



## Environment and Climate Change

CLIMATE CHANGE COULD AFFECT economies and societies in profound ways, and mitigating its consequences is an enormous challenge faced by the world today. Fortunately, though, we have tools with far-reaching power that can be used to take up the challenge and help achieve a smart and sustainable future: information and communication technologies, or ICTs.

### SAVING ENERGY AND RESOURCES, MONITORING CHANGE

To make and use ICTs needs energy, and it has been estimated that this produces about 2.5% of global greenhouse-gas emissions — a figure that will grow as ICTs become more widespread. But these technologies can also save much more energy than they require themselves, while also helping to reduce the use of natural resources. They are a vital part of solutions to climate change and for supporting sustainability — two areas that are among ITU's top priorities.

There are three main ways in which ICTs can help us move to a greener economy: by improving energy efficiency, by replacing the physical with the digital, and by checking on the status of the environment.

ICTs are central in the control of modern manufacturing and distribution processes. For example, intelligent transport systems, coupled with RFID tags on goods, allow cargoes to be tracked precisely, using fewer trucks that are also able to consume less fuel. Smart electricity grids employ ICTs to monitor and distribute energy flows efficiently, reducing wastage. In the home or office, heating and cooling systems can be automatically controlled to fit outside conditions and whether people are actually in the building (or a particular room). Collaborating remotely online and meeting through videoconferencing make travel less necessary. Producing digital media cuts down on the use of print or physical recordings.

These are just some of the myriad of ways in which ICTs save energy, and so reduce greenhouse-gas emissions. In a report by the Global eSustainability Initiative (GeSI), it has been suggested that up to 15% of total emissions could be saved by 2020 through the use of ICTs, or more than five times the emissions produced by the ICT sector itself.<sup>1</sup>

When it comes to monitoring the changes to the environment that are already taking place, ICTs are essential. Satellites collect and send data about sea-level rises or shrinking ice caps; crop and forest cover is recorded, and water resources noted. Data are shared for analysis on the computers of researchers worldwide. ICTs play an increasing part in raising food production, and they are literally vital in responding to natural disasters that can result from extreme weather events.

One way of providing tsunami alerts, as well as monitoring changes in the ocean, could be to use sensors on submarine telecommunication cables. A joint task force has been established by ITU, UNESCO/IOC and WMO to investigate this possibility. Technical standards that improve energy efficiency and set the foundation for transformative ICT applications have been issued by ITU, which is also developing (in collaboration with 60 other organizations) a set of standardized methodologies to calculate the carbon footprint of ICTs, as well as the emissions saved through using green applications in other industrial sectors. The set will provide a unique framework for transparency and accountability.

Work is being carried out on standards that aim to cut e-waste, such as through better recovery of rare metals and by improving recycling. Next-generation networks are being promoted that use 40% less energy than before. The second ITU Green Standards Week is scheduled for September 2012, and

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an academic conference on building sustainable communities is to be convened in April 2013 as part of ITU's "Kaleidoscope" series. The aim is to identify emerging technological developments and help generate products and services that will move societies in this direction. There are many other areas of activity in this domain, including a series of international symposiums on "ICTs, the Environment and Climate Change." Details can be found at [www.itu.int/climate](http://www.itu.int/climate).

In April 2012, the Broadband Commission for Digital Development published "The Broadband Bridge: Linking ICT with Climate Action for a Low-Carbon Future," a report from top figures in industry, international organizations and NGOs, that showed how these high-speed, high-capacity networks can support the transition to a low-carbon economy.<sup>2</sup> The report listed recommendations that were put forward to Rio+20, the United Nations Conference on Sustainable Development, held in June 2012. In its outcome document entitled "The Future We Want," Rio+20 recognized the importance of combating climate change, and the critical role of ICTs achieving sustainable development.<sup>3</sup> ITU plans to fully integrate the main principles of this document into its activities.

## CLIMATE CHANGE AND WCIT-12

The full potential of ICTs is achieved through global connectivity. Ensuring interoperability is one of the main purposes of the International Telecommunication Regulations, or ITRs, which were last revised in 1988 when the danger of climate change was not yet well-known.

The ITRs will be reviewed and updated at the 2012 World Conference on International Telecommunications (WCIT-12). A proposal has been made to add a provision to the ITRs saying that countries should cooperate to encourage operators and the ICT industry to adopt measures that lessen the use of energy and natural resources by ICT networks, and reduce waste produced by the sector. These measures would include adopting international standards for efficient equipment and networks, and following best practice in disposing of e-waste.

All industrial sectors — and communities — need to move towards sustainable production and consumption. By recognizing how ICTs can support this progress, while playing a crucial role in mitigating the effects of climate change, WCIT-12 could make a forward-looking contribution to worldwide efforts to face this major challenge of our age.

<sup>1</sup> "Smart 2020: Enabling the low carbon economy in the information age" (2008), available at [www.gesi.org/ReportsPublications/Smart2020/tabid/192/Default.aspx](http://www.gesi.org/ReportsPublications/Smart2020/tabid/192/Default.aspx)

<sup>2</sup> [www.broadbandcommission.org/work/working-groups/Bridge.aspx](http://www.broadbandcommission.org/work/working-groups/Bridge.aspx)

<sup>3</sup> [www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%209pm.pdf](http://www.uncsd2012.org/content/documents/727The%20Future%20We%20Want%2019%20June%209pm.pdf)