

INTERNATIONAL



Artificial Intelligence Under the UNFCCC: Existing Work and Emerging Questions

Discussion Paper

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Artificial Intelligence (AI) has not yet become a significant topic of negotiations under the United Nations Framework Convention on Climate Change (*UNFCCC or the Convention*). AI has primarily been addressed under the UNFCCC's Technology Mechanism (*TM*), which facilitates enhanced action on technology development and transfer. Established in 2023 and set to run through 2027, the **AI for Climate Action Initiative** is exploring how AI can support mitigation and adaptation in developing countries while examining challenges, such as energy consumption, data security, and digital divides.

While this technical work under the TM is underway, **in formal UNFCCC decisions, AI has only come up in the context of recognizing the launch of the AI for Climate Action Initiative**. Although key findings on AI from a report under the initiative were included in an early draft of negotiating text on technology development and transfer,¹ in June 2026, Parties removed all specific messages on AI in favor of text that broadly notes the relevance key recommendations from the TM's policy arm.²

As the AI for Climate Action Initiative progresses through its workplan, technology is developing rapidly, energy consumption stemming from AI use is increasing, and the views regarding the impacts of AI on the environment are evolving in the broader UN architecture. In June 2026, **the UN Secretary General called for AI companies to disclose their environmental impacts and to power data centers with renewable energy by 2030**. In December 2025, Member States to the UN Environment Programme (*UNEP*) agreed to the first-ever multilateral resolution on AI and the environment, which focuses on the ecological impacts of AI and its potential to support climate resilience and biodiversity.

As AI-related discussions evolve, the UNFCCC may increasingly be confronted with two related questions: how can AI contribute to the achievement of climate goals, and how may the deployment of AI systems affect energy demand, resource use and sustainable development objectives? The AI for Climate Action Initiative has already begun to examine both dimensions, including: (i) opportunities for AI to support mitigation and adaptation; and (ii) recommendations to reduce the energy consumption and carbon footprint of AI systems. In the future, Parties could seek additional guidance on AI applications for climate action, sustainable AI deployment, or capacity building and infrastructure needs in developing countries.

While AI is currently mainly discussed through technical UNFCCC processes, growing attention to its climate, energy, and resource implications could bring the issue into broader political discussions among Parties. If Parties decide to elevate the discussion, AI-related issues could emerge through several existing processes, including work under the Technology Implementation Programme (*TIP*), negotiations on the TM's mandates and work programs, and preparations for the second global stocktake (*GST2*). Whether such discussions occur will ultimately depend on whether Parties choose to bring these issues into the political arena and seek a mandate for their further consideration under the UNFCCC.

Questions for consideration

- What is the UNFCCC doing to address questions related to climate and AI?
- How might further questions related to climate and AI come up under the UNFCCC in the future?
- Where and when could discussions about AI arise under the UNFCCC?

A. The UNFCCC's AI for Climate Action Initiative

1. The UNFCCC is currently examining the role of AI through the TM, which aims to facilitate the implementation of enhanced action on climate technology development and transfer toward achieving the full implementation of the Convention.³
2. To date, work on AI under the UNFCCC has centered on understanding how AI can support climate mitigation and adaptation efforts, particularly in developing countries, while also considering the risks and implications associated with its deployment. The principle vehicle for this work is the AI for Climate Action Initiative, established under the TM in 2023 and operationalized in 2024. Its workplan, which runs through 2027, includes research products and capacity-building activities.⁴
3. The TM's AI for Climate Action Initiative has identified useful applications across a range of climate-relevant sectors and activities, including climate monitoring and data collection, climate modelling and prediction, energy management, disaster risk reduction, resource management, transport systems, education and community engagement. The Technology Executive Committee (*TEC*)—the TM's research and analysis arm—has highlighted the potential of AI-enabled satellite imagery, sensor networks, predictive analytics, and machine learning to support climate decision-making and resilience building in developing countries.⁵
4. Parties have recognized the initiative in negotiated decisions, including in the GST1 outcome⁶ and in Decision 14/CMA.5 on technology development and transfer.⁷ However, work on AI has largely remained within the TM and has not yet become a significant subject of negotiation.
5. Current discussions are primarily technical and implementation-focused, rather than political. There is an emerging question as to whether AI-related issues may eventually move into more political negotiations under the UNFCCC process.

B. Issues Related to Negotiations on AI Under the UNFCCC

6. AI has featured only to a limited extent in UNFCCC negotiations to date. The first references to AI appeared in decisions adopted at the 28th Conference of the Parties to the UNFCCC (COP28) and 5th Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA5), through which Parties recognized the launch of the AI for Climate Action Initiative and requested its implementation through the TM.⁸
7. When AI has arisen in UNFCCC discussions, it has largely reflected familiar debates surrounding climate technologies more broadly. These discussions have focused on how developing countries, particularly least developed countries (*LDCs*) and small island developing states (*SIDS*), can access infrastructure, technical expertise, and the finance needed to benefit from AI-enabled climate solutions. Related concerns include technology transfer, capacity building, and equitable access, as well as the risk that unequal adoption of AI could reinforce existing technological and development divides.

8. These themes are reflected in the work of the AI for Climate Action Initiative. The initiative explicitly focuses on developing countries, particularly LDCs and SIDS. It addresses how developing countries can access the data, infrastructure, skills, and finance required to benefit from AI. It also is expected to address concerns that unequal access to AI could reinforce existing technological and development divides.
9. Through the initiative, the TEC has developed recommendations on issues including early warning systems, energy efficiency, data security, open data, Indigenous knowledge, technology transfer, and gender-responsive approaches.⁹ The initiative continues to explore both opportunities for AI to support climate action and the challenges associated with its deployment.
10. Importantly, these recommendations were developed by the TEC and were not negotiated by Parties. Early drafts of negotiated outcomes on the joint annual reports of the TEC and CTCN included elements of the recommendations, including calls to promote the use of open source AI for climate mitigation and adaptation, promote supportive policies and local trainings to utilize AI for greenhouse gas emissions removals, strengthen international cooperation to maximize AI's potential in climate strategies, establish governance approaches that enable AI-driven decision-making, reduce the energy consumption and carbon footprint of AI, address gender bias in AI systems, bridge the digital divide by investing in infrastructure development and capacity-building initiatives in developing countries, invest in AI research, integrate local knowledge in AI systems, ensure gender responsive approaches to AI development, and develop robust data governance to address privacy, security, and ethical concerns.¹⁰
11. Specific references were ultimately removed and replaced with more general language that welcome TEC knowledge products.¹¹ This suggests there is currently limited political appetite among Parties to negotiate detailed outcomes related to AI. A broader question is whether AI will remain a technical issue or evolve into a more political topic within the UNFCCC.
12. In October 2026, the TEC will host an AI for Climate Action Forum in Cambodia to explore how responsible AI can support climate mitigation and adaptation action.¹²

C. AI in the Broader UN System

13. Across the UN system, there is growing attention not only to AI's potential contribution to sustainable development and environmental protection, but also to the environmental impacts associated with AI systems themselves, including energy consumption, water use, infrastructure requirements, and the potential for AI to boost fossil fuel pipeline development and expansion. The UNFCCC's AI for Climate Action Initiative reflects many of these same themes, particularly around capacity building, equitable access, and the relationship between AI deployment and sustainable development.¹³
14. In 2023, the UN Secretary-General's High-Level Advisory Body on Artificial Intelligence was established to examine options for international AI governance. The Advisory Body's reports highlight both the opportunities presented by AI and the need for inclusive governance arrangements that enable all countries to benefit from AI development. The reports also identify capacity building, access to digital infrastructure, data governance, and sustainable development as key international policy issues.¹⁴
15. The Secretary-General has also increasingly linked AI to environmental sustainability. In June 2026, he launched an AI Environmental Transparency Initiative urging AI companies to disclose their environmental impacts and to power data centers with renewable energy by 2030.¹⁵ This call reflects a growing concern regarding the energy consumption associated with AI systems and the implications for climate and energy policy.
16. United Nations Environment Assembly (**UNEA**) also addresses the environmental dimensions of AI. In December 2025, UNEA adopted its first resolution specifically addressing the environmental

sustainability of AI systems. The resolution recognizes both the potential contribution of AI to environmental protection and sustainable development and the need to better understand and manage the environmental impacts associated with AI deployment.¹⁶

D. Opportunities for the Future

17. As international attention to AI's environmental footprint grows, pressure may increase to move beyond technical discussions and consider more substantive policy questions under the UNFCCC. If that occurs, future debates are likely to focus on balancing AI's potential contribution to climate action with concerns about energy use associated with AI, resource consumption of AI, and equitable access to its benefits.
18. COP31 could present an opportunity to advance discussions on climate-related AI. Türkiye announced that, in coordination with the UN International Telecommunication Union, it is developing a voluntary Antalya Pledge on Artificial Intelligence to enhance transparency and to align AI infrastructure with global climate goals. COP31 will also feature a day dedicated to technology and AI, during which Türkiye will launch an initiative to develop a portfolio of AI-enabled clean-technology pilots.
19. Some plausible entry points for future political discussions on AI within the UNFCCC may include:
 - **The relationship between AI and energy systems:** AI can support the optimization and decarbonization of energy systems, but its own electricity demand is growing rapidly. This could lead to greater focus on the energy efficiency of AI systems and the emissions associated with AI infrastructure. AI-related issues could increasingly appear in discussions on the implementation of nationally determined contributions (**NDCs**) and long-term low-emission development strategies (**LT-LEDS**). Parties could also choose to explore the potential for AI to accelerate the energy transition in line with the goals of the Paris Agreement and the targets and signals agreed in GST1.
 - **Electrification:** The COP31 Presidency has identified electrification as a priority area under the action agenda for COP31¹⁷ and launched a voluntary pledge to increase electricity's share of energy consumption to around 35 percent by 2035.¹⁸ Some have also called for an electrification target in a negotiated outcome at COP31 or in GST2. Parties could consider the impact of AI in this context.
 - **Fossil fuel–rebound expansion through AI usage:** Some Parties may raise concerns that AI could contribute to increased fossil fuel production or consumption by improving exploration, extraction, operational efficiency, or energy-demand forecasting. Such discussions would likely focus on whether AI deployment aligns with long-term decarbonization objectives and how potential rebound effects should be addressed.
 - **AI physical-resource usage:** Water consumption, resource use, and infrastructure requirements could also become subjects of greater scrutiny. The TEC has already recommended reducing the energy consumption and carbon footprint of AI.
 - **Energy-efficient AI deployment:** In the future, Parties could choose to request additional guidance from the TEC on energy-efficient AI deployment. Parties could also ask the CTCN to support developing countries in planning sustainable infrastructure for AI.
20. If Parties choose to raise political questions about AI beyond the AI for Climate Action Initiative that concludes in 2027, they could do so in several potential places:
 - **The Technology Implementation Programme (TIP):** The TIP is designed to accelerate the deployment and implementation of climate technologies. Parties could use the programme to discuss both the opportunities presented by AI for climate action and the infrastructure, energy, and capacity requirements associated with AI deployment, particularly in developing countries.

- **TM negotiations and mandates:** Parties could request additional work from the TEC or the CTCN on topics such as energy-efficient AI deployment, AI lifecycle emissions, resource use, or best practices for sustainable AI infrastructure. Such discussions would likely occur through negotiations concerning the work programs and mandates of the TM. With the current workplan of the joint work programme of the TM,¹⁹ rolling workplan of the TEC,²⁰ and programme of work for the CTCN²¹ nearing their end next year in 2027, there could be scope to elevate considerations about AI in future TM workplans.
- **The second global stocktake:** Lessons from the AI for Climate Action Initiative could serve as inputs to GST2 through the joint annual reports of the TEC and CTCN. As preparations for GST2 advance, Parties may choose to raise questions concerning both the role of AI in supporting climate action and the implications of AI deployment for energy systems, infrastructure development, and broader sustainable development objectives.
- **National implementation discussions:** As Parties update NDCs and LT-LEDS, AI may become increasingly relevant in discussions concerning energy-system planning, electrification, industrial transformation, and emissions reductions.
- **Ministerial and high-level political dialogues:** If concerns regarding AI's environmental footprint gain greater prominence, Parties could choose to elevate these issues through ministerial discussions, COP Presidency initiatives, or other high-level dialogues addressing technology, energy transitions, and implementation.

21. Developments in other international fora could reinforce these discussions. For example, UNEA's 2024 resolution on AI recognized both the potential of AI to support environmental protection and sustainable development, as well as the need to address the environmental impacts associated with AI systems, including energy consumption, resource use, and waste generation. The resolution also encourages governments and other stakeholders to promote transparency, resource efficiency, and sustainability in AI practices. The growing attention being given to AI's environmental implications across the UN system could increase pressure for more substantive consideration of these issues within the climate regime.

E. References

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- ³ UNFCCC, "What Is the AI for Climate Action Initiative," accessed September 16, 2026, https://unfccc.int/ttclear/artificial_intelligence.
- ⁴ UNFCCC, *Rolling workplan of the Technology Executive Committee 2023-2027* (May 13, 2025), https://unfccc.int/ttclear/misc_/StaticFiles/gnwoerk_static/TEC_Documents_doc/75c51e57e36541baadc12401c9efe010/19d1d79cdfb24c97a54953327609b5ac.pdf
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- ⁶ UNFCCC, *Outcomes of the first global stocktake*, Decision 1/CMA.5, ¶ 109 (March 14, 2024), <https://unfccc.int/documents/637073>.
- ⁷ UNFCCC, *Enhancing climate technology development and transfer*, Decision 14/CMA.5 (March 15, 2024), <https://unfccc.int/documents/637074>.
- ⁸ UNFCCC, *Outcomes of the first global stocktake*, Decision 1/CP.28; UNFCCC, *Enhancing climate technology development and transfer*, Decision 14/CMA.5.
- ⁹ UNFCCC, *Draft text: Matters related to technology development and transfer: Joint annual report of the TEC and CTCTN*, Annex I: Key messages and recommendations of the Technology Executive Committee for the Conference of the Parties, ¶¶ 1-14, (November 13, 2025), https://unfccc.int/sites/default/files/resource/TEC_CTCTN_JAR_cop30.pdf.
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- ¹⁵ "UN Secretary-General launches AI Environmental Transparency Initiative, calling on AI companies to disclose carbon, water and land footprints," United Nations, June 23, 2026, <https://unu.edu/inweh/news/un-secretary-general-launches-ai-environmental-transparency-initiative-calling-ai>.
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