

04 June 2026

**Seventh global dialogue and investment-focused event under
the Sharm el-Sheikh mitigation ambition and implementation
work programme**

Report by the secretariat

Abbreviations and acronyms

AI	artificial intelligence
CCUS	carbon capture, utilization and storage
CMA	Conference of the Parties serving as the meeting of the Parties to the Paris Agreement
CO ₂	carbon dioxide
COP	Conference of the Parties
CTCN	Climate Technology Centre and Network
GCF	Green Climate Fund
GEF	Global Environment Facility
IPCC	Intergovernmental Panel on Climate Change
IRENA	International Renewable Energy Agency
MRV	measurement, reporting and verification
NDC	nationally determined contribution
SIDS	small island developing State(s)
SMEs	small and medium-sized enterprises
UNIDO	United Nations Industrial Development Organization

I. Introduction

A. Mandate

1. CMA 4 requested the secretariat to prepare, under the guidance of the co-chairs of the Sharm el-Sheikh mitigation ambition and implementation work programme, a report on each of the dialogues under the work programme, reflecting in a comprehensive and balanced manner the discussions held and including a summary, key findings, opportunities and barriers relevant to the topic, and to prepare an annual report comprising a compilation of the individual dialogue reports for consideration by the CMA and the subsidiary bodies.¹ CMA 5 requested the secretariat to include, under the guidance of the co-chairs of the work programme, information on the investment-focused events in the report on each of the global dialogues.²

B. Approach

2. This report has been prepared to reflect in a comprehensive and balanced manner the discussions held at the seventh global dialogue and investment-focused event under the work programme. It includes a summary, key findings, opportunities and barriers relevant to the topic.

3. The discussions at the seventh global dialogue and investment-focused event and presentations delivered during the dialogue and event form the basis of this report. The report highlights the relevance of all aspects raised and discussed during the seventh global dialogue and investment-focused event. The recordings of the dialogue and event and the presentations are available on the UNFCCC website.³

C. Co-chairs of the work programme

4. The Chairs of the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation appointed Angela Churie Kallhauge (Sweden) and Gao Xiang (China) as the co-chairs for the work programme for 2025–2026.⁴

D. Topics for the global dialogues under the work programme in 2025–2026

5. CMA 4 decided that the scope of the work programme should be based on broad thematic areas relevant to urgently scaling up mitigation ambition and implementation in this critical decade and include all sectors covered in the *2006 IPCC Guidelines for National Greenhouse Gas Inventories*,⁵ thematic areas in the contribution of Working Group III to the

¹ Decision 4/CMA.4, para. 15.

² Decision 4/CMA.5, para. 12.

³ <https://unfccc.int/event/seventh-global-dialogue-and-investment-focused-event-under-the-sharm-el-sheikh-mitigation-ambition>.

⁴ Pursuant to decision 4/CMA.4, para. 7. Information on the co-chairs is available at <https://unfccc.int/topics/mitigation/workstreams/sharm-el-sheikh-mitigation-ambition-and-implementation-work-programme-mwp/co-chairs-of-the-mitigation-work-programme-2025-2026>.

⁵ IPCC. 2006. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. S Eggleston, L Buendia, K Miwa, et al. (eds.). Hayama, Japan: Institute for Global Environmental Strategies. Available at <http://www.ipcc-nggip.iges.or.jp/public/2006gl>.

Sixth Assessment Report of the IPCC,⁶ and relevant enabling conditions, technologies, just transitions and cross-cutting issues.⁷

6. CMA 4 invited Parties, observers and other non-Party stakeholders to submit via the submission portal⁸ every year suggested topics in line with the scope of the work programme to be discussed under the dialogues. Considering these submissions, the co-chairs of the work programme are to decide on the topics to be discussed at the dialogues in a given year.⁹

7. In March 2025, the co-chairs of the work programme decided on and communicated to Parties and observers that the dialogues taking place under the work programme in 2025 and 2026 will focus on enabling mitigation solutions in the industry, agriculture, forestry and other land use, and waste sectors, drawing on national and regional experience.¹⁰ The fifth global dialogue focused on enabling mitigation solutions in the forest sector, drawing on national and regional experience, and the sixth focused on enabling mitigation solutions in the waste sector, including through circular economy approaches.

8. In March 2026, the co-chairs decided on and communicated to Parties and observers that the seventh global dialogue will focus on enabling mitigation ambition and implementation in industries, drawing on national and regional experience (part 1) and the eighth will focus on enabling mitigation ambition and implementation in industries, drawing on national and regional experience (part 2) and other cross-cutting issues.¹¹

II. Summary of discussions, key findings, opportunities and barriers at the seventh global dialogue

A. Technology options and trends in decarbonizing industries, drawing on national and regional experience

1. Experiences of best practices and lessons learned

(a) Key observations from national and regional experiences

9. Industrial decarbonization was widely discussed and viewed as requiring a combination of complementary technologies sequenced according to national circumstances, readiness, resource availability and industrial structures, rather than relying on any single solution. Near-term options cited included energy efficiency improvements, electrification of industrial processes, fuel and feedstock switching and use of alternative materials, with CCUS and green hydrogen identified as important for hard-to-abate sectors over the medium and longer term. Participants observed that the prioritization of technologies will necessarily differ across countries and sectors.

10. Long-term sectoral road maps reflecting operational and technical realities, developed in collaboration with industry, were highlighted by several participants as useful for supporting industrial decarbonization planning across different sectors and time-horizons,

⁶ IPCC. 2022. *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. P Shukla, J Skea, R Slade, et al. (eds.). Cambridge and New York: Cambridge University Press. Available at <https://www.ipcc.ch/report/ar6/wg3/>.

⁷ Decision 4/CMA.4, para. 4.

⁸ <https://submissions.unfccc.int>.

⁹ Decision 4/CMA.4, paras. 12–13.

¹⁰ <https://unfccc.int/documents/645941>.

¹¹ <https://unfccc.int/documents/655943>.

through scenario analysis, technology sequencing, identification of the lowest-cost abatement pathways and alignment of investment decisions and industrial policy.

11. Cluster-based approaches to industrial decarbonization, in which co-located facilities collectively plan and implement decarbonization, were presented by several participants as a means of sharing infrastructure costs and creating cross-sectoral synergies, including by mutualizing CO₂ pipelines, hydrogen networks and electricity connections, as well as allowing for integrated workforce and supply chain planning across facilities. Participants described as beneficial the development of integrated green manufacturing systems encompassing green factories, industrial parks and supply chains alongside resource recycling and water conservation.

12. Carbon pricing was referred to by many participants as a policy instrument being applied to incentivize investment in the reduction of industrial emissions, with revenues in some cases channelled to dedicated innovation and transition funds, while contributing to creating stable demand for innovative clean technologies. Several participants noted that carbon pricing tends to be most effective as part of a broader policy package, alongside other instruments, including investment support, demand for low-carbon industrial products, infrastructure development, and regulatory measures, rather than being used in isolation. Some participants expressed concern that approaches invoking a broad interpretation of the polluter-pays principle can risk shifting a disproportionate burden onto developing countries and consumers therein in a manner inconsistent with the principles of equity and common but differentiated responsibilities and the nationally determined nature of the Paris Agreement.

13. Retrofitting existing industrial facilities was discussed by several participants as a near-term decarbonization approach given long asset lifetimes, with large-scale low-emission retrofits cited as demonstrating the potential for significant energy savings alongside continued growth in industrial output. Digitalization, including using digital twins, AI-enabled analytics, advanced sensors and predictive maintenance, was highlighted as a practical means of improving the emissions performance of existing infrastructure, while emphasizing that the credibility of such interventions depends on the design of robust MRV systems. Participants also noted that building internal capacity on digitalization alongside deploying technology solutions can ensure their continuity, facilitate replication across sites and produce long-term impacts.

14. The electrification of industrial processes was highlighted by many participants as being pursued in their countries. Participants noted that the effectiveness of electrification of industrial processes depends on concurrent investment in grid infrastructure and renewable energy capacity, given that scaling up industrial decarbonization will require significant grid investment, interconnectivity and optimization.

15. CCUS was discussed by several participants in the context of hard-to-abate sectors, where process emissions cannot be eliminated through electrification or fuel switching alone. Shared CO₂ transport and storage infrastructure was highlighted as a means of reducing the costs thereof. Participants noted the importance of piloting a range of approaches, including point-source capture, direct air capture, cryogenic carbon capture technology development and alternative mineralization pathways, in order to improve their performance and test their applicability under different regional conditions. Certifications and standards relevant to the approaches were noted as important for both storage effectiveness and investor confidence.

16. Non-CO₂ emissions were framed by participants as key levers for industrial emissions reductions and as a set of mitigation options that are relatively accessible in the near-term. It was noted that targeting gases such as nitrous oxides and PFCs, alongside improvements in process efficiency, can in some contexts contribute to achieving significant emissions reductions. However, it was also emphasized that CO₂ emissions represent a fundamentally different challenge, particularly in hard-to-abate sectors where they are linked to core

chemical processes. In this context, participants highlighted that addressing CO₂ emissions requires deeper structural transformations including the deployment of new technologies such as electrification, hydrogen use and carbon capture and storage.

17. Some participants emphasized that mitigation action must be accompanied by strong safeguards, including with respect for the rights of Indigenous Peoples and the principle of free, prior and informed consent. Participants further noted that prioritizing partnerships with companies and financial institutions that adopt clear policies on these rights can contribute to ensuring mitigation efforts do not lead to social harm, as well as encouraging organizations and institutions to adopt such policies. It was stressed that without sufficient safeguards in place, mitigation actions risk becoming sources of rights violations rather than providing sustainable solutions.

18. Industrial decarbonization was framed by participants not only as a means of meeting climate objectives but also as an opportunity to advance sustainable, long-term economic development, including through emerging industrial sectors such as green steel, green cement and manufacturing based on clean technologies. It was noted that this framing is relevant to a broad range of contexts, with all countries able to take advantage of the opportunity it represents. International cooperation on technology transfer, including through support from developed countries to developing countries and South–South cooperation, was seen as remaining an important aspect of industrial decarbonization efforts.

(b) Opportunities (including actionable solutions) and barriers

19. Noting that not all of the following opportunities are applicable to every national or regional context, that there is no single solution that fits all contexts, and that the prioritization of opportunities will vary in accordance with national circumstances, opportunities mentioned by participants include:

(a) Scaling up the electrification of industrial processes, including by using heat pumps, electric boilers and electric arc furnaces, in conjunction with renewable electricity generation and grid infrastructure investment, as a pathway applicable to a wide range of sectors;

(b) Expanding CCUS deployment in hard-to-abate sectors, including by using shared transport and storage infrastructure at the regional and cross-border level, starting with low-cost, high-purity CO₂ capture approaches and building towards integrated storage hubs;

(c) Deploying green hydrogen and its derivatives as a feedstock and energy carrier in sectors and applications where electrification is not feasible, including iron and steel production, chemicals manufacturing and high-temperature industrial processes;

(d) Promoting circular systems and industrial symbiosis approaches, including the co-processing of waste, the substitution of clinker in cement production, the recycling of resources and the cascading use of residual heat and CO₂ across agriculture, industry and urban infrastructure, as measures that can simultaneously reduce emissions and improve resource efficiency;

(e) Developing integrated approaches to infrastructure planning that co-design renewable energy, hydrogen and CO₂ transport and storage systems consistent with industrial decarbonization timelines, including cluster-based approaches to industrial decarbonization that enable the mutualization of infrastructure costs across facilities;

(f) Developing and applying digital technologies to improve the emissions performance of existing industrial infrastructure, supported by implementing robust MRV systems and investing in data integration as shared infrastructure with common standards and architecture;

(g) Establishing government-supported units mandated to assist industries in navigating the landscape of applicable climate regulations and available support programmes and to provide a feedback loop to governments on implementation experience.

20. Noting that not all of the following barriers or challenges are present in every national or regional context, and that the prioritization of actions to be considered to overcome relevant barriers and challenges will vary in accordance with national circumstances, barriers and challenges mentioned by participants include:

(a) The long asset lifetimes of industrial facilities, which make comprehensive replacement operationally and economically impractical and necessitate industrial decarbonization strategies that incorporate retrofitting and allow for incremental advances;

(b) The high capital intensity of industrial decarbonization investments, combined with the risk of stranded assets where future technology availability, carbon prices or regulatory frameworks cannot be predicted with confidence;

(c) Insufficient long-term market signals and policy frameworks for industrial decarbonization and the lack of consolidated goals with interim milestones, which can undermine investor confidence and delay the mobilization of private capital;

(d) Infrastructure gaps resulting from, for example, planning and permit delays for CO₂ pipelines and hydrogen networks, insufficient grid capacity and the absence of shared CO₂ storage infrastructure, all of which can slow project delivery and increase project costs;

(e) Limited access to finance, including to concessional finance in the case of SIDS and other developing countries, alongside limited technical capacity and skills, and insufficient public awareness, all of which can constrain the ability of governments and industries to engage with and implement available methodologies and policy frameworks for industrial decarbonization;

(f) Difficulties in adapting internationally developed standards and technologies to local conditions, resource constraints and unfavourable regulatory contexts, all of which can impede the deployment of available solutions;

(g) Concerns that carbon pricing measures invoking a broad interpretation of the polluter-pays principle may impose disproportionate costs on developing countries and can undermine industrial competitiveness in countries with more limited capacity to respond to such measures.

2. Experiences of addressing challenges and barriers

(a) Key observations from national and regional experiences

21. The long operational lifetimes of industrial assets were recognized by many participants as a central structural challenge for industrial decarbonization, creating the risk of stranded assets. Several participants noted that industrial facilities in several sectors are designed to operate for between 20 and 40 years, making rapid replacement operationally and economically impractical. Several participants described approaches focused on retrofitting existing assets and phased transitions of existing infrastructure, noting that such approaches can enable emissions to be reduced without necessitating the early retirement of capital stock.

22. Several participants drew attention to the bottleneck between technology demonstration and commercial deployment, noting that financing frameworks for scaling up technologies beyond the pilot stage remain, in many cases, underdeveloped and that the cost and maturity of breakthrough technologies remain prohibitive to their application. Several participants observed that phased deployment approaches, prioritizing mature, lower-cost applications in the near term and creating pathways for emerging technologies to be scaled

up over time, represent a practical means of managing this challenge, alongside clearer frameworks for sequencing public and private investment.

23. Gaps in infrastructure, particularly in grid networks, hydrogen systems and CO₂ transport and storage systems, were cited by many participants as a barrier to near-term deployment of technology, although some participants noted that such gaps can also reveal longer-term investment priorities. Several participants noted the conflicting dynamic in which the absence of shared infrastructure may deter investment in individual projects, while the scale of individual projects may be insufficient to justify infrastructure development in isolation. Some participants highlighted regulatory frameworks in their countries which set storage capacity goals for relevant industries as a means to enhance capacities over time. Cluster-based approaches to industrial decarbonization were highlighted by some as a means of reducing infrastructure costs across multiple facilities.

24. The misalignment between national industrial transition objectives and renewable energy and hydrogen infrastructure planning was raised by several participants as an area that would benefit from greater policy attention and coordination. Some participants noted that realizing the potential of hydrogen requires attention to the full value chain, from renewable power generation to end-use applications, as policy emphasis on one element without corresponding attention to sequencing may delay progress.

25. The level and predictability of carbon pricing was identified by several participants as a factor having a bearing on the extent to which price signals are able to drive long-term investment in low-carbon alternatives. Several participants observed that the predictability of carbon price trajectories is as important as the price itself in terms of influencing long-term capital allocation decisions.

26. Limited demand for low-carbon industrial products was identified by several participants as a barrier affecting the investment case for decarbonization across the value chain. Several participants noted that buyers often face difficulty distinguishing low-carbon products from their conventional equivalents, and that the limited willingness of buyers to pay a premium for low-carbon products constrains the development of the market for them. Public procurement frameworks, demand aggregation mechanisms, value visualization initiatives and internationally aligned standards for emissions accounting, benchmarking and product definitions for green industrial goods were among the approaches highlighted as a means of stimulating demand for low-carbon products. Some participants noted, however, that the development of standards should take into account different national circumstances and levels of industrial development, to ensure they function as enablers of market access

27. The challenge of adapting technologies developed in one national or regional context to the conditions prevailing in another was raised by several participants as an important barrier to technology transfer and deployment, particularly for emerging markets and developing countries. Several participants noted that technology transfer is most effective when it involves co-development with and local technical validation in the recipient country, undertaken at an industry-wide level, as this approach can reduce costs and enable wide dissemination.

28. Long-term, stable policy frameworks for industrial decarbonization were described by many participants as an important enabling condition for investment therein. Several participants noted that enshrining long-term climate goals in national legislation and developing sectoral investment strategies have assisted in providing clarity in terms of both public and private capital allocation. Fragmentation of governance responsibilities across multiple ministries was noted as having the potential to undermine policy coherence.

29. Public-private collaboration on technology development, research and development, demonstration and commercialisation was highlighted by several participants as important to advancing industrial decarbonization, particularly in the case of investments with high upfront costs that individual actors may not be willing or able to undertake in isolation. The

role of government as both a provider of financial support for research, development and demonstration and a convener of actors across the technology and innovation landscape was also noted. Several participants observed that industry associations can serve as platforms for aggregating demand, reducing transaction costs and facilitating the uptake of low-carbon solutions, and that technology deployment programmes in which operators increase their internal capabilities alongside adopting technology solutions can contribute to producing longer-lasting and more readily replicable outcomes.

30. Challenges relating to workforce and skills, including shortages of interdisciplinary technical professionals and the need for workforce re-skilling in affected regions, were raised by several participants as arising across multiple sectors and contexts. Several participants observed that industrial decarbonization presents both risks and opportunities for affected workers and communities, and that early, inclusive community engagement, benefit-sharing arrangements and coordinated approaches to workforce retraining are practical measures being applied in some contexts.

31. Access to finance was identified by several participants as a persistent barrier to the uptake of low-carbon industrial technologies given their high upfront costs and long payback periods. It was noted that small-scale actors in developing countries are frequently constrained by requirements for collateral and the absence of adequate financial support mechanisms.

32. Some participants highlighted the vulnerability of the industrial sectors to external market volatility and supply chain exposure, particularly in the context of increases in fossil-fuel import costs and the growing difficulty in accessing critical raw materials at competitive prices and in required quantities due to strategic dependencies.

33. The risk of carbon leakage was raised by some participants as a challenge with implications for the effectiveness of national mitigation action, with industries at risk of leakage noted as representing a significant share of national industrial emissions. Carbon border adjustment mechanisms were raised by some participants as an instrument being developed to address the risk of carbon leakage, alongside broader efforts to support the uptake of carbon pricing and accelerate industrial decarbonization internationally, and it was noted by these participants that such mechanisms can be designed to focus on large importers while exempting the majority of smaller ones. Some participants called for an open, inclusive and non-discriminatory global trade environment as a positive enabler of international cooperation on green transition and expressed concern that unilateral trade-related climate measures risk imposing a disproportionate burden on developing countries and present a structural challenge to international cooperation and as such should be considered in the light of the principles of equity and common but differentiated responsibilities, noting that such measures can hinder the free flow of green technologies and products, increase transition costs and undermine collective efforts towards low-carbon industrial development. While others highlighted that such measures are domestic and nationally determined and hence cautioned against characterising them as unilateral.

(b) Opportunities (including actionable solutions) and barriers

34. Noting that not all of the following opportunities are applicable to every national or regional context, that there is no single solution that fits all contexts, and that the prioritization of opportunities will vary in accordance with national circumstances, opportunities mentioned by participants include:

(a) Developing sectoral investment strategies and industrial decarbonization strategies that use, for example, least-cost pathway analysis to identify technology sequencing and support measures for priority industries;

(b) Adopting phased implementation approaches to industrial decarbonization that prioritize near-term, low-cost measures, including energy efficiency improvements,

renewable energy integration into industrial systems and processes and fuel switching, while developing pathways for emerging technologies to mature and be integrated into decarbonization approaches over time;

(c) Developing integrated infrastructure planning approaches, including cluster-based approaches, to industrial decarbonization;

(d) Supporting the adaptation of proven low-carbon technologies to different national and local contexts through co-development and technical validation of technologies in recipient countries;

(e) Stimulating demand for low-carbon industrial products through public procurement frameworks, coordinated offtake agreements among buyers and producers, and aligned product standards and definitions;

(f) Strengthening interministerial coordination and whole-of-government approaches to policymaking on industrial decarbonization with a view to ensuring policy coherence across the climate, energy, industry and finance portfolios;

(g) Investing in workforce re-skilling, community engagement and benefit-sharing arrangements to address the just transition dimensions of industrial decarbonization in affected regions;

(h) Applying carbon pricing as part of a broader policy package that also addresses investment support, demand creation and infrastructure development and takes into account the need for predictability of carbon price trajectories over time to provide the certainty needed for long-term industrial investment decisions;

(i) Promoting industry associations as platforms for aggregating demand, reducing transaction costs and facilitating the uptake of low-carbon solutions by companies, particularly SMEs, and across regions.

35. Noting that not all of the following barriers or challenges are present in every national or regional context, and that the prioritization of actions to be considered to overcome relevant barriers and challenges will vary in accordance with national circumstances, barriers and challenges mentioned by participants include:

(a) Long operational lifetimes of industrial assets, which may give rise to the risk of lock-in;

(b) The gap between technology demonstration and commercial deployment, which may have arisen owing to, for example, underdeveloped financing frameworks for scaling up technologies beyond the pilot stage and an insufficient level of public investment;

(c) Gaps in infrastructure, including in electricity networks, hydrogen systems and CO₂ transport and storage systems, resulting in network capacity constraints, grid connection delays and the absence of shared infrastructure at the required scale to make investments in individual projects viable;

(d) Misalignment between national industrial decarbonization objectives and renewable energy and hydrogen infrastructure planning and development timelines, resulting in situations where low-carbon industrial processes must rely on fossil-derived inputs in the near term owing to the absence of a clean supply chain;

(e) Limited market demand for low-carbon industrial products, reflecting difficulties in distinguishing such products from conventional alternatives, limited willingness of consumers to pay a premium price for such products, and the absence of international standards for such products;

(f) The risk associated with adapting technology solutions developed in one national context to conditions prevailing in another, which can raise the cost of capital and constrain deployment;

(g) Shortages of interdisciplinary professionals with technical experience in emerging industrial decarbonization fields, and the lack of coordinated approaches to workforce re-skilling in areas undergoing industrial transition;

(h) Limited access to finance for industrial decarbonization initiatives in developing countries as a result of, for example, high upfront costs, long payback periods, insufficient concessional finance and collateral requirements, all of which may exclude small-scale actors from accessing green investment;

(i) Fragmentation of governance structures, insufficient or unpredictable carbon prices, and outdated permit processes and regulatory frameworks that do not reflect the requirements of industrial decarbonization technologies, which can collectively slow investment and implementation.

B. Enabling mitigation ambition and implementation in industries, drawing on national and regional experience

1. Finance, technology development and transfer, and capacity-building

(a) Key observations from national and regional experiences

36. Many participants highlighted that long-term regulatory stability is essential for investor confidence and capital deployment in capital-intensive sectors such as steel, cement and chemicals. They emphasized that embedding industrial decarbonization within broader economic development plans would allow climate action to drive competition, job creation and economic transformation, rather than being seen as a stand-alone agenda.

37. Many participants emphasized that blended finance, public–private partnerships and stable policy environment are essential for mobilizing industrial decarbonization investments. Combining public resources with de-risking instruments helps overcome the green premium, facilitate and unlock private capital for investing in low-carbon infrastructure, particularly in hard-to-abate sectors, ensuring a just transition.

38. Participants discussed financing instruments and carbon pricing schemes, including emissions trading schemes and carbon taxes, that are aimed at accelerating the uptake of clean industrial products. These mechanisms provide the long-term signals necessary to unlock significant private investment in low-carbon infrastructure and innovation.

39. Many participants highlighted that context-specific application of technologies, including electrification, green hydrogen and CCUS, are important for reducing emissions in hard-to-abate sectors. Their successful deployment depends on aligning the maturity of the technologies with sectoral road maps, while being supported by carbon pricing and blended finance. Circular solutions such as bioenergy require localization alongside capacity-building for local actors to deploy these technologies effectively.

40. Several participants noted that risk mitigation mechanisms and innovative financial instruments build private sector confidence in mobilizing capital and scaling up projects. Such mechanisms and instruments include blended finance, which address upfront costs; carbon contracts, which provide price certainty; and green taxonomies, which prevent greenwashing. Participants expressed the view that market and non-market cooperative approaches under Article 6 of the Paris Agreement and sovereign green bonds are essential for bridging financing gaps in low-carbon infrastructure and deploying low-carbon technologies.

41. Many participants emphasized that robust MRV systems for emissions, digital tools and reliable environmental data are essential for attracting green investment. Standardizing sustainability information reduces investor risk while aligning MRV frameworks with green procurement enhances global credibility of low-carbon products. Digital technologies and product life-cycle analyses are critical for ensuring environmental integrity of complex supply chains.

42. Participants noted that international and regional cooperation, the provision of financial assistance and technology transfer are essential for assisting developing countries in overcoming the high costs and technical barriers related to industrial decarbonization. In particular, some participants highlighted the existing finance gap, citing that investments in mitigation must rise three- to six-fold.

43. Several participants highlighted that capacity-building to adopt and manage low-carbon technologies was noted by many participants as being essential for industrial decarbonization, especially in developing countries. Specialized training and knowledge transfer initiatives equip the workforce with the necessary skills to implement sustainable industrial process. Investment in research, development, deployment and commercialization can contribute to accelerating innovation and creating locally appropriate clean technology solutions, while sustained institutional strengthening and human capital development ensure these technologies deliver long-term socioeconomic benefits.

(b) Opportunities (including actionable solutions) and barriers

44. Noting that not all of the following opportunities are applicable to every national or regional context, that there is no single solution that fits all contexts, and that the prioritization of opportunities will vary in accordance with national circumstances, opportunities mentioned by participants include:

(a) Designing blended finance mechanisms and public-private risk-sharing models, including contracts for difference, concessional loans and innovation funds, to front-load corporate investment into industrial decarbonization initiatives and bridge the gap between current deployment costs of low-carbon alternatives and market capacity;

(b) Providing developing countries access to concessional finance, grants and carbon- or climate-related funding through instruments such as Article 6 markets, green transformation funds and global matchmaking platforms, thereby connecting their industrial decarbonization needs with targeted financial and technical support;

(c) Investing in industrial decarbonization infrastructure, including renewable energy grids, green hydrogen production and transportation networks and CO₂ storage systems, alongside applying cluster-based approaches to industrial decarbonization that enable companies to share costs related to carbon capture and clean energy generation;

(d) Supporting technology transfer (e.g. of green hydrogen, low-carbon cement and digital industrial technologies), capacity-building (e.g. via training academies) and local innovation (e.g. via partnerships that adapt global innovations to local circumstances);

(e) Implementing advanced digital tools for data collection and emissions MRV frameworks to facilitate investment in low-carbon projects and regulatory oversight, these measures encompass digitalizing manufacturing processes, monitoring the carbon footprint of industrial goods and ensuring the transparency of emission reductions across entire supply chains;

(f) Promoting international and regional partnerships among public and private sectors, expertise exchange of technical and policy expertise and the scaling up of innovative low-carbon solutions; these efforts are facilitated by multilateral initiatives, working groups, bilateral trade agreements focused on low-carbon technologies and matchmaking platforms

aimed at aligning national decarbonization goals with international capital and specialized technical assistance.

45. Noting that not all of the following barriers or challenges are present in every national or regional context, and that the prioritization of actions to be considered to overcome relevant barriers and challenges will vary in accordance with national circumstances, barriers and challenges mentioned by participants include:

(a) Restricted access to affordable finance, high upfront capital expenditures and significant lock-in risks created by the lengthy lifetimes of existing infrastructure. These challenges are intensified by a mismatch in timing between investments and returns, thereby impeding project bankability and commercial viability;

(b) Insufficient risk-sharing mechanisms and innovative financial instruments, which deters private investment in nascent technologies owing to the high risks and commercial unviability associated with them. Mismatched investment timing and low-demand for low-carbon products hinder capital-intensive projects from reaching the final investment stage;

(c) Limitations in access to technologies, locally appropriate solutions and infrastructure pose major barriers to industrial decarbonization. These are compounded by the lengthy lifetimes of existing industrial assets, creating risks of lock-in of older, high-emission facilities and a lack of scale for newer, near zero emission technologies;

(d) Disparities in technological maturity and institutional capacity, where developing nations, particularly SIDS and emerging markets, struggle to overcome their constraints in designing bankable projects and lack of expertise in carbon accounting and emissions MRV systems;

(e) Governance and regulatory obstacles hindering investment and technical progress, such as fragmentation of policy frameworks and unpredictability of regulatory frameworks, which compound the risks for long-lived industrial assets;

(f) Information deficiencies, inconsistent metrics and underdeveloped digital foundations, including fragmented GHG MRV systems. Participants noted that the significant financial burden of establishing and maintaining these robust MRV systems constitutes a major finance barrier rather than solely a technical capacity limit. These are exacerbated by an absence of harmonized international standards and data.

2. Governance and policy

(a) Key observations from national and regional experiences

46. Many participants highlighted the importance of integrating industrial decarbonization into broader national development strategies, long-term low-emission development strategies and NDCs, rather than being seen as a stand-alone climate agenda. Several participants noted that doing so could help to ensure policy coherence and link mitigation objectives with broader economic development goals.

47. Several participants pointed to the enshrining of long-term climate and industrial decarbonization goals in national legislation as an important tool for providing policy signals to industry and investors across political cycles. Participants described national climate laws anchoring NDC goals and long-term emission reduction goals in stable legislative frameworks, with annual reporting mechanisms on progress towards these goals cited as providing accountability and enabling regular assessment of whether policies need to be strengthened in order to achieve them. It was noted that linking such reporting to budget planning can help to ensure that budgetary decisions reflect progress towards national emission reduction goals.

48. Several participants described coherent, cascading policy frameworks in which economy-wide emission reduction targets can be used to develop sectoral policies, investment strategies and regulatory instruments, highlighting them as an important means of translating national ambition into implementable action. Sectoral decarbonization road maps, developed through structured engagement between governments, industry associations and financiers, were identified as a practical tool within such frameworks.

49. Several participants described interministerial coordination mechanisms, including climate committees, multi-entity designated national authority structures and cross-sectoral commissions, as a practical means of ensuring policy coherence across the energy, industry, environment and finance portfolios involved in industrial decarbonization.

50. Carbon pricing was referred to by many participants as an important instrument for driving industrial decarbonization, with emissions trading systems cited as providing both a price signal and revenues that can be channelled back into mitigation implementation. Several participants noted that emissions trading systems tend to be most effective when emission caps are sufficiently stringent and surplus allowances are managed so as to sustain a price level capable of influencing long-term investment decisions.

51. Robust MRV systems for GHG emissions were identified by many participants as an important enabler of effective climate governance, underpinning evidence-based policymaking, the tracking of NDC progress and access to climate finance. Several participants noted that MRV systems can contribute to improving the availability and consistency of emissions data across sectors, thereby strengthening policy signals for investors. Some participants also noted that engagement with cooperative approaches and market mechanisms under Article 6 of the Paris Agreement and with voluntary carbon markets can help to support the development of national MRV capacity.

52. Several participants noted the increasing role of industrial decarbonization strategies in supporting technologies where emissions reductions are aligned with commercial adoption and market viability, rather than dependent on a climate rationale alone. They highlighted that the durability and predictability of policy frameworks has become an important factor in investment decision-making for such technologies.

53. Several participants highlighted the importance of inclusive multi-stakeholder engagement as a component of effective governance for industrial decarbonization. They noted that technical round tables on industrial decarbonization methodologies and data with industry associations have proven to be effective in standardizing GHG emission methodologies, improving data consistency and ensuring that policies are both technically sound and implementable. It was also noted that inadequate consultation with local stakeholders, including farmers, fishers, Indigenous Peoples and local communities, can undermine the social acceptability of mitigation measures. Several participants observed that governance mechanisms need to be extended to the subnational level to ensure coherence between national policy frameworks and their local implementation, noting that subnational authorities often have a critical implementation role but may lack the technical and financial resources to fulfil it.

54. Several participants from SIDS highlighted specific governance challenges, including fragmented markets for low-carbon products, infrastructure gaps and constrained fiscal space, observing that, in such contexts, the policy challenge is often not market distortion, but market absence. Public sector leadership through procurement, concessional power purchase agreements and early adoption of low-carbon technologies was highlighted as important for market creation. Regional collaboration, including through shared technical platforms for infrastructure planning and investment facilitation, pooled procurement of low-carbon products and equipment and the development and application of regional standards for product certification, was highlighted as a practical means of overcoming scale-related constraints in accessing finance and deploying low-carbon technologies.

(b) Opportunities (including actionable solutions) and barriers

55. Noting that not all of the following opportunities are applicable to every national or regional context, that there is no single solution that fits all contexts, and that the prioritization of opportunities will vary in accordance with national circumstances, opportunities mentioned by participants include:

(a) Enshrining long-term climate goals in national legislation, supported by reporting mechanisms linked to budgetary processes with a view to providing long-term policy signals to industry and investors and establishing accountability for progress towards these goals across political cycles;

(b) Developing national sectoral decarbonization road maps through structured engagement with governments, financiers and industry, including through industry associations, to build a shared understanding of technology pathways and investment requirements across sectors and time-horizons;

(c) Applying carbon pricing as part of a broader policy package that includes investment support, technology development and demand creation measures, with revenues channelled into climate funds, including in support of just transitions;

(d) Using green public procurement frameworks to create early demand for low-carbon industrial products as a means of stimulating market development where private demand remains insufficient;

(e) Leveraging market-based mechanisms, including arrangements under Article 6 of the Paris Agreement, voluntary carbon markets and carbon pricing schemes, to bridge the green premium gap and crowd in private finance for low-carbon industrial projects and technologies, while ensuring adequate safeguards for social and environmental integrity, including through the meaningful participation of affected communities in project design and benefit-sharing arrangements;

(f) Establishing interministerial coordination mechanisms and designated national authorities to ensure policy coherence across the climate, energy, industry and finance portfolios, with a bottom-up design process that accounts for the roles and responsibilities of the sectoral ministries and entities in implementing such policies;

(g) Promoting regional collaboration, including through shared technical platforms, pooled procurement and regional standards, to assist countries, particularly SIDS, in addressing scale-related constraints and in overcoming infrastructure and financing barriers;

(h) Developing inclusive multi-stakeholder governance mechanisms, including technical round tables with industry associations and structured community engagement processes, to ensure that policies are technically sound, implementable and socially acceptable, and are extended to the subnational level.

56. Noting that not all of the following barriers or challenges are present in every national or regional context, and that the prioritization of actions to be considered to overcome relevant barriers and challenges will vary in accordance with national circumstances, barriers and challenges mentioned by participants include:

(a) Policy uncertainty and mid-cycle regulatory changes, which can undermine investor confidence and prevent pilot projects from being commercially deployed, particularly as climate finance tends to focus on commercially mature assets with near-term returns;

(b) Gaps between national climate and industrial decarbonization technologies and their implementation, including the absence of sectoral road maps and limited technical

guidance, which can prevent national climate goals from being translated into implementable projects;

(c) Fragmented and non-interoperable MRV and data systems, which limit the availability of consistent emissions data across sectors and can constrain both evidence-based policymaking and access to climate finance;

(d) Insufficient market demand for low-carbon industrial products owing to limited awareness, the absence of green public procurement frameworks and the unwillingness of buyers to absorb green premiums;

(e) Governance challenges specific to SIDS and other countries with limited institutional capacity, including market absence, infrastructure gaps and constrained fiscal space for public investment.

III. Summary of the seventh investment-focused event

A. Discussions

57. The scene-setting presentation highlighted that mobilizing finance and investment are critical for industrial decarbonization, particularly in emerging markets and developing economies, where most global steel and cement production takes place. Current public bilateral and multilateral financial support remains limited as a share of total mitigation finance, while investment needs for near zero emission technologies are substantial. The presentation emphasized that there is no single instrument that can close the gap in terms of competition with conventional fossil fuel based production; rather, a mix of grants, concessional loans, guarantees, capital and operational expenditure support, demand-side measures, carbon pricing, carbon credits and revenue-stabilization mechanisms may be needed, supported by long-term plans for industry decarbonization, NDCs, sectoral road maps, taxonomies, regulations for low-carbon technologies, infrastructure, affordable energy and raw materials, policy coordination, stakeholder engagement and international cooperation.

58. The panel discussion considered the elements that enable financing for industrial decarbonization to work in practice and at scale, drawing on perspectives from multilateral climate funds, multilateral development banks, philanthropies and private financial institutions. Participants noted that finance for industrial decarbonization should be approached according to technological maturity, namely through capacity-building for SMEs and developing economies where mature technologies are available; public-private collaboration to create demand for technologies that have proven to be effective but have not yet been implemented at scale; and national strategic coordination to guide private capital towards next-generation technologies such as green hydrogen and CCUS. Financial institutions may understand transition objectives at a general level but require stronger sector-specific knowledge, clearer project pipelines and closer engagement with real-economy actors, including ministries of industry, regulators and industries.

59. Participants discussed the role of multilateral climate funds and development banks in supporting countries across the full investment chain, from readiness and institutional strengthening to project preparation and large-scale financing. The catalytic role of the GCF in mobilizing finance was also mentioned including through provision of readiness support, project preparation facilities and blended financial instruments to help developing countries translate NDCs into bankable project pipelines. Participants highlighted the role of multilateral development banks in integrating climate objectives into national systems, tailoring financing instruments to the specific complexities of industrial decarbonization and addressing fragmentation of SMEs, transition risk and the need for clear economic rationales to mobilize private sector capital.

60. Participants further discussed the importance of targeted upstream technical assistance, including in relation to transition risk modelling, economic viability assessments, firm-level road maps towards decarbonization, energy efficiency audits of industrial processes and financial structuring of industry decarbonization finance, to create actual demand and identify practical opportunities for climate-informed investment. They also highlighted the catalytic role of philanthropic funding in supporting policy design, capacity-building, market transformation and coordination among governments, industry associations and financial institutions. It was suggested that the “hard-to-abate sector” label should not discourage action, as available and emerging technologies provide opportunities to scale deployment of technological solutions.

61. The session on case studies and perspectives on financing mitigation in industries included presentations on policy, finance and project-development approaches for financing industrial decarbonization. Topics discussed included scaling technologies through investment in public research and development, the role of export credit guarantees, multilateral climate finance under the GEF, source of finance for enabling the transition of hard-to-abate sectors such as iron and steel, circularity of palm oil waste biomass through co-firing in power plants, and technical assistance for developing investment-ready project pipelines and national technology road maps for NDC implementation.

62. Participants emphasized that industrial decarbonization requires a coherent combination of technology development, targeted finance and credible market signals. The experience of the Republic of Korea in scaling industrial decarbonization technologies highlights the importance of targeted research and development, concessional lending, tax incentives and credible carbon pricing to reduce risks for capital-intensive technologies and mobilize private capital. Export credit agencies were also mentioned as an important but often underutilized tool to reduce political and financial risks, enabling long-term financing for industrial decarbonization projects with lending from commercial banks.

63. Participants discussed how multilateral climate funds and implementing entities can support countries in developing investment-ready project pipelines. Examples from the GEF included grant financing, technical assistance and blended finance for improvements in relation to industrial energy efficiency, electrification, material efficiency and circularity, feedstock substitution, development of green hydrogen, battery supply chains development and decarbonization of the cement production. A representative of UNIDO, as a GEF implementing agency, described how such support can be translated into concrete country-level projects aligned with national strategies, such as South Africa’s just energy transition priorities, green hydrogen development, battery value chains and initiatives aimed at creating long-term industrial growth and jobs.

64. During the discussions, participants underscored the need to strengthen project preparation and investment readiness. They noted that technical assistance, including through feasibility studies, technology assessments, product standards, asset-level data systems, financing strategies and capacity-building for local financial institutions, is often needed before or alongside investment to address policy, regulatory, technical and financial barriers. A representative of UNIDO shared information on the organization’s technical assistance, including regional workshops on the use of low-carbon cement alternatives. Innovative financial instruments for transition, including those linked to carbon credits and buyer-of-last-resort structures, were discussed as possible ways of addressing revenue uncertainty and improving access to capital, provided that they include robust baselines, additionality provisions and sunset clauses.

65. Participants also discussed practical implementation issues, including the need for reliable supply chains, appropriate procurement structures and institutional coordination. A case study presented by a representative of IRENA on co-firing palm oil waste biomass in coal power plant in Malaysia highlighted the importance of feedstock availability, fuel quality and financing mechanisms to address biomass procurement costs that exceed those

of conventional fuels. The case study on Pakistan's collaboration with CTCN and the Global Green Growth Institute in developing technology road maps and investment pipelines also underscored the importance of government ownership, technical assistance, matchmaking with financiers and alignment with national development and just transition objectives.

B. Pitch hub

66. The feedback from the advisory panel emphasized the critical importance of clear communication, well-defined project scope, detailed financial information, robust data and planning, effective governance and a strong commitment to ensuring sustainability and social impact in terms of improving the proposal and attracting investment. The feedback on the presentations can be summarized as follows:

(a) It was highlighted that projects need clear concepts, timelines and alignment with national goals. As lenders shift from purely grant-based funding towards blended finance, project proposals should split large financing requests into manageable phases, identify revenue-generating milestones and demonstrate long-term financial self-sufficiency;

(b) The advisory panels emphasized the importance of tailoring project scopes in alignment with local needs and showing the potential for replicability. Baseline costs and qualitative benefits should be quantified;

(c) Projects should have a long-term vision integrating climate resilience and infrastructure development. To survive post-grant funding, it was advised that projects should clarify operational costs and quantify job creation, the value chain and specific health impacts, especially for women and children;

(d) Scaling strategies should bundle small-scale activities into bankable programmes that can justify transaction costs. Clear road maps should detail costs, reductions in greenhouse gas emissions and private sector engagement, while establishing mechanisms that recycle capital to create sustainable markets;

(e) Government leaders should be engaged at an early stage to ensure project alignment with national strategies and eventual policy ownership. Building public-private partnerships, exploring opportunities for subnational funding and using co-financing to share risks and boost investor confidence was also advised;

(f) Operational risks should be mitigated, including supply chain disruptions and consumer adoption barriers. To ensure investment readiness and a lasting legacy, the need to evaluate regulatory requirements at an early stage and build robust institutional systems was emphasized, rather than relying on short-term capacity building workshops;

(g) The environmental benefits of projects should be quantified and verified. In addition, highlighting co-benefits such as improved public health outcomes, reduced black carbon and enhanced urban climate resilience can make project proposals more appealing to diverse investors;

(h) Involving local communities through a bottom-up co-development approach was highlighted as critical to enhancing project legitimacy and adoption. Collaboration with the private sector and local governments should focus on promoting job creation and implementing behavioural change campaigns to ensure that technical investments achieve desired social outcomes;

(i) Promoting international collaboration and technical assistance is key to effective project implementation. The project should leverage capacity-building programmes and technical assistance to equip stakeholders with tools and key performance indicators for implementation. Standardizing data systems open long-term access to carbon markets and sustainability-linked loans long after the project has been concluded.

C. Opportunities (including actionable solutions) and barriers

67. Noting that not all of the following opportunities are applicable to every national or regional context, that there is no single solution that fits all contexts, and that the prioritization of opportunities will vary in accordance with national circumstances, opportunities mentioned by participants and showcased in the regional case studies include:

(a) Developing an end-to-end ecosystem for accessing climate finance that links upstream readiness support, institutional strengthening, project preparation facilities and blended finance to translate NDC priorities into bankable industrial decarbonization projects;

(b) Improving the connection between NDCs and actual finance by integrating climate goals into sector policy planning, using country climate finance platforms and developing integrated policy and finance packages, including targeted research and development, concessional finance, export credit guarantees, carbon credit offtake agreements, contracts for difference, reimbursable grants and carbon pricing frameworks, to reduce risks during the transition from technology demonstration to commercial deployment;

(c) Developing bankable project pipelines and strengthening investment readiness through technical assistance, investment-ready concept notes, sector-specific technology road maps, feasibility studies, standardized data systems, asset-level monitoring, economic viability assessments and capacity-building for local financial institutions, including financial modelling, risk structuring, transition risk assessments, sector-specific technologies and transition pathways;

(d) Increasing collaboration among multilateral development banks, multilateral climate funds, philanthropies, insurance providers, national development banks and local financial institutions to make financial instruments more accessible to both SMEs and larger industrial actors;

(e) Using transition finance instruments, including bonds linked to carbon credits, buyer-of-last-resort arrangements to stabilize revenue streams, and revolving catalytic funds while ensuring that they include robust baselines, technical additionality, revenue-generation milestones and sunset clauses;

(f) Harnessing the catalytic role of philanthropic funding, including through civil society organizations, think tanks and coordination platforms, to support enabling environments, policy design, market transformation and the preparation of bankable project pipelines;

(g) Implementing demand-side policies, green public procurement, low-emissions product standards, public-private coordination and market development measures to create demand for low-emission and near zero emission industrial products;

(h) Advancing broader sustainable development benefits while promoting industrial decarbonization to access philanthropic and public-private finance in cross-sectoral areas such as public health, job creation, rural livelihood improvement, increasing productivity, climate resilience and energy security;

(i) Improving enabling conditions for biomass and other resource-based mitigation solutions by identifying national champions to strengthen ownership of implementation, securing reliable feedstock supply, reducing contractual risks, developing pre-treatment supply chains and using public de-risking instruments to absorb early stage project risks.

68. Noting that not all of the following barriers or challenges are present in every national or regional context, and that the prioritization of actions to be considered to overcome relevant barriers and challenges will vary in accordance with national circumstances, barriers and challenges mentioned by participants and showcased in the regional case studies include:

- (a) Financing gaps between technology validation and commercial deployment attributable to high upfront costs, long investment cycles and payback periods, high perceived risks for unproven new technologies, currency and credit risks, limited access to affordable long-term capital and limited sector-specific knowledge among financial institutions, with many financing approaches relying on corporate lending or broad sustainability-linked loans, rather than project-based structures suited to complex blended finance solutions;
- (b) Weak pipelines of investment-ready projects as a result of limited pre-feasibility work such as market readiness assessments, financial sustainability analysis and targeted matchmaking with development partners and financiers;
- (c) Weak enabling environments, including limited data availability, unsuitable technical standards, fragmented technical assistance, policy uncertainties, lack of standardized contractual architectures for long-term supply of low-emission products, and constraints related to existing green finance definitions and taxonomies, which may favour fully green technologies and fail to sufficiently recognize credible transitional or incremental improvements in hard-to-abate sectors;
- (d) High transaction costs due to fragmented industrial markets, especially where SMEs and smaller manufacturers lack the scale, credit profile or experience needed to directly access multilateral or commercial finance;
- (e) Weak implementation capacity, including insufficient coordination across ministries, regulators, financial institutions and industries, including cases where financial initiatives and central bank sustainability efforts on industry decarbonization operate separately from ministries of industry and sectoral policymakers;
- (f) Challenges faced by SIDS in accessing timely and predictable finance, despite having developed NDC investment plans, implementation road maps and investment pipelines;
- (g) The limited scale of philanthropic funding relative to overall climate investment needs, requiring careful targeting of such resources to harness their catalytic role;
- (h) Technical and supply chain constraints for resource-based solutions, including feedstock impurities, fuel quality risks, the lower calorific value of biomass compared with coal to ensure effective power plant operation through co-firing, higher procurement costs of low-emission industrial products, lack of long-term fuel supply contracts and weak contractual architecture;

Annex

Proceedings of the seventh global dialogue and investment-focused event under the Sharm el-Sheikh mitigation ambition and implementation work programme

1. The seventh global dialogue and investment-focused event under the Sharm el-Sheikh mitigation ambition and implementation work programme¹ took place in Yeosu, Republic of Korea, from 21 to 23 April 2026, in hybrid format, with 147 registered in-person participants and 159 registered virtual participants.
2. The co-chairs, considering the submissions received, decided on and communicated in a message to Parties and observers² that the seventh global dialogue will focus on enabling mitigation ambition and implementation in industries, drawing on national and regional experience.³
3. During the dialogue, participants discussed two key areas within this focus area:
 - (a) First area of discussion: technology options and trends in decarbonizing industries, drawing on national and regional experience;
 - (b) Second area of discussion: enabling mitigation ambition and implementation in industries, drawing on national and regional experience.
4. The first area of discussion addressed two themes:
 - (a) Experiences of best practices and lessons learned;
 - (b) Experiences of addressing challenges and barriers.
5. The second area of discussion included two themes:
 - (a) Finance, technology development and transfer, and capacity-building;
 - (b) Governance and policy.
6. The dialogue was followed by an investment-focused event, which was organized by the secretariat under the guidance of the co-chairs of the work programme and held from 22 to 23 April 2026 in hybrid format. The investment-focused event, which included a scene-setting presentation followed by a panel discussion on financing mitigation in industries, case studies and a pitch hub session, can be revisited via the webcast links on the event web page.⁴
7. Welcome remarks were provided by Elif Pinar Polat, representing the incoming COP 31 Presidency, and Ingrid Lundberg, representing the incoming Presidency of Negotiations for COP 31, followed by an introduction to the seventh global dialogue and investment-focused event by the co-chairs of the work programme.
8. The opening session was followed by a scene-setting session, consisting of presentations and panel discussions on the two areas of discussion. The scene-setting presentation on the first area of discussion was delivered by Nurzat Gundacker, representing

¹ Organized in accordance with decision [4/CMA.4](#), paras. 8 and 11.

² As per decision 4/CMA.4, paragraph 13

³ See <https://unfccc.int/documents/655943>.

⁴ <https://unfccc.int/event/seventh-global-dialogue-and-investment-focused-event-under-the-sharm-el-sheikh-mitigation-ambition>.

UNIDO. This presentation provided an overview of technology options and trends for industrial decarbonization, highlighting the scale and drivers of industrial emissions, progress and challenges in mitigation across key sectors, and best practices and solutions, such as material efficiency, energy efficiency, electrification, hydrogen and carbon management, drawing on national and regional experience to overcome barriers to implementation.

9. The scene-setting presentation was followed by a panel discussion on the first area of discussion, which was moderated by Christopher Hope, Industrial Transition Specialist at UNIDO. Panellists included Eline van der Linden, Head of Impact and ESG at the Namibia Green Hydrogen Programme (virtual); Ida-Linn Näzelius, Head of Sustainability and Environment for Stegra (virtual); Stig Oyvind Uhr Svenningsen, Deputy Director General at the Ministry of Climate and Environment of Norway; Naser Odeh, Principal Fellow of the King Abdullah Petroleum Studies and Research Center (virtual); and Wang Jun, Director at the Climate Neutral Technology Research for Contemporary Ampere Technology Co., Limited.

10. The scene-setting presentation on the second area of discussion was delivered by Rachel Howard, Director for Asia and the Pacific at the Industrial Transition Accelerator, who presented on approaches to enable mitigation ambition and implementation in industries.

11. The scene-setting presentation was followed by a panel discussion on the second area of discussion, which was moderated by Mina Iwamoto Berkow, Senior Director at the Environmental Defense Fund. Panellists included Adriana de Medeiros Gabinio (Brazil); Dingane Sithole from the World Business Council for Sustainable Development – Zimbabwe (virtual); Katy Harris, Senior Policy Fellow, and Felipe Sanchez, Partnerships Lead, at the LeadIT secretariat (virtual); Leon Heng, Senior Managing Consultant at South Pole; and Jeanne Lan Hing Po, Permanent Secretary at the Ministry of Environment, Solid Waste Management and Climate Change of Mauritius.

12. Following the scene-setting presentations and panel discussions on both areas of discussion, two breakout group sessions were held on themes under the first area of discussion. These sessions built on the themes and issues highlighted in the scene-setting presentations and panel discussions, providing participants with the opportunity to share best practices and solutions with a view to exploring key aspects of mitigation action in industries.

13. Each breakout group was facilitated by one of the co-chairs of the work programme. The breakout sessions were held in two consecutive rounds, with two groups convening in parallel during each round, allowing participants to select the group they wished to join. Each breakout session concentrated on a distinct thematic area drawn from the preceding discussions.

14. The breakout session on experiences of best practices and lessons learned, was facilitated by the co-chairs of the work programme. Amanda McKee, Director of Knowledge and Learning at the NDC Partnership, provided the icebreaker intervention under this theme. The guiding questions were:

(a) What technology options and solutions have been successfully applied in your country or region to advance industrial decarbonization, and what best practices and lessons have emerged from their deployment?

(b) What opportunities exist, from your national or regional experience, for the development, adoption, scale-up or implementation of industrial decarbonization in practice and what has supported their uptake in practice?

15. The breakout session on experiences of addressing challenges and barriers was facilitated by the co-chairs of the work programme. Gyoorie Kim, Diplomacy Lead at Solutions for Our Climate, provided the icebreaker intervention under this theme. The guiding questions were:

(a) What challenges and barriers have been encountered in the development, adoption, scaling-up or implementation of technologies in decarbonization of industries in your country or region such as long lifecycles of industrial plants, technology maturity, advancing innovation and the need of breakthrough technologies among others?

(b) Based on your national or regional experience, what approaches have helped to address these challenges and barriers in practice?

16. The co-chairs of the work programme opened the second day with a report back on the previous day's discussions in the breakout sessions under the first area of discussion and gave participants the opportunity to provide additional input.

17. Following the report back, two breakout sessions were held on themes under the second area of discussion. These sessions built on the themes and issues highlighted in the first day's scene-setting presentations and panel discussions on enabling mitigation ambition and implementation in industries, drawing on national and regional experience, providing participants with an opportunity to contribute to the discussion on that area.

18. Each breakout group was facilitated by one of the co-chairs of the work programme. The breakout sessions were held in two consecutive rounds, with two groups convening in parallel during each round, allowing participants to select the group they wished to join. Each breakout session concentrated on a distinct thematic area drawn from the preceding discussions.

19. The breakout session on finance, technology development and transfer, and capacity-building was facilitated by the co-chairs of the work programme. Michael Apicelli, Head of the Secretariat at the Climate Club, provided the icebreaker intervention. The guiding questions were:

(a) What best practices and actionable solutions have been effective in your country or region in mobilizing and accessing finance, including but not limited to carbon markets and carbon pricing, technology development and transfer, and capacity-building, including with respect to workers, skills development and just transitions, to support mitigation action in industries, in line with national priorities and circumstances?

(b) What challenges and barriers have been encountered in mobilizing and scaling up finance, technology deployment or capacity-building, and what approaches have helped or could help to address them?

20. The breakout session on governance and policy was facilitated by the co-chairs of the work programme. Muslim Anshari Bin Rahman, Director of Policy and Analytics at GenZero, provided the icebreaker intervention. The guiding questions were:

(a) What are the best practices and actionable solutions from your national or regional experience with respect to governance and policy frameworks, including but not limited to integrating industrial decarbonization into broader national strategies and plans, that have proven to be effective in enabling and implementing mitigation action in industries and what lessons have emerged from their application?

(b) What related challenges and barriers have arisen in practice and what practical solutions or approaches have helped or could help to address them?

21. At the conclusion of the breakout sessions on the second day, the co-chairs of the work programme reported back on the discussions that took place in the breakout groups under the second area of discussion and gave participants the opportunity to provide additional input. Following this closing session, the co-chairs opened the investment-focused event.

22. The investment-focused event featured a scene-setting presentation by Sirini Jeudy-Hugo, Team Lead of Climate Change Expert Group at the Organisation for Economic Co-

operation and Development, who provided institutional perspectives on financing mitigation action in industries. This was followed by a panel discussion showcasing a range of approaches to enable financing of mitigation in industries, including perspectives on different financing modalities, the role of blended finance and de-risking instruments, and support for project preparation. The panel discussion was moderated by Hisham Mundol, Chief Adviser, India, Environmental Defense Fund. The following panellists provided regional perspectives:

- (a) Exsley Taloiburi, Head of Multilateral Governance and Observer Engagement at the GCF;
- (b) Katherine Anne Hughes, Principal Climate Change Specialist at the Asian Development Bank;
- (c) Xinyi Zeng, Programme Consultant at the Sequoia Climate Foundation;
- (d) Yuki Yasui, Managing Director, Asia Pacific Network, from the Glasgow Financial Alliance for Net Zero.

23. The investment-focused event also featured case studies and perspectives on financing mitigation in industries, showcasing real examples and case studies of mitigation action where public finance, blended mechanisms and support from global funds have successfully improved bankability and accelerated development of mitigation projects. Case studies were jointly presented by representatives of financial institutions and their country and/or implementing partners, offering diverse regional perspectives. The presentations illustrated innovative investment approaches, enabling policy frameworks and key lessons learned in advancing mitigation action in industries. Presentations on regional case studies were delivered by:

- (a) Hyunkeong Kim, Executive Director at the Korea Institute of Energy Technology Evaluation and Planning;
- (b) Karin Wessman, Head of Sustainability and Country Analysis at the Swedish Export Credit Agency (virtual);
- (c) Rémy Ruat, Climate Change Specialist from the GEF secretariat (virtual), who presented jointly with Christopher Hope, Industrial Transition Specialist at UNIDO;
- (d) Saarthak Khurana, Associate Director at Climate Policy Initiative (virtual);
- (e) Simon Benmarraze, Head of Energy Planning and Modelling at IRENA, who presented jointly with Dato' Leong Kin Mun (Malaysia) (virtual);
- (f) Tomoko Furusawa, Head of Office at the CTCN Partnership and Liaison Office, who presented jointly with Diana Alejandra Quezada Avila, Senior Officer at the Global Green Growth Institute, and Usman Ali (Pakistan).

24. The pitch hub session was held to provide an opportunity for interested Parties to share their project ideas and interact with investors, financial institutions and other policymakers with a view to receiving expert advice and insights on investment project preparation. Interested Parties were requested to submit a project proposal, using a template which can be found on the event web page,⁵ to be presented at the pitch hub. Project proponents made pitches to investors and policymakers on their project proposals under various thematic areas, including industrial decarbonization. A total of five projects (see the table below) were presented in plenary format, accommodating an advisory panel of experts, who provided guidance and advice on the project proposals presented. A webcast of each breakout room is available on the event page.

⁵ <https://unfccc.int/event/seventh-global-dialogue-and-investment-focused-event-under-the-sharm-el-sheikh-mitigation-ambition>.

Seventh investment-focused event – pitch hub: projects pitched and advisory panel members

<i>Project name</i>	<i>Advisory panel members</i>
Urban Climate Resilience in Burkina Faso through Forestry and Agroforestry, (Burkina Faso) ^a	Katherine Anne Hughes, Principal Climate Change Specialist, Asian Development Bank Max Russer, Climate Finance Associate, NDC Partnership
Acceleration Pathway for a Competitive and Decarbonized Industry, (Colombia) ^b	Simon Benmarraze, Head, Energy Planning and Modelling, IRENA Max Russer, Climate Finance Associate, NDC Partnership
Clean Energy Access, Local SME Growth, and Biomass Transition for Climate Mitigation, (Liberia) ^c	Simon Benmarraze, Head, Energy Planning and Modelling, IRENA Perna Saxena, Regional Investment Specialist, United Nations Capital Development Fund
AI for Climate-Smart and Low-Emission Agricultural Systems, (Republic of Korea) ^d	Katherine Anne Hughes, Principal Climate Change Specialist, Asian Development Bank Rosa-Stella Mbulu, Lead Strategic Partnerships, Mitigation Action Facility
Methane Capture and Energy Recovery from Municipal Solid Waste Landfill in Lilongwe, (Malawi) ^e	Perna Saxena, Regional Investment Specialist, United Nations Capital Development Fund Rosa-Stella Mbulu, Lead Strategic Partnerships, Mitigation Action Facility

^a The proposal is available at [Urban Climate Resilience in Burkina Faso through Forestry and Agroforestry, \(Burkina Faso\)](#).

The presentation is available at [Urban Climate Resilience in Burkina Faso through Forestry and Agroforestry, \(Burkina Faso\)](#).

^b The proposal is available at [Acceleration Pathway for a Competitive and Decarbonized Industry, \(Colombia\)](#).

The presentation is available at [Acceleration Pathway for a Competitive and Decarbonized Industry, \(Colombia\)](#).

^c The proposal is available at [Clean Energy Access, Local SME Growth, and Biomass Transition for Climate Mitigation, \(Liberia\)](#).

The presentation is available at [Clean Energy Access, Local SME Growth, and Biomass Transition for Climate Mitigation, \(Liberia\)](#).

^d The proposal is available at [AI for Climate-Smart and Low-Emission Agricultural Systems, \(Republic of Korea\)](#).

The presentation is available at [AI for Climate-Smart and Low-Emission Agricultural Systems, \(Republic of Korea\)](#).

^e The proposal is available at [Methane Capture and Energy Recovery from Municipal Solid Waste Landfill in Lilongwe, \(Malawi\)](#).

The presentation is available at [Methane Capture and Energy Recovery from Municipal Solid Waste Landfill in Lilongwe, \(Malawi\)](#).