



World Class Standards

# ETSI Green Agenda

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# Introduction

- ❑ **ETSI Green Agenda** is one of the ETSI strategic topics for 2008.
- ❑ Global warming, climate change, green agenda, sustainable development, etc. are becoming more and more important and therefore it is relevant that ETSI address these issues.
- ❑ Since 1970, the production of greenhouse gases has risen by more than 70 per cent, and this is having a global effect in warming the planet, causing changing weather patterns, rising sea-levels, desertification, shrinking ice cover and other worrying long-term effects.
- ❑ Climate change is a concern for all of humanity and requires efforts on the part of all sectors of society, including the Information and Communication Technologies (ICTs) sector.
- ❑ *“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”*

## ICT and global CO<sub>2</sub> emissions

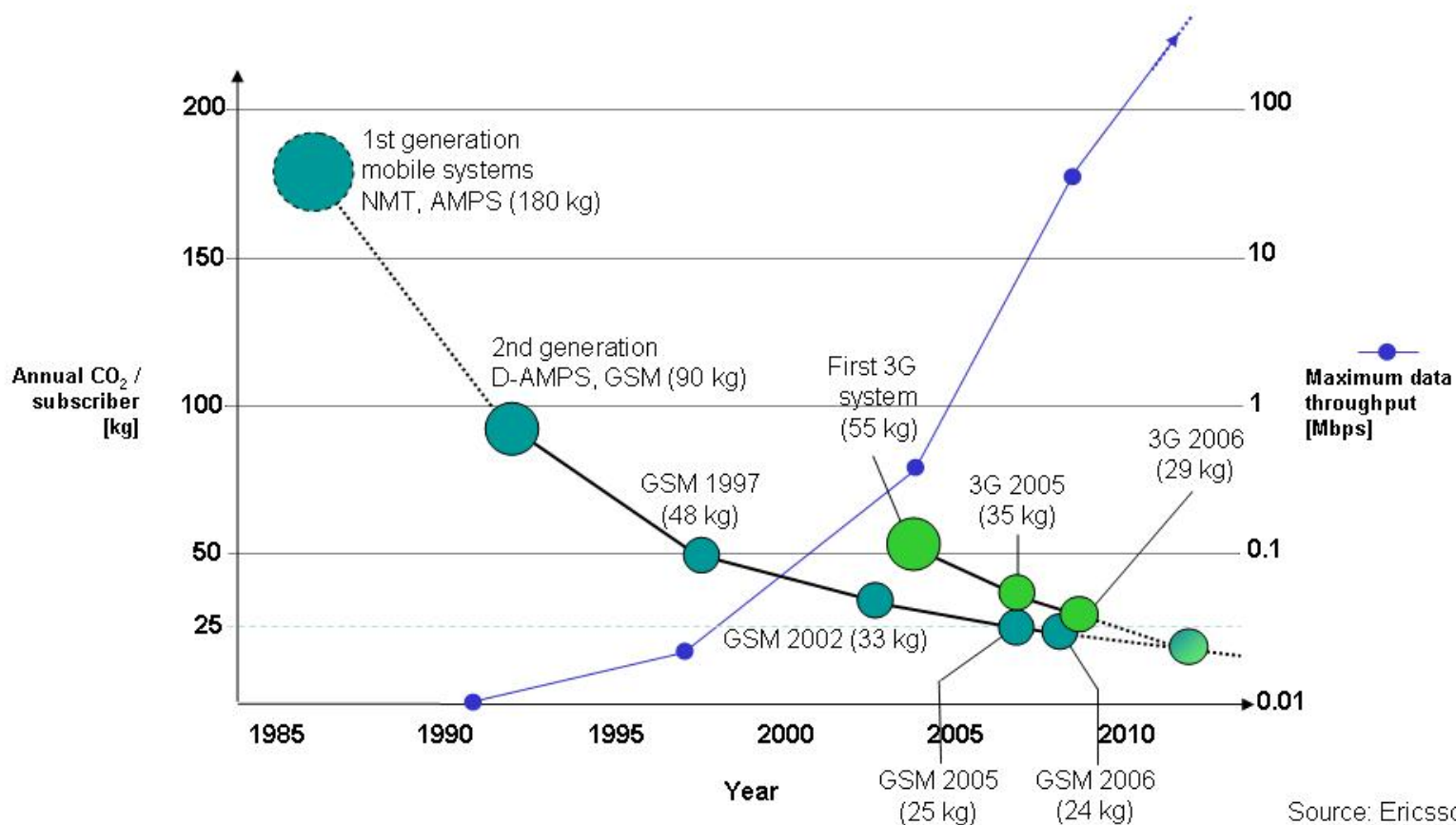
Year 2007	Share of global CO <sub>2</sub> emissions
Mobile telecom (3,3 billion subscriptions)	~0,2 %
Fixed telecom	~0,3 %
Other ICT (PCs, data centers, etc.)	~1,5 %
<b>TOTAL ICT</b>	<b>~2,0 %</b>

- ❑ **ICT contributes as much as 7 % of global Gross Domestic Product.**

## Introduction Lifecycle assessment (LCA)

- ❑ Lifecycle assessment (LCA) can be used to analyze the total potential environmental impacts associated with a product or service. LCA can provide a holistic overview of the relative significance of the different phases of a life cycle, and can be used as a tool to provide guidance on improvements.
- ❑ In the following an example of LCA calculation for mobile networks is provided.

## Introduction Co2 per mobile subscriber



## ETSI Green Agenda

- **The Green Agenda can be divided into the following parts with respect to ETSI:**
  - **ETSI secretariat**
  - **ETSI standardization process**
  - **ETSI standardization activities**



### ETSI Green Agenda ETSI Secretariat

#### □ ISO 14001 - The Environmental Management Standards

##### ➤ ISO 14001:2004

- Specifies the requirements for such an environmental management system.

##### ➤ ISO 14004:2004

- Provides guidelines on the elements of an environmental management system and its implementation, and discusses principal issues involved.

#### □ ETSI will implement the ISO 14001:2004 and 14004:2004 standards.

- [http://www.iso.org/iso/iso\\_catalogue/management\\_standards/iso\\_9000\\_iso\\_14000/iso\\_14000\\_essentials.htm](http://www.iso.org/iso/iso_catalogue/management_standards/iso_9000_iso_14000/iso_14000_essentials.htm)





### ETSI Green Agenda ETSI standardization process

- ❑ ETSI has been pioneering the standardization work by early moving to paperless meetings (i.e. only electronic document handling) in ETSI SMG at the end of 1999 and 3GPP was paperless since its start in December 1998!
- ❑ Electronic way of standardization work via telephone conferences and video telephony conferences/Web conference have a positive effect on the green agenda and should be encouraged.
- ❑ **ETSI Encourages and stimulates electronic way of working in the ETSI standardization process.**

# ETSI Green Agenda ETSI standardization process

- ❑ An improvement to the ETSI standardization process is to introduce a checklist for new standardization work in all ETSI Technical Committees.
  - This checklist will be applied to every work item *before* the work starts, *during* the work and *after* the completion of the work. The use of the checklist will be complemented by involving energy efficiency experts in the process.
  - Examples of check list items
    - Can the ETSI deliverable consider/enable lower power/energy consumption of the technology for instance by enabling multiple power modes?
    - If so, how well does the ETSI deliverable perform the action of reducing energy consumption? For example, is power saving mandatory or optional?
  
- ❑ **ETSI will Implement a check list for ETSI standardization in order to address the Green Agenda aspects in standardization.**

# ETSI Green Agenda ETSI standardization activities

- The ETSI Standardization activities with respect to the Green Agenda can be divided into three categories:
  - i) Specifications for energy definitions, reference models, measurements etc.
  - ii) Specifications that include solutions for reduction of energy consumption.
  - iii) Implementation and use of ICT standardization results can positively contribute to the Green Agenda.

## ETSI Green Agenda ETSI Environmental Engineering (EE)

### □ 'DTR/EE-00002 Work Item' TR 102 530

#### ➤ Title: Environmental Engineering (EE)

- The reduction of energy consumption in telecommunications equipment and related infrastructure.

#### ➤ Scope and Field of Application

- Study and produce a report on the various methods (hardware and software) of controlling/reducing energy consumption in telecommunications network equipment and related infrastructure.

#### ➤ Status

- Draft available 21 December 2007.

## ETSI Green Agenda ETSI Environmental Engineering (EE)

- **'DTR/EE-00004' Work Item; TR 102 532**
  - **Title: Environmental Engineering (EE)**
    - Environmental Engineering (EE) The use of alternative energy sources in telecommunication installations.
  - **Scope and Field of Application**
    - Study the use of alternative energy source in the telecommunication installation/application. (Solar, wind, fuel cell, etc.)
  - **Status**
    - Draft available 30 September 2007.

# ETSI Green Agenda

## ETSI Environmental Engineering (EE)

- **'DTS/EE-00005' Work Item ; TS 102 533**
  - **Title: Environmental Engineering (EE)**
    - Environmental Engineering (EE) Energy consumption in BB Telecom Network Equipment
  - **Scope and Field of Application**
    - To define energy consumption targets and measurement methods for fixed and wireless broadband telecom network equipment. - In first phase, DSL, ISDN and combined NW equipment. - In second phase, Wimax, PLC and Cable Service Provider equipment. Phase 1 proposed target dates are stated in table below. Reference documents: 1. Network Equipment part of: EC, JRC, institute for the Environment and Sustainability, Renewable Energies Unit, "Broadband Equipment Code of Conduct - Draft Nov. 2005 2. ETSI work item WI-DTR/EE-00002 "Reduction of energy consumption in telecommunications equipment and related infrastructure.
  - **Status**
    - Draft available 26 November 2007.

# ETSI Green Agenda ETSI Environmental Engineering (EE)

### □ 'DTS/EE-00006' Work Item

#### ➤ Title: Environmental Engineering (EE)

- Environmental Engineering (EE) Environmental consideration for equipment installed in outdoor location

#### ➤ Scope and Field of Application

- To write a technical report on the applicability of ETSI environmental classes to equipment installed in outdoor cabinet. Also acoustics noise emission will be considered.

#### ➤ Status

- Start of work 28 September 2007.

## ETSI Green Agenda ETSI Environmental Engineering (EE)

- **'DTS/EE-00007'**      new Work Item
  - **Title**  
Environmental Engineering (EE) Energy efficiency of wireless access network equipment
  
  - **Scope and Field of Application**
    - To define wireless access network energy efficiency metrics, define efficiency parameters and measurement methods for wireless access network equipment. In first phase GSM/EDGE, WCDMA/HSPA and WiMAX is addressed.
  
  - **Status**
    - Start of work, 15 May 2008



### ETSI Green Agenda

#### ETSI Access, Terminals, Transmission and Multiplexing (ATTM) TM6

##### □ 'DTR/ATTM-06002' Work Item

###### ➤ Title: Transmission and Multiplexing (TM)

- Power Optimization for xDSL transceivers

###### ➤ Scope and Field of Application

- Possibilities to optimize the power consumption of the xDSL transceiver shall be investigated. These investigations may include power modes that are beyond the currently existing modes. The potential influence of power optimization schemes on the stability and performance of each line of the network due to power optimization, e.g. non-stationary noise, shall be an important part of the WI. This WI will aim at building coherence with other ETSI documents relating to the topic. Therefore, a close collaboration with other WI in TM6 (e.g. ADSL, VDSL, SpM), with other ETSI technical bodies (e.g. ETSI EE) and other standardization bodies (e.g. SG15/Q4) is needed for that WI.

###### ➤ Status

- Start of work 6 February 2007.

# Other ETSI Activities

### ➤ Intelligent Transport System (ITS)

- ITSs make it possible in the future that cars will be able to foresee and avoid collisions, navigate the quickest route to their destination, making use of up-to-the-minute traffic reports, identify the nearest available parking slot and minimize their carbon emissions.

### ➤ eHealth

- eHealth means healthcare practice which is supported by electronic processes and communication and can positively contribute to the climate change by reduced traveling and transportation.

### Best practice

- ❑ *There should be a balance between standardization, regulation and innovative solutions in the area of Green Agenda.*
- ❑ *As a matter of fact not all technical solutions need to be standardized. E.g. ICT equipment can be designed in an innovative way so that active cooling techniques can be avoided. Also components with higher maximum operating temperature can be used in order to minimize the need for active cooling.*
- ❑ *Liaisons with other SDO (ITU-T) or Fora (HGI) is necessary to optimize ICT Power consumption saving.*

### Summary

- ❑ **ETSI is already addressing the Green Agenda in many areas. A number of work items are already ongoing in ETSI. The following improvements are ongoing:**
  - **ETSI will implement the ISO 14001:2004 and 14004:2004 standards.**
  - **ETSI Encourages and stimulates electronic way of working in the ETSI standardization process.**
  - **ETSI will Implement a check list for ETSI standardization in order to address the Green Agenda aspects in standardization.**

## Magic Formula to convince End Customer

**115 watts (Sleep mode, standby,..)  
x 24 hours x 365 days  
= 1000 Kwatt-hour (1 Mwatt-hour)  
x €0.10 = €100**