

I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

ICT and Climate Change: Conclusions of ITU-T Focus Group



ITU
and climate
change



Foreword

The idea for the Focus Group on ICTs and Climate Change originated during the cherry blossom season in Kyoto 2008. In just one year, the group concluded its work this time during the cherry blossom season in Hiroshima in April 2009.



*Malcolm Johnson,
Director,
Telecommunication
Standardization
Bureau,
ITU*

What better symbol of the fragile beauty of Mother Nature than the delicate cherry blossom? Hiroshima is also testament to the destructive power of mankind, but it is now a recognized centre for promoting world peace and addressing social and public policy issues. It was therefore an appropriate venue to discuss the issue of climate change, recognized by the UN Secretary-General as the moral issue of our time.

The Symposium in Kyoto, and the following event in London in June 2008, provided vivid examples of the way in which ICTs can play an important role in reducing total greenhouse gas (GHG) emissions.

The Symposium also recognized the important role that global standards can play in enabling the ICT industry to not only minimize its own carbon footprint, but also to limit and reduce emissions in other sectors.

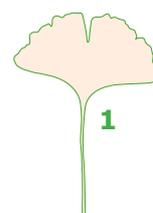
What became clear, however, is that there were wide-ranging estimates of what that impact might be which, of course, reduces the credibility of these claims.

I am proud that the prime objective of the Focus Group was met. An internationally standardized methodology for calculating this impact, both in direct and indirect terms, has been published.

It is a methodology that is agreed by all and that provides a common and well-understood approach that can be a key part of national commitments to reduce GHG emissions and to measure the impact of ICTs in reducing emissions in other sectors. We have agreed on ways to measure the impact of videoconferencing, travel substitution, dematerialization, monitoring, etc. A common methodology will help establish the business case and can ultimately be beneficial by fostering informed consumer choices and climate-friendly business procurement.

A clear message from Hiroshima has enabled us to make the best decision on future work within ITU-T on climate change. It means we can see clearly what has been accomplished, and what issues still need to be addressed. This work is ongoing, spearheaded by ITU-T's Study Group 5 on Environment and Climate Change.

ITU being a UN agency, is a key player in the overall UN effort on tackling climate change. This work can be the means through which the ICT industry conveys its message to global leaders on the importance of recognizing the role of ICTs in any future agreements.



In 2008, 37 countries had to start meeting their binding commitments under the Kyoto Protocol to reduce their GHG emissions. For most of these countries this means that reductions of 6-8 percent against the baseline year of 1990 must be achieved by 2012.

Meeting those commitments will require common reporting formats and methodologies to calculate national GHG emissions. In turn, agreed methodologies can be based on global standards.

While not formally part of the Kyoto process, common approaches to calculating the impact of ICTs are vital to ensure coherent and effective solutions to reduce GHG emissions.

Faced with mounting evidence of the urgency of addressing global warming, we cannot be content to sit and tell one another that ICTs can mitigate climate change. We must demonstrate our case with hard facts and figures.

The financial and economic crisis sweeping the globe has hampered investments for alternative technologies, while placing ever greater stress on the business case for going green.



Fortunately, national stimulus packages are beginning to realize that rebuilding infrastructure can be done in a more environmentally friendly manner. We must also make sure that the message that investment in broadband has a strong role to play in reducing climate change is heard.

Even conservative estimates show a significant contribution can be made through the application of ICTs. Companies can exercise corporate social responsibility while also improving efficiency and reducing costs. There are some truly compelling reasons for ICT players to take in this challenge.

The Focus Group has given us a great head start and great publicity. I have every confidence that the next stage of work will adopt the same levels of efficiency.

Malcolm Johnson,
Director, Telecommunication Standardization Bureau, ITU

Introduction and background

Human-induced climate change is recognised by the majority of scientists as beyond debate and has been termed an uncontrolled, unintentional “experiment”. We do not yet know what feedback mechanisms and changes in life forms come into play as more greenhouse gases are released into the biosphere.

ITU-T is recognized as the pre-eminent global telecommunications standardization body. Its Recommendations are developed by the information and communication technologies (ICTs) industry and are the first standards considered when purchasing or using network equipment. Some administrations recognize the importance of reducing dependence on fossil fuels for the supply of electricity and acknowledge the need for a sustainable future in the face of climate change.

Reducing the rate of electricity usage and increasing the use of non-fossil fuel sources, as far as possible, are clearly key measures to help control the carbon footprint of the ICT sector.

The Focus Group on ICT and Climate Change (FG ICT & CC) was set up in July 2008 by the ITU-T Telecommunication Standardization Advisory Group (TSAG) as an open group tasked to perform a rapid impact analysis on “ICTs and Climate Change”.

Focus Group members recognised the importance of addressing climate change and engagement in projects to bring GHG emissions under control, from the perspective of their own core businesses, and to provide stability of habitat so that future generations can thrive. They recognized that a cohesive group is far more effective than a disjointed effort in achieving a commonly agreed “green” agenda.

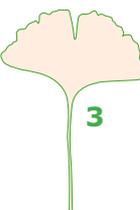
Resolution 73

Climate change was one of the highest profile subjects at the World Telecommunication Standardization Assembly, last October. The side event on climate change attracted great interest, and the Assembly adopted the first ITU Resolution on the subject. Resolution 73 on ICTs and Climate Change encourages the membership to work towards reductions in greenhouse gas emissions, in line with the United Nations Framework Convention on Climate Change. An agreed methodology is essential to meet that commitment. This was reported to the High-Level Session of the ITU Council, last November.

The work of the FG was recognized in Resolution 73, adopted by the World Telecommunication Standardization Assembly in October 2008. The Focus Group held three well-attended physical meetings (1-3 September and 25-28 November 2008 in Geneva, and 24-27 March 2009 in Hiroshima, not to mention 28 teleconference calls).

The Group was chaired by David Faulkner (BT) and organized around three Working Groups, with outputs called deliverables that will be input into the formal standardization process of ITU-T.

Information on the deliverables, full management team, WG Chairs and editors appears on the FG website [www.itu.int/ITU-T/focusgroups/climate].







Members of the Focus Group ICTs and Climate Change, Geneva, 28 November 2008.

Work methods

In addition to reducing its own carbon footprint, the terms of reference of the Focus Group recognized that ICTs can be an important enabling technology to reduce emissions in other sectors. The group examined

What is a Focus Group

Focus Groups are an instrument created by ITU-T that augment the Study Group work programme by providing an alternative working environment for the quick development of specifications in their chosen areas. Focus Groups are now widely used to address industry needs as they emerge, and when they are not covered within an existing Study Group. The key difference between Study Groups and Focus Groups is the freedom that they have to organize and finance themselves, and that they are open to all. Focus Groups can be created very quickly, are usually short-lived and can choose their own working methods, leadership, financing and types of deliverables. They are governed by Recommendation ITU-T A.7.

ways to promote the use of ICTs as a substitute for other sectors' costly, fossil-fuelled activities such as travel and transport. To set an example, the work of the FG was conducted mainly by teleconference, in combination with other remote working tools. This principle is now applied to all ITU standards work.

The Deliverables

Deliverable 1 – Definitions

Intensive work on "Definitions" (contained in Deliverable 1) was conducted with the aim of providing definitions needed to produce the key "methodologies" under Deliverable 3. Definitions of unit(s) of energy and unit(s) of efficiency were highlighted as key. Standards organizations with relevant definitions that were considered include ITU, the Intergovernmental Panel on Climate Change (IPCC) and the International Organization for Standardization (ISO).

Deliverable 1 lists definitions for selected classes of ICT equipment, provides a glossary and references documents on international standards. The text examines the following topics:

- ✦ Understanding and mitigating the negative impact of ICTs on climate change (raw material extraction, production/manufacture, use phase, end of life) and increasing in particular the efficiency of equipment, networks and organizations.
- ✦ Understanding and encouraging the positive impacts of ICTs on climate change (e.g. travel substitution, product substitution, smart buildings, etc.): reducing GHG emissions.
- ✦ Understanding and encouraging measurement and monitoring of climate change impacts.

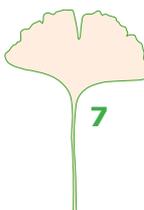
Deliverable 2 – Gap analysis

A “Gap Analysis” was performed under Deliverable 2 to identify existing standards that are relevant to ICTs and climate change, so as to avoid “reinventing the wheel”. ISO 14040:2006, 14064:2006, 14065:2007 and ISO 14044:2006 were cited as key source methods. Various gaps were identified, some of which could be addressed by the ITU.

Review of key bodies active in the area of ICTs and climate change

The organizations reviewed in Deliverable 2 include:

- ✦ Asia-Pacific Economic Cooperation (APEC)
- ✦ Alliance for Telecommunications Industry Solutions (ATIS)
- ✦ Basel Convention on the Control of Transboundary Movements of Hazardous Wastes
- ✦ Collaborative Labeling and Appliance Standards Programme (CLASP)
- ✦ Consumer Electronics Association (CEA)
- ✦ Energy Star
- ✦ Energy Efficiency Inter-Operator Collaboration Group (EE IOCG)
- ✦ Ethernet Alliance
- ✦ European Telecommunications Standards Institute (ETSI)
- ✦ European Union (EU)
- ✦ Global Standards Collaboration (GSC)
- ✦ Green Grid
- ✦ Greenhouse Gas Protocol Initiative
- ✦ Institute of Electrical and Electronic Engineers (IEEE)
- ✦ International Electrotechnical Committee (IEC)
- ✦ International Organisation for Standardisation (ISO)
- ✦ International Telecommunication Union (ITU)
- ✦ Joint Technical Committee 1 of ISO and IEC (ISO/IEC JTC1)
- ✦ World Bank
- ✦ UN System and Agencies



Potential gaps identified on reviewing the work of other bodies

Future actions for consideration are:

- ✦ ITU is well-placed to become the global “Green ICT” repository and resource base for these activities. Given that many other organizations are currently working on specific issues related to the environment, ITU could help by establishing itself as the global green ICT library, in addition to its standards work in this field.
- ✦ ITU-T could undertake a study to determine the effectiveness of energy consumption labelling on consumer’s buying decisions for ICT devices and also study embodied CO₂e (carbon dioxide equivalent) labels for equipment and services.
- ✦ ITU could foster a programme to show how each person delivering small savings can add to considerable savings. It was noted that sustainable social education is lacking in many approaches to the use and labelling of ICTs.
- ✦ The carbon footprint associated with the device’s production/ manufacture phase and its operation must be taken into account.
- ✦ Review the five EU codes of conduct (COM (99) 120) to take them into account in the work of ITU-T (propose a maximum power consumption for devices in different operating states for end-user equipment).
- ✦ Regarding the reduction of GHG emissions: ITU-T will need to review the Asia-Pacific Economic Cooperation (APEC) document (see <http://www.apec-esis.org>) for inclusion of best practices in achieving the stated goals.
- ✦ ITU-T is involved in developing Recommendations for next generation networks (NGN). A holistic approach is needed to minimize primary energy demand.
- ✦ ITU-T should investigate the relative timescales regarding equipment lifetime and time to break-even regarding CO₂e reductions.
- ✦ The development of a Wikipedia type project focussing on green or sustainable issues.
- ✦ It was noted that the GeSI Smart2020 Report mentions rebound effects. Future work needs to take account of such effects.
- ✦ ITU-T, along with ITU-R, should analyze the impact of spectrum allocation on energy efficiency and consumption of cellular and wireless communication systems.

Prioritisation of standards gaps that ITU can address

- ✦ ITU needs to quantify the reduction of primary energy converted utilizing ICTs as a service substitute (see DEL-3 below) and apply it to case studies to show realistic numerical examples (e.g. travel reduction).

- ✦ ITU needs to develop a calculator that can compare the short and long-term benefits of different types of telecommunications networks and systems, e.g. wired vs. fibre vs. wireless.
- ✦ ITU Study Groups could develop new energy-saving checklists (an example already exists: See TD 288 (GEN/15) Checklist on Energy Saving for Standardization Activities and also Res. 73).

Deliverable 3 – Methodology

Deliverable 3 provides an internationally agreed method of calculating two elements: (1) the energy usage and carbon impact arising from ICTs lifecycle and (2) the mitigation that can be achieved by substituting ICT services and devices for intensive fossil-fuelled activities such as travel and transport, and through dematerialization. This work has an important bearing on current and future global agreements under which countries undertake commitments to reduce their overall GHG emissions.



Relevant metrics and units

The internationally accepted standard metric for measuring climate impact is known as greenhouse gas emissions (mass of CO₂e). This metric can also be used when determining the influence ICT systems have when physical services are replaced by ICT services. Nevertheless, CO₂e is not directly calculated and depends on the amount of energy consumed during the various steps of a product life cycle. To encourage the ICT industry to disclose and reduce its carbon footprint, the information provided to various stakeholders will require the following:

- ✦ The GHG emissions caused by the purchased ICT equipment prior to its purchase and after its disposal (mass of CO₂e).
- ✦ The power consumption of the ICT equipment being used (in W or kWh). This may lead to the need to introduce the definition of “use-profile” and modes of operation.
- ✦ The emission factor of the purchased electricity (mass of CO₂e / kWh) using agreed conversion rates.
- ✦ The direct GHG emissions of replaced mass of CO₂e or energy consumption in litres of fuel or tones of oil equivalent to calculate CO₂e emission using the appropriate conversion tables.

The collected data should include the equipment lifecycle footprint and the power consumption. For the sake of clarity, the results should be in absolute values and could also be associated with units of measure such as percentage of GHG/energy reduction, CO₂e emission and power, or another established value.

Methodologies for ICT impact assessment

Deliverable 3 proposes that the industry estimate the impact of GHG emissions for the following: device, network, service, company and economic sector. This estimation should be based on the ISO 14040 and ISO 14044 methods and authenticated values from operators, manufacturers or relevant stakeholders. Due to the reporting level interdependencies and to emphasize the importance of reducing GHG emissions, lifecycle extension and power efficiency, it is important to report on the following criteria:



Impact of lifecycle phases: The reporting should provide the shares of extraction, production, transport, use phase and end-of-life in the entire lifecycle. The shares are expressed in CO₂e and are obtained through the conversion of direct measurable power consumption. Power consumption is the de facto primary unit for assessing ICT impact and is the intermediate unit to the CO₂e unit.

On premise levels: When reporting on service, company or economic sector level, the report should include the impacts at the provider premises, the outsourced premises and the user premises.



GHG emissions and power consumption: For the production and use phase, the report should contain information on GHG emissions and power consumption. These figures could be projected in relation to the load/usage level of the entity.

Agile-working CO₂e benefits: A methodology to address and quantify ICT-supported agile-working CO₂e benefits is detailed in D3. D3 also shows some preliminary results and tools that could be developed to support the principled, organization and country-specific optimisation of agile working practices.

Data centre and telecommunication building power supplies: Calculation (or estimation) methods for obtaining energy efficiency of technologies such as high-voltage DC (HVDC) and high-voltage AC HVAC systems. Standardizing data centres and telecommunication building power supplies is important to improve energy efficiency of ICT power feed systems.

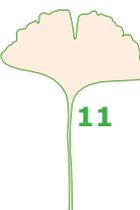
The proposed methodology allows for a modular approach in order to facilitate the estimation exercise to be executed by different stakeholders. If possible, the methodology should include internationally agreed standard carbon calculators used in other sectors such as transportation, goods, agriculture, heavy industry, buildings, etc., which represent the majority of GHG emissions.

Deliverable 3 acknowledges the importance of a single metric in order to compare the GHG emission efficiency of the entities. The FG proposed that this metric could be identified as "emission per unit of delivered value". But it should be noted that the definition of "delivered value" is highly dependent on the entity and on other entities. So that the CO₂e metric based on power consumption at each phase of the entities' and product lifecycle (Ecodesign) be the easiest to be universally understood and compared.

Deliverable 3 provides methodologies on:

-  Impact of GHG emissions of ICTs, and
-  Impact on other economic sectors.

The methodologies will cover measurement, quantification, reporting, validation and verification.



Impact of ICTs on climate change

GHG emissions of ICT sector

In this section, the baseline text of Deliverable 3 presents views on estimating the ICT footprint. When estimating the ICT footprint, it is necessary to consider the impact in data centres, the network and at the user premises.



Impact of ICTs on other sectors

Currently, it is estimated that the impact that ICTs can have in reducing the global carbon footprint in other sectors is significantly greater than the footprint of the ICT sector itself. However, the text in Deliverable 3 reflects the view that the uncertainty of this estimation is potentially large, due to the fact that the baseline impact relies largely on estimations made by different sectors. A difference in methodology could lead to misinterpreted results. A generic method can be used to assess a wide range of services (and applications) and to compare them with conventional systems in use today.

Factors potentially influencing the adoption of ICT solutions

The widespread adoption of ICT solutions to mitigate climate change is subject to a large number of external factors that ITU cannot control. These factors are social, political, economical, financial and cultural in nature. It should be noted that, in the context of widespread adoption of ICT strategies, rebound effects should be taken into account by policy-makers. A liaison statement was sent to OECD to ask for more information on rebound effects.

Deliverable 4 – Direct and indirect impact of ITU-T standards

Under Deliverable 4, the FG investigated what tools (e.g. checklists) and guidelines would enable ITU-T Study Groups to reduce direct GHG emissions from ICTs and establish possible savings in terms of mitigation from the use of ICTs.

General checklists for an eco-friendly guidance of ICT systems and services are introduced, and examples of networks and systems, which influence climate change in the ICT field, are discussed. Next, ITU-T standards that have a positive impact on mitigation of climate change are explained. It is noted that the list of technologies and ITU-T standards introduced in this section do not limit the possible and potential ICT technologies and ITU-T standards to impact on climate change.

Checklist

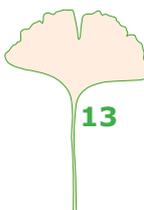
The baseline text for Deliverable 4 identifies a number of tools, guidelines and technologies that could be promoted more widely in ITU. These include checklists for developing and promoting eco-friendly standards for ICT architecture, ICT devices, ICT providers, ICT systems, and disposal and recycling of ICT systems in an eco-friendly way.

- Key benefit: provides a starting point for GHG audit for ICT managers.
- Recommendation: expand checklist to include quantifiable benefits regarding ICT's role in reducing CO2 emission. Studies should be conducted in a way to benefit developing countries as they implement ICTs to reduce carbon footprint within their borders.

Networks and systems influencing climate change

Fixed networks using fibre technology provide additional speed and increased range compared to mobile networks. More work is needed to inform network providers of the impact of fixed vs. mobile networks in terms of GHG emissions and mitigation.

- Fixed line vs. wireless/mobile networks
- Fibre technology: fixed networks using fibre technology provide additional speed and increased range and may reduce power consumption compared to other broadband networks such as wireless or wireline. A direct comparison of the power consumption of fixed and mobile networks is somewhat difficult, as the applications and usage behaviour are different.
- Recommendation: additional information and studies are needed in ITU-T (e.g. relative impact of fibre, wireline, wireless and cellular networks).



Data centres

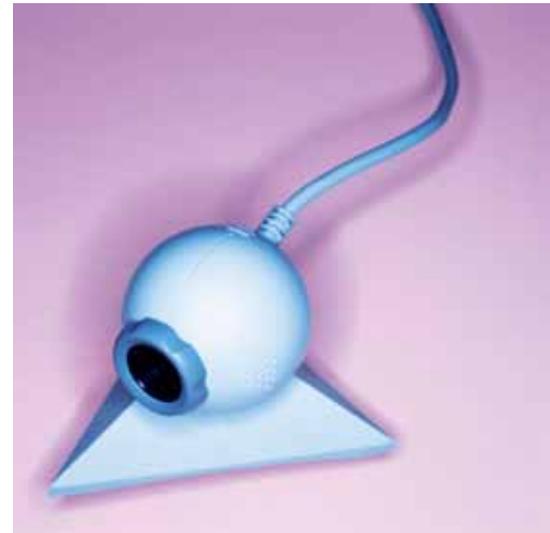
The use of natural cooling systems should be promoted widely. How should data storage and retrieval systems be organised to facilitate natural cooling? In telecommunication networks, lower signal levels would lead to reduced power consumption and lessen the need for air conditioning.

- 📌 Green internet data centre (IDC) platforms; based on the highly integrated blade system and dynamic power management system.
 - Recommendation: more inputs and studies are needed (e.g. technical specification for energy-aware OS, middleware and application API for green IDC).
- 📌 Natural cooling systems: provide a method of use of natural air in the cooling system for data centres or base stations.
 - Recommendation: additional information and studies are needed in ITU-T (e.g. guidelines reducing power consumption to eliminate the need for air conditioning systems by using ambient air, etc.).

Audio and video conferencing systems

A teleconferencing roadmap could identify improvements and eliminate roadblocks to increase the use of low-carbon substitute services.

- 📌 Use of teleconferencing systems: shows the amount of CO₂ reduction resulting from the adoption of teleconference as opposed to physical meetings, which require travel.
 - Recommendation: additional information and studies are needed in ITU-T to enhance our understanding of the carbon benefits of various teleconferencing systems, and propose improvements based on the input from SGs' work.

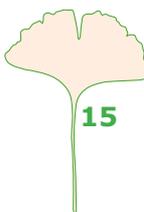


Home networking systems

The total energy people consume in their households accounts for a large amount of the global energy consumption with important contribution to CO₂ emissions. The major challenges are to promote the energy saving of household appliances using ICT-enabled solutions and through long-term sustainability.



-  The implementation of ICT-enabled energy-saving applications minimizes the energy consumed by energy-hungry household appliances.
-  Recommendation: further studies are needed on generic communication interfaces between controlled devices and the management logic of the network, energy profiles for household application types, etc.



Next generation networks (NGN)

Next generation networks require fewer switching centres, offer more efficient network components, provide smarter routing methods and, as a result, are expected to consume significantly less power per transported bit. However, a considerable increase in data traffic will continue over the next several decades and, despite technical advances, could increase the energy consumption of the global network. Although increasing the equipment replacement cycle will accelerate technological benefits, the equipment's embedded energy becomes increasingly more significant.

- ✦ NGN is expected to bring about greater energy efficiency than legacy networks by improving the energy efficiency of ICTs.
- ✦ Recommendation: NGN is the subject of active standardization in ITU-T. The Focus Group noted that the carbon impact of NGN should be dealt with carefully and take into account the results of more recent studies (e.g. the effects of the acceleration of the equipment replacement cycle, etc).

Ubiquitous sensor networks (USN)

One major use of ubiquitous sensor networks is to monitor climate parameters and pollution (GHG) levels. Additional work is needed to determine if device transmission protocols could be extended to include both monitoring and control (e.g. of home environment and appliances).

- ✦ USN is already used to monitor climate parameters and pollution (GHG) levels, etc., and further development of USN will be a landmark of energy saving and of addressing climate change in the future.
- ✦ Recommendation: USN is subject to active standardization in ITU-T and in ISO/IEC. In the FG meeting, it was commented that the matter should be dealt with carefully, taking into account the impact of energy saving monitoring, GHG monitoring, etc.

In conjunction with data collection, ITU-T could investigate ways to efficiently utilize the data. The use of fast web services could be investigated.

Intelligent transport systems (ITS)

Intelligent transport systems (ITS) can improve road safety and increase traffic efficiency, and thus are an important area to study, especially in the network interface area (see also ITU-T Technology Watch Report No. 8 on ITS). ITS could provide telecommunications operators with guidance on the efficient dispatch of vehicles. Work in this area should be coordinated with other SDOs.



- ✦ ITS is designed to achieve: improvement of road safety and reduction of traffic accidents; increased traffic efficiency; improved freight and public transportation efficiency; reduced CO2 emissions; and enhanced driver assistance and management.
- ✦ Recommendation: it is agreed that ITS is an important area to study, especially with regard to network interface areas. It should be dealt with in coordination with other relevant SDOs.

Tag-based identification applications and services

Tag-based identification applications and services are one of the key ICT solutions that can be used for lifecycle management of ICT products, among others. In ITU-T the Joint Coordination Activity on Network Aspects of Identification Systems (including RFID) examines this topic. Further work is needed to determine how important this technology could be in the context of lifecycle management.

- ✦ Tag-based identification applications and services are one of the key ICT solutions that can be used for lifecycle management of ICT products and in other sectors.
- ✦ Recommendation: tag-based identification (RFID) is on active standardization at ITU-T. In the FG meeting, it was agreed that this is a good solution for lifecycle management.

Coordination with other ITU Sectors

The FG works in close collaboration with all ITU-T Study Groups and, in order to avoid duplication and overlap of work, also cooperates and coordinates with other ITU Sectors (ITU-R, ITU-D) and with other relevant bodies outside ITU-T (SDOs, Fora/Consortia, regulators, policy-makers).

Conclusion

The FG had its last meeting on March 27, 2009. This summary provides an overview of the work of the FG, as well as conclusions that may be read on a stand-alone basis to report the key outcomes of the Group.

The FG has recognized a number of potential gaps in standards that were acknowledged in the various contributions and recapped in the Deliverables of this Focus Group.

- ✦ A gap exists in quantifying the potential savings ICTs can bring in other sectors. Accurate metrics will need to be defined. This should be followed up with case studies to show the potential benefits of substitution using values obtained from approved sources, wherever possible (e.g. SDOs dealing with other sectors such as travel).
- ✦ Equipment efficiency tables fail to take into account equipment placement in the network, e.g. its function (see NIPP-TEE-2008-046, NIPP-TEE-2008-047 at atis.org), duty-cycle and emissions during installation.
- ✦ There is a need to develop a data base for key performance indicators.
- ✦ Work has been done in other industries to measure efficiency end to end, that is, from extraction of natural resource to final use. See for example: "About the determination of the yield of energy systems". ITU needs to learn from best practices in other industries.
- ✦ Home appliances and equipment can be a big source of energy savings through the use of ICTs. They can also be part of a global electrical grid management strategy (e.g. micro-generation control and trading). A protocol is required to communicate equipment status and profiles possibly deeper into the grid. This should work over different media, e.g. PLC and radio, and should be optimized for low-power operations.

The FG has identified a number of activities that, if followed through as a team effort across ITU and if strongly supported and coordinated by ITU management, could lead to GHG emission savings in line with existing or emerging targets and timescales. The FG recognized that technology is very much part of the solution to reducing greenhouse gases; it is the tool to help reduce emissions, not only within the ICT sector, but also for other sectors of the economy. The FG Deliverables present innovations in ICT and advances in technology that streamline processes, create more energy-efficient equipment, facilitate consolidation and sharing of networks and improve business models. It can also help domestic consumers reduce their energy consumption and costs. To play a part in gaining control over GHG emissions and reduce the risk of destruction of the ecosystem that supports human life, the entire ITU membership needs to consider how rapidly it can move away from fossil-fuel dependency and support others in their endeavours.

Next phase

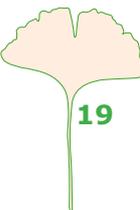
ITU has established a new study group to deal with environment and climate change.

The Telecommunication Standardization Advisory Group (TSAG), concluding its three day meeting on 30 April, agreed on how work on ICTs and the environment (including climate change and recycling) will be distributed in ITU-T. This follows the TSAG's approval of the report of the Focus Group on ICTs and Climate Change and will formalize the Focus Group's output as ITU-T Recommendations (see previous newslog) – including a methodology for evaluating the effects of ICTs on climate change – both in direct terms and how ICTs can reduce emission in other industry sectors.

Study Group 5 was chosen as the lead study group and will be renamed the Study Group on Environment and Climate Change to reflect its new mandate. SG 5 remains the lead Study Group for protection against electromagnetic effects.

Specifically, SG 5 will work on documents related to:

- ✦ Study of methodologies for calculating the amount of greenhouse gas (GHG) emissions from ICTs and the amount of reduction in the GHG emissions in other sectors as a result of using ICTs.
- ✦ Creation of a framework for energy efficiency in the ICT field, taking account of WTSA Resolution 73.
- ✦ Study of methodologies for power feeding that effectively reduce power consumption and resource usage.
- ✦ Study of methodologies that reduce environmental effects for ICT facilities and equipment such as recycling.



Study Group 5 will next meet on 25-29 May in Geneva and is likely to establish a new working party to address these issues. The many organizations that contributed to the work of the Focus Group will participate at the invitation of the Study Group Chairman.

ICTs and Climate Change Symposia

As part of its major initiative on ICTs and climate change, ITU organizes Symposia on ICTs and climate change. These symposia bring together key specialists in the field, from top decision-makers to engineers, designers, planners, government officials, regulators, standards experts and others. ITU held two successful symposia on climate change in 2008, the first hosted by MIC Japan in Kyoto, Japan, in April 2008, and the second hosted by British Telecom in London, UK, in June 2008, and together they led to the formation of the Focus Group. A third Symposia will take place in Quito, Ecuador on 8-10 July, 2009, hosted by CITIC and a virtual symposium is being planned for September in Korea (see www.itu.int/ITU-T/worksem/climatechange).

In addition, a Joint Coordination Activity (JCA) will ensure that the work across ITU-T's Study Groups is focused on delivering climate change-focused standards in a timely and efficient way. Essentially, the group will aim to see that standards are developed in the most appropriate way and that no duplication of effort occurs. It will also provide a single point of contact for ICT and climate change activities in ITU-T and seek collaboration from external bodies working in the field. It is expected that the work of the JCA will be carried out mainly via webconferencing tools.

Full details will be published on the website of Study Group 5 and a soon-to-be created JCA page.

Study Group 5 - <http://www.itu.int/net/ITU-T/info/sg05.aspx>

JCA - <http://www.itu.int/ITU-T/jca/ictcc/index.html>

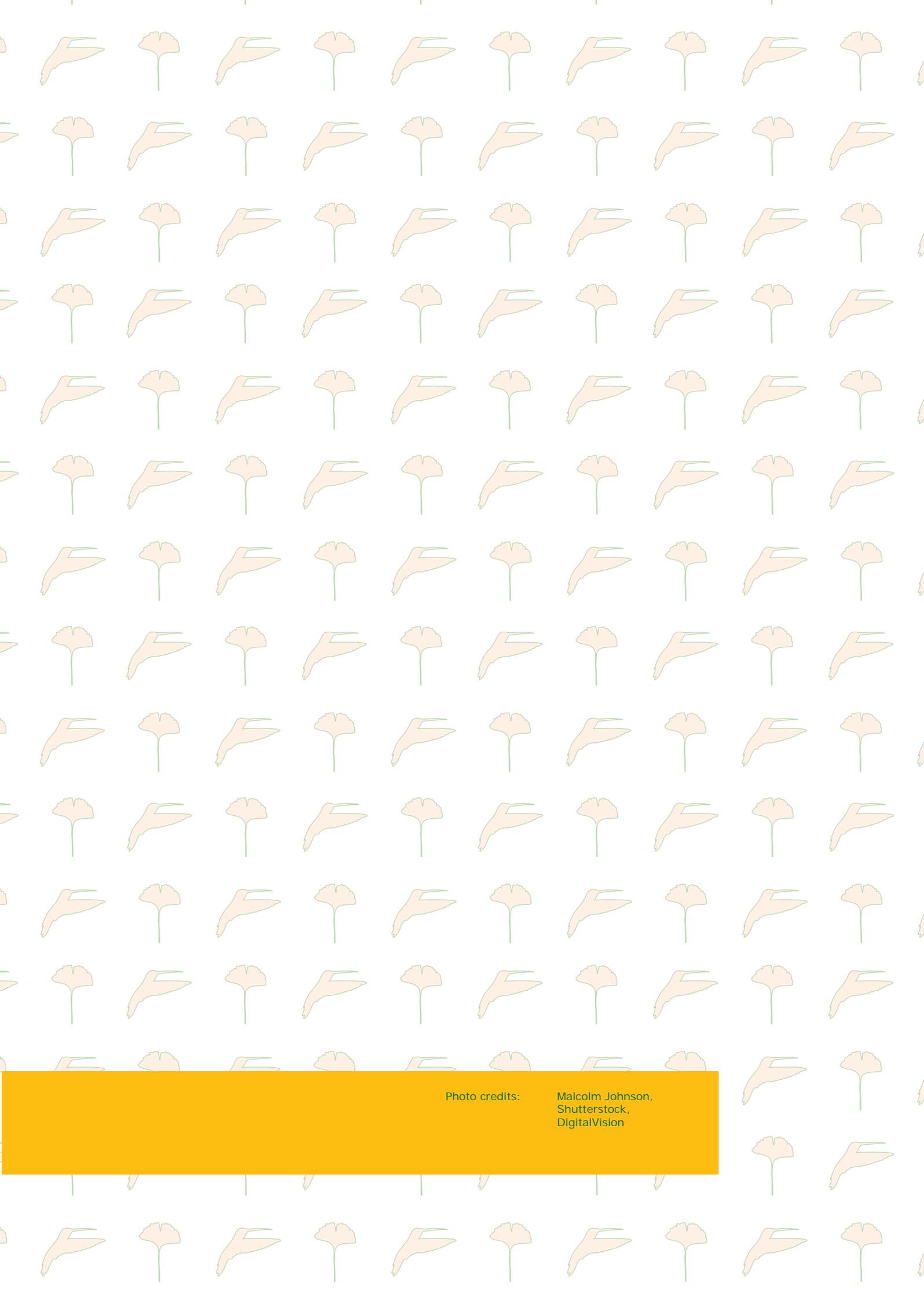


Photo credits:

Malcolm Johnson,
Shutterstock,
DigitalVision



Ginkgo biloba leaf: Extreme examples of the Ginkgo's tenacity may be seen in Hiroshima, Japan, where four trees growing between 1–2 km from the 1945 atom bomb explosion were among the few living things in the area to survive the blast. While almost all other plants (and animals) in the area were destroyed, the ginkgos, though charred, survived and were soon healthy again. The trees are alive to this day.



Hummingbirds become endangered: hummingbirds were killed for their feathers. Today, habitat loss and destruction are the hummingbird's main threats.