WORLD TELECOMMUNICATION STANDARDIZATION ASSEMBLY
New Delhi, 15-24 October 2024

Resolution 73 – Information and communication technologies, environment, climate change and circular economy

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, and information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

RESOLUTION 73 (Rev. New Delhi, 2024)

Information and communication technologies, environment, climate change and circular economy

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016; Geneva, 2022; New Delhi, 2024)

The World Telecommunication Standardization Assembly (New Delhi, 2024),

recalling

a)   Resolution 66 (Rev. Kigali, 2022) of the World Telecommunication Development Conference, on information and communication technology (ICT), environment, climate change and circular economy;

b)   Resolution 79 (Rev. New Delhi, 2024) of this assembly, on the role of telecommunications/ICTs in handling and controlling e-waste from telecommunication/ICT equipment and methods of treating it;

c)   Resolution 70/1 of the United Nations General Assembly (UNGA), on transforming our world: the 2030 Agenda for Sustainable Development;

d)   UNGA Resolution 75/231, which recognizes the potential benefits for countries to transform their economies to promote sustainable consumption and production patterns, by engaging with partners to integrate or implement concepts such as circular economy and Industry 4.0 for more sustainable industrial activity and manufacturing systems, according to national plans and priorities;

e)   Resolution 182 (Rev. Bucharest, 2022) of the Plenipotentiary Conference, on the role of telecommunications/ICTs in regard to climate change and the protection of the environment;

f)   Resolution 1429 of the ITU Council, adopted at its 2024 session, on ITU's role in facilitating ICTs' contribution to sustainability and climate action;

g)   the outcomes of conferences under the United Nations Framework Convention on Climate Change (UNFCCC);

h)   the importance of climate change and biodiversity challenges as stressed by the Intergovernmental Panel on Climate Change (IPCC) in its report "Global Warming of 1.5°C" (2018) and the report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services *The global assessment report on biodiversity and ecosystem services – Summary for policymakers* (2019), describing the severity of biodiversity loss and damages, and planetary limit assessments;

i)   that ITU is already a partner in the Coalition for Digital Environmental Sustainability, mandated by the United Nations Secretary-General to advance environmental digital sustainability by providing resources and opportunities to establish priorities, take concerted action and develop capacities for an inclusive sustainability-driven digital transition;

j)　　the Lisbon Declaration adopted on 1 July 2022 at the United Nations Ocean Conference, in order to support implementation of Sustainable Development Goal (SDG) 14 of the 2030 Agenda for Sustainable Development,

noting

a)　　ITU activities on climate change and environmental sustainability, such as Green Digital Action and other relevant multi-stakeholder initiatives;

b)　　the joint statement by the World Standards Cooperation (ITU, the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC)) on the importance of sustainability being built into technical standards by design,

recognizing

a)　　that ICTs are essential for monitoring climate, monitoring and protecting natural ecosystems, data gathering, rapid information transfer and managing the risks of climate change, and that adequate telecommunication networks and information technologies are essential in ensuring that communications reach people and the appropriate relief organizations;

b)　　that ICTs are also critical in accelerating the transition to circular economy, which could not only support greenhouse gas (GHG) emission reduction but also curb biodiversity loss and pollution;

c)　　that there is growing research considering the environmental impact of ICTs; however, it is still difficult to estimate the total net impact of ICTs on climate change, i.e. including both positive and negative aspects, while the direct effects of ICTs are rising from production use and end-of-life of ICT products and digitalization in other sectors can contribute to decreasing GHG emissions and other environmental impacts;

d)　　that the increasing, dynamic pace of the ICT sector poses both opportunities for innovation, including the promotion of sustainable ICT solutions, and challenges for addressing its adverse environmental effects;

e)　　that, since ICTs also contribute to climate change through GHG and other emissions, the necessary priority must be given to reducing GHG emissions through "sufficiency policies", according to the IPCC 6th Assessment Report, which identifies sufficiency policies as a set of measures and daily practices that avoid demand for energy, materials, land and water, while delivering human well-being for all within planetary boundaries;

f)　　that other environmental impacts associated with the use of ICTs are worth considering, in particular resource depletion and other measures in-line with circular economy principles, energy efficiency and decarbonization of the energy mix;

g)   that low-cost safe and sustainable-by-design ICT solutions with reduced carbon footprint are an urgent requirement;

h)   that climate change is particularly detrimental to:

i)   countries that are susceptible to wildfires, drought, floods and other disasters exacerbated by climate change;

ii)   countries whose economies rely on agricultural investments;

iii)   countries with weak capacity or lack of meteorological-support infrastructure and technical systems for the mitigation of climate-change effects;

i)   that other technologies are currently being developed and deployed for climate monitoring, including, but not limited to, oceanic sensing technologies, for better knowledge of climate evolution; and that such technologies benefit from technical standardization, which enables their global development and implementation,

resolves

1   to continue and further develop the ITU Telecommunication Standardization Sector (ITU-T) work programme initially launched in December 2007 on ICTs, climate change and circular economy, as a high priority, in order to contribute to the wider global efforts to mitigate climate change, as part of United Nations processes;

2   to take into account the progress already made in the international symposia on ICTs, environment, climate change and circular economy, held in various parts of the world[1], by distributing their outcomes as widely as possible;

3   to continue to maintain and update the ITU-T Global Portal on Environment and Sustainable Digital Transformation, extending its features by developing an electronic and interactive forum to share information and to disseminate ideas, standards and best practices on the relationships between ICTs and environmental sustainability, experiences and practices for disclosure, labelling schemes and recycling facilities;

4   to promote the development and adoption of ITU-T Recommendations for enhancing the use of ICTs to serve as a potent and cross-cutting tool to assess and reduce GHG emission and promote circularity in other sectors such as energy, manufacturing industries, transportation, buildings and agriculture to achieve the SDGs;

5   to work towards minimizing the ICT sector environmental impact including GHG emissions, nature monitoring optimization, conservation and restoration, including promoting modular designs for devices and components, reuse as well as its replacements, reduce non-renewable natural resource use (fossil energy sources, minerals and metals) and water consumption, increase energy efficiency and improve e-waste management and circularity across economic and social activities;

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[1]   Kyoto, Japan, 15-16 April 2008; London, United Kingdom, 17-18 June 2008; Quito, Ecuador, 8-10 July 2009; Seoul Virtual Symposium, 23 September 2009; Cairo, Egypt, 2-3 November 2010; Accra, Ghana, 7-8 July 2011; Seoul, Republic of Korea, 19 September 2011; Montreal, Canada, 29-31 May 2012, Turin, Italy, 6-7 May 2013; Kochi, India, 15 December 2014; Nassau, Bahamas, 14 December 2015; and Kuala Lumpur, Malaysia, 21 April 2016.

6 to develop ITU-T Recommendations and technical reports on the use of new and emerging telecommunications/ICTs to facilitate adaptation to climate change and to combat it;

7 to work towards a reduction of the negative environmental impact of materials used in ICT products, encouraging use of recycled/recyclable and/or reusable material and disclosures in respect of the use of such material in ICT products, promotion of sustainable procurement and supply chain management;

8 to work towards promoting industrial approaches in telecommunications/ICTs, such as the reduction and utilization of e-waste and infrastructure-sharing models, in order to advance the use of circular economy;

9 to increase awareness and promote information sharing on the role of ICTs in enhancing environmental sustainability, in particular by promoting the use of more environmental, resource- and energy-efficient[2] devices, infrastructure, networks and ICT products/services, more efficient working methods and processes, and ICTs that can be used to replace or displace technologies/uses that have higher energy consumption;

10 to work towards the reductions in emissions of GHGs arising from the use of ICTs that are necessary to meet the goals of UNFCCC;

11 to promote the development and adoption of ITU-T Recommendations for smart energy solutions, which promote the application of renewable energy or alternative low-carbon energy sources within the ICT and other sectors;

12 to bridge the standardization gap by providing technical assistance to countries in developing their national green ICT action plans, and develop a reporting mechanism in order to support countries in implementing their plan;

13 to set up e-learning programmes on ITU-T Recommendations related to ICTs, environment, climate change and circular economy;

14 to work towards supporting cities, communities and the ICT sector in harnessing ICTs to combat climate change, adopt sustainable practices and circularity to reach net zero;

15 to work towards identifying the environmental protection requirements of ICTs and developing strategic frameworks for assessing their environmental impacts;

16 to support using ICTs to facilitate climate-change mitigation and adaptation efforts as well as building climate-resilient infrastructures;

17 to improve the methodological anchoring of studies devoted to measuring the environmental impact of ICTs through the promotion of ITU-T Recommendations,

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[2] With respect to efficiency, promotion of efficient use of materials used in ICT devices and network elements should also be a consideration.

instructs the Telecommunication Standardization Advisory Group

1   to coordinate the activities of ITU-T study groups in relation to their review of relevant standardization activities of other standards-development organizations (SDOs) and facilitate collaboration between ITU and those SDOs in order to avoid duplication of, or overlap in, international standards;

2   to ensure that ITU-T study groups continuously carry out a review of all ITU-T Recommendations in order to assess their implications and the application of best practices from the standpoint of protection of the environment, climate change and circular economy;

3   to consider further possible changes to working procedures in order to meet the objective of this resolution, including extending the use of electronic working methods to reduce the impact on climate change, such as paperless meetings, virtual conferencing and teleworking,

instructs all study groups of the ITU Telecommunication Standardization Sector

1   to cooperate with ITU-T Study Group 5 to develop appropriate ITU-T Recommendations on ICTs, environment and climate-change issues within the mandate and competence of ITU-T, including, for example, telecommunication networks used for monitoring and adapting to climate change, transition to circular economy, disaster preparedness, protection of biodiversity, signalling and quality of service issues, taking into account any economic impact on all countries and in particular on developing countries[3];

2   to identify best practices and opportunities for new applications, new and emerging telecommunications/ICTs, including existing solutions, in order to foster environmental sustainability, including both material and energy efficiency, to assess their environmental efficiency based on key performance indicators and evaluation and measurement methodologies in line with ITU-T Recommendations, and to identify appropriate actions;

3   to identify and promote best practices towards implementing environmentally sustainable policies and practices, and to share use cases and key success factors;

4   to identify initiatives which support consistently successful and sustainable approaches that will result in cost-effective application, including low-cost technologies and digitalization of services;

5   to identify and promote successful new energy-efficient technologies using renewable energy or alternative energy sources that are proven to work for both urban and rural telecommunication sites;

6   to liaise with the relevant study groups of the ITU Radiocommunication Sector and the ITU Telecommunication Development Sector and promote liaison with other SDOs and forums in order to avoid duplication of work, optimize the use of resources and accelerate the availability of global standards,

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[3]   These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

instructs the Director of the Telecommunication Standardization Bureau, in collaboration with the Directors of the other Bureaux

1   to report on progress on the application of this resolution annually to the Council and to the next world telecommunication standardization assembly;

2   to keep up to date the calendar of events relevant to ICTs, environment, climate change and circular economy, based on proposals by the Telecommunication Standardization Advisory Group and in close collaboration with the other two Sectors;

3   to launch pilot projects, aimed at bridging the standardization gap, on environmental sustainability issues, in particular in developing countries;

4   to support the development of reports on ICTs, environment, climate change and circular economy, taking into consideration relevant studies, in particular the ongoing work of ITU-T Study Group 5, including issues related to, *inter alia*, circular economy, sustainable eco-design of equipment and ICT solutions, green data centres, smart buildings, green ICT procurement, cloud computing, energy efficiency, smart transportation, smart logistics, smart grids, water management, adaptation to climate change and disaster preparedness, biodiversity protection, in cooperation with other expert bodies in these domains, and how the ICT sector contributes to annual reductions in GHG emissions, and submit the reports as soon as possible to ITU-T Study Group 5 for its consideration;

5   to organize forums, workshops and seminars for developing countries in order to raise awareness and identify their particular needs and challenges in regard to environmental, climate-change and circular-economy issues;

6   to develop, promote and disseminate information and training programmes on ICTs, climate change, environment and circular economy;

7   to report on progress of the Joint Task Force of ITU, the World Meteorological Organization (WMO) and the United Nations Educational, Scientific and Cultural Organization Intergovernmental Oceanographic Commission (IOC-UNESCO) to investigate the potential of using submarine telecommunication cables for ocean and climate monitoring and disaster warning;

8   to promote the ITU-T Global Portal on Environment and Sustainable Digital Transformation and its use as an electronic forum for the exchange and dissemination of ideas, experience and best practices on ICTs, environment, climate change and circular economy;

9   to assist countries that are vulnerable to climate-change impact, with specific emphasis on developing countries:

i)   that are susceptible to wildfires, drought, floods, and other disasters exacerbated by climate change;

ii)   whose economies rely on agricultural investments;

iii)   with weak capacity or lack of meteorological-support infrastructure and technical systems for the mitigation of climate-change effects,

invites the Secretary-General

to continue to cooperate and collaborate with other entities within the United Nations system in formulating future international efforts to address climate change and protection of the environment and biodiversity, and to support vulnerable countries in projects towards mitigation, adaptation and resilience efforts as well as climate-change preparedness plans, contributing to the achievement of the goals of the 2030 Agenda for Sustainable Development,

invites Member States, Sector Members and Associates

1   to continue to contribute actively to ITU-T Study Group 5 on ICTs, environment, climate change and circular economy on topics including, but not limited to, environmental efficiency, e-waste management, circularity, smart energy solutions, GHG emission accounting, the construction of climate-resilient infrastructures and ICT enablement for other sectors;

2   to continue or initiate public and private programmes that include ICTs, environment, climate change and circular economy, giving due consideration to relevant ITU-T Recommendations and relevant work;

3   to share best practices and raise awareness of the benefits associated with the use of environmentally sustainable ICTs in accordance with relevant ITU-T Recommendations;

4   to promote the integration of ICT, climate, environmental and energy policies in order to improve environmental performance and enhance energy efficiency and resource management;

5   to integrate the use of ICTs into national adaptation plans so as to make use of ICTs as an enabling tool for addressing the effects of climate change;

6   to adopt and implement ITU-T Recommendations to tackle environmental challenges and achieve sustainable digital transformation;

7   to promote the collection of standardized environmental data for the telecommunication/ICT sector and ensure their harmonization across domestic data systems for easier analysis;

8   to liaise with their national counterparts responsible for environmental issues in order to support and contribute to the wider United Nations process on climate change, by providing information and developing common proposals related to the role of telecommunications/ICTs in mitigating and adapting to the effects of climate change, so that they can be taken into consideration within UNFCCC.