



**GeSI**

GLOBAL e-SUSTAINABILITY  
INITIATIVE

# Global answers to Global Challenges

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<http://www.gesi.org/>

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# What is GeSI?

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- GeSI is a Global International Non for Profit Association to address sustainability (triple bottom line - social, environmental and economical)
- industry led and open to full ICT industry
- manufacturers, operators and regional associations
- partnered with United Nations Environmental Programme (UNEP) and International Telecommunications Union (ITU), World Business Council for Sustainable Development (WBCSD), the World resource Institute (WRI) and the Electronic Industry Citizenship Coalition (EICC)
- Carbon Disclosure Project (Global Initiative of Institutional Investors representing more than 57 trillion USD of Asset under management) and WWF

# GeSI Members



CARBON DISCLOSURE PROJECT



# GeSI Members

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## Expected to join soon:

- SKT (South Korea Telecom)
- TeliaSonera
- HTC (Taiwan)
- GSMA
- IBM
- Belgacom
- Telenor

# GeSI partnerships

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## UN Organisations



## Business Initiatives for Sustainable development



**WBCSD**



## Electronic Industry Citizenship Coalition



**Expected partnerships: EICTA and GSMA**

# GeSI Activities and benefits

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## Activities

- Climate Change
  - Study on ICT and Energy efficiency
- Supply Chain
  - E-TASC
  - Extractives
- E-Waste
- Regional ICT Sustainability Forum
- Materiality
- Stakeholder Engagement
- Communications WG

## Benefits

- Risk management
- Best practice
- Visibility
- Early warning system
- Stakeholder engagement
- Global influence
- Leadership

# GeSI Study on ICT and Energy efficiency



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# A GLOBAL STUDY ON THE CARBON IMPACTS AND OPPORTUNITIES OF ICTs

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## CONTEXT

The Global e-Sustainability Initiative (GeSI), and The Climate Group have undertaken a study on the role of the ICT sector and Climate Change to support the publication of a **major report** designed to examine how the application of ICT can, not only deliver energy savings and carbon reduction, but do so in a way that drives even greater economic growth and productivity

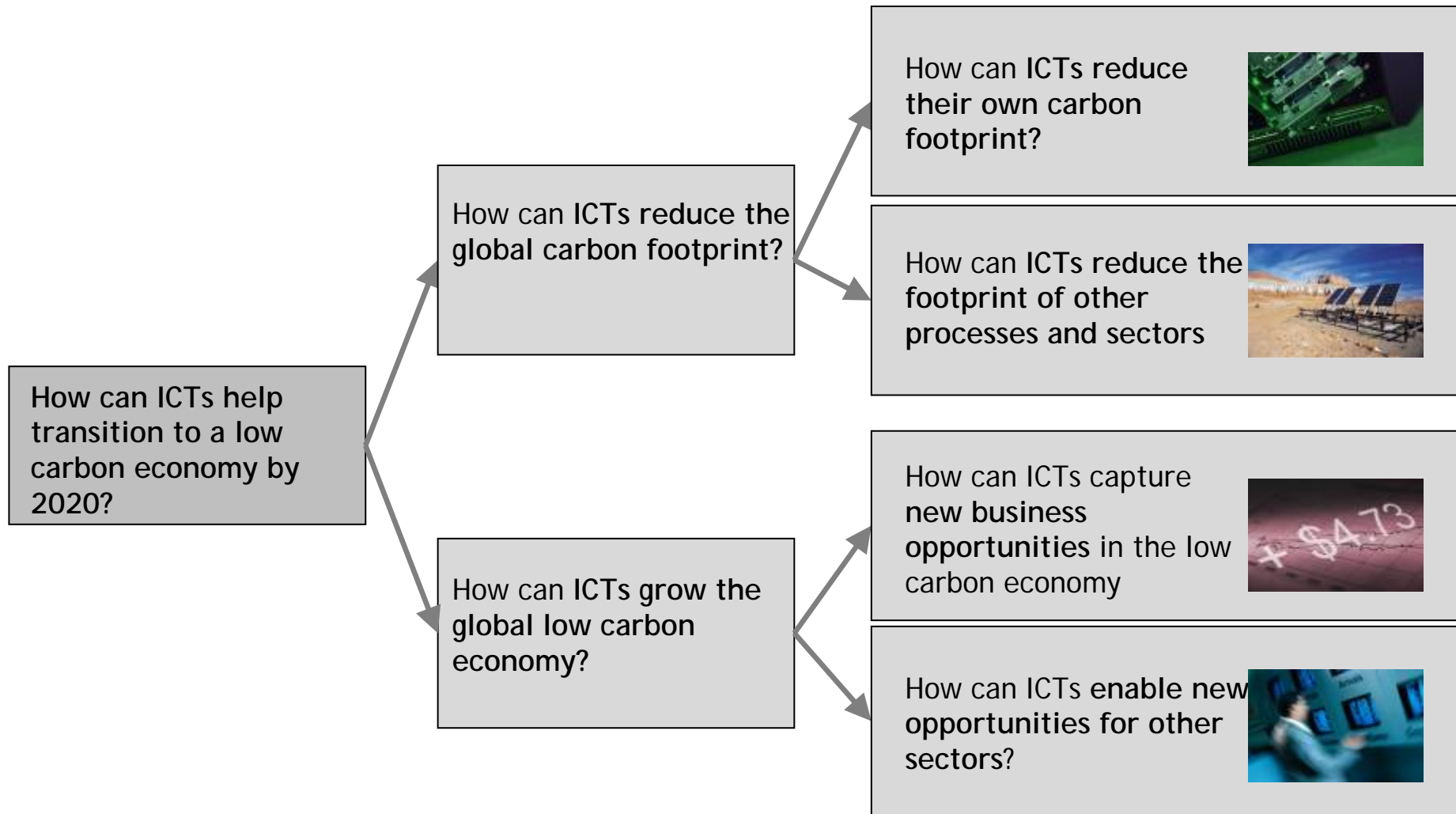


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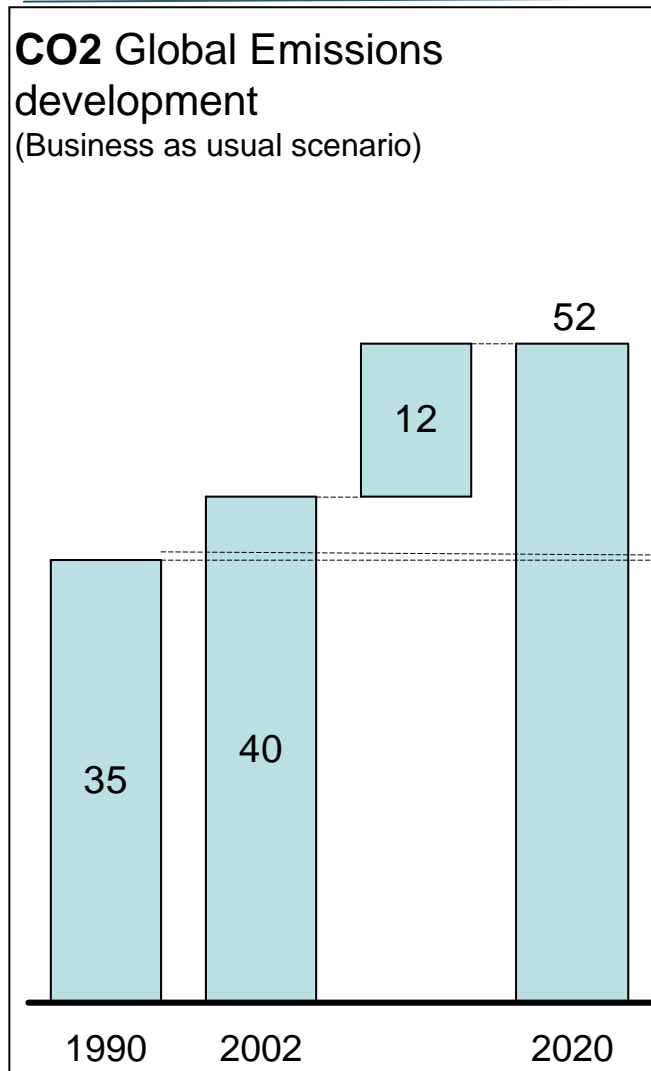
This Study presents the first comprehensive estimates and projections of the ICT sector footprint out to 2020

# Key questions addressed

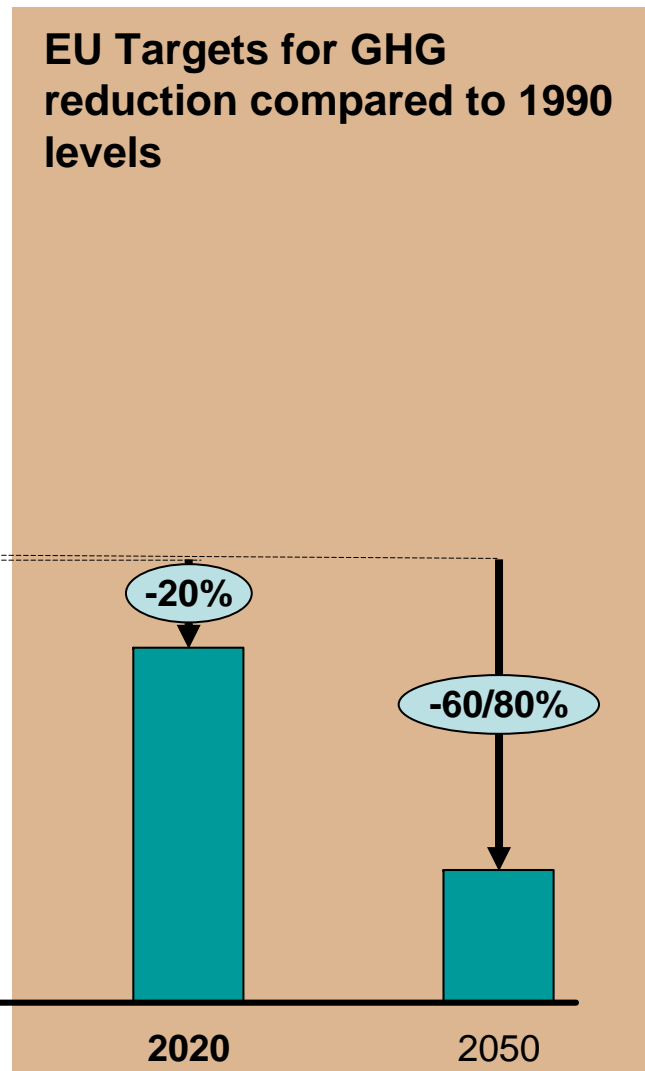


# The Global Challenge

GtCO<sub>2</sub>e, Greenhouse gases (GHG) anthropogenic emissions



### EU Targets for GHG reduction compared to 1990 levels



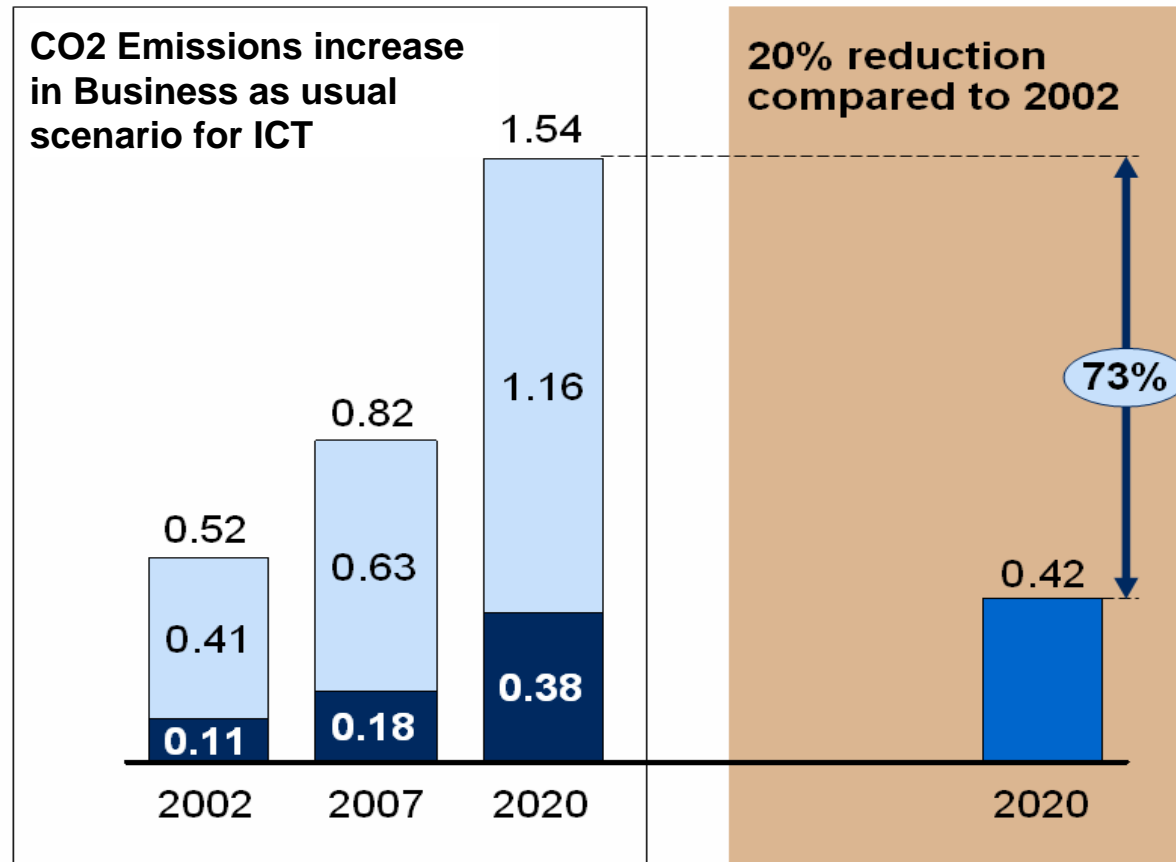
### Key takeaways

- Under business as usual conditions, emissions will increase 1.5% per annum driven by global GDP and population growth
- The European Union has recently announced a 20% reduction target compared to 1990 levels for 2020
- A reduction of 60 to 80% compared to 1990 levels by 2050 “may be necessary to maintain the temperature increase under 2°C”

# The Challenge For The ICT Sector

Radically Innovate to meet Global Targets

GtCO<sub>2</sub>e, Greenhouse gas (GHG) emissions from ICT






## Key take-aways

- A 20% reduction by 2020 compared to the beginning of the century is an ~73% reduction against baseline
- **To meet this target, the ICT sector would have to rely on the decarbonization of the power it uses, implement radical efficiency measures, and significantly reduce embedded carbon**
- In the case of ICT the footprint is spread across the supply chain and users of ICT, making tracking and implementation a challenge



# The Business Opportunity

ICT can impact global emissions through dematerialization or by acting as a platform to increase energy efficiency and reduce carbon intensity of existing processes

	ICT role	Scope	Total abatement potential (Gt CO <sub>2</sub> e) identified by 2020
 <p>How can ICT help reduce global emissions</p>	 <p><b>Dematerialization</b></p>	<p>Substitute or virtualise physical processes through the application of ICT</p> <ul style="list-style-type: none"> <li>Processes that can be physically eliminated or for which value can be separated from physical medium</li> <li>Dependent on behavioral change and demand for new ways of using products and services</li> </ul>	0.5
	 <p><b>Efficiency</b></p>	<p>Act as a platform to <b>monitor</b> processes, <b>optimize</b> use of devices, and <b>manage</b> complex systems to reduce energy consumption and increase carbon efficiency</p> <ul style="list-style-type: none"> <li>All energy consuming processes, in particular those that rely on distributed use of energy and emissions</li> <li>Dependent on financial impacts and return on investment</li> </ul>	7.3

# The Business Opportunity

Efficiency represents a large market opportunity, attracting significant private capital investment

Area	Opportunity	Drivers of efficiency value	Size of market EUR billions
<b>Smart logistics</b>	Reduction of waste and optimization across entire logistics process	<ul style="list-style-type: none"> <li>• 16% reduction of worldwide fuel used for road transportation</li> <li>• Average cost of fuel plus price of carbon*</li> </ul>	<b>280</b>
<b>Smart buildings</b>	Reduction of waste of energy across commercial, industrial and residential buildings for HVAC and lighting	<ul style="list-style-type: none"> <li>• 15% saving on worldwide electricity consumption for HVAC and lighting</li> <li>• 15% reduction in consumption of primary energy sources</li> </ul>	<b>196</b>
<b>Smart grid</b>	Reduction of transmission and distribution losses in power grids	<ul style="list-style-type: none"> <li>• 50% recovery of worldwide power transmission and distribution losses plus price of carbon*</li> <li>• Average world electricity price plus price of carbon applied to carbon intensity of power*</li> </ul>	<b>79</b>
<b>Industrial automation</b>	Reduction of waste in manufacturing systems, from motors to complex systems	<ul style="list-style-type: none"> <li>• 8% reduction of total electricity used in industry</li> <li>• Average world electricity price plus price of carbon applied to carbon intensity of power*</li> </ul>	<b>68</b>



\* Assumes a price of carbon of EUR 20/tCO<sub>2</sub>e  
Source: Expert interviews, Jan-Feb 2008; Team analysis

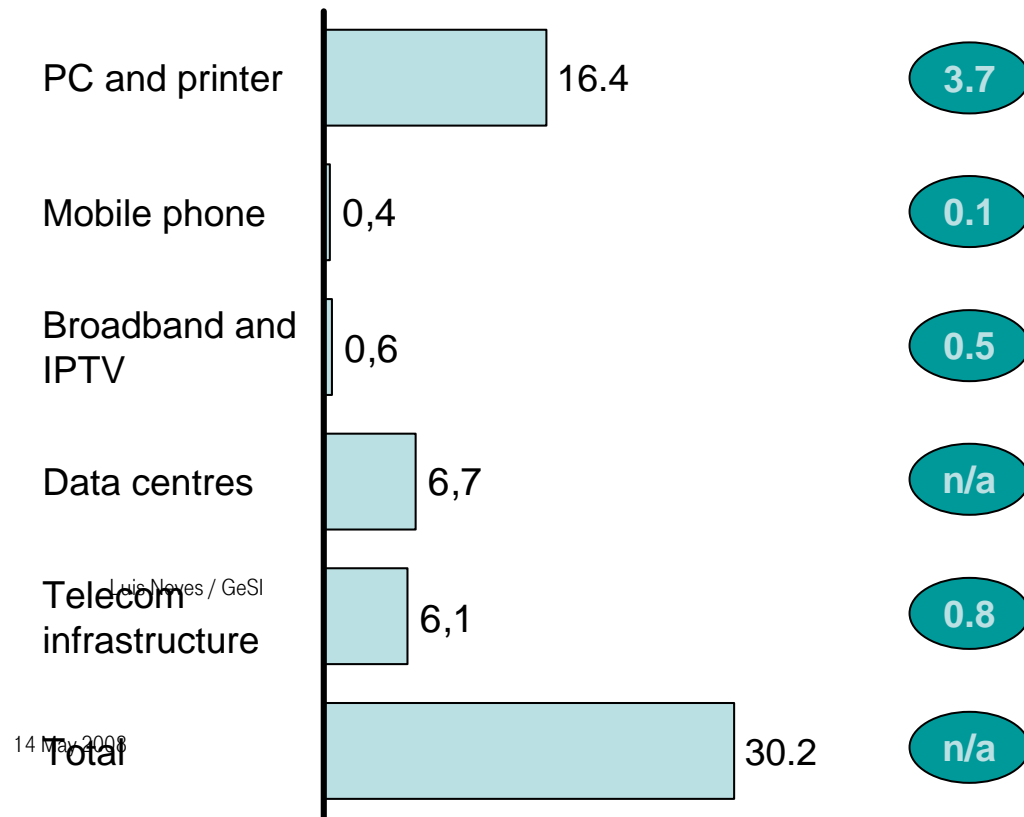
# AT A CARBON PRICE OF EUR 20/TON, THE TOTAL ICT CARBON BILL WOULD REACH EUR 30 BILLIONS UNDER BUSINESS AS USUAL

## Assumptions (2020)

- Cost of carbon for worldwide emissions of EUR 20/ton
- In 2020
  - 4.9 billion mobile phones replaced every 1.5 year and consuming 2.7 kWh p.a.
  - 4.1bn PCs or equivalent replaced every 3 years and consuming 200 kWh p.a.
  - 1.3bn broadband routers and IPTV devices replaced every 3 - 4 years and consuming ~ 15 kWh p.a.
  - 7bn fixed, broadband and mobile accounts requiring 38 kWh p.a. for Telco infrastructure
  - Data centres consuming 610 TWh

## ICT industry carbon bill EUR billions, 2020, worldwide

## Cost per user or per account EUR p.a.

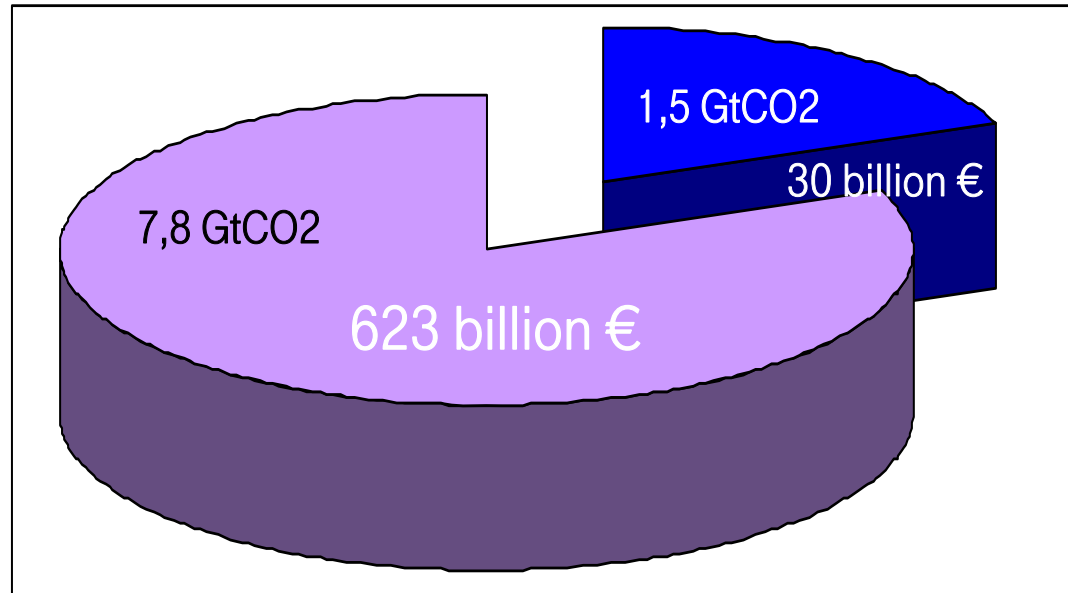


# The size of the “opportunity”

## ENABLING OPPORTUNITY:

The ICT can facilitate carbon reductions across sectors world-wide up to the order of 15% of total emissions by 2020, or 7.8GtCO<sub>2</sub> emissions through the development and deployment of products and services.

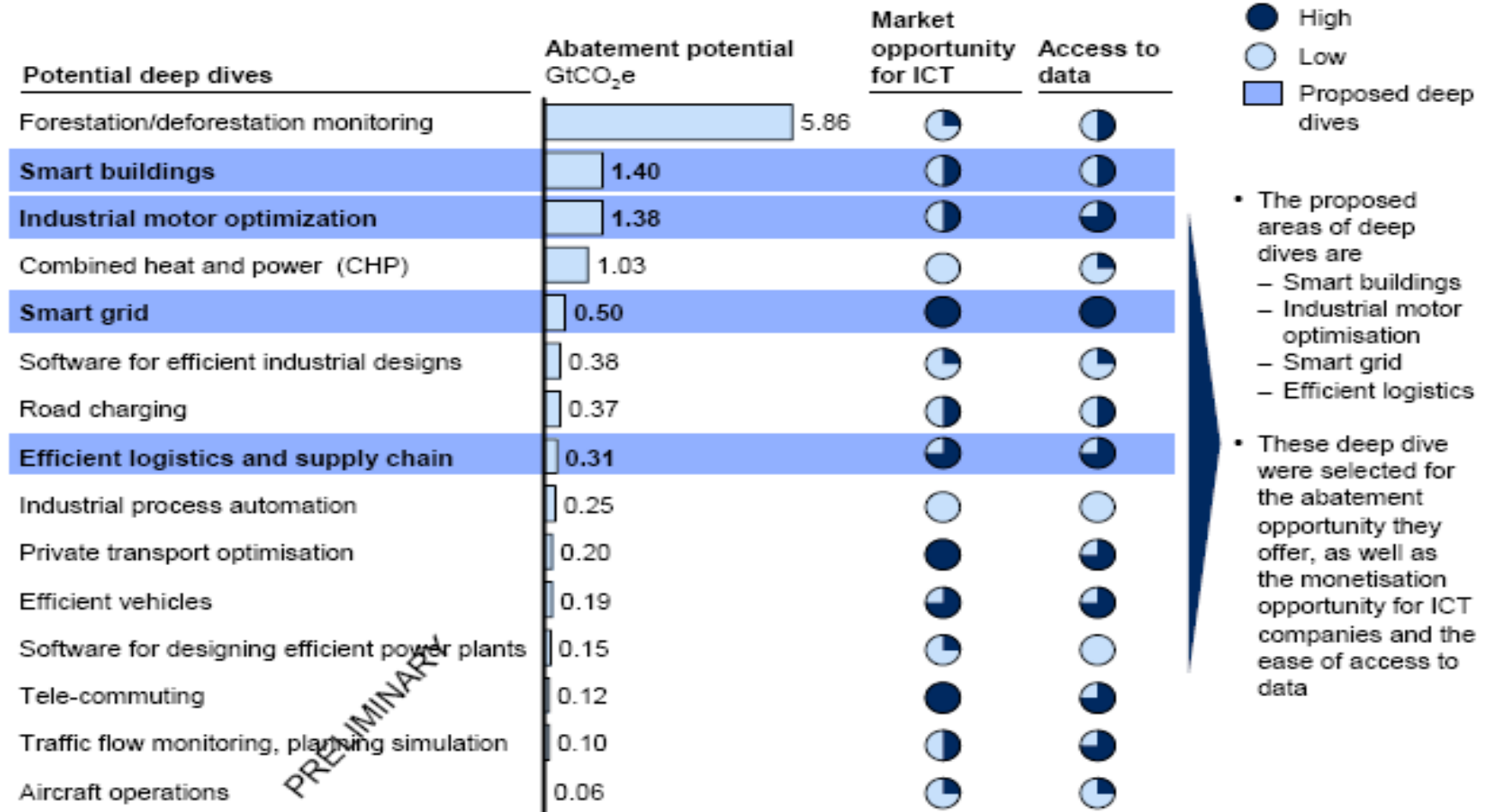
This is an opportunity 5x bigger than the size of the sector’s footprint of its own products and services, including manufacturing, use and end of life impacts



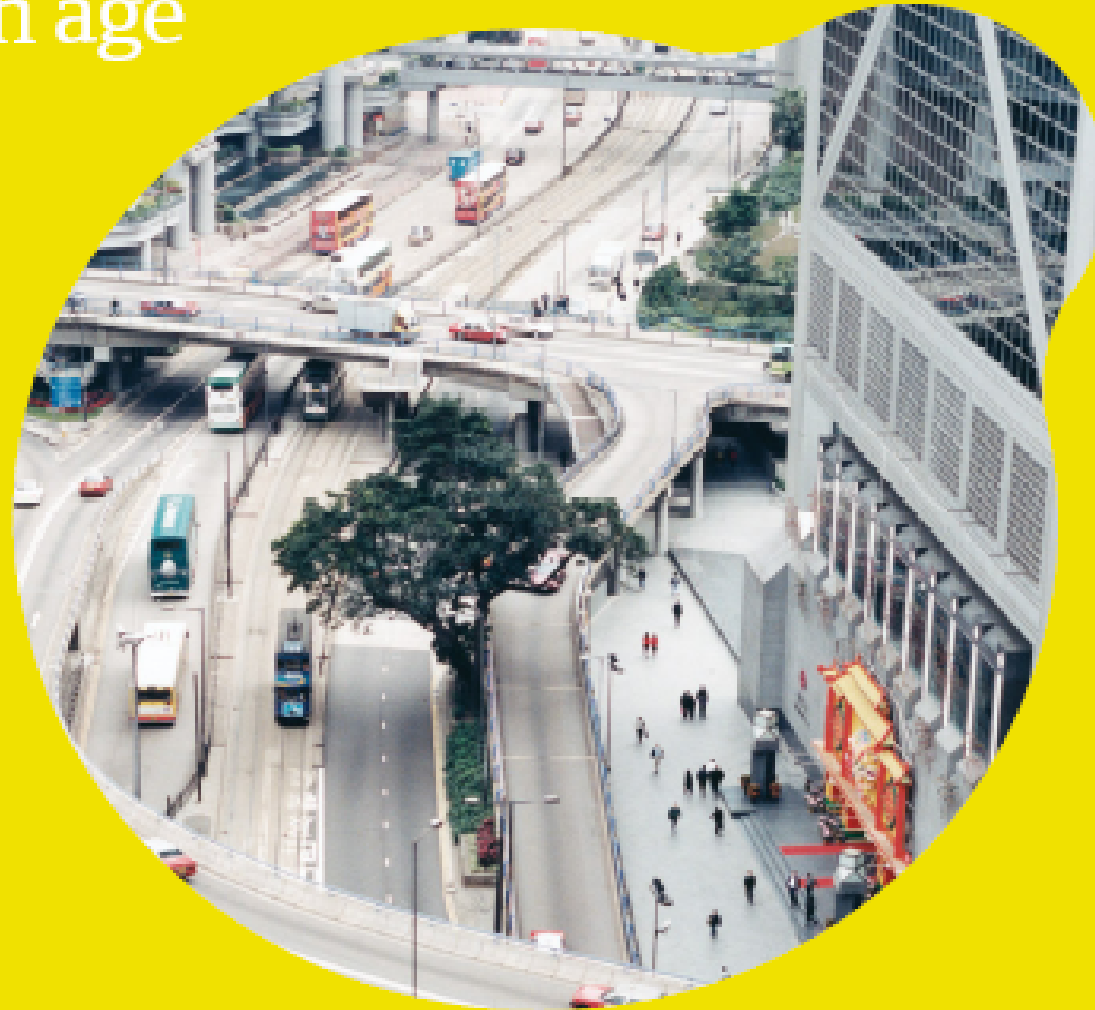
■ ICT FOOTPRINT ■ ENABLING

# Identified potential business

**WE HAVE IDENTIFIED 4 DEEP DIVES THAT OFFER THE BEST MIX OF ABATEMENT OPPORTUNITY, MARKET OPPORTUNITY, AND FEASIBILITY**



# SMART 2020: Enabling the low carbon economy in the information age



# SMART 2020: next steps

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**Standardise:** Develop protocols to enable smart systems to interact

*Direct action:* Ensure energy standards are included in technological standards development

*Enabling action:* Like TCP/IP enables machine messaging, develop ways for devices outside the sector to message about energy consumption

**Monitor:** Make energy and carbon emissions visible

*Direct action:* Monitor energy consumption of ICT products and networks

*Enabling action:* ICT can incorporate monitoring information into the design and control of energy use

**Account:** Link monitoring to accountability

*Direct action:* Make energy use transparent throughout the supply chain by reporting and labelling

*Enabling action:* ICT can provide the software tools and platforms to improve accountability of energy and carbon throughout service and product life cycles

**Rethink:** Optimise for energy efficiency, and find alternatives to high-carbon development

*Direct action:* Optimise its own products and services and continue to deliver radical product innovation

*Enabling action:* ICT can offer new innovations that, if considered during the design phase of buildings, roads and other infrastructure can change our current ways of living

**Transform:** Implement smart low carbon infrastructure at scale

*Direct action:* Make the ICT sector an exemplar of low carbon technologies

*Enabling action:* ICT can apply smart and integrated approaches to energy management of systems and processes, incorporating system-wide benefits from both automation and behaviour change

# Conclusion

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- GeSI has a unique position to address sustainability at a Global level and in Global "fora"
- GeSI membership is unique (service providers and manufacturers tackling together common Global issues)
- GeSI is recognised by the EU and Global Compact as the "The Global Business initiative" for Sustainability

# Contact GeSI

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