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WORKING GROUP OF THE PLENARY

RESOLUTION 182 (REV.BUSAN, 2014)

**THE ROLE OF TELECOMMUNICATIONS/INFORMATION AND COMMUNICATION
TECHNOLOGIES IN REGARD TO CLIMATE CHANGE AND THE PROTECTION OF THE
ENVIRONMENT**

MOD WGPL/52/1

RESOLUTION 182 (~~GUADALAJARA, 2010~~ REV. BUSAN, 2014)

The role of telecommunications/information and communication technologies in regard to climate change and the protection of the environment

The Plenipotentiary Conference of the International Telecommunication Union
(~~Guadalajara, 2010~~ Busan, 2014),

recognizing

- a) the fundamental contribution that the approval of Resolution 35 (Kyoto, 1994) of the Plenipotentiary Conference made to initiate ITU's activities in the area of telecommunications/ICTs for environmental protection and sustainable development;
- ab) Resolution 136 (Rev. ~~Guadalajara, 2010~~ Busan, 2014) of the Plenipotentiary Conference, on the use of telecommunications and information and communication technologies (ICTs) for monitoring and management in emergency and disaster situations for early warning, prevention, mitigation and relief;
- ~~b) — relevant resolutions of world radiocommunication conferences and radiocommunication assemblies, such as Resolution 646 (WRC-03), on public protection and disaster relief; Resolution 644 (Rev. WRC-07), on radiocommunication resources for early warning, disaster mitigation and relief operation; or Resolution 673 (WRC-07), on the use of radiocommunication for Earth observation, in collaboration with the World Meteorological Organization (WMO);~~
- c) Resolution 646 (Rev. WRC-12), on public protection and disaster relief;
- d) Resolution 644 (Rev. WRC-12), on radio communication resources for early warning, disaster mitigation and relief operation;
- e) Resolution 673 (Rev. WRC-12), on the use of radio communication for Earth observation, in collaboration with the World Meteorological Organization (WMO);
- f) Resolution 750 (Rev. WRC 12), on compatibility between the Earth exploration-satellite service (passive) and relevant active services;
- g) Resolution ITU-R 60 (RA-12), on reduction of energy consumption for environmental protection and mitigating climate change by use of ICT/radiocommunication technologies and systems;
- eh) Resolution 73 (~~Johannesburg, 2008~~ Rev. Dubai, 2012) of the World Telecommunication Standardization Assembly, on ICTs and climate change, ~~which resulted from the successful work of the focus group created in 2007 by the Telecommunication Standardization Advisory Group to identify the role of the ITU Telecommunication Standardization Sector (ITU-T) in regard to this issue, and was adopted in response to the needs identified in the relevant contributions to WTSA-08 by the ITU regional groups;~~

- di)* Resolution 66 (Rev. ~~Hyderabad, 2010~~Dubai, 2014) of the World Telecommunication Development Conference (WTDC), on ICT and climate change;
- jj)* Resolution 34 (Rev. Dubai, 2014) of the World Telecommunication Development Conference, on the role of telecommunications/ICTs in disaster preparedness, early warning, rescue, mitigation, relief and response;
- ek)* Resolution 54 (Rev. ~~Hyderabad, 2010~~Dubai, 2014) of WTDC, on ICT applications;
- fl)* Resolution 1307 adopted by the ITU Council at its 2009 session, on ICTs and climate change;^z
- m)* the outcomes of the Symposia on "ICTs and Climate Change", especially the Cairo Roadmap adopted at the 5th ITU Symposium on ICTs and Climate Change, held in Egypt in November 2010. As well as the Roadmap adopted at the 6th ITU Symposium on ICTs and Climate Change, held in Ghana in July 2011;
- n)* the outcomes of ITU-T Study Group 5 on environment and climate change;
- o)* Luxor call to Action on "Building a Water Resource Efficient Green Economy", adopted at the ITU Workshop on ICT as an enabler for Smart Water Management held in Luxor, Egypt in April 2013;
- p)* Resolution 79 (Dubai, 2012) of WTSA, on the role of telecommunications/ICTs in handling and controlling e-waste from telecommunication and information technology equipment and methods of treating it;
- q)* Resolution 1353 adopted by the 2012 session of the ITU Council, which recognizes that telecommunications and ICTs are essential components for developed and developing countries¹ in achieving sustainable development, and instructs the Secretary-General, in collaboration with the Directors of the Bureaux, to identify new activities to be undertaken by ITU to support developing countries in achieving sustainable development through telecommunications and ICTs,

recognizing further

- a)* § 20 of Action Line C7 (E-environment) of the Geneva Plan of Action of the World Summit on the Information Society (Geneva, 2003), calling for the establishment of monitoring systems using ICTs to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries;
- b)* Opinion 3 of the 2009 World Telecommunication Policy Forum, on ICT and the environment, which recognizes that telecommunications/ICTs can make a substantial contribution to mitigating and adapting to the effects of climate change, and calls for formulating future inventions and efforts for effectively addressing climate change;
- c)* the outcomes of the annual United Nations Climate Change conferences; ~~held in Indonesia in December 2007 and in Copenhagen in December 2009;~~
- d)* the Nairobi Declaration on the Environmentally Sound Management of Electrical and Electronic Waste, and the adoption by the Ninth Conference of the Parties to the Basel Convention of the Work Plan for the Environmentally Sound Management of E-waste, focusing on the needs of developing countries and countries with economies in transition;^z

¹ These include the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition.

e) the outcome document adopted by Rio+20, entitled “The Future We Want”, reflecting the renewed commitment to advancing sustainable development and achieving environmental sustainability;

f) the outcome documents adopted under the remits of the UN Framework Convention on Climate Change (UNFCCC), reflecting the need to close the pre-2020 gap by intensifying technical work,

considering

a) that Working Group III of the United Nations Intergovernmental Panel on Climate Change (IPCC) estimated in its 5th report in 2014 calculated that that global greenhouse gas (GHG) emissions had risen by more than 70 per cent since 1970, having an effect on global warming, changing weather patterns, rising sea levels, desertification, shrinking ice cover and other long-term effects have continued to rise by 2.2% per year from 2000 to 2010 despite the introduction of mitigation policies;

b) that climate change is acknowledged as a potential threat to all countries having an effect on global warming, changing weather patterns, rising sea-levels, desertification, shrinking ice cover and other long-term effects, that it and needs a global response and Telecommunications/ICTs can contribute to this response;

c) that the impact of climate change effects will be severe for consequences of developing and least developed countries' lack of preparation in the past have recently come to light, and that these countries that are not prepared for climate change and its consequences and that these countries will could be exposed to incalculable dangers and considerable losses, including the consequences of rising sea levels for many coastal areas in these developing countries;

~~d) — Programme 5 of the Hyderabad Action Plan for least developed countries, countries in special need (small island developing states, low-lying coastal countries and landlocked developing countries), emergency telecommunications and climate change adaptation,~~

d) Objective 5 of the Dubai Action Plan to “Enhance environmental protection, climate change adaptation and migration and disaster management efforts through telecommunications/Information and communication technologies” and its related outputs,

considering further

a) that telecommunications/ICTs play an important and significant role in protecting the environment and in promoting innovative and sustainable development activities presenting relatively at low risk to the environment through varied activities in monitoring, observing detecting, responding and mitigating the various threats to climate change and to disaster prediction and relief;

~~b) — that the role of telecommunications/ICTs in tackling the challenge of climate change encompasses a wide array of activities, including, but not limited to: the promotion of telecommunications/ICTs as alternatives to other technologies that consume more energy; the development of energy-efficient devices, applications and networks; the development of energy-efficient working methods; the implementation of satellite and ground-based remote-sensing platforms for environmental observation, including weather monitoring; and the use of telecommunications/ICTs to warn the public of dangerous weather events and provide communication support for governmental and non-governmental organization aid providers to contribute to the reduction of GHG emissions;~~

b) the role of ITU can play in assisting Member States in the use of ICTs to monitoring, observing, detecting, responding and mitigating the various threats to climate change and to disaster prediction and relief and through telecommunications/ICTs consider solutions for efficient water resource management, and that the strategic plan for the Union gives clear priority to combating climate change using ICTs;

c) that telecommunications/ICTs also contribute to climate change through GHG and other emissions, and that the necessary priority must be given to reducing GHG emissions and energy consumption;

d) that the use of telecommunications/ICTs, provides increased opportunities to reduce GHG emissions generated by non-ICT sectors through the utilization of telecommunications/ICTs in ways that replace services or increase efficiency of the sectors concerned;

e) that several countries have committed to a 20 per cent reduction in GHG emissions, both in the ICT sector and in the use of ICTs in other sectors by 2020, against 1990 levels,

ef) that remote-sensing applications on board satellites and other radiocommunication systems are important tools for climate monitoring, environmental observation, disaster prediction, detection of illegal deforestation, and detection and mitigation of the negative effects of climate change;

dg) the role ITU can play in promoting the use of ICTs to mitigate climate-change ~~causes effects~~, and that the strategic plan for the Union for ~~2016-2019~~ ~~2012-2015~~ gives clear priority to combating climate change using ICTs;

eh) that the use of telecommunications/ICTs provides increased opportunities to reduce GHG emissions generated by non-ICT sectors through the utilization of telecommunications/ICTs in ways that replace services or increase efficiency of the sectors concerned;

i) the role of ITU in developing suitable guidelines for efficient disposal of e-waste from telecommunications/ICTs,

j) that one of the major challenges for sustainable development is to ensure that all people have reliable access to water supply and sanitation services;

k) that ITU recommendations that focus on energy-saving systems and applications can play a critical role in the development of telecommunications/ICTs, by promoting the adoption of recommendations for enhancing the use of telecommunications/ICTs to serve as an effective cross-cutting tool to measure and reduce GHG emissions across economic and social activities,

aware

a) that telecommunications/ICTs also contribute to ~~climate change through GHG and other emissions of GHG~~, a contribution which, although relatively small, will grow with the increased use of telecommunications/ICTs, and that the necessary priority must be given to reducing GHG emissions ~~and energy consumption, increasing the use of green energy resources for energy efficiency of the telecommunication sector~~;

b) that developing countries face additional challenges in addressing the effects of climate change, including natural disasters related to climate change, ~~and in establishing new telecommunications/ICT facilities into their national networks, hence ITU providing guidance and assistance, which varies from one Region to another and between countries,~~

bearing in mind

- a) that 195 countries have ratified the United Nations Framework Convention on Climate Change (UNFCCC) Protocol and have committed to reduce their emission levels of GHG to targets that are mainly set below their 1990 levels;
- b) that the countries that have submitted plans in response to the Copenhagen Accord have specified which steps they are prepared to take to reduce their carbon intensity in the current decade,

noting

a) that the current ITU-T Study Group 5 is the lead ITU-T study group on ICTs and climate change responsible for studies on methodologies for evaluating telecommunication/ICT effects on climate change, for publishing guidelines for using ICTs in an eco-friendly way, for studying energy efficiency of the power feeding systems, for studying ICT environmental aspects of electromagnetic phenomena, ~~and~~ for studying, assessing and analysing safe, low-cost social recirculation of telecommunication/ICT equipment through recycling and reuse, and for tackling e-waste issues, and energy efficiency of telecommunications/ICT systems;

b) Question 624/2 of Study Group 2 of the ITU Telecommunication Development Sector (ITU-D), on ICTs and climate change, adopted by WTDC-~~1410~~;

~~c) — that ITU recommendations that focus on energy saving systems and applications can play a critical role in the development of telecommunications/ICTs, by promoting the adoption of recommendations for enhancing the use of telecommunications/ICTs to serve as an effective cross-cutting tool to measure and reduce GHG emissions across economic and social activities;~~

~~d) — the leadership of the ITU Radiocommunication Sector (ITU-R), in collaboration with the ITU membership, in continuing to support studies on the use of radiocommunication systems, including remote sensing applications, to improve climate monitoring and disaster prediction, detection and relief;~~

~~ec)~~ that there are other international bodies that are working on climate-change issues, including UNFCCC, and that ITU should collaborate, within its mandate, with those entities;

~~f) — that several countries have committed to a 20 per cent reduction in GHG emissions both in the ICT sector and in the use of ICTs in other sectors by 2020, against 1990 levels,~~

d) that the development and deployment of telecommunication/ICTs has resulted in innovative outcomes, including but not limited to better energy management, recognition of the contribution of all life-cycle of telecommunication/ICTs on climate change, and the benefits that accrue from a comprehensive deployment of telecommunication/ICTs,

e) that work on Smart Sustainable Cities and on Smart Water Management is being developed, along with a series of deliverables aimed to promote the development of policies and the implementation of international standards to shape smart sustainable cities worldwide and smart water management,

resolves

that ITU, within its mandate and in collaboration with other organizations, ~~will demonstrate its leadership in applying telecommunications/ICTs to~~ address the causes and effects of climate change through the following:

1 to continue and further develop ITU activities on telecommunications/ICTs and climate change, and disaster management planning in order to contribute to the wider global efforts being made by Member States and the United Nations to contribute to further preventing and combating the effects of climate change;

2 to encourage energy efficiency improvement of telecommunications/ICTs in order to reduce the GHG emissions produced by the telecommunication/ICT sector;

3 to encourage the telecommunication/ICT sector to contribute, through its own improvement of energy efficiency and in the use of ICTs in other parts of the economy, to an annual reduction in GHG emissions;

~~4 — to report on the level that the ICT sector has contributed to the reduction of GHG emissions in other sectors through a reduction of their energy consumption by applying ICTs;~~

~~54~~ to promote awareness of the environmental issues associated with telecommunication/ICT equipment design and encourage energy efficiency and the use of materials in the design and fabrication of telecommunication/ICT equipment that contribute across its life-cycle in order to promote to a clean and safe environment;

~~65~~ to include, as a priority, assistance to developing countries so as to strengthen their human and institutional capacity in promoting the use of telecommunications/ICTs to tackle climate change, as well as in areas such as the need for communities to adapt to climate change, as a key element of disaster-management planning,

~~6~~ to promote the benefits that accrue to the environment and society from the use of sustainable telecommunication/information and communication equipment and services in bridging the standardisation gap;

~~7~~ to encourage reduction of GHG emissions through adoption of green energy sources in the telecommunications/ICT sector;

~~8~~ to support use of telecommunications/ICTs in implementing smart grid that help reduces the waste of energy in transmission and distribution and helps regulate the peak energy demand from consumers,

instructs the Secretary-General, in collaboration with the Directors of the three Bureaux

~~1 — to formulate a plan of action for the role of ITU, taking into account all relevant ITU resolutions, in conjunction with other relevant expert bodies/groups, and taking into account the specific mandate of the three ITU Sectors;~~

~~2 — to ensure that the relevant ITU study groups responsible for ICTs and climate change implement the plan of action referred to in *instructs the Secretary-General, in collaboration with the Directors of the three Bureaux 1 above*;~~

~~31~~ to continue liaison with appropriate organisations in activities related to climate change, ~~other relevant organizations~~ in order to avoid duplication of work and optimize the use of resources;

~~4 — to ensure that ITU organizes workshops, seminars and training courses in developing countries at the regional level for the purpose of raising awareness and identifying key issues in order to generate best-practice guidelines;~~

~~52~~ to continue taking appropriate measures within the Union to contribute to the reduction of the carbon footprint (e.g. paperless meetings, videoconferences, etc.);

~~63~~ to report annually to the Council and to the next plenipotentiary conference on the progress made by ITU on implementation of this resolution;

~~74~~ to submit this resolution and other appropriate outcomes of the ITU activities to meetings of relevant organizations, including UNFCCC, in order to reiterate the Union's commitment to sustainable global growth; and to ensure recognition of the importance of telecommunications/ICTs in mitigation and adaptation efforts as well as the critical role of ITU in this regard,

5 to cooperate with United Nations entities and others in activities related to climate change, working towards a progressive and measurable reduction in energy consumption and GHG emissions throughout the lifecycle of telecommunication/ICT equipment;

6 to report on the level that the telecommunications/-ICT sector has contributed to the reduction of GHG and other emissions in other sectors through a reduction of their energy consumption;

7 to encourage Member States in the various regions to cooperate in sharing expertise and resources and identify a regional cooperation mechanism¹, including through support from ITU regional offices, so as to assist all Member States in the region in measurement and training

8 to assist Member States in particular developing countries, including the least developed countries, small island developing states, landlocked developing countries and countries with economies in transition, in infrastructure development and capacity building, as well as with assistance from ITU regional office– within the available budget of the Union - for energy efficiency measurement and development of guidelines for efficient e-waste disposal;

9 to encourage the use of renewable energy technologies and systems, and to study and disseminate best practices in the field of renewable energy;

10 to support Member States, particularly developing countries, in adapting to and mitigating the impact of climate change in a number of areas, including smart water management, e-waste management and treatment methods and the use of ICTs in disaster prediction, early warning, mitigation and relief,

instructs the Directors of the three Bureaux, within the purview of their mandates

~~1—to continue the development of best practices and guidelines that will assist governments in the development of policy measures that could be used to support the ICT sector in reducing GHG emissions and promoting ICTs in other sectors;~~

~~21~~ to help in the promotion of best practices and guidelines research and development:

- to improve the energy efficiency of telecommunications/ICT equipment
- to measure [the carbon footprint of the telecommunications/ICT industry climate change
- to monitor water resources through the use of telecommunications/ICTs]
- to mitigate the effects of climate change through the use of telecommunications/ICTs

¹ To be formalized by the relevant Regional meetings.

- to adapt to the effects of climate change through the use of telecommunications/ICTs;
- to enable telecommunications/ICTs contribute to disaster prediction, mitigation and relief,

42 to support the development of reports on ICTs, the environment and climate change taking into consideration relevant studies in particular the ongoing works of ITU-T Study Group 5, of ITU-D Study Group 1 and 2 related to, inter alia, ICTs and Climate Change and to assist affected countries with utilizing relevant applications for disaster preparedness, mitigation and response, and management of telecommunications/ICT waste;

53 to organize, in close collaboration among all three Bureaux, and within the budgetary limits of the Union, workshops and seminars to assist developing countries, by raising awareness and identifying their particular needs and challenges on using telecommunications/ICTs to address environment and climate change issues, including e-waste collection, dismantling, refurbishment and recycling, as well as sustainable and smart management of water.

instructs the Director of the Telecommunication Development Bureau

to ensure that ITU organizes seminars and training courses in developing countries at the regional level for the purpose of raising awareness and identifying key issues in order to generate best-practice guidelines in the area of environmental protection,

instructs the Director of the Radiocommunication Bureau

1 to ensure the widespread use of radiocommunications for mitigation of negative effects of climate change, natural and man-made disasters by:

- i) urging the ITU-R Study Groups to accelerate their work, particularly In the areas of disaster prediction, detection, mitigation and relief;
- ii) continuing the development of new technologies to support or supplement advanced public protection and disaster relief applications;

2 to highlight the importance of using effective measures to predict, alert and otherwise mitigate the effects of natural disasters through the coordinated and effective use of radio frequency spectrum,

instructs the Director of the Telecommunication Standardization Bureau

1 to share the outputs of ~~assist the lead ITU-T study group Study Group 5~~ on ICTs and climate change ~~(currently ITU-T Study Group 5), and any other related Study Groups,~~ in collaboration with other bodies, in the development of methodologies to assess:

- i) the level of energy efficiency in the telecommunications/ICT sector and the application of telecommunications/ICTs in non-ICT sectors;
 - ii) the complete lifecycle GHG emissions of telecommunication/ICT equipment, in collaboration with other relevant bodies, in order to establish best practice in the sector against an agreed set of ~~metrics~~ methods for quantifying such emissions to enable the benefits of reuse, refurbishment and recycling to be quantified in order to help achieve reductions in GHG emissions both in the telecommunication/ICT sector and in the use of ICTs in other sectors;
- 2 to ~~promote the work of ITU and~~ cooperate with United Nations entities and others in activities related to climate change, working towards a progressive and measurable reduction in energy consumption and GHG emissions throughout the lifecycle of telecommunication/ICT equipment;

3 to ~~continue~~utilize the current Joint Coordination Activity on ICT and on climate change in specialist and specific discussions with other industries, drawing upon the expertise existing in other forums, industrial sectors (and their relevant forums) and academia in order to:

- i) demonstrate ITU leadership in GHG reductions and energy savings in the telecommunications/ICT sector;
- ii) share knowledge and best practices on the deployment of pilot projects on the use of telecommunications/ICTs for the environment;
- ii) ensure that ITU actively leads in the application of ICTs in other industries and contributes to the reduction in GHG emissions through the use of telecommunications/ICTs,

4 to conduct work on implementing the outcomes of ITU's activities on the development of energy-saving and e-waste standards;

5 to continue the work within ITU-T aimed at bridging the gap on environmental sustainability issues in particular in developing countries; and gauge the needs of the developing countries in the field of telecommunications/ICT, the Environment and climate change;

Invites Member States, Sector Members and Associates

1 to continue to actively contribute ~~actively to ITU on ICTs and climate change~~ to the work within the sphere of activities of ITU, together with other bodies, and in all international, regional and national platforms on the topic of telecommunications/ICTs and climate change, and to exchange best practices with regard to law and regulation in the area of environmental protection and management of natural resources;

2 to continue or initiate public and private programmes that include telecommunications/ICTs and climate change, giving due consideration to relevant ITU initiatives;

~~3 to support and contribute to the wider United Nations process on climate change;~~

43 to take necessary measures to reduce the effects of climate change by developing and using more energy-efficient ICT devices, applications and networks, as well as green energy sources, and through the application of telecommunications/ICTs in other fields;

54 to promote recycling, and reuse of telecommunication/ICT equipment and efficient disposal of e-waste from telecommunications/ICTs;

65 to continue to support the work of ITU-R in remote sensing (active and passive) for environmental observation and other radiocommunication systems that can be used to support climate and water resource monitoring, disaster prediction, alerting and response in accordance with relevant resolutions adopted by radiocommunication assemblies and world radiocommunication conferences;

6 to integrate the use of telecommunications/ICTs as an enabling tool in combating the effects of Climate change into national adaptation and mitigation plans;

7 to address the environmental indicators, conditions and standards into their national telecommunications/ICT plans;

8 to conduct work in their countries on improving access to and expanding the use of alternative energy sources in the telecommunication/ICT sector;

9 to promote the introduction of ecological innovations in the telecommunication/ICT sector;

10 to adopt and implement ITU Recommendations to tackle environmental challenges such as climate change adaptation and mitigation as well as e-waste, and promote smart sustainable cities.
