ITU standards & activities to help the environment and tackle climate change

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World Standards Day and International E-Waste Day 2020

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The ICT sector accounts for 2% of global emissions.

But it can also help reduce global emissions by 15%.
Frontier Technologies can address global challenges such as climate change.
ITU is helping the ICT sector move towards a carbon neutral path

**International standards:** ITU-T SG5:
Environment, Climate Change & Circular Economy

**Research and pre-standardization work:**
FG-AI4EE

**Raising awareness:**
International events and reports

**Active collaboration**
with other entities and UN organizations
ITU-T Study Group 5: Environment, climate change and circular economy

SG5 is responsible for:

- Studying ICT environmental aspects of electromagnetic phenomena and climate change.
- Studies on how to use ICTs to help countries and the ICT sector to adapt to the effects of environmental challenges, including climate change, in line with the Sustainable Development Goals (SDGs).

Lead Study Group for:

- Electromagnetic compatibility, lightning protection and electromagnetic effects
- ICTs related to the environment, climate change, energy efficiency and clean energy
- Circular economy, including e-waste

WP1/5 - EMC, lightning protection, EMF
WP2/5 - Environment, Energy Efficiency and the Circular Economy
Using ICT solutions in an environmentally sound manner

Aspects that should be considered

- GHG Emission
- Smart sustainable cities & communities
- E-Waste
- Smart energy
- Energy Efficiency
- Circular Economy
ITU-T Recommendations on Energy Efficiency and Smart Energy

- **Recommendations ITU-T L.1220, ITU-T L.1221, and ITU-T L.1222**: Innovative Energy storage technology for stationary use:
  - Part 1: Overview of energy storage
  - Part 2: Battery
  - Part 3: Supercapacitor technology

- **Recommendation ITU-T L.1303**: Functional requirements and framework of green data centre energy-saving management system

- **Recommendation ITU-T L.1305**: Data centre infrastructure management system based on big data and artificial intelligence technology

- **Recommendations ITU-T L.1380, ITU-T L.1381, and ITU-T L.1382**: Smart Energy Solutions for:
  - Telecom sites
  - Data Centre
  - Telecommunication rooms

- **Recommendation ITU-T L.1370**: Sustainable & intelligent building services

- **Recommendation ITU-T L.1371**: A methodology for assessing and scoring the sustainability performance of office buildings
ITU-T L.1381(2020) “Smart energy solutions for data centers”
ITU’s work to combat e-waste

- National Policy and Regulatory Development
- Developing International standards
- Improving and Collecting Data
- Projects and Activities
- United Nations E-waste Coalition
- Reports and Publications
The E-waste Challenge MOOC

The Massive Open Online Course (MOOC) on e-waste has been developed to encourage:

- Environmentally sound management of hazardous chemicals and wastes.
- Cleaner production processes to minimize use/emissions of hazardous waste.
- Protection of human health, communities and the environment from the impact of hazardous waste and climate change.
- Design, circular economy, mitigation and adaptation activities to lower the impact on climate change and natural resources.
Helping the ICT sector reduce its emissions

Methodologies for the assessment of the environmental impact of the ICT sector

GHG emissions trajectories for the ICT sector compatible with the UNFCCC Paris Agreement

Guidance to operators of mobile and fixed networks and data centres on setting 1.5°C aligned targets

This guidance supports operators and data centre owners in setting science-based targets for GHGs according to the decarbonisation pathways, described in detail in Recommendation ITU-T L.1470.
FG-AI4EE: Environmental efficiency for AI and other emerging technologies

This FG-AI4EE identifies the standardization needs to develop a sustainable approach to AI and other emerging technologies.

The FG-AI4EE is working on the Requirements, Assessment and Measurement & Implementation of AI and Emerging Technologies for environmental efficiency.
ITU-T publications on Environment and Climate Change

Turning digital technology innovation into climate action

Frontier technologies to protect the environment and tackle climate change
Thank you!

Questions? Interested in learning more? Let us know!

Email
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Additional slides
WP1/5 - EMC, lightning protection, EMF

Q1/5 - Protection of information and communication technology (ICT) infrastructure from electromagnetic surges

Q2/5 - Equipment resistibility and protective components

Q3/5 - Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs)

Q4/5 - Electromagnetic compatibility (EMC) issues arising in the telecommunication environment

Q5/5 - Security and reliability of information and communication technology (ICT) systems from electromagnetic and particle radiations
WP2/5 - Environment, Energy Efficiency and the Circular Economy

Q6/5 - Achieving energy efficiency and smart energy

Q7/5 - Circular economy including e-waste

Q9/5 - Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs)
ITU-T Recommendations on E-waste and Circular Economy

- **Recommendation ITU-T L.1021**: Extended producer responsibility - Guidelines for sustainable e-waste management
- **Recommendation ITU-T L.1022**: Circular Economy: Definitions and concepts for material efficiency for Information and Communication Technology
- **Recommendation ITU-T L.1023**: Assessment method for circular scoring
- **Recommendation ITU-T L.1032**: Guidelines and certification schemes for e-waste recyclers
ITU-T Recommendations on Climate Change adaptation and mitigation

- **Recommendation ITU-T L.1450**: Methodologies for the assessment of the environmental impact of the information and communication technology sector

- **Recommendation ITU-T L.1451**: Methodology for assessing the aggregated positive sector-level impacts of ICT in other sectors

- **Recommendation ITU-T L.1470**: GHG emissions trajectories for the ICT sector compatible with the UNFCCC Paris Agreement

- **ITU-T L.Suppl.37 to ITU-T L.1470**: Guidance to operators of mobile networks, fixed networks and data-centres on setting 1.5°C aligned targets compliant with Recommendation ITU-T L.1470