

ITU standards driving a sustainable digital transformation & strengthening collaboration

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International Telecommunication Union (ITU)



The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies (ICTs)







Main topics

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Electromagnetic compatibility, resistibility and lightning protection



Human exposure to electromagnetic fields



Soft error caused by particle radiations



Circular economy and e-waste management



ICTs related to the environment, energy efficiency, clean energy and sustainable digitalization for climate actions







BASEL / ROTTERDAM / STOCKHOLM CONVENTIONS



COP Biodiversity

13 CLIMATE ACTION









International and diverse participation



Sustainable Digital Transformation and Standards



International standards represent the amalgamation of knowledge contributed by experts from around the world!

Sector

For ICT



For cities an

- Reduce carbon emissions government
 - Achieve a sustainable digital Transformation
 - Improve uptake of green energy
 - Achieve targets set in the Paris Agreement and SDGs



- Technical guidance to implement green energy solutions
- Provide measurement tools to evaluate progress
- Bring low-cost connectivity to rural areas
- Reach net-zero





International Standards on Sustainable Digital Transformation

E-waste Management

Sustainable Digital Transformation

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Green Network and Data Centres



GHG Emissions and ICT Sector

Standards to help **sustainable e-waste management systems**, **recycling procedures** and move us towards a circular economy.

Designing with circularity and sustainability in mind avoiding waste and facilitating their recovery and re-use during their end-of-life phase.

Identifying the environmental and energy efficiency requirements for ICTs .

Providing solutions for assessing **environmental performance of green networks and data centres**.

Providing trajectories, best practices, and targets to help the ICT sector move towards decarbonization and Net Zero emissions.

To support and provide guidance to government, industry, and academia





ITU-T Standards Driving Sustainable Networks



TRANSITION TO NET ZERO

Sets the trajectories of GHG emissions for the global ICT sector and sub-sector Recommendation ITU-T L.1470



Examples of ITU International Standards

E-waste and Circular Economy



Energy Efficiency, Green Network and Data Centres



ICT sector GHG emissions and Enablement effect of ICT





Enabling the Net Zero transition



- Provides a methodology on how to assess ICT and digital technologies solutions impact GHG emissions
- Being used by the European Green Digital Coalition

Six steps to assess an ICT solution





Digital solutions Enabling the Net Zero transition in the vertical industry



Coming soon: Scope 3 – Guidance for ICT Telecommunication Operators

ICT companies are committing to reduce not only their own GHGs, but also the emissions resulting from their value chain, including their supply chain and customers.

How to measure the inventory of value chain emissions (scope 3)?

This Guidance harmonizes methods for telecommunication operators to assess and report their scope 3 GHG emissions, and to increase its coverage, and transparency.

| Category 1: Purchased goods and services | Category 2: Capital Goods | Category 3: Fuel and energy-related activities | Category 8: Upstream leased assets | Category 11: Use of sold products |
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Creating Global Partnerships and collaboration with SDOs





Working together to **reduce environmental impact** and achieve a sustainable digital transformation



By fostering collaboration between industry leaders, we can streamline efforts, eliminate duplication and help the ICT sector through the development of relevant standards.



Data Centres and Energy Efficiency



Energy storage



- ICT goods, networks and services footprint
- Enabling ICTs and Digital Technologies for other sectors





Examples of technically aligned standards



Environmental Engineering (EE); Methodology for environmental Life Cycle Assessment (LCA) of Information and Communication Technology (ICT) goods, networks and services



Environmental Engineering (EE); Assessment of mobile network energy efficiency



Development of technically aligned deliverables (1)



Energy Efficiency

- L.BBU: Requirements and use cases of liquid cooling solutions and high energy efficiency solutions for 5G BBU in C-RAN mode
- L.EE_serv: Energy Efficiency measurement methodology and metrics for servers.
- L.EE_sgpu: Energy Efficiency measurement methodology and metrics for servers: Graphical Processor Unit (GPU) solution based
- L.MCI_MIM and L.MCI_Gen: Monitoring and Control Interface for Infrastructure Equipment

Q6/5 "Environmental efficiency of digital technologies" and Q11/5 "Climate change mitigation and smart energy solutions"

ETSI TC "Environmental Engineering"





Development of technically aligned deliverables (2)

Circular Economy

"Assessment of material efficiency of ICT network goods Circular economy"

ETSI EN 303 800-1/ ITU-T L.Mat frame Part 1: General for server and data storage equipment.

ETSI EN 303 800-2/ ITU-T L.ME DD Part 2: Server and data storage product secure data deletion functionality.

ETSI EN 303 800-3/ ITU-T L.ME AF Part 3: Server and data storage product availability of firmware and of security updates to firmware.

ETSI EN 303 800-4/ ITU-T L.ME RM Part 4: Server and data storage product critical raw materials.

ETSI EN 303 800-5/ ITU-T L.ME DIS Part 5: Server and data storage product disassembly and disassembly instruction

Digital Product Passport for ICT

- **ITU-T L.GDSPP:** Requirements for a global digital sustainable product passport to achieve a circular economy
- ITU-T L.D4PI: An information model for digital product information on sustainability and circularity

Q7/5 "E-waste, circular economy, and sustainable supply chain management"

ETSI TC "Environmental Engineering"

Next

(ÌTU)







Development of technically aligned deliverables (3)





Assessment methodologies of ICT

- L.1410rev: Methodology for environmental life cycle assessments of information and communication technology goods, networks and services
- L.SimplifiedLCA: Guidance on simplified life cycle assessments of Information and Communication Technologies

Planned to be a technically aligned deliverable:

 L.1480: Enabling the Net Zero transition: Assessing how the use of information and communication technology solutions impact greenhouse gas emissions of other sectors Q9/5 "Climate change and assessment of digital technologies in the framework of the Sustainable Development Goals (SDGs) and the Paris Agreement"

ETSI TC "Environmental Engineering"





Areas of Ongoing Work in ITU-T SG5









Thank you!

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Additional slides



Shifting the ICT Sector to a Circular Approach



- Improper e-waste management can result in considerable environmental and health risks.
- International standards such as the requirements for a universal charger can mitigate 50 000 tonnes of e-waste. Has been adopted by the European Union





Circular Design principles



- Provides a method to assess the circularity of an ICT goods
- Implemented by several operators



Planned to be accompanied with: Circular scoring tool



Energy Efficiency, Green Network and Data Centers



Defines a **KPI useful to** evaluate network emission and give an indication on how a network can reduce its emission due to energy usage



Provides **metrics and methods of assessing energy efficiency** in operational networks



Support public authorities in purchasing data centres related products, services and items with reduced environmental impacts through establishing a set of procurement criteria





Leveraging Digital Technology for GHG Reduction



Provides a methodology for calculating the ICT sector footprint with respect to life cycle GHG emissions



As of today, it is the **only international standard that deals with the life cycle assessment of ICT goods and services**



Standards provide **detailed** trajectories on how to reduce the ICT Sector's GHG emissions by 45% by 2030.







Publishing Research



Science-based publications, toolkits, case studies and thought leadership



Driving Sustainability Trough Events and Webinars



Bringing together key industry, academia and ICT experts

New events and webinars scheduled for 2023!

