

Measuring the environmental footprint of ICTs

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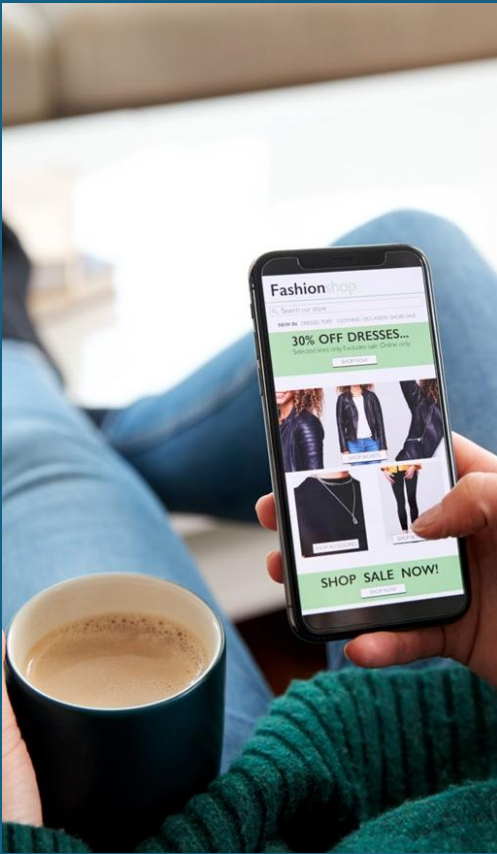
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20 May 2026



Digital technologies deliver benefits everyday

Online Shopping



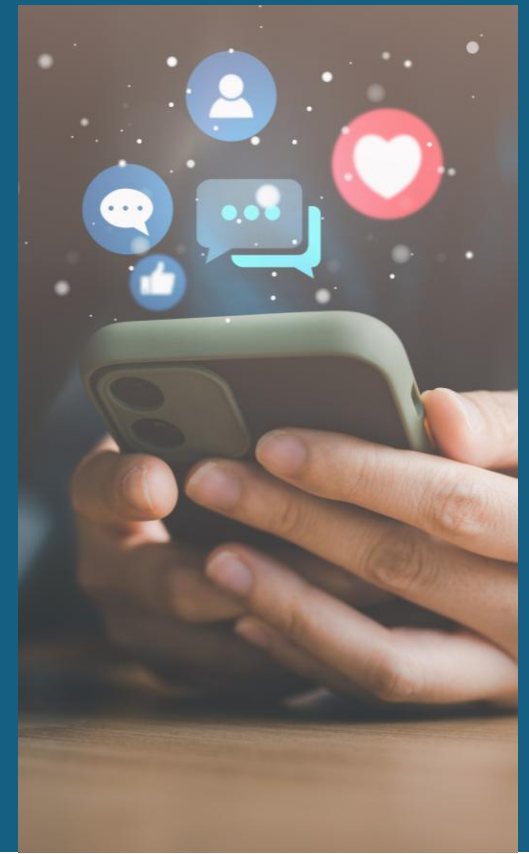
Online Banking



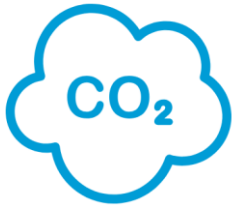
Remote Work



Social Media



However, the adoption of digital technologies poses significant impact on our environment



2% - 3%
of global GHG
emissions annually
are generated by the
ICT industry



62 Billion
kilograms of e-waste
was generated
globally in 2022.



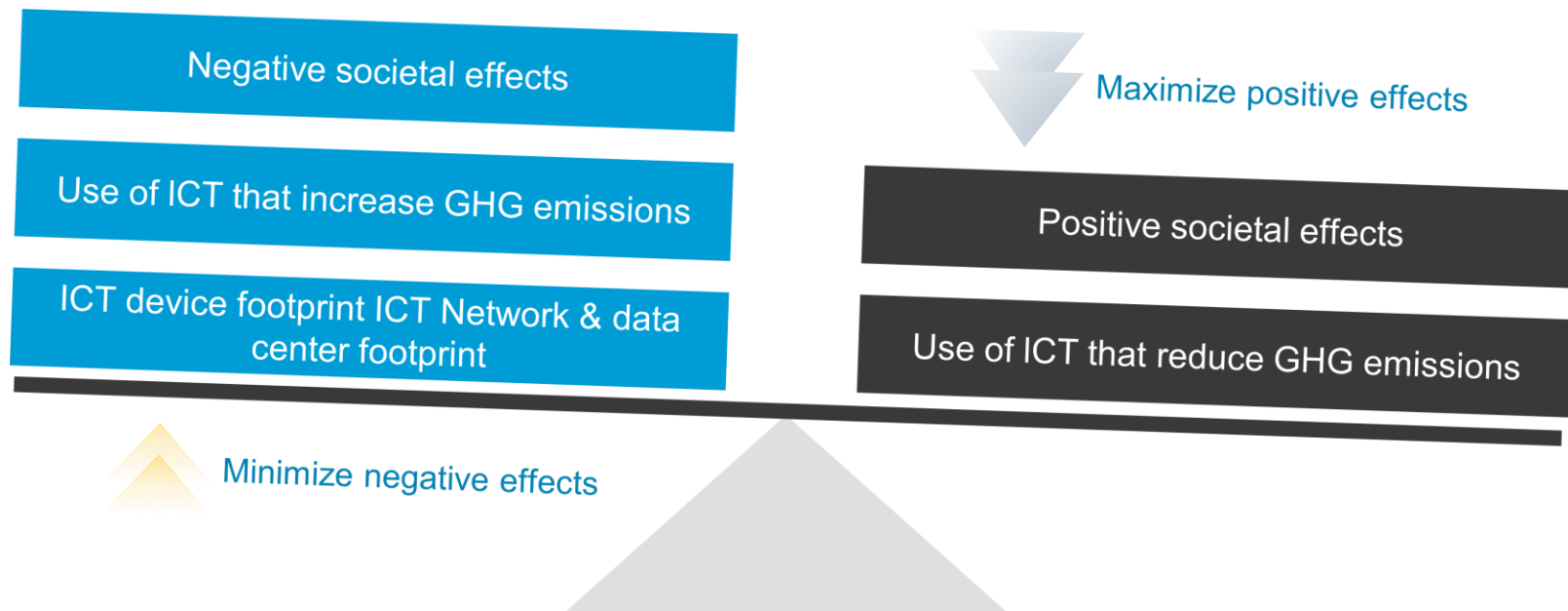
+12%
Per year of data
centre electricity use



+150%
AI related emissions
since 2020



Digital technologies can be both a solution and a challenge



Standards: The Backbone of Sustainable ICT

Standards enable the ICT sector to take concrete actions to reduce emissions and energy consumption, assisting other sectors in doing the same.

Requirements

Clear guidelines for sustainable ICT practices.

Frameworks

Approaches to implement sustainability.

Metrics and KPIs

Tools to measure and track progress.

Assessment

Methodologies to evaluate environmental impact.





United Nations specialized agency for information and communication technologies (ICTs)



194

Member States



+100

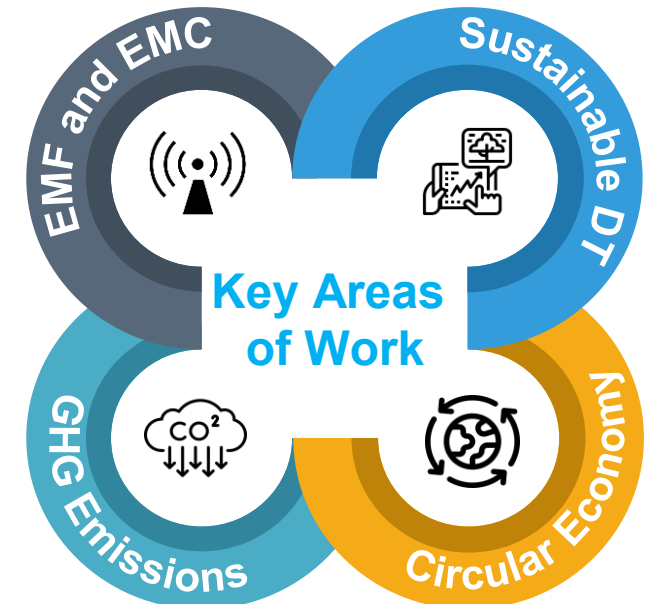
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companies, universities,
research institutes and
international
organisations

ITU-T Standardization Sector

Sets International Standards for Climate Action and Sustainable Digitalization

ITU-T Study Group 5
Environment, climate action, circular economy and electromagnetic fields



Exploring standards, reporting and internal monitoring

Setting 1.5°C Trajectories for the ICT sector

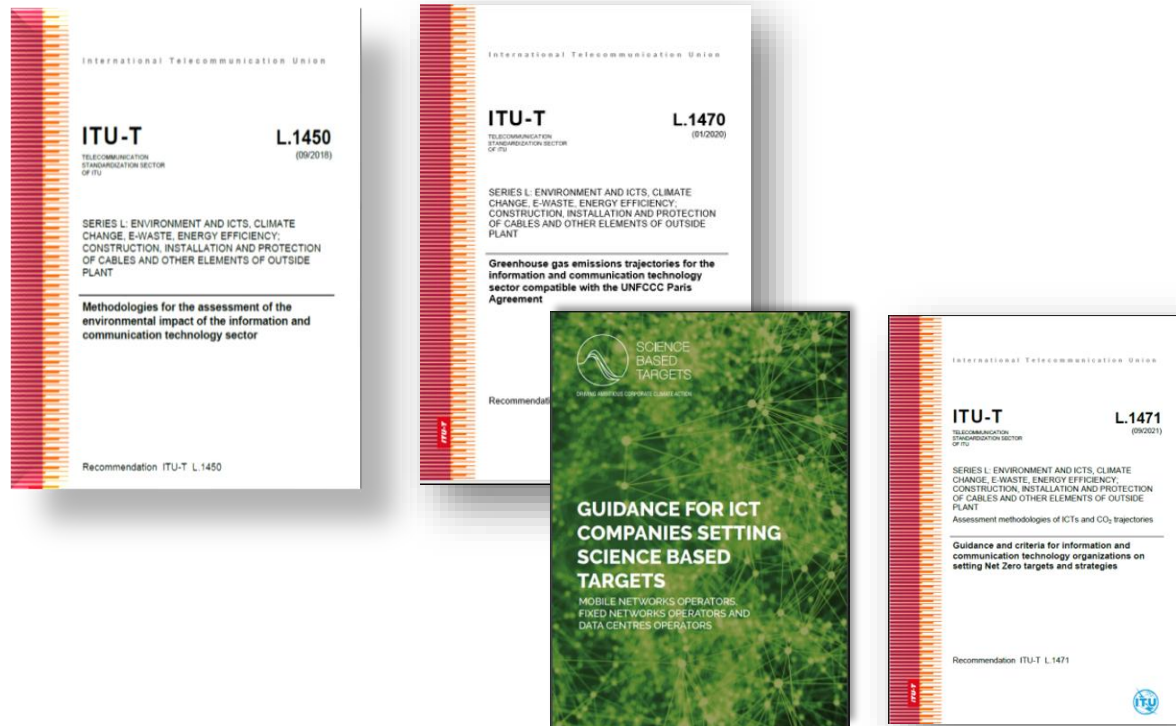
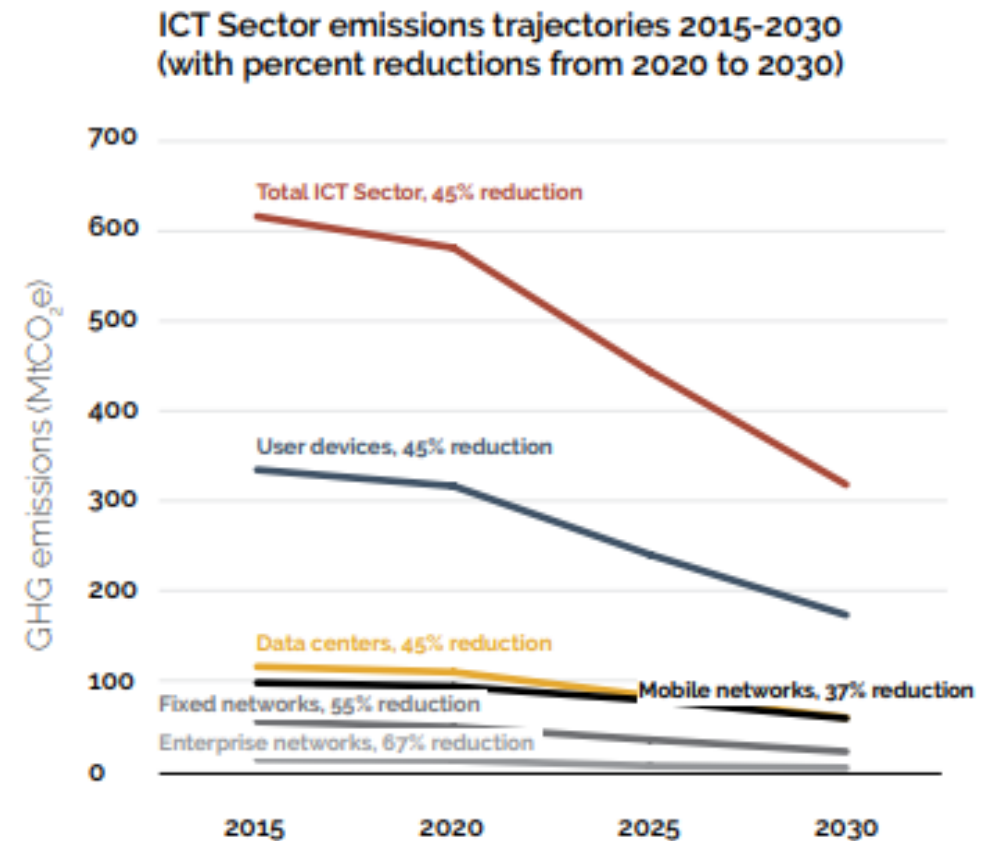


Figure 1: Summary of ICT sector and sub-sector trajectories including embodied emissions and operation



GeSI ENABLING
DIGITAL
SUSTAINABILITY

GSMA™



SCIENCE
BASED
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

leda



ITU-T L.1801 - Guidelines for Assessing the Environmental Impact of Artificial Intelligence systems



World **first full methodology** standard for AI systems



Joint development in ITU-T SG5 and ETSI TC EE, as technically aligned standard

ITU Publications
Recommendations

International Telecommunication Union
Standardization Sector

Recommendation
ITU-T L.1801 (02/2026)

SERIES L: Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant

Environmental sustainability of artificial intelligence and emerging ICT systems

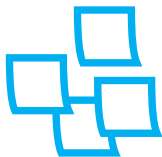
Guidelines for assessing the environmental impact of artificial intelligence systems



Standard containing **mandatory requirements**



Full life cycle of AI systems



Comparative assessment

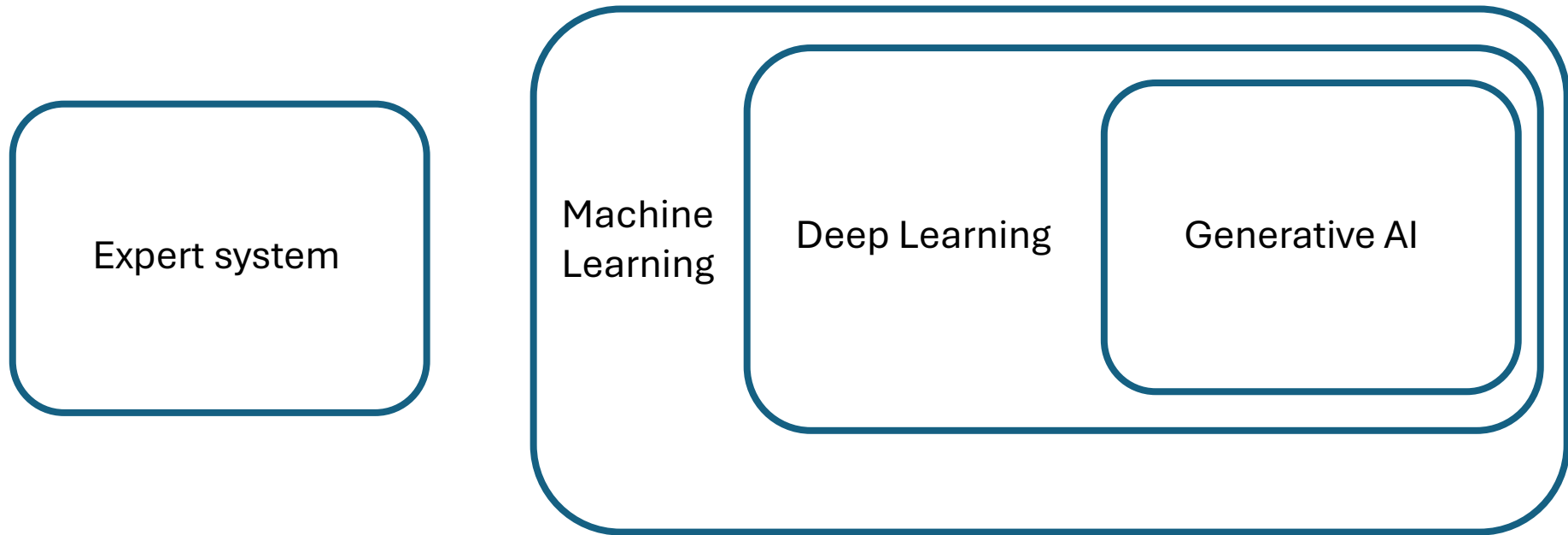
- AI technology compared to not using AI
- Impact comparison of two AI systems



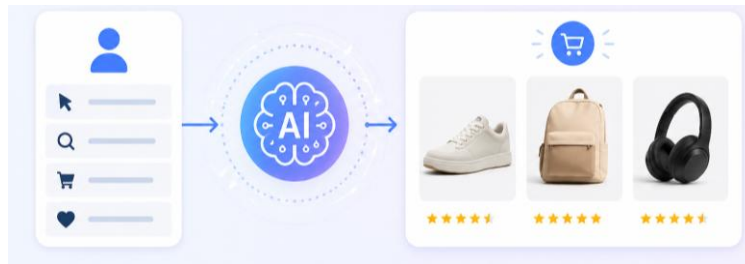
Based on:

- ITU-T L.1410: Methodology for environmental LCA of ICT goods, networks and services
- ITU-T L.1480: Enabling the Net Zero transition – Assessing how the use of ICT solutions impacts GHG emissions of other sectors

AI systems vary widely in shape, size, and use case



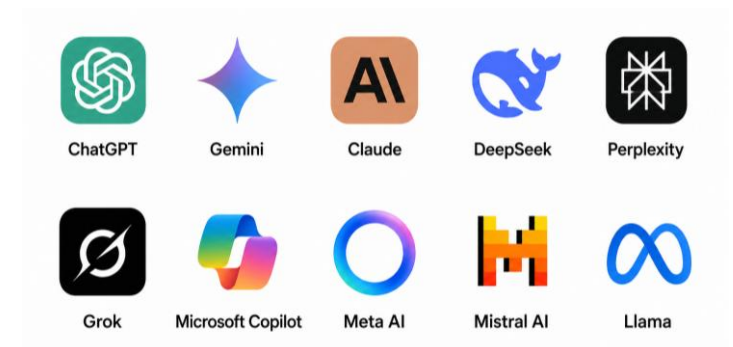
Fraud detection



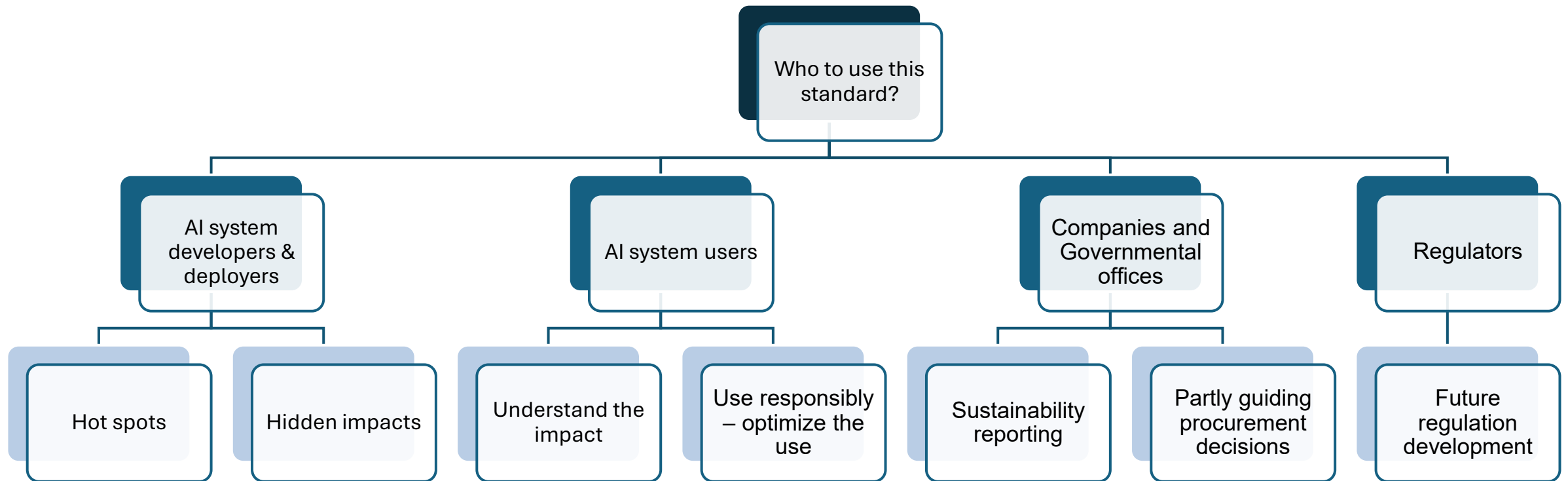
Product Recommendations



Image Recognition



AI chat & Assistant apps



Call for Implementation - ITU-T L.1801

Guidelines for Assessing the Environmental Impact of AI systems

Why implement the standard?

- Test the methodology in real use cases
- Provide feedback to improve the standard
- Generate the first data and insights

Shape what's next

- Shape the roadmap towards 2027
- Contribute to AI for Good & AI Summit
(Switzerland)
- Support global and national assessments



ITU-T L.Sup.ExamplesAI: Examples of assessments of artificial intelligence systems



ITU-T L.AgregatedAI: Guidelines for Assessing the Environmental Impact of Artificial Intelligence aggregated at worldwide, country and city level

👉 **“We need early implementers to test, improve, and help us build the first global evidence base.”**

**ITU-T
Standardization Sector**

Sets International Standards for Climate
Action and Sustainable Digitalization



ITU-T Study Group 5
Environment, climate action, circular economy and electromagnetic fields



ICT sector GHG emissions



Green standards



Circular economy



Enablement of industries



Green computing

IMPLEMENTATION & ACTION

GDA at COP30: Implementation Focus



COP30
BRASIL
AMAZÔNIA
BELÉM 2025

- GDA's 3rd edition at COP30 featured **30 sessions**.
- Supported the **Belém Package** on *implementation, inclusion, and financing*.



Green Digital Action Hub

Harnessing technology innovation for climate action, anchored in Brazil as a COP30 legacy together with 8 International partners



Empowering developing countries to harness AI and local innovation to address the climate crisis

Measuring what matters: Closing the gaps in assessing AI's environmental impact

2026 Report



The real challenge today is not awareness, it is measurement.

⚠️ AI sustainability is limited by lack of reliable data

📊 Current approaches rely on estimates, not real measurements

🔄 Impacts are not fully captured across the lifecycle

🚫 **What is missing**

💧 Visibility on **water use, supply chains, and e-waste**

📏 **Common metrics and reporting standards**

🔍 **Transparency and comparability** across systems

What needs to change

 Move to real-time measurement(telemetry, dashboards, lifecycle tracking)

 Adopt common metrics and standards(energy, carbon, water, lifecycle impacts)

 Cover the full lifecycle(from hardware to use to end-of-life)

How to enable progress

 Strengthen international collaboration

 Improve transparency and data sharing

 Integrate sustainability into policies and digital infrastructure

Standardization for AI Environmental Sustainability



Towards a coordinated global approach
Updated version
February 20th, 2026

COALITION FOR
SUSTAINABLE AI

An update published for the AI Impact Summit

*Developed by the **Coalition for Sustainable AI** and the **French Ministry for the Ecological Transition**, in collaboration with **ITU**, **ISO** and **IEEE***

 **Landscape analysis** of AI environmental sustainability standards

 **Mapping of ongoing work** across SDOs (*ITU, ISO, IEEE*)

 **Identification of gaps and priorities** for future standards

 **Guidance toward aligned methodologies and metrics** for assessing AI environmental impact

Upcoming events

ITU-T SG5 Meeting
Sophia Antipolis, France,
9 – 18 June 2026

More information [here](#).

AI for Good Global Summit
Geneva, Switzerland,
7-10 July 2026

More information [here](#).

