AI-ENABLED CLEANTECH INITIATIVE

BACKGROUND

The transition to a low-carbon and climate-resilient economy requires not only stronger commitments, but also the rapid deployment of scalable solutions. The implementation challenge lies in the speed, cost and reliability with which proven and emerging technologies move from research and demonstration into operating assets, supply chains and public systems. The UNEP Emissions Gap Report 2025 estimates that full implementation of current nationally determined contributions would result in global warming of approximately 2.3–2.5°C over this century, while current policies imply warming of approximately 2.8°C. The IPCC has further assessed that global greenhouse gas emissions need to decline by approximately 43% by 2030 relative to 2019 levels to keep pathways consistent with limiting warming to 1.5°C within reach. Closing the implementation gap therefore requires faster identification, financing, adoption and deployment of effective climate technologies.

Artificial intelligence accelerates specific climate and clean-technology applications, including the optimisation of energy systems, improved resource efficiency, support for industrial decarbonisation, enhanced climate-risk analysis and more transparent measurement and reporting. Research by the London School of Economics' Grantham Research Institute and Systemiq estimates that applications of AI in power, mobility and food systems could reduce global greenhouse gas emissions by approximately 3.2–5.4 billion tonnes of carbon dioxide equivalent annually by 2035 under ambitious deployment scenarios. These potential benefits are not automatic and depend on the purpose, design, energy requirements, data quality, governance and deployment context of each application. The UNFCCC Technology Mechanism has also recognised the potential of AI to support mitigation and adaptation solutions, including in developing countries. The strategic opportunity for COP31 is therefore to establish trusted pathways from clearly defined climate challenges to responsible deployment and measurable climate and development outcomes.

The opportunity is significant, but it will not be realised by default. AI-enabled cleantech solutions remain fragmented across geographies, sectors and innovation ecosystems, and private capital, climate-tech start-ups, corporate adopters and academic research are insufficiently connected. Start-ups may have technically credible products but no industrial testbed, reference customer or route to project finance. Corporate and public-sector adopters face material climate challenges but lack curated solution pipelines, appropriate data infrastructure or credible methods for allocating implementation risks and benefits. Investors identify promising technologies but lack evidence of customer demand, replicability or verified impact. Public institutions have limited capacity to distinguish scalable applications from early-stage demonstrations or unsupported claims. As a result, proven AI-enabled cleantech pilots often remain at demonstration stage, while prospective adopters lack access to implementation-ready technologies and innovators struggle to secure deployment partners and patient capital.

These barriers are more pronounced in emerging and developing markets, where access to high-quality datasets, computing infrastructure, technical skills and patient capital is uneven. Without targeted support, the digital divide risks becoming a climate-implementation divide. Türkiye's geographic position at the nexus of Europe, Central Asia, the Middle East and North Africa creates

a natural platform for North-South and South-South innovation flows, drawing on its industrial base, start-up ecosystem and COP31 convening power to build cross-regional partnerships.

Against this backdrop, the AI-Enabled Cleantech Initiative is proposed as a Türkiye-anchored, private-sector-led initiative under the COP31 Action Agenda, positioning AI as a cross-cutting enabler of climate implementation and supporting the development and deployment of solutions across sectors and markets. The Initiative builds on the COP29 Declaration on Green Digital Action, which addresses both the climate-enabling potential and the environmental footprint of digital technologies, as well as the Artificial Intelligence Climate Institute announced at COP30 to strengthen AI-related skills and capacities for climate action in developing countries. The initiative aims to complement these efforts by adding a demand-led implementation layer focused on challenge identification, corporate and public-sector adoption, deployment finance, pilot delivery and impact measurement. The Initiative strengthens the visibility of emerging-market innovation and advances the responsible use of digital technologies in green industrialisation, circularity and climate resilience. For Türkiye, it connects national industrial and technological capabilities with international climate priorities and establishes a practical COP31 legacy centred on deployment, cross-regional cooperation and real-economy implementation.

OBJECTIVES

The AI-Enabled Cleantech Initiative mobilises corporates, investors, climate-tech start-ups, universities and youth innovators to support the deployment of AI-enabled cleantech solutions contributing to measurable emissions reductions and inclusive innovation outcomes through 2030. The Initiative focuses on priority sectors including green industry, circular economy and zero waste, smart energy, climate-smart agriculture, and climate finance, data and measurement, reporting and verification (MRV).

By linking the existing AI-climate dialogue with real-world application, the Initiative addresses fragmentation across the innovation ecosystem. It complements existing AI and climate platforms through a dedicated focus on real-economy adoption, investment readiness, pilot delivery, impact measurement and replication, translating the visibility and momentum created at COP31 into practical partnerships and longer-term implementation pathways. Recognising that technological potential alone will not deliver climate outcomes, the Initiative combines structured coordination, responsible AI requirements, pilot preparation and support to access deployment finance, helping partners progress from demonstration to wider adoption.

The Initiative applies responsible AI principles throughout its delivery model. These address the energy, water, materials and lifecycle footprint of AI systems; data governance and transparency; equitable access; and the meaningful participation of women-led, youth-led and emerging-market innovators. Pilot selection and evaluation consider both the climate benefits enabled by the proposed solution and the associated environmental and social impacts of its deployment.

INITIATIVE OUTLINE

1. Implementation pillars

The Initiative will be implemented through three mutually reinforcing pillars that translate COP31 visibility into practical partner mobilisation, pilot development, investment alignment and responsible AI governance.

Pillar 1	**Flagship Pilots and Corporate Adoption** Develop a portfolio of AI-enabled cleantech pilots across priority sectors, including green industry, circular economy and zero waste, smart energy, climate-smart agriculture, and climate finance, data and MRV.
Pillar 2	**Innovation Pipeline and Investment Mobilisation** Curate a pipeline of climate-tech and AI-tech start-ups, convene AI-enabled cleantech innovators and adopters at COP31, and facilitate corporate-start-up partnerships and investment mobilisation for deployment.
Pillar 3	**Responsible and Sustainable AI, Data Governance and Knowledge Exchange** Advance a commitment to responsible and sustainable AI for climate action, establish principles for data governance, cybersecurity and confidentiality in pilots, support climate-data and MRV use cases, and develop knowledge products and technical exchange with universities, research institutions and implementation partners.

2. Delivery

Pillar 1: Flagship Pilots and Corporate Adoption
The Initiative develops and launches a portfolio of AI-enabled cleantech pilots across the priority sectors. A pilot is considered launched once it has a defined challenge owner, technology provider, implementation site, agreed workplan, baseline, impact measurement plan, financing pathway and implementation start date.

Each pilot tests the responsible application of AI to a clearly defined climate or resource-efficiency challenge. The pilots generate evidence on technical performance, climate and development outcomes, implementation requirements, environmental footprint and potential for replication across sectors and markets. Participating companies and public institutions act as challenge owners, pilot hosts and first customers, identifying operational climate challenges and providing access to relevant implementation environments and data.

Pillar 2: Innovation Pipeline and Investment Mobilisation
The Initiative curates a pipeline of climate-tech and AI-tech start-ups, with particular attention to solutions from emerging and developing markets, and connects selected innovators with corporate adopters and investors, including through convening at COP31. It also supports selected pilots and technology providers in developing credible financing pathways, connecting opportunities with corporate investors, venture and impact funds, public banks and development finance institutions. Financial reporting distinguishes between announced interest, formal commitments, contracted finance and disbursement.

Pillar 3: Responsible and Sustainable AI, Data Governance and Knowledge Exchange
The Initiative establishes a common framework for the responsible deployment and assessment of AI-enabled cleantech solutions. The framework addresses the environmental footprint of AI systems, transparency, data governance, equitable access and inclusive participation, aligned where applicable with the principles of the COP29 Green Digital Action Declaration. It also defines how

pilot outcomes are measured, documented and communicated, including relevant emissions, energy, materials, resilience and inclusion indicators. Lessons from the pilots are converted into practical guidance for replication.

GOVERNANCE STRUCTURE AND PARTNERS

The Initiative, launched by Boğaziçi Ventures / GreenWise, will operate as a private-sector execution platform with the support and strategic engagement of the Ministry of Environment, Urbanisation and Climate Change / Directorate of Climate Change and the Ministry of Industry and Technology of the Republic of Türkiye. Boğaziçi Ventures / GreenWise will provide secretariat and operational coordination, while participating public institutions will support policy alignment with the COP31 Action Agenda.

Technical assessment, responsible AI safeguards, conflict-of-interest management, finance tracking and approval of public impact claims are governed through documented procedures. Pilot implementation remains the responsibility of the respective challenge owners, technology providers and implementation partners.

Informed by ongoing consultation and exchange with stakeholders engaged in *Axis 6: Unleashing Enablers and Accelerators, including on Finance, Technology and Capacity Building* of the Global Climate Action Agenda, the AI-Enabled Cleantech Initiative will support efforts to advance the Global Climate Action Agenda's objectives.

PARTICIPATION

Participation will be open to corporates, investors, climate-tech and AI-tech ventures, universities, research organisations, public institutions, development finance partners and youth innovation networks according to their areas of expertise. Participation will be encouraged through access to curated pilot opportunities, corporate-start-up matchmaking, investor engagement, technical workstreams, knowledge partnerships, responsible and sustainable AI commitments and COP31 launch activities, subject to relevant selection and governance arrangements.

Parties wishing to participate in the initiative are kindly requested to submit their request through their respective UNFCCC national focal point, by e-mail to the addresses indicated below. The same addresses may also be used by other interested stakeholders to express their support of the initiative.

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