effective means to share lessons learned and avoid harmful competition.

114. Several participants highlighted that international cooperation is essential to achieving the goals of the Paris Agreement and broader climate and development objectives. They noted that this cooperation extends beyond multilateral settings to include regional, bilateral and plurilateral arrangements. Some participants emphasized the importance of better coordination among existing multilateral processes, including between the World Trade Organization and the UNFCCC, to better understand the development dimension of trade-related climate measures, as well as ways in which any disadvantages for developing countries could be mitigated or addressed to ensure that trade and climate goals can be mutually reinforcing. Some participants suggested a potential role for the work programme in this context.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

115. Some participants highlighted that trade measures could contribute to just energy transitions by facilitating access to environmental goods and services and lowering costs for clean technologies. Other participants noted that trade policy could promote more consistent and interoperable approaches for accounting for embodied emissions, as well as encourage the expansion of energy efficiency and product standards across markets in ways that minimize duplication and administrative burden. A number of participants suggested the need for voluntary, non-prescriptive tools, to assist policymakers in integrating considerations of equity, decent work, gender responsiveness and distributional impacts into trade-related climate measures. Some participants added that transparency and early consultation with affected stakeholders could support fair and inclusive implementation. Some participants highlighted the role that carbon pricing instruments, such as taxes on carbon-intensive goods, could play in advancing just energy transition pathways.

116. Several participants referred to regional integration as a means to enhance the reliability, affordability and resilience of energy systems while advancing low-emission transitions. Examples shared included cross-border interconnectors, power pooling arrangements and coordinated market operations that allow neighbouring systems to share resources and hedge variability risks. Some participants mentioned that these initiatives have been supported by development finance institutions and other partners through concessional or blended finance, which has helped to de-risk investments and mobilize private capital. Participants also referred to cooperation frameworks that combine finance, technology and capacity-building, noting that such approaches can strengthen local participation and industrial development in clean energy value chains.

117. On critical minerals, several participants drew attention to cooperative approaches that could promote equitable and sustainable outcomes along supply chains. Suggested practices included in-country processing and value addition, traceability and mandatory due diligence throughout exploration, extraction, processing and export, as well as the operationalization of free, prior and informed consent. Some participants referred to the establishment of accessible grievance and redress mechanisms and producer country platforms for sharing

experience and lessons learned. Other participants underscored the importance of safeguarding Indigenous rights and ensuring equitable benefit-sharing arrangements. Some participants referred to trade policy levers that could support just transition objectives, including tariff liberalization for environmental goods, alignment of measurement and reporting standards to reduce compliance costs, and targeted technical assistance to help developing countries, including the LDCs and SIDS, meet emerging verification and reporting requirements. Other participants emphasized the importance of preserving adequate policy space for domestic industrialization and value addition so that cooperation instruments do not constrain national strategies for economic diversification or in country beneficiation.

118. A number of participants identified several challenges and barriers. These included administrative and compliance burdens for countries with limited institutional capacity; uncertainty regarding the application of some measures to national grids or specific energy systems; and risks to vulnerable sectors and workers. Some participants noted governance gaps between trade and climate processes, highlighting that limited coordination between the UNFCCC and the World Trade Organization could lead to inconsistencies or overlapping engagement. Other participants referred to provisions in investment agreements that might restrict regulatory flexibility or delay development and implementation of public interest measures. Additional points raised by some participants included potential dependence on imported technologies that may not be adapted to local circumstances.

## I. Sharing experience on policy frameworks for just energy transition pathways and holistic approaches to just transitions that leave no one behind

119. The session on this subtopic was facilitated by Jane Cohen from the International Energy Agency.

### 1. Summary of discussions and key findings

120. Participants discussed national and international policy frameworks required to create enabling environments for just energy transitions. Many interventions highlighted the importance of policy coordination and coherence across ministries, sectors and levels of government. Several participants emphasized that these frameworks should be aligned with national development priorities and designed to reflect specific economic, social and environmental contexts rather than externally prescribed templates. Several participants underlined that effective enabling environments depend on institutionalized participation mechanisms supported by adequate resources.

121. Many participants referred to structured social dialogue, tripartite frameworks, advisory councils and formal consultative processes that allow workers, employers, civil society, Indigenous Peoples, women’s groups and local governments to engage meaningfully in policy formulation and implementation. The need for dedicated funding to support inclusive participation was also noted by some participants. A number of participants stressed that energy security and the eradication of energy poverty must remain central to any just transition frameworks. Many participants noted that access to affordable, reliable and clean energy underpins basic services such as education and health, particularly in developing countries and regions where energy access remains limited. A number of participants reiterated that discussions on just energy transition pathways should not be detached from this fundamental development dimension.

122. Many interventions addressed climate finance and technology transfer as indispensable components of enabling environments. Several participants referred to the importance of predictable, grant-based and concessional finance, as well as accessible mechanisms for technology transfer and capacity-building. Some participants linked these to broader fiscal challenges, including debt burdens, which constrain national policy space for transition investments.

123. Some participants also drew attention to legal and rights-based safeguards, including constitutional and statutory recognition of Indigenous Peoples’ collective rights to land, territories and resources, and the full implementation of free, prior and informed consent. A

number of participants called for measurable indicators on rights protection to be integrated into climate plans and policies such as NDCs, NAPs and LT-LEDS. Other participants mentioned the need for legal remedies, protection for environmental and human rights defenders, and the establishment of grievance mechanisms.

124. A number of participants emphasized that pathways must remain nationally determined, reflecting the principle of equity and common but differentiated responsibilities and respective capabilities. These participants stressed that national governments should define the pace, sequencing and policy mix of their just transition pathways. Some participants noted that enabling environments also have an international dimension, including the need to address barriers such as high capital costs, trade-related measures and limited access to finance and technology transfer.

125. Local governments were repeatedly mentioned as critical actors in the implementation of just energy transition pathways by many participants. Some participants noted that municipal and subnational authorities often drive community-level energy access and have direct channels for citizen engagement. Several participants cited examples of community energy cooperatives, mini-grids and municipal-level partnerships as effective frameworks for inclusive governance.

126. Many participants highlighted the role of social protections in supporting workers and communities affected by transition processes. Some participants highlighted health coverage, unemployment benefits, reskilling programmes and livelihood diversification measures as essential to preventing economic dislocation and inequality. Some participants underlined the importance of targeting vulnerable groups, including informal workers, women, youth, Indigenous Peoples and persons in remote areas. Several participants referred to experience in linking just transition strategies with national climate laws, renewable energy expansion and integrated governance mechanisms.

### 2. Opportunities, best practices, actionable solutions, challenges and barriers

127. Participants outlined multiple opportunities to strengthen enabling environments for just energy transitions. Some participants proposed the development of guiding principles on just transitions that would focus on participation and equity, incorporating provisions for social dialogue, free, prior and informed consent, gender equality, grievance and redress. Other participants highlighted the importance of guidance provided by instruments such as the United Nations Guiding Principles on Business and Human Rights and the Organisation for Economic Co-operation and Development Guidelines for Multinational Enterprises. Best practices highlighted by participants included tripartite councils and advisory bodies bringing together governments, workers, employers and civil society to advise on sustainable jobs and just transition measures. Examples were provided of territorial transition plans and multilevel governance structures that align national strategies with local priorities. Some participants also mentioned the role of offices for clean energy jobs or sustainable jobs legislation, workforce transition schemes and social dialogue platforms in maintaining coherence between economic and social objectives.

128. A number of interventions focused on the importance of community-driven approaches. Energy cooperatives, Indigenous-led renewable projects and women-led initiatives were presented as effective means of enhancing ownership, local accountability and equitable benefit-sharing. Some participants described participatory monitoring and data-collection systems managed by communities themselves, including in the context of mini-grids and watershed co-management. Others referred to women-led initiatives as examples of how gender-responsive models can link livelihoods, training and local empowerment. Several participants identified the importance of financing mechanisms that provide predictable, concessional and grant-based support for the implementation of national just energy transition pathways at the community level, noting that affordable capital, coupled with technology transfer and capacity-building, is essential to scale up community-based and municipal projects.

129. Some participants pointed to the value of country platforms and partnerships, including just energy transition partnerships, to mobilize resources and knowledge-sharing while maintaining national ownership. Speakers also referenced new thematic opportunities

such as ocean energy research and deployment for SIDS and rural electrification frameworks combining public policy and community governance. Some underscored the potential for replicating successful women- and youth-led initiatives in other developing country contexts to integrate social inclusion with clean energy expansion.

130. In discussing barriers, participants noted persistent challenges, including limited institutional capacity, high transaction costs and the complexity of accessing international finance. Some participants drew attention to fragmented governance and a lack of coordination between the national and local level. Other participants highlighted the insufficient integration of gender equality in energy sector finance and the underfunding of ocean energy research as ongoing obstacles. Additional challenges cited by some participants included external constraints, such as high costs of capital, trade measures with cross-border impacts and technology access barriers that limit domestic manufacturing and innovation. Several participants referred to the need to address these issues systematically to enable equitable participation in just transition processes.