

ICTs and Climate Change

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Agenda

- The evidence for climate change
- ICTs ...
 - as a cause of global warming
 - in monitoring climate change
 - for mitigating climate change
 - for adaptation
- ITU Symposia:
 - Kyoto, Japan, 15-16 April, co-organised by MIC Japan
 - London, UK, 17-18 June, supported and hosted by BT
- E-environment scoping study
- ITU and Climate Change

Evidence for climate change



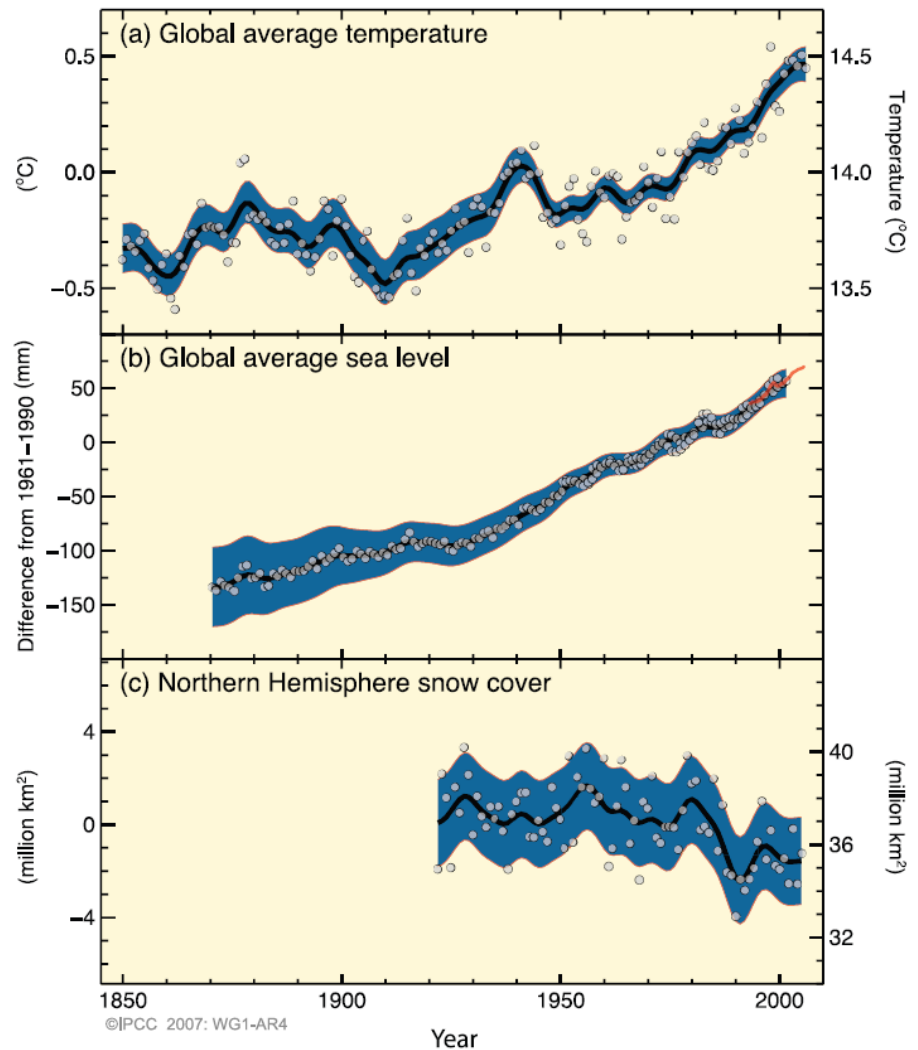
Global average temperature



Global average sea level

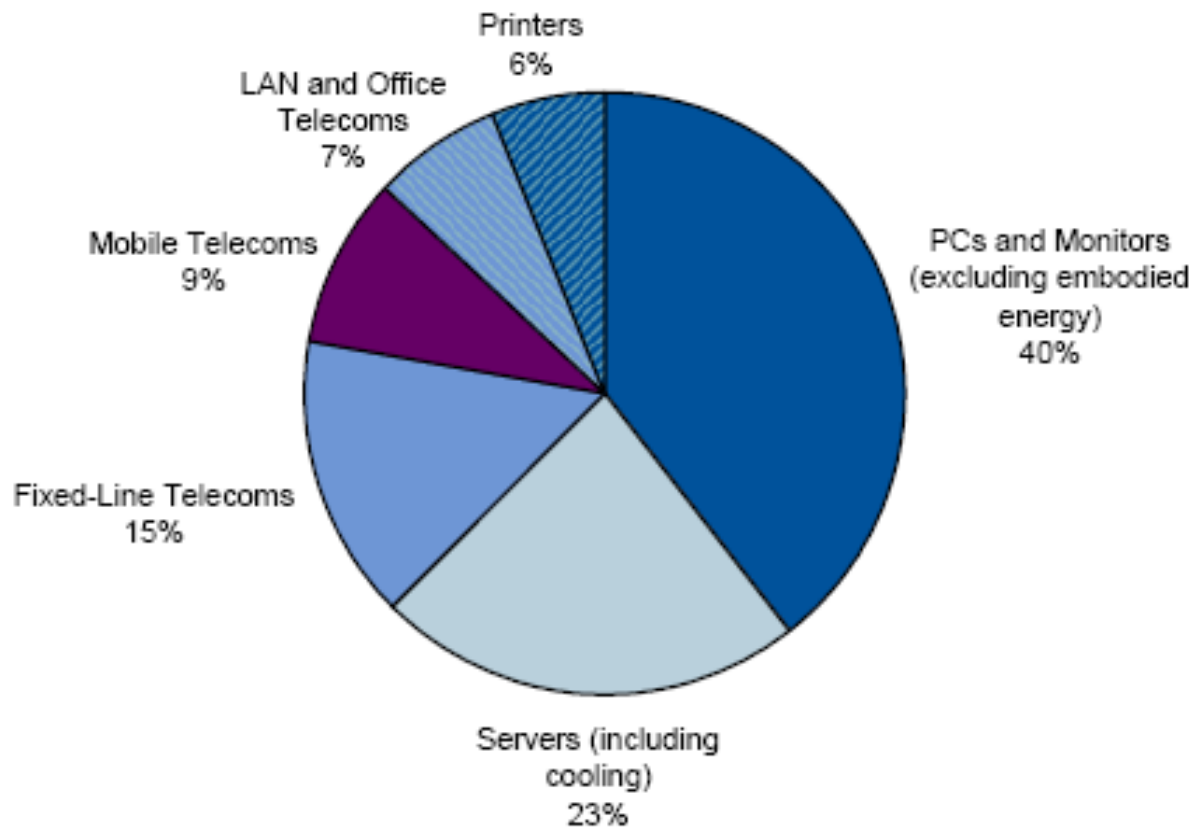


Northern hemisphere snow cover



ICTs as a cause of global warming

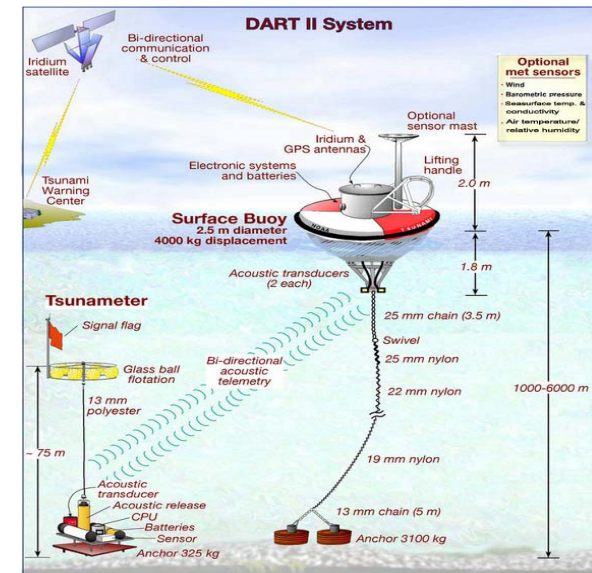
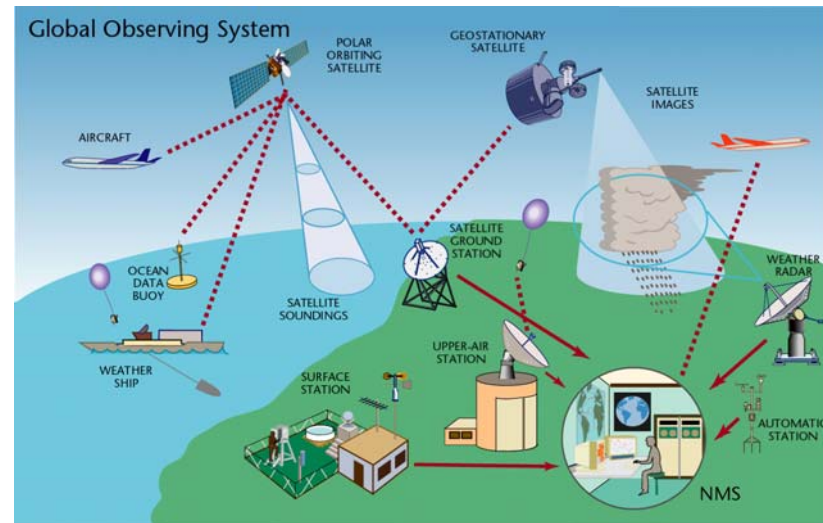
Percentage contribution to total



- ICTs (excluding broadcasting) contribute an estimated 2-2.5% of global Greenhouse Gas emissions
- Around 0.9 tonnes GtCO₂e in 2007
- Telecoms contributed around one quarter of this total
- But Telecoms also have greatest potential for mitigation

ICTs at work for monitoring climate change

- WMO World Weather Watch, incorporating:
 - Global Observing system
 - Global Telecom System
 - Global Data Processing system
- Remote sensing
- Environmental monitoring
 - Tsunami early-warning system
- Digital climate forecasting models
- GPS-enabled telemetry
- Ubiquitous sensor networks



Mitigating the impact

- **Directly**, e.g., through energy-saving
 - Next-Generation Networks (NGN) should reduce GHG emissions by 40% compared with separate fixed and mobile networks
 - Modern radio technologies reduce energy consumption by transmitters ~ 10 times
- **Indirectly**, e.g. ICTs for carbon abatement
 - Video-conferencing to reduce business travel in Europe by 1% would save 1m CO₂ tonnes
- **Systemically**, e.g., by “dematerialisation”
 - Intelligent Transport Systems could reduce vehicle carbon emissions below 130g per km

Towards a climate neutral ICT sector

- BT has reduced carbon emissions by 60% compared since 1996
- ETNO Members reduced carbon emissions by 7% and carbon intensity by 14%, 2000-03
- NTT's "Total Power Revolution" saved 124m kWh in 2007
- Other initiatives:
 - GeSI, Green Grid, WattWatt, FTTH Council Europe, EU codes of conduct, CBI Task Force etc

Using ICTs for carbon abatement / displacement

- Reducing / substituting for travel
 - In 2007, Telstra held 7'500 video conferences saving 4'200 tonnes of CO₂
- Flexible work arrangements
 - Each one million EU workers could save one million tonnes of CO₂ annually by telecommuting
- Intelligent Transport Systems (ITS)
 - In-car systems to assist in "eco-driving" can reduce CO₂ emissions by up to 20 per cent
- Dematerialization (replacing atoms with bits)
 - ITU-T Recommendations Online save 105 tonnes of CO₂ annually compared with distribution of paper copies



ICTs for adaptation: ITU Role

- Telecommunications/ICTs for disaster preparedness
 - Tampere Convention
 - PP-06 Resolutions 36 and 136 on use ICTs for humanitarian assistance
 - WRC Resolutions 646, 647, 673 on use of radiocommunications for environmental monitoring, public protection and disaster relief
 - WTDC-06 Resolution 34 on the role of ICTs in mitigation of effects of disasters and humanitarian assistance
 - Partnership Coordination Panel on Telecoms for Disaster Relief (PCP-TDR)
 - E.164 country code (888) for UN OCHA
 - Recommendations E.106 on call priority and X.1303 on common alerting protocol

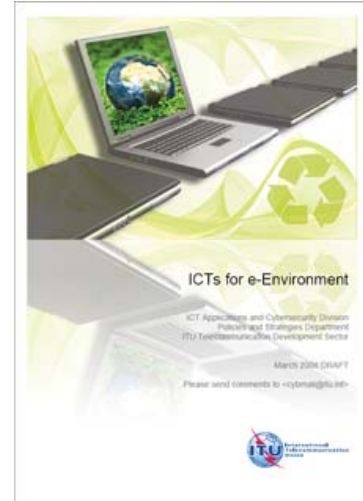
Symposia on ICTs and Climate Change

- Kyoto, Japan, 15-16 April, co-organized by MIC Japan
- London, UK, 17-18 June, supported and hosted by BT
- Outline agenda
 1. ICTs to the Rescue?
 2. Corporate responsibility: Towards a climate-neutral ICT sector
 3. ICTs for monitoring climate change
 4. ICTs as a green technology
 5. Towards a high-bandwidth, low carbon future
 6. Adapting to climate change
 - Webcast using GoToWebinar

ITU-D e-Environment Scoping Study: Rationale

- ITU mandate in e-Environment relates to telecomm/ICT applications (Resolution 35, Kyoto 1994)
- At 2006 World Telecommunication Development Conference, ITU was mandated to:
 - Assist developing countries in the implementation of relevant ICT applications for environment and sustainable development
 - To develop guidelines on the technology and policy aspects of ICT applications, including e-Environment
- ITU is co-facilitator on issues related to WSIS Action Line C7: e-Environment

Study available at: www.itu.int/ITU-D/cyb/app/e-env.html



Implications for developing countries

- All countries can respond to climate change by a process of *adaptation* to its impacts and by reducing GHG emissions (*mitigation*) thereby reducing rate and magnitude of climate change
- The capacity to adapt and mitigate is dependent on socio-economic and environmental circumstances and availability of ICTs
- Many countries have limited capacity to make beneficial use of ICTs for environmental action:
 - Limited access to Internet
 - Limited human capacity to analyze and interpret climate change data
 - Limited capacity to integrate scientific data into decision and policy making
 - Limited capacity to undertake adaptation and mitigation

Towards a climate-neutral ITU

- Developing a knowledge base and repository
 - Conducting systematic review of ITU Recommendations
 - Creating a Focus Group on methodologies for estimating the GHG emissions from ICTs
- Positioning ITU as a strategic leader
 - Developing a Resolution for WTSA-08
- Promoting a global understanding through international fora and agreements
 - High-level segment at Council 2008
- Achieving a climate-neutral ITU within three years
 - Conducting carbon audit
 - Using remote collaboration tools
 - Developing projects under Carbon Development Mechanism



Website: www.itu.int/climate

Tech Watch reports: <http://www.itu.int/ITU-T/techwatch/reports.html>

e-Environment scoping study: <http://www.itu.int/ITU-D/cyb/app/e-env.html>

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Thank you