Why Green ICT: Challenge or Opportunity?

The use and application of information and communication technologies (ICTs) in economic and social life is rapidly increasing throughout the world. For example it is estimated that there are now some 6 billion mobile phone users and over 2.4 billion Internet users. The ICT industry has a major challenge to minimize its own emissions in the face of such phenomenal growth. This calls for the adoption and implementation of additional standards for increased energy efficiency of networks and services. However, what is very clear is that it is only through the implementation of measures including the wide application of ICTs that the necessary reduction in total global greenhouse gas (GHG) emissions can be achieved.

ICTs can be an opportunity for a sustainable and inclusive future by revolutionizing business models and behavior, by making management of energy distribution and transportation more efficient, by enabling new ways of working, learning, e-health and providing public services, and by helping countries adapt to climate change and reducing disaster risk.

As the leading United Nations Specialized Agency for telecommunications and ICTs, the International Telecommunication Union (ITU) plays a leading role in developing an integrated approach to the significant role of ICTs in addressing climate change and in helping countries implement the United Nations Framework Convention on Climate Change (UNFCCC) through the use of ICTs.

The series of ITU Symposia on "ICTs, the Environment and Climate Change" have provided since 2008 vivid examples of ways in which ICTs play an important role in reducing GHG emissions, helping countries adapt to climate change, and to address some of the most urgent environmental challenges of our time. The 5th ITU Symposium on ICTs, the Environment and Climate Change concluded with the adoption of the Cairo Roadmap and the 6th ITU Symposium concluded with the Accra Call to Action.

This 7th ITU Symposium on ICTs, the Environment and Climate Change, co-organized with Government of Canada and hosted by Prompt aimed to advance the "green ICT" agenda by raising awareness of the power of ICTs to aid in monitoring, mitigating and adapting to climate change, tackling e-waste and highlighting the key role played by ICTs as enablers in environmentally-sustainable economic development.

With ICTs now an intrinsic element of every economic sector, the need to integrate ICT-based solutions into the environmental actions of each industry sector has become essential. The Symposium explored ways of achieving this integration, and helped plot the course of ITU's future work in the field.

This event concluded with the adoption of the Montreal Declaration to urge stakeholders to identify and agree on key priorities and provide clear guidance on how to move forward the global green agenda forward through the use of ICTs.

Montreal Declaration

We, the participants at the 7th ITU Symposium on ICTs, the Environment and Climate Change meeting in Montreal, Canada from 29 to 31 May 2012, call on the global leaders, public sector officials, ICT and environmental experts and representatives from international organizations, that will gather at the 2012 United Nations Conference on Sustainable Development (Rio+20) [i] , the 2012 United Nations Climate Change Conference (COP18-CMP8)[ii], and the 2012 ITU World Telecommunication Standardization Assembly (WTSA-12) [iii] , to identify and agree on key priorities and provide clear guidance on how to move the global green agenda forward through the use of Information and Communication Technologies (ICTs).

A. Key Priorities

1. Protect the Environment		
Support research and development on the use of ICTs for monitoring, mitigating and adapting to the effects of climate change and develop appropriate tools and technologies in support of green growth and sustainable development.	Encourage participation of national experts in developing green international standards and recommendations through the work of specialized organizations in particular ITU.	Design holistic digital economy strategies, integrating renewable energy production, and develop appropriate tools and technologies for tackling climate change and e-waste to support green growth and sustainable development.
2. Monitoring		
Support the adoption of ICTs such as smart sensors and sensor networks, satellite based imagery and Earth observation, mapping and modeling technologies to gather and monitor real-time, location-specific climate change impacts, particularly where it impacts remote and vulnerable populations.	Explore the potential of using existing and planned ICT infrastructure (e.g. wireless networks, Near Field Communication technologies and submarine communications cables) for climate monitoring and disaster warning.	Encourage governments to preserve the frequency bands for satellite based earth observation and put in place policies that promote the use of ICTs to improve the reliability and comparability of climate change data, to evaluate the outcome of actions, and guide law enforcement actions in regards to key natural resources issues, such as forest conservation.
3. Adaptation and Disaster Preparedness		

Put in place policies and develop standards that integrate ICTs as climate change adaptation tools in key areas (e.g. agriculture, land management, coastal zone management, food security, smart water management, economic progress, health and infrastructure).	Encourage the adoption and implementation of policies and standards that provide incentives to the development and implementation of "e-adaptation" applications that foster information sharing, capacity building and collaboration towards national adaptation goals.	Adopt policies to integrate ICTs into disaster management strategies, including identification of local climate change vulnerabilities to ensure effective communication of disaster alerts to vulnerable populations while Also fostering ICTs as enabling tools of transparency and accountability in the allocation of climate change adaptation and disaster management resources.

4. Mitigation

Adopt policies and regulatory incentives, based on international standards, that commit governments and public institutions, and encourage industry and consumers, to minimize their GHG emissions, minimize energy consumption in addition to making best use of renewable energy through the use of ICTs.	Support the implementation of standardized methodologies to assess the environmental impact of ICT (in particular ITU-T Recommendations L.1400, L.1410, L.1420) and encourage the adoption of best practices aimed at reducing the negative impact of ICTs (e.g. ITU-T Recommendation L.1300). Promote measures to minimize overall environmental impacts of energy consumption through the use of smart grids.	Support efforts to develop practices for the transparent reporting of ICT related GHG emissions and energy use (e.g. ITU-T Recommendation L.1310).

5. Raising Awareness and Capacity Building

Help raise awareness of the potential of ICTs to tackle environmental challenges, including climate change and e-waste.	Encourage research and development on ICTs that can be adopted by the public for monitoring and reporting on GHG emissions (i.e. mobile applications and related technologies) and facilitate knowledge and technology transfer in the field of using ICTs to promote environmental sustainability. Encourage funding these research and development activities through public funds targeted for actions plans on climate change.	Use ICTs to build capacity at the community and institutional level, so that climate change data, and traditional and emerging adaptation experiences can be either developed, shared and/or utilised more effectively.

6. E-waste and Smart Recycling

Ensure the capacity of systems to measure the magnitude of e-waste using the indicators that will be defined by the Partnership on Measuring ICT for Development.	Work with ITU, United Nations Specialized Agencies, International and Regional Organizations to develop and streamline standards and practices for disclosure, labeling schemes and recycling facilities as well as e-waste management legislation.	Promote a life cycle approach in the design of ICTs (eco-design) to reduce e-waste and provide incentives and encouragement for e-waste take back schemes.

7. Partnerships for Environmental Sustainability		
Work closely with government, universities, research centres, SDOs, NGOs, IGOs and industry associations to develop Green ICT entrepreneurs and business models to support the Green Economy.	Create enabling policies to encourage investment in smart technologies and ICT based clean technologies (cleantech) as well as low carbon solutions such as cloud computing, broadband applications and green data centres as a way of promoting green growth and sustainable development.	Work with United Nations Specialized Agencies, in particular the ITU, and International and intergovernmental Organizations to ensure the adoption and implementation of global best practices and standards for dealing with environmental and climate change.

B. Moving the global green agenda forward

I. WTSA-12 delegates are invited to:

1. Adopt and/or modify any necessary Resolution(s) that would encourage the ITU Membership to work more intensively on issues of green ICT and sustainable development;
2. Continue to promote collaborative work in the field of ICTs, the environment and climate change;
3. Create a global platform for exchange of e-waste information, best practices and standards in collaboration with other organizations;
4. Strengthen institutional capacities through capacity building and the development of international energy efficient standards;
5. Promote awareness and research in innovative technologies for adapting and mitigating climate and environmental change;
6. Bridge the standardization gap by providing technical assistance to countries to develop their National Green ICT Action Plans and develop a reporting mechanism in order to support countries in implementing their Plan;
7. Inform and draw the attention of UNFCCC delegates to the powerful use of ICTs to tackle environmental challenges and the key role played by standards to promote technology transfer and diffusion; and
8. Participate actively in the development of e-waste indicators and methodologies.

II. Rio+20 is invited to:

Consider the crucial importance of information and communication technology (ICT), and especially broadband networks and services, as a catalyst for sustainable development and climate change mitigation.

Montreal, 31 May 2012

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[i] *To be held Rio de Janeiro (Brazil) on 20-22 June 2012*

[ii] *To be held in Doha (Qatar) on 26 November -7 December 2012*

[iii] *To be held in Dubai (United Arab Emirates) on 20-29 November 2012*