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Economic Commission for Africa
Committee on Private Sector Development, Regional Integration, Trade, Infrastructure, Industry and Technology
Fourth session
Addis Ababa (hybrid), 18 and 19 November 2025

Aide-memoire

I. Introduction

1. The fourth session of the Committee on Private Sector Development, Regional Integration, Trade, Infrastructure, Industry and Technology will be held in Addis Ababa, at the headquarters of the Economic Commission for Africa (ECA), on 18 and 19 November 2025. The session will take place alongside expert group meetings organized by the relevant divisions of ECA. The session will be held in a hybrid format, with participants attending in person and online. The theme of the session is "Leveraging frontier technologies and innovation to advance regional integration for sustainable and inclusive growth".

II. Background

2. Frontier technologies are rooted in digital innovation, which is driven by artificial intelligence, the Internet of things, big data, blockchain, 5G, robotics and automation, but their reach extends well beyond the digital realm. They span powerful advances in renewable energy, biotechnology, nanotechnology and advanced materials.[1] Far from being just a trend, frontier technologies cut across sectors and systems, making them critical enablers of broader innovation and development ambitions in Africa. As African countries work to achieve their collective development goals outlined in the 2030 Agenda for Sustainable Development and Agenda 2063: The Africa We Want, of the African Union, it is important that they adopt frontier technologies to overcome long-standing barriers to integration.

3. The frontier technology market, which is set to grow sixfold to $16.4 trillion by 2033,[2] is not just a booming sector in its own right; it is fast becoming the backbone of entire economies. Such technology is being embedded into value and supply chains, transforming the ways in which industries operate, compete and scale up, and Africa is seizing the opportunity. For example, blockchain is now used in the tea industry in Kenya to improve traceability and reduce fraud. In South Africa, sensors connected to the Internet of things monitor cold chain storage for medicines and perishables, helping to maintain quality and extend shelf life during transportation. In Nigeria, algorithms that incorporate artificial intelligence are used to match freight with trucks in real

[1] *Technology and Innovation Report 2025: Inclusive Artificial Intelligence for Development* (United Nations publication, 2025).

[2] Ibid.

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time, cutting costs and delays. Recent estimates suggest that digitizing supply chains could boost productivity by up to 30 per cent in developing regions, highlighting the potential of frontier technologies that remains to be unlocked across economies in Africa.[3]

4. The power of frontier technologies extends beyond business: it is helping to advance African progress on the Sustainable Development Goals. In Nigeria, solar mini-grids are delivering affordable power to off-grid communities. With 600 million Africans still lacking access to electricity, off-grid solar and battery storage are examples of solutions that can help to close the access gap that are scalable and powered by frontier technologies.[4] South Africa is partnering with Egypt, Kenya, Nigeria, Senegal and Tunisia to establish messenger ribonucleic acid (mRNA) vaccine facilities to enhance continental pharmaceutical production and strengthen health systems.[5] Furthermore, Africa has launched 44 satellites, and 114 more are under development, with a view to supporting climate monitoring, agriculture and disaster response.[6]

5. Frontier technologies have great potential to enhance African integration and prosperity. If properly harnessed, they could form the nervous system of a unified continental economy, and there is evidence that such a process is already under way. For example, the Pan-African Payment and Settlement System, which enables secure, near-instant cross-border payments, uses various frontier technologies, such as the real-time gross settlement system, standard number 20022, on messaging, of the International Organization for Standardization, and machine learning-driven cybersecurity.[7] By greatly reducing costs, including $5 billion in annual currency conversion fees,[8] time delays and trust barriers, the System removes major obstacles to intra-African trade and integration.

6. The relationship between regional integration and frontier technologies is mutually supportive. In the same way that frontier technologies can support the advancement of regional integration, scaling up those technologies requires regional cooperation. Given that such technologies thrive on scale, interoperability and shared infrastructure, they may need deliberate cooperation and coordinated interventions. For example, by aligning policies, pooling resources and harmonizing standards at the regional level, countries can reduce deployment costs, enable cross-border compatibility and create large, integrated markets that are attractive to investors and innovators. There is evidence that regional cooperation is delivering results in that regard. For instance, under the Programme for Infrastructure Development in Africa, by 2023, 17 countries were digitally connected with fibre-optic cables; regional information and communications technology (ICT) capacity had reached 9 terabits, exceeding a 2020 target of 6 terabits; broadband penetration had surpassed 25 per cent; and 30 million more people had access to electricity.[9] Although those technologies may not be frontier technologies, they are essential enablers and lay the foundation for the successful deployment and scaling-up of advanced technologies across the continent.

[3] Sarah Rudge, “Transforming Africa’s supply chains: the role of AI, blockchain, and IoT”, Supply Chain World, 19 September 2024.

[4] Victoria Uwemedimo and Katrina Zimmer, “For climate and livelihoods, Africa bets big on solar mini-grids”, Eos, 16 April 2025.

[5] World Health Organization, “The mRNA vaccine technology transfer programme”.

[6] Temidayo Oniosun, “Space economy: Africa in focus”, Space in Africa, n.d.

[7] For more information, see https://papss.com/how-it-works.

[8] Pan-African Payment and Settlement System, “New Africa payment system to save $5 billion in fees, lift trade in Bloomberg”, 13 January 2022.

[9] African Union Development Agency-New Partnership for Africa’s Development, *Programme for Infrastructure Development in Africa (PIDA): First 10-Year Implementation Report – A Decade of Transforming Africa’s Infrastructure* (Midrand, 2023).

7. There has been promising progress, but unlocking the disruptive power of frontier technologies will require Africa to deepen the capacity to use, adopt and adapt those innovations. The frontier technology readiness index of the United Nations Conference on Trade and Development (UNCTAD), measured on a scale from 0 to 1, shows that progress in Africa is modest: the average score for Africa rose from 0.21 in 2008 to 0.25 in 2021.[10,11] According to data from 2021 from 44 countries, the relative strengths in Africa lie in access to finance and industry activity, indicators for which the scores were 0.47 and 0.44, respectively, although both indicators have slightly declined since 2008. The research and development indicator remains the weakest link, with a score of 0.09, followed by skills, at 0.25, and ICT, at 0.28. Encouragingly, the ICT indicator has more than doubled since 2008, signalling growing momentum. The data reinforce a broad consensus: although gains are emerging, critical gaps remain across the board, especially in education, research and institutional capacity, which undermine the ability of Africa to leverage frontier technologies for inclusive and sustainable growth.

8. An enabling regulatory environment is crucial for driving the development and adoption of frontier technologies across the continent, given that it helps to build trust, ensure security and improve the efficiency of innovations. Regulatory fragmentation poses a significant challenge, however, increasing compliance costs and constraining the ability to scale up technologies across borders. For example, some frontier technologies rely on robust data centres to process large volumes of data, but some countries have imposed restrictions on cross-border data flows, even though not all the countries have the infrastructure to host such data locally.[12] There is, therefore, an imperative to accelerate the implementation of continental frameworks, such as the Protocol to the Agreement Establishing the African Continental Free Trade Area on Digital Trade and its related annexes, that are aimed at harmonizing regulatory environments across the continent.

9. Attention should be given to the fact that frontier technologies are often developed in advanced economies and adopted later in Africa, once they have become more affordable and their success has been demonstrated. In that context, mobilizing affordable green finance will be critical to supporting the development and deployment of frontier technologies across the continent. Many innovations require investments up front, which can be prohibitive if targeted financial support is unavailable. Although those conditions do not necessarily indicate that Africa is lagging behind, they do invite a call for action and present an opportunity for African countries to adopt technologies strategically, in alignment with their stages of development and own priorities. A dual-track approach, combining frontier technologies with mature, proven solutions, including innovative finance models, can help to maximize impact. The right entry points will vary, depending on development stage and the capacity to absorb and adapt the technologies. For example, in low-income countries, the priority may be leapfrogging, in order to bridge critical development gaps. In those cases, such solutions as solar mini-grids and mobile health can extend essential services where traditional systems fall short. Mature technologies, such as drip irrigation and energy-efficient machinery, are low-risk and cost-effective and deliver returns quickly in such sectors as agriculture and light manufacturing. Those tools help to strengthen the economic base

[10] ECA analysis on the basis of UNCTAD, “Frontier technology readiness index, annual (analytical)”, UNCTADstat Data centre. Available at https://unctadstat.unctad.org/datacentre/# (accessed on 1 July 2025).

[11] For a detailed explanation of the index and its component indicators, see *Technology and Innovation Report 2021: Catching Technological Waves – Innovation with Equity* (United Nations publication, 2021), pp. 144–147.

[12] For more information on the continent’s digital infrastructure and regulatory environment, see United Nations, ECA, *Digital Infrastructure in Africa* (Addis Ababa, 2023), and the website of the ECA regional digital trade regulatory integration initiative in Africa, https://dtri.uneca.org/eca/home.

while laying the groundwork for more advanced innovations. In contrast, middle-income countries, with stronger institutions, research capacity and more diversified economies, are better positioned to integrate frontier technologies into higher-value sectors, such as biotechnology and smart manufacturing, helping to escape the middle-income trap.[13] Ultimately, the goal is not just to move quickly, but to choose smartly, prioritizing impact, managing risk and building resilience tailored to the continent's unique contexts.

III. Objectives

10. The overall aim of the session is to strengthen the ability of ECA to respond to the evolving priorities of its members and adapt to changing institutional, national, regional and global development landscapes, in particular in relation to advancing priority frontier technologies for inclusive and sustainable growth and development. Specifically, the aims of the session are:

(a) To review the work of ECA on private sector development, regional integration, trade, infrastructure, industry and technology and its contribution to inclusive, green industrialization in Africa;

(b) To provide a forum for dialogue and consensus-building in those areas in the context of the African development agenda, namely the 2030 Agenda and Agenda 2063;

(c) To catalyse progress at the national and regional levels in those areas, including by leveraging regional instruments and initiatives, such as the Protocol to the Agreement Establishing the African Continental Free Trade Area on Investment, with a view to promoting sustainable investments and mobilizing affordable green finance to support the adoption of frontier technologies and innovations, and the Protocol to the Agreement on Digital Trade, with a view to fostering an enabling digital regulatory environment and accelerating the development of requisite digital infrastructure;

(d) To address topical and emerging issues of relevance to the Committee's areas of focus and to take stock of the progress made by members of ECA in the areas mentioned above;

(e) To consider the prospective work of the relevant ECA subprogrammes and make recommendations to guide such work;

(f) To generate inputs for the meeting of the Conference of African Ministers of Finance, Planning and Economic Development that will be held in 2026 during the fifty-eighth session of the Economic Commission for Africa.

IV. Expected outputs and outcomes

11. The following outputs are expected:

(a) A report on the fourth session of the Committee, which will provide insights into the issues mentioned above;

(b) Reports of the expert group meetings.

12. The following outcomes are expected:

(a) A better understanding of the challenges and opportunities faced by members of ECA in boosting private sector development, regional

[13] *Technology and Innovation Report 2021: Catching Technological Waves – Innovation with Equity* (United Nations publication, 2021).

integration, trade, infrastructure, industry and technology for sustainable and inclusive growth;

(b) Guidance from members of ECA, in the form of recommendations, on the work of ECA in private sector development, regional integration, trade, infrastructure, industry and technology;

(c) Greater awareness among members of ECA of the role of frontier technologies and innovation in regional integration and sustainable transformation in Africa.

V. Format

13. The session will consist of plenary meetings, during which the secretariat will deliver presentations on parliamentary documents and the issues paper on the theme of the session. General discussions will follow the presentations. The session may be informed by the outcomes of the expert group meetings that will be held alongside the session.

VI. Participation

14. The session will be attended by representatives of members of ECA; the African Union Commission; regional economic communities; development finance institutions; United Nations funds, programmes and specialized agencies; the private sector; civil society; academic institutions; and sectoral organizations.

VII. Documentation

15. The session will be a paper-smart event, and only electronic versions of documents will be made available to participants. All documents will be available in the ECA PaperSmart portal, at https://papersmart.uneca.org/meeting. Individuals who attend the event in person are advised to bring their own devices, such as laptop computers, tablets or smartphones, in order to download and view the documents.

16. A print-on-demand service will remain available to in-person participants during the session. Nonetheless, it is expected that requests for hard copies of documents will be made only when strictly necessary. Such requests will be honoured on an exceptional basis. No more than five copies per document per delegation will be provided. Participants requiring this service are asked to complete the request form on the PaperSmart portal and send it to Mamayenesh Teshome at teshomem@un.org.

VIII. Working languages

17. The working languages of the Committee are English and French, and all session documents will be available in both languages.

IX. Contacts

18. For more information about the session, please contact the following individuals:

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