

ITUEvents

# First Digital African Week

27-30 August 2019  
Abuja, Nigeria

*Accelerating Smart Sustainable Cities  
with frontier technologies &  
international standards*



Paolo Gemma  
Chairman of Working Party 2 of ITU-T Study Group 5  
FG-AI4EE Acting chairman  
U4SSC Vice chairman



# ITU-T Study Group 5: Environment, climate change and circular economy



## Lead Study Group for

### 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).

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



# ITU-T Study Group 5 (SG5): Environment, climate change and circular economy

ITU-T Study Group 5 (SG5):  
Environment, climate change and circular economy

- SG5 is tasked to develop international standards (ITU-T Recommendations) on:
  - the evaluation of ICT effects on climate change and the environment.
  - the use of ICTs (including new frontier technologies) in an eco-friendly way.
  - how to reduce ICTs and e-waste's adverse environmental effects, for example, through recycling of ICT facilities and equipment and in order to achieve a circular economy.
- ITU also helps:
  - countries and the ICT sector to adapt to the effects of environmental challenges, including climate change, in line with the Paris Agreement and in order to achieve the SDGs

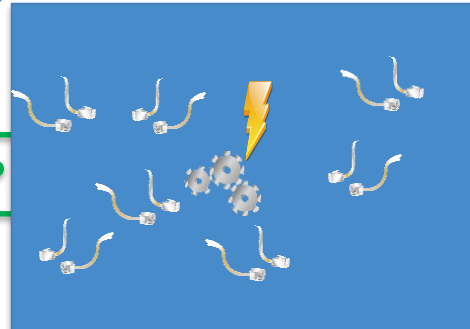
## SG5 Regional Groups

SG5RG-ARB	ITU-T SG5 Regional Group for the Arab Region
SG5RG-LATAM	ITU-T SG5 Regional Group for Latin America
<b>SG5RG-AFR</b>	<b>ITU-T SG5 Regional Group for Africa</b>
SG5RG-AP	ITU-T SG5 Regional Group for Asia and the Pacific

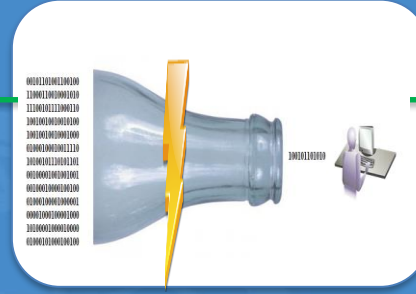


# ITU-T SG5 Future key topics

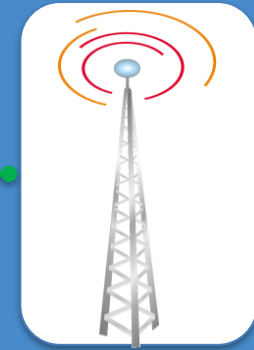
Using ICTs to protect the environment



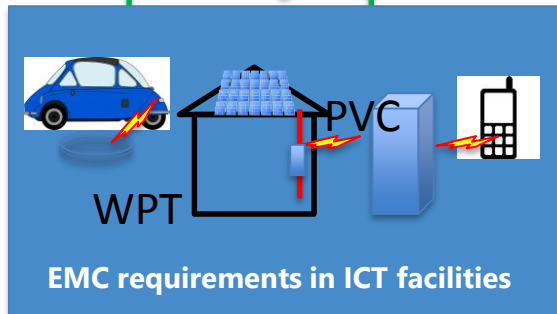
ICT protection



Internet data-centers protection



EMF exposure assessment from new and emerging technologies



EMC requirements in ICT facilities



Circular economy



KPIs to assess energy efficiency



Green Data Centre



SUSTAINABLE DEVELOPMENT GOALS



# ITU-T SG5 current work addressing sustainability challenges



## Smart Energy, Energy Efficiency and Data Centre

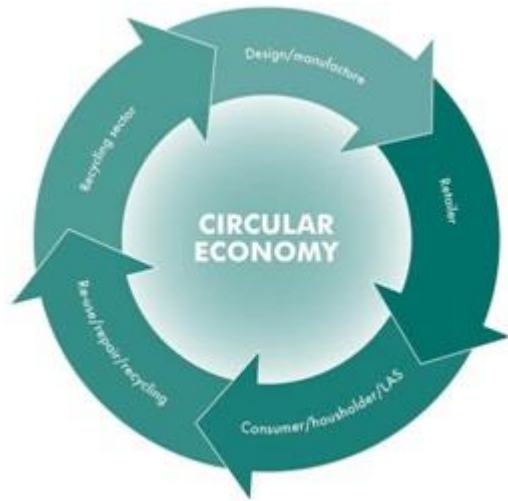
- Smart energy solutions for telecom base stations, data centre, telecom centres
- Smart energy for cities and home applications
- Energy consumption of crypto currency
- Data centre infrastructure Management system based on big data and AI

## Energy Efficiency and 5G

- Energy Efficiency Framework
- Energy efficiency and slicing on 5G
- Sustainable power feeding solutions for 5G network
- Environmental KPIs/metrics for 5G architectures



# ITU-T SG5 current work addressing sustainability challenges

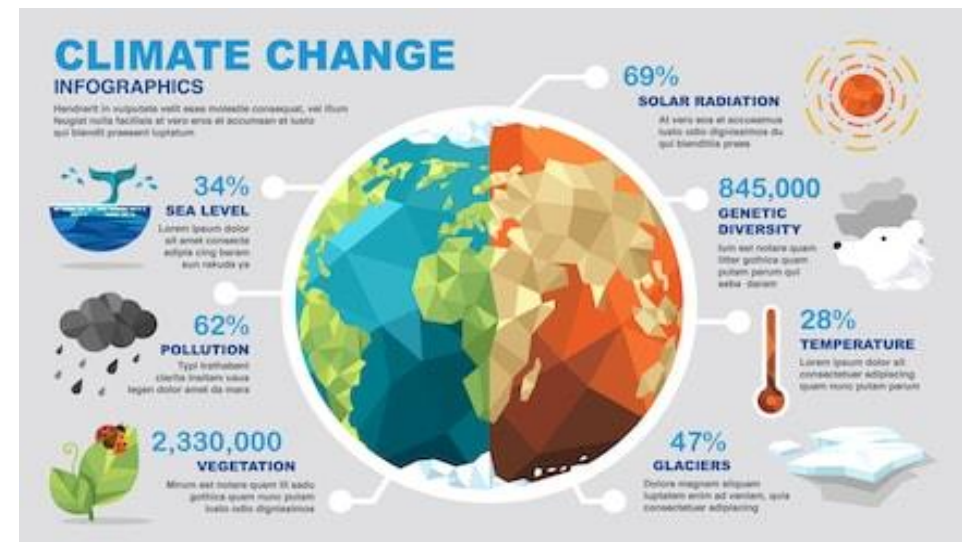


## E-waste and circular economy

- Circular economy and Industry 4.0
- ICT response to circular economy
- Sustainable management of batteries resulting from ICT equipment

## Climate change and assessment of ICTs

- Methodology for assessing the aggregated positive sector-level impacts of ICT in other sectors
- Trajectories of GHG emissions for the ICT sector
- Carbon neutrality for organizations in the ICT sector



# ITU-T SG5 key international standards and supplements

## Smart Energy, Energy Efficiency and Data Centre

- L.1300 – Best practices for green data centres
- L.1310 – Energy efficiency metrics and measurement methods for telecommunication equipment
- L.1320 – Energy efficiency metrics and measurement for power and cooling equipment for telecommunications and data centres
- L.1370 - Sustainable and intelligent building services



## Energy Efficiency and 5G

- L.1220 - Innovative energy storage technology for stationary use - Part 1: Overview of energy storage
- L.1221 - Innovative energy storage technology for stationary use - Part 2: Battery
- L.1222 - Innovative energy storage technology for stationary use - Part 3: Supercapacitor technology
- ITU-T L.Suppl.36 to ITU-T L.1310 - Study on methods and metrics to evaluate energy efficiency for future 5G systems

# ITU-T SG5 key international standards and supplements

## E-waste and circular economy



- L.1000 - Universal power adapter and charger solution for mobile terminals and other hand-held ICT devices (recently revised)
- L.1015 - Criteria for evaluation of the environmental impact of mobile phones
- L.1020 - Circular economy: Guide for operators and suppliers on approaches to migrate towards circular ICT goods and networks

## Climate change and assessment of ICTs



- L.1400 - Overview and general principles of methodologies for assessing the environmental impact of information and communication technologies
- L.1450 – Methodologies for the assessment of the environmental impact of the ICT sector
- L.1500 - Framework for information and communication technologies and adaptation to the effects of climate change
  - L.1501 - Best practices on how countries can utilize ICTs to adapt to the effects of climate change
  - L.1502 - Adapting information and communication technology infrastructure to the effects of climate change
  - L.1503 – Use of ICT for climate change adaptation in cities



# ITU-T SG5: Draft Recommendation on Trajectories of GHG emissions for the ICT sector



This Recommendation will provide figures for one or several trajectory(ies) of GHG emissions for the ICT sector and sub-sectors worldwide compatible with the 1.5 degree/well below 2 degrees objective of the UNFCCC Paris Agreement and the IPCC Special Report on 1.5 degree.

This Recommendation will include figures of GHG emissions for the ICT sector and sub-sectors worldwide, for the years 2025, 2030 and 2050.

In collaboration with:



**GeSI**  
GLOBAL e-SUSTAINABILITY  
INITIATIVE



# Focus Group on Environmental Efficiency for AI and other Emerging Technologies (FG-AI4EE)



## Main objectives:

- Identify the standardization gaps related to the environmental performance of AI and other emerging technologies.
- Develop technical reports and technical specifications to address the environmental efficiency, as well as water and energy consumption of emerging technologies.

## Management team:

**Acting chairman:** Paolo Gemma, Huawei Technologies Co., Ltd., China

## Vice-Chairmen:

- Neil Sahota, Technossus, IBM & University of California
- Barbara Kolm, Austrian Economics Center & Austrian National Bank
- Kari Eik, Organization for International Economic Relations (OiER)
- Joel Alexander Mills, AugmentCity AS

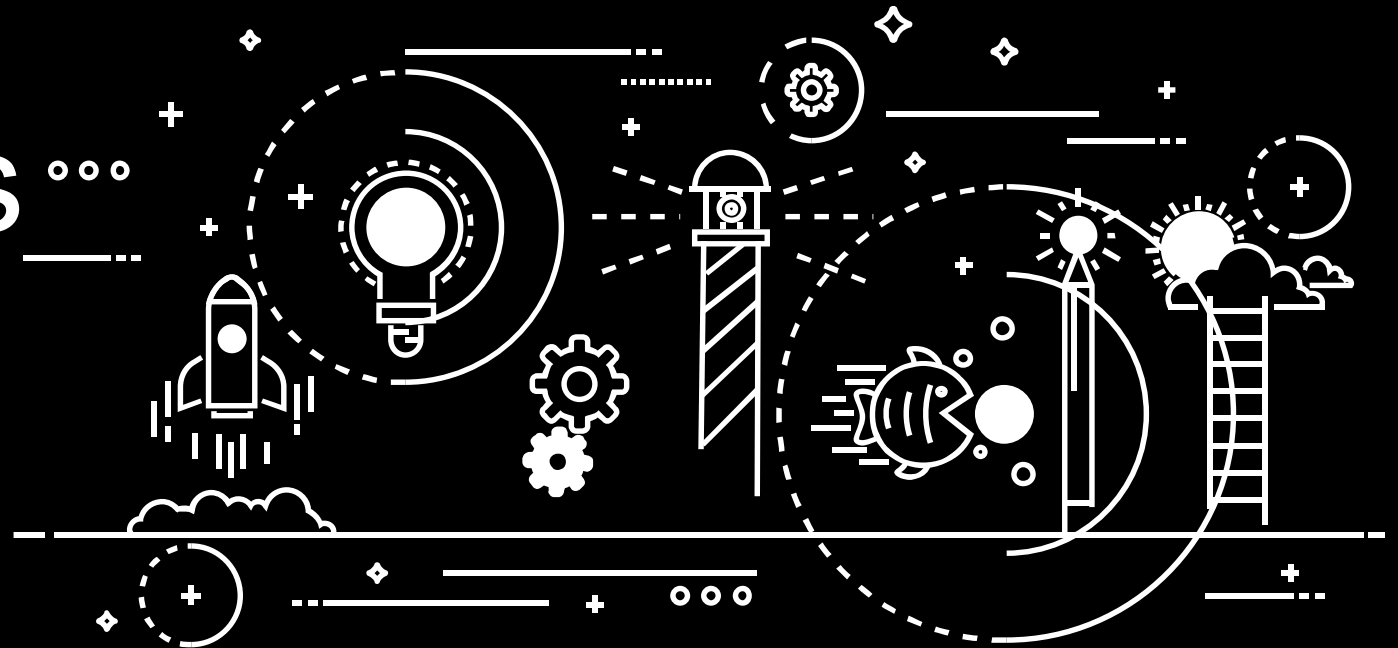
First meeting

15 October 2019 Vienna

- Mats Pellbäck Scharp, Ericsson (sustainability)
- Alice Charles, World Economic Forum (WEF)
- Lucy Lombardi, Digital & Ecosystem Innovation, TIM
- Peter Ulanga, Universal Communications Service Access Fund, United Republic of Tanzania



# Future events





# Connecting Smart Sustainable Cities with the Sustainable Development Goals



## Main discussions on:

- "Frontier Technologies to Tackle Climate Change and Achieve a Circular Economy"
- Leadership panel      ● Valencia Smart City      ● Smart Governance in cities
- 4<sup>th</sup> U4SSC meeting and Award Ceremony
- Training on Building smarter and more sustainable cities

# Save the date and join us.....

- ITU-T Study Group 5 “Environment, climate change and circular economy” meeting, 16-20 September 2019, Geneva, Switzerland
- Green Standards Week, 1-4 October 2019, Valencia, Spain
- 1<sup>st</sup> meeting of the Focus Group on Environmental Efficiency for AI and other emerging technologies (FG-AI4EE), 15 October 2019 Vienna

