Overview of ITU activities on ICTs, the Environment and Climate Change

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ITU Overview

ITU : enabling communication since 1865

1865   2015

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Unique public/private partnership

Mr. Ban Ki-moon,
Secretary-General of the United Nations
and Dr. H. Touré, Secretary-General of ITU

- **UN agency** for ICTs
- **Members**:
  - **193 Member States** (Governments and regulatory bodies)
  - **700 Private Sector** (Sector Members and Associates)
  - **63 Academia**

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ITU's **Global** presence

Headquarters in Geneva with Liaison Office in New York
Regional offices in Addis Ababa, Bangkok, Brasilia, Cairo
Area offices in Bridgetown, Dakar, Harare, Jakarta, Moscow, Santiago, Tegucigalpa, Yaoundé

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ITU's mission:
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ITU-T
develops ICT and telecommunication standards

ITU-R
manages radio spectrum and satellite orbits

ITU-D
assists developing countries

General Secretariat coordinates work of ITU

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ITU, the Environment and Climate Change

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ICTs play a double role in climate change

ICTs are part of the problem...

2%

of Global CO2 Emissions

... but ICTs are also part of the solution!

15%

of Global CO2 Emissions reduction

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ITU's mandate

- **ITU Resolution 182** - "The role of telecommunications/information and communication technologies on climate change and the protection of the environment" (Guadalajara, 2010)

- **ITU-T Resolution 73** - "Information and communication technologies, environment and climate change" (Dubai, 2012)

- **ITU-T Resolution 79** - "The role of telecommunications / information and communication technology in handling and controlling e-waste from telecommunication and information technology equipment and methods of treating it" (Dubai, 2012)

- **ITU-R Resolution 60** - "Reduction of energy consumption for environmental protection and mitigating climate change by use of ICT/radiocommunication technologies and systems" (2012)

- **ITU-R Resolution 673 (Rev. WRC-12)** - "The importance of Earth observation radiocommunication applications" (2012)

- **ITU-D WTDC Resolution 66** - "Information and communication technology and climate change" - (Hyderabad, 2010)

- **WCIT - ARTICLE 8A**: Energy efficiency/e-waste

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Work in monitoring

As the steward of the global framework for spectrum and satellite orbits, ITU:

- Ensures availability of radio-frequency spectrum and satellite orbits for climate monitoring and climate change prediction

- Develops international treaty level standards to ensure non-interference operation of systems involved in climate monitoring;

- Carries out studies (through ITU-R Study Groups) for development of new wireless technologies to increase use of remote sensors;

- Assists administrations in implementing radio systems by analyzing compatibility between new and existing systems
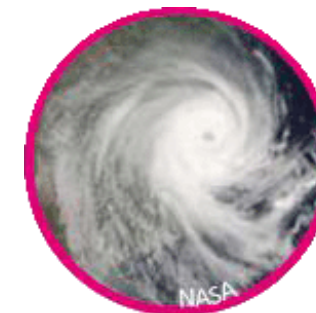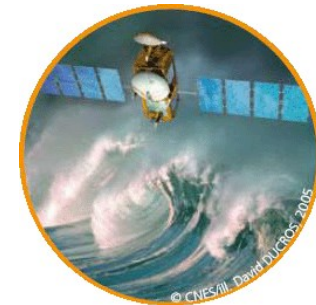
Work in adaptation

1. BASE LINE
-Socioeconomic
-Demographic
-Infrastructure
-Environmental
....etc...

Disaster Management Time Line

5. Activities in targeted areas

3. Monitoring

Time

2. Risk Analysis
Identification of Indicators and Vulnerable areas to monitor

Shock event

4. Early warning

Country- Capacity Building

Work in mitigation

- Reduction of energy consumption by ICT equipment through new standards;
  - E.g. The promotion of Next Generation Networks
    (reducing power consumption by up to 40%)
  - Better use of spectrum to reduce energy consumption of wireless devices.

- Advancing on new standards to promote reduction of emissions by other sectors
  - Smart grids and smart buildings
  - Intelligent transport systems
  - Remote working technologies
  - Sensor-based networks
  - Energy efficiency

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Focus Group on Smart Sustainable Cities

Focus Group on Smart Sustainable Cities (FG SSC)

- Established at ITU-T Study Group 5 meeting in Geneva, 29 January to 7 February 2013

- As an open platform for smart-city stakeholders for smart-city stakeholders to exchange knowledge in the interests of identifying the standardized frameworks needed to support the integration of ICT services in smart cities.

- Open to all

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FG SSC – meeting results

Turin, 8 May 2013
- Establishment of FG-SSC structure and deliverables, 4 working groups created
- Liaison statements sent to other bodies engaged in smart-city studies and development.

Madrid, 17 Sept 2013
- Three main documents under development:
  1. Draft definition of Smart Sustainable Cities
  2. Draft of Key Performance Indicators for Smart Sustainable Cities
  3. Draft Stakeholders' Map and City Engagement Plan

- Liaison statements sent to other bodies engaged in smart-city studies and development.

Lima, 6 December 2013
- Third meeting of the Focus Group on Smart Sustainable Cities

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Focus Group on Smart Water Management

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Focus Group on Smart Water Management:

- Established by the ITU-T TSAG meeting in Geneva, 4-7 June 2013

- Will work in close collaboration with the FG-SSC

- 1st meeting, 10 December 2013, in Lima, Peru

- Main tasks and deliverables:
  - Collect and document information on national, regional and international smart water management initiatives; reporting on current activities and technical specifications.
  - Specify the roles to be played by ICTs in smart water management.
  - Develop a list mapping key stakeholders involved in the area of ICTs and smart water management.
  - Develop Key Performance Indicators (KPIs) to assess the impact achieved through the use of ICTs in water-management systems.
  - Develop a set of methodologies for estimating the impact of ICTs on water conservation.
  - Identify water-management ICT applications and services with the potential to ensure interoperability and the benefits of economies of scale.
  - Draft technical reports that address standardization gaps and identify new standardization work items to be taken up by its parent group, ITU-T Study Group 5 (Environment and climate change).

Projects and Partnerships

Uncovering innovative ICT approaches and applications towards addressing global environmental issues in cities and urban areas.

The most innovation idea for a smart sustainable city focused:

- Designed by Andrey Sryvkov, from Belarus, Greenyplay is a mobile application that helps solve the problem of waste disposal in cities.

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Dynamic Coalition on Internet and Climate Change (DCICC)

- open body committed to developing a global coordinated response to address the impact of the Internet on climate change and the environment;

- 51 members;

- **Next meeting: 22-25 October 2013, Bali, Indonesia during the next Internet Governance Forum meeting.**

Workshop on
maximizing the power of the internet for disaster management & environmental control

- **22-25 October 2013, Bali, Indonesia**
  during Internet Governance Forum;

- Overview on the use of Internet based services and ICTs for climate change adaptation, disaster risk reduction and disaster management.

Co-organizers:

- Asosiasi Penyelenggara Jasa Internet Indonesia (Indonesia ISP Association, APJII)
- Bangladesh NGOs Network for Radio and Communication (BNNRC)
- Bangladesh Internet Governance Forum
- European Broadcasting Union (EBU)
- European Telecommunications Network Operators' Association (ETNO)
- Google
- ID-Config (Indonesian Civil Society Organizations Network for Internet Governance)
- Information Support pro bono Platform (iSPP), Japan
- Institute for InfoSocinomics, Tama University
- International Telecommunications Union (ITU)
- Jalin Merapi (Jaringan Informasi Lintas Merapi or Information Network Across Merapi)
- Ministry of Information and Communication technology, Egypt

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ITU with UNESCO-IOC and the WMO
established a joint task force (JTF) tasked to
investigate using submarine telecommunications cables
for ocean and climate monitoring and disaster warning

Joint Task Force (JTF) comprises over 80 international experts from the science, engineering, business and law communities

- Chair: Chris Barnes, Professor Emeritus, University of Victoria (Canada)
- Vice-Chair: David Meldrum, Research Fellow, Scottish Association for Marine Science (SAMS) and JCOMM Observations Programme Area (UNESCO-IOC)

Through its 5 committees and meetings, the JTF is advancing a strategy and roadmap to enable the availability of green cables equipped with scientific sensors for climate monitoring and disaster risk reduction (tsunamis). It is also analyzing the potential renovation and relocation of retired out-of-service cables.

1. **Science and Society**
2. **Business Models**
3. **Engineering**
4. **Legal**
5. **Publicity, Awareness and Marketing**

Three reports were commissioned and published on Strategy and Roadmap, Engineering Feasibility, and Opportunities and Legal Framework.

Task Force Members

- Alcatel-Lucent
- AQEST
- Arctic Fibre Inc.
- Axiom
- BT Design
- Bureau of Oceans, Environment and Science, U.S. Department of State
- Climate Associates
- ETH-Zurich
- European Seas Observatory NETwork (ESONET)
- France Telecom
- France Telecom Marine
- Fujitsu
- Gartner Inc.
- GNS Science
- Huawei Marine Networks CO.,LTD
- Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and connected Seas (ICG/NEAMTWS)
- Intergovernmental Oceanographic Commission of UNESCO
- International Cable Protection Committee (ICPC)
- International Telecommunication Union (ITU)
- International Tribunal for the Law of the Sea

- Istituto Nazionale di Geofisica e Vulcanologia (INGV)
- Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM)
- Libya, Ministry of Communications and Informatics
- Mallin Consultants Ltd.
- Ministry of Foreign Affairs, Greece
- Nansen Environmental and Remote Sensing Center
- NASA
- National Authority for Management and Regulation in Communication of Romania
- National Oceanic and Atmospheric Administration (NOAA)
- NEC Corporation
- Netherlands Institute for the Law of the Sea, Utrecht University School of Law
- Ocean Observations Panel for Climate (OOPC)
- Puertos del Estado, Spain
- Scottish Association for Marine Science (SAMS)
- Scripps Institute of Oceanography
- Sea-Bird Electronics
- Sea Risk Solutions LLC
- Swiss Maritime Navigation Office (SMNO)

- TE SubCom
- Teledyne ODI / Teledyne Oil & Gas
- Telefónica
- Telefónica International Wholesale Services
- UN Office of Law and Sea (DOALOS)
- University of Hawaii
- University of Milano-Bicocca
- University of Stockholm
- University of Sydney
- University of Tokyo
- University of Victoria
- University of Washington
- U.S. Geological Survey
- Vrije Universiteit Brussels
- Woods Hole Oceanographic Institution (WHOI)
- WILTSHIRE & GRANNIS LLP
- World Meteorological Organization (WMO)
- World Ocean Council (WOC)
- Zimbabwe National Water Authority
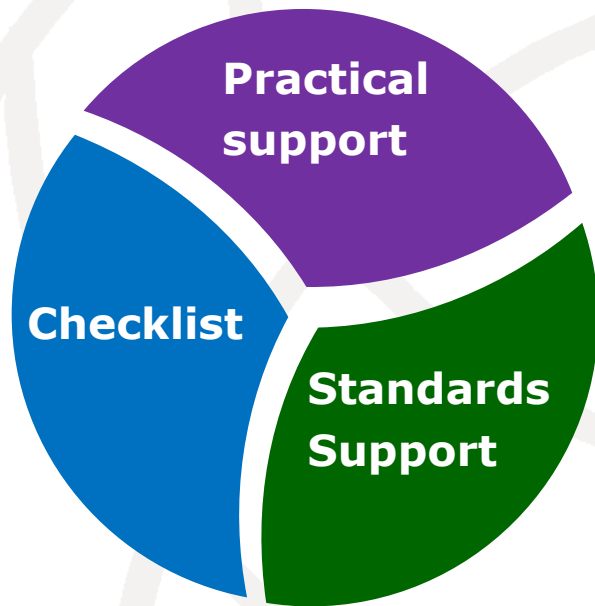
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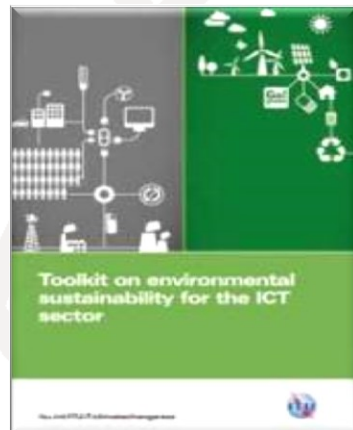
ITU-T Toolkit on Environmental Sustainability for the ICT Sector

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Purpose of the Toolkit

Practical support

Checklist

Standards Support

Detailed practical support on how ICT companies can build sustainability into their operations and management

Ongoing contribution to ITU-T Study Group 5 which has the goal of developing global standards in this arena

Standardized checklist of sustainability requirements specific to the ICT sector

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Toolkit content

Document	Summary
Introduction to toolkit	A business-led perspective on the use of sustainability in ICT organizations
Sustainable ICT in corporate organizations	Sustainability issues with the use of ICT products and services
Sustainable products	Sustainability-led design principles and practice for ICT products
Sustainable buildings	Sustainability management of the construction, use and decommissioning of ICT buildings
End-of-life management	Support in dealing with the various end-of-life stages of ICT equipment
General specifications and KPIs	Environmental KPIs that can be used to manage and evaluate sustainability performance
Assessment framework	Mapping the standards and guidelines applying to the ICT industry

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Collaboration with over 50 partners

- 3p Institute for Sustainable Management
- Alcatel Lucent
- BBC
- BIO Intelligence Service
- BT
- CEDARE
- Climate Associates
- ClimateCHECK
- Cogeco Cable
- DATEC Technologies
- Dell
- Ernst & Young
- ETRI
- ETNO
- ETSI
- European Broadcasting Union

- France Telecom/Orange
- Fronesys
- Fujitsu
- GHG Management Institute (GHGMI)
- Hewlett-Packard
- Hitachi
- Huawei
- IBI Group
- Imperial College
- Infosys
- International Telecommunication Union (ITU)
- Mandat International
- MicroPro Computers
- Microsoft
- MJRD Assessment Inc.
- National Inter-University Consortium for Telecommunications
- Nokia Siemens Networks
- NEC Empowered by Innovation
- NTT

- Panasonic
- PE INTERNATIONAL AG
- Research In Motion
- Scuola Superiore Sant'Anna of Pisa
- Step Initiative
- Telecom Italia
- Telecommunications Networks and Telematics Laboratory
- Telecommunication Technology Committee
- Telefónica
- Thomson Reuters
- Toshiba
- United Nations Environmental Programme
- United Nations Environmental Programme Basel convention
- United Nations University
- University of Genova
- University of Zagreb
- Verizon
- Vodafone Ghana
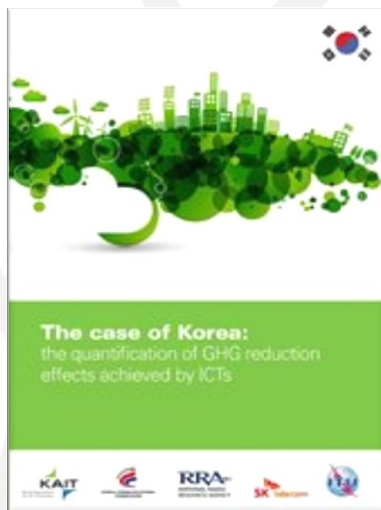
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Identifying standards and policy needs: ITU-T Climate Change Reports

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The case of Korea:
the quantification of GHG reduction effects achieved by ICTs

- Demonstrate the potential GHG abatement of "Greening by ICTs" solutions in Korea between 2011 and 2020;
- The methodology used is ITU-T Recommendation L.1410.

Climate Change Adaptation, Mitigation and Information & Communications Technologies (ICTs):
The Case of Ghana

Information and communication technologies (ICTs) and climate change adaptation and mitigation:
The case of Ghana

- "How can developing countries effectively integrate ICT tools within climate change adaptation and mitigation strategies?"

In cooperation with

Supported by

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# An Energy-Aware Survey on ICT Device Power Supplies

This survey reports the results of a wide analysis performed on a large set of commercially available external power supplies (more than 300 devices verified and more than 200 electrically measured).

Boosting Energy Efficiency through Smart Grids

This report discusses the role of ICT in the smart grid with a view of energy efficiency, with the ultimate goal of hindering climate changes.
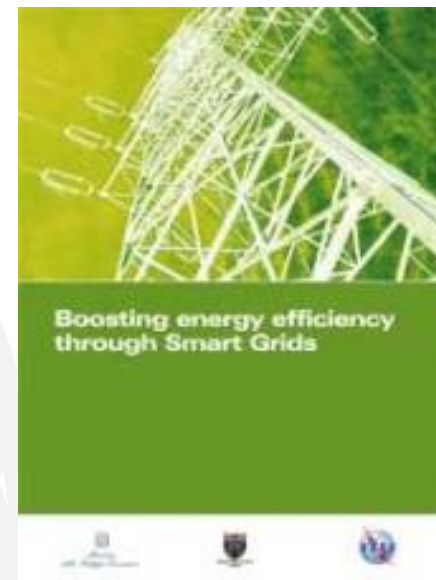
Review of Mobile Handset Eco-Rating Schemes

This report provides with an overview of eco-rating schemes developed by the mobile handset industry to communicate the sustainability performance of their products to consumers.

Guidance on
Green ICT Procurement

This Guidance provides directions to ICT companies to promote effective procurement practices with suppliers and customers.

Guidance on green ICT procurement

Greening **ICT Supply Chains**
Survey on Conflict Minerals Due Diligence Initiatives

Greening ICT supply chains –
Survey on conflict minerals
due diligence initiatives

Describe and assess existing conflict minerals supply chain transparency and due diligence initiatives.

Raising Awareness

ITU Green Standards Week

- Annual event

- Global platform for discussion and knowledge-sharing to raise awareness of the importance and opportunities of using ICT standards to build a green economy and ensure a sustainable future

- To bring together leading specialists in the field, from top policy-makers to engineers, designers, planners, government officials, regulators, standards experts and others.

SEE YOU in 2014...

Upcoming workshops and events

- ITU/CITEL Workshop on Environmentally Sound Management of E-waste - Mendoza, Argentina, 9 October 2013

- Joint Coordination Activity on ICT and Climate Change – Lima, Peru, 5 December 2013

- Workshop on Smart Sustainable Cities – Lima, Peru, 5 December 2013

- Meeting of the Focus Group on Smart Sustainable Cities – Lima, Peru, 6 December 2013

- Meeting of the Focus Group on Smart Water Management – Lima, Peru, 10 December 2013.

- ITU-T Study Group 5 meeting - Lima, Peru, 2-13 December 2013

- ITU/UNESCO Events on Smart Sustainable Cities – Montevideo, Uruguay, 11-14 March 2014

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Conclusion:
Leading with Vision

A global challenge needs a global and comprehensive solution

- Raising awareness on the role of global standards in spreading access to green ICTs

- Working in partnership with major stakeholders to develop green ICTs standards to build a green economy and combat climate change

- Standardized achievement can be multiplied worldwide across the whole industry

Now it is time to move the environmental global agenda forward using ICTs to foster the development of a green economy and to ensure a better and more sustainable future.

SAVE OURSELVES

Links

- ITU and climate change
  http://www.itu.int/climate

- ITU-T/SG5 "Environment & Climate Change"
  http://www.itu.int/ITU-T/studygroups/com05/index.asp

- ITU-T and climate change
  http://www.itu.int/ITU-T/climatechange

Thank you

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