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# The future carbon footprint of the ICT and E&M sectors

*(E&M = Entertainment and Media)*

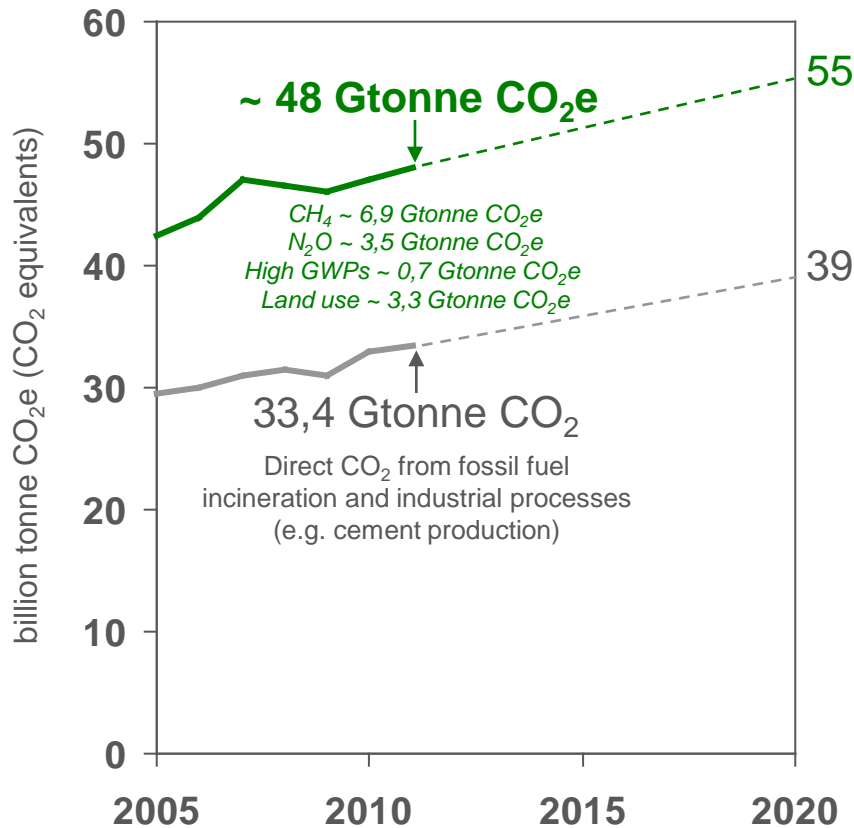
Jens Malmodin and Pernilla Bergmark, Ericsson Research  
Dag Lundén, TeliaSonera

# background



## Overall global carbon footprint

There is a strong political will to reduce fossil fuel incineration. Fossil fuels also contribute to other impacts and is a limited resource.

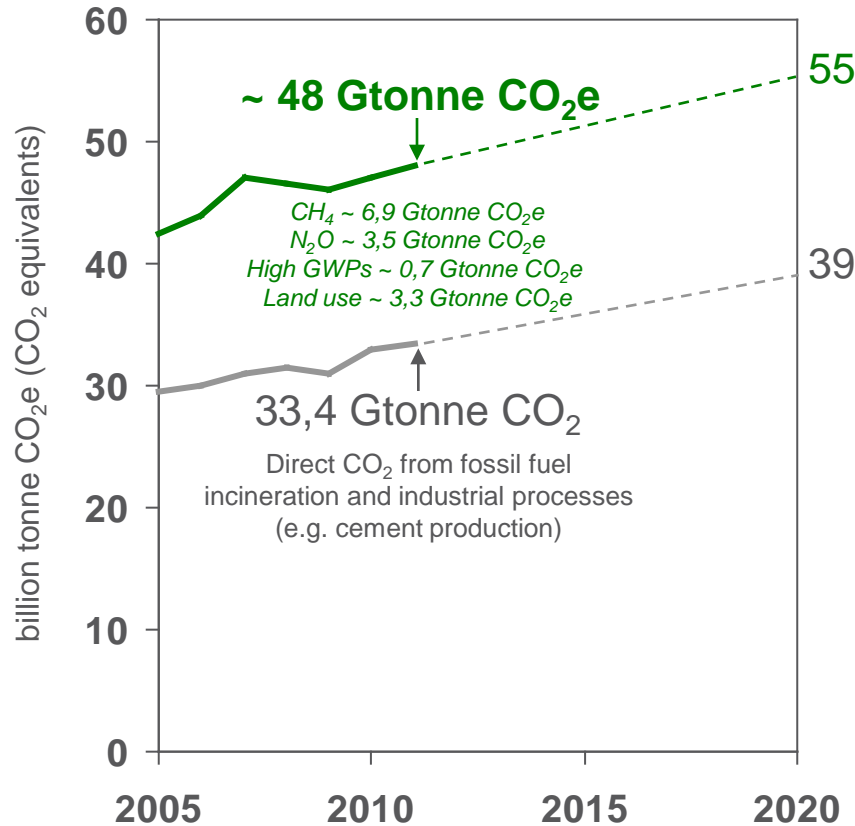


# background



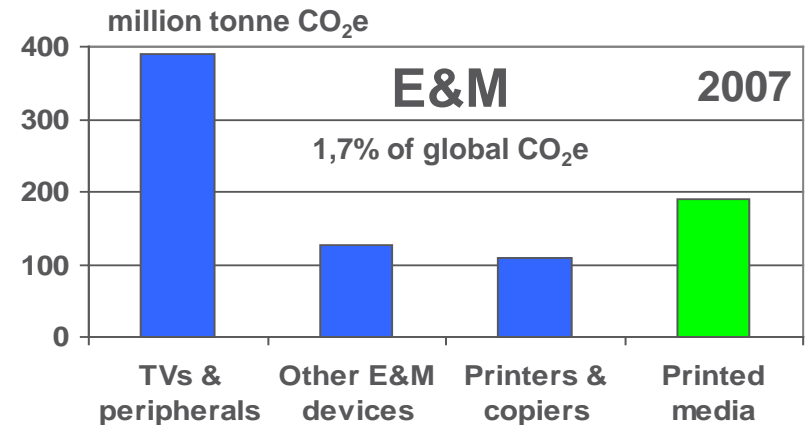
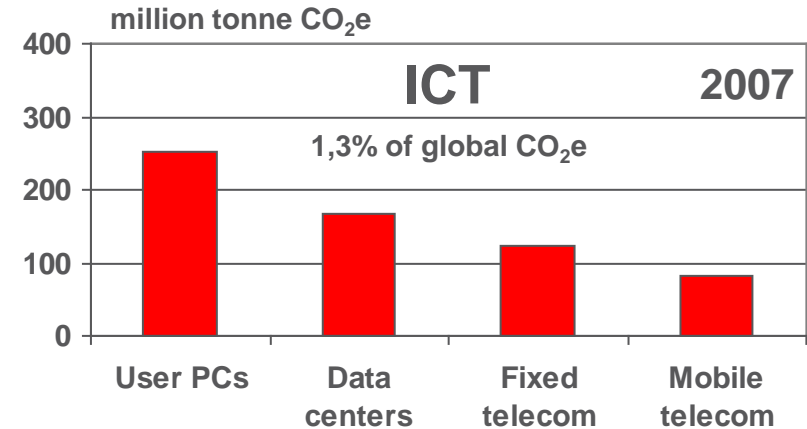
## Overall global carbon footprint

There is a strong political will to reduce fossil fuel incineration. Fossil fuels also contribute to other impacts and is a limited resource.



## The ICT reference study

1) Malmodin, J., Å. Moberg, D. Lundén, G. Finnveden, N. Lövehagen. 2010. Greenhouse gas emissions and operational electricity use in the ICT and entertainment & media sectors. *Journal of Industrial Ecology*. 2010.



# Methodology



## ICT reference study

- › Reuse definition of ICT and E&M
- › Compare to OECD definitions

## Analysts, other org (e.g. IDC, Gartner, ITU)

- › Sales and subscription statistics
- › Prognoses about 5 year ahead
- › Extrapolation of prognoses up to 2020

## LCA data (embodied CO<sub>2</sub>e)

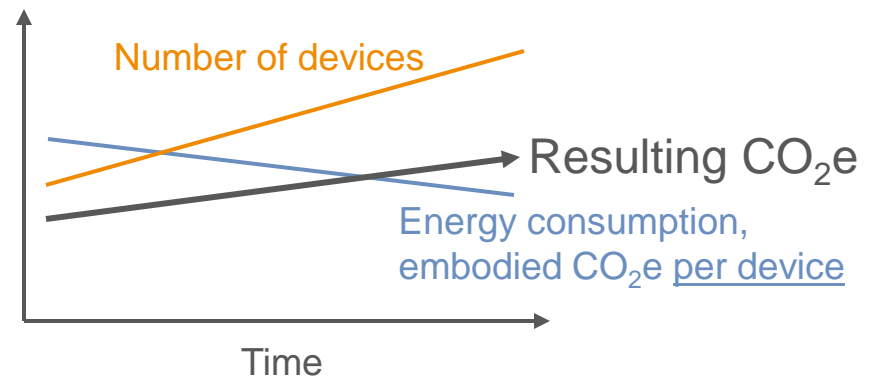
- › TVs, PCs, tablets, Smart phones, mobile phones, CPE (home modems/routers), paper media, *other consumer electronics*
- › *Servers and other network equipment (low embodied:use ratio)*

## Other important sources

- › Global data traffic (Ericsson, Cisco)
- › Data centers (Kooomey, IDC)
- › CDP and CSR data (ICT companies)
- › Operation studies (e.g. GSMA)

## Own data, connected devices scenario

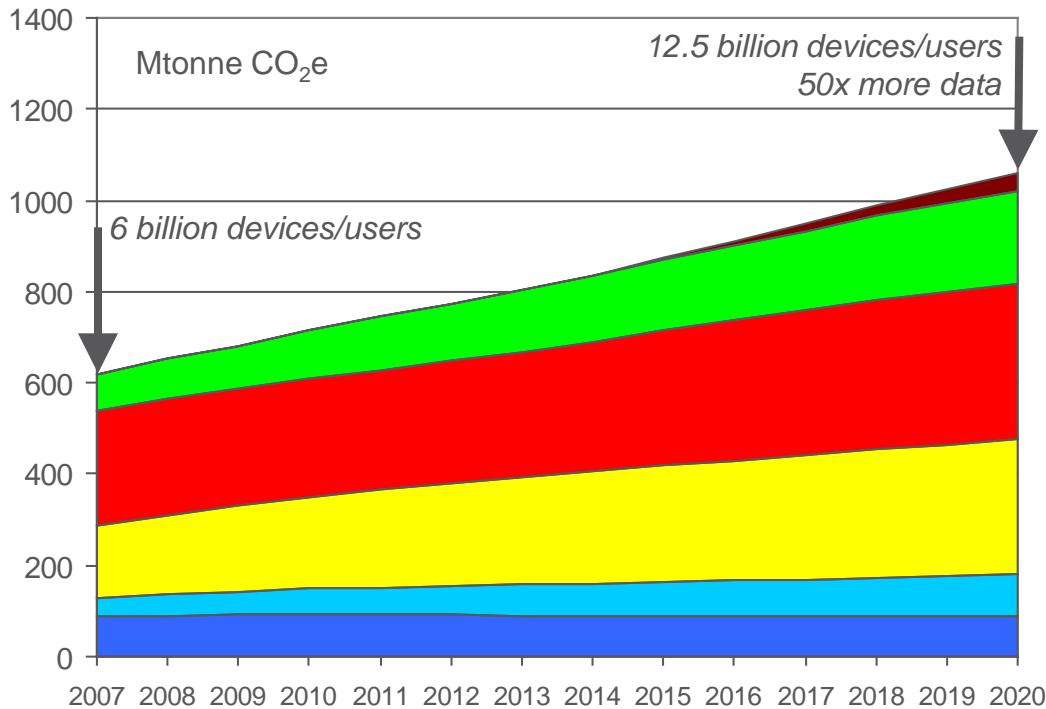
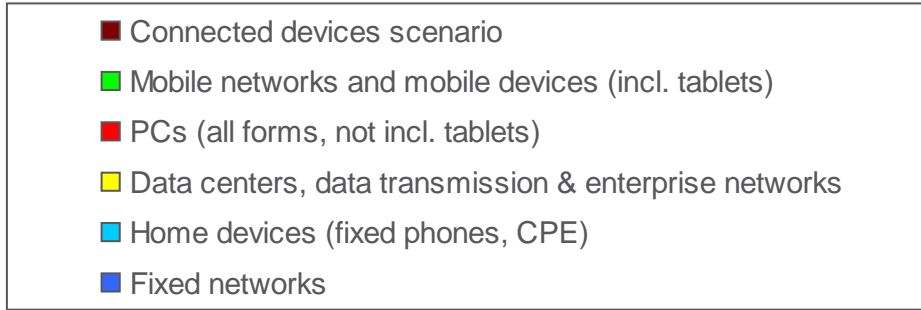
- › Network equipment manufacturing, infrastructure deployment and network operation (own LCA data)
- › Connected devices scenario



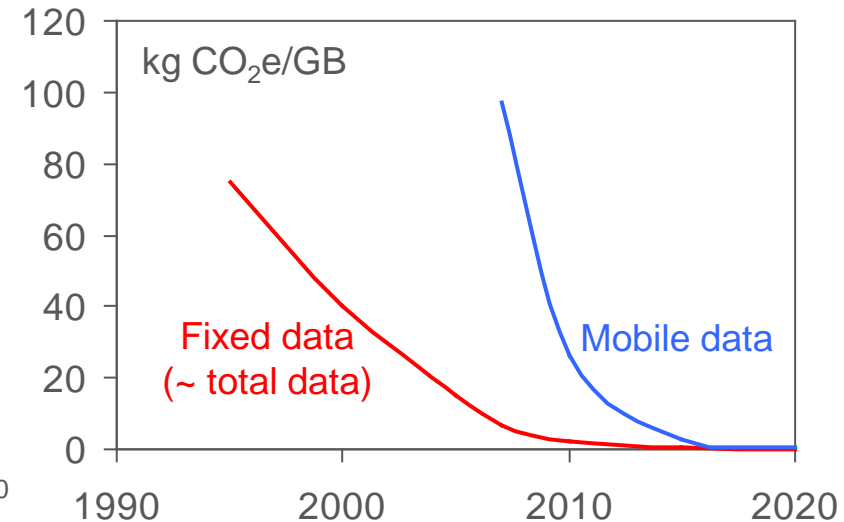
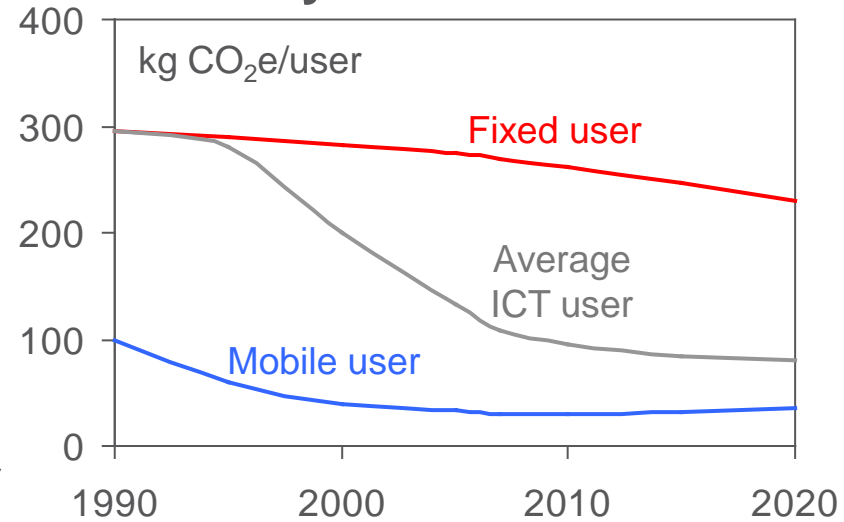
# ICT CO<sub>2</sub>e estimate 2007-2020



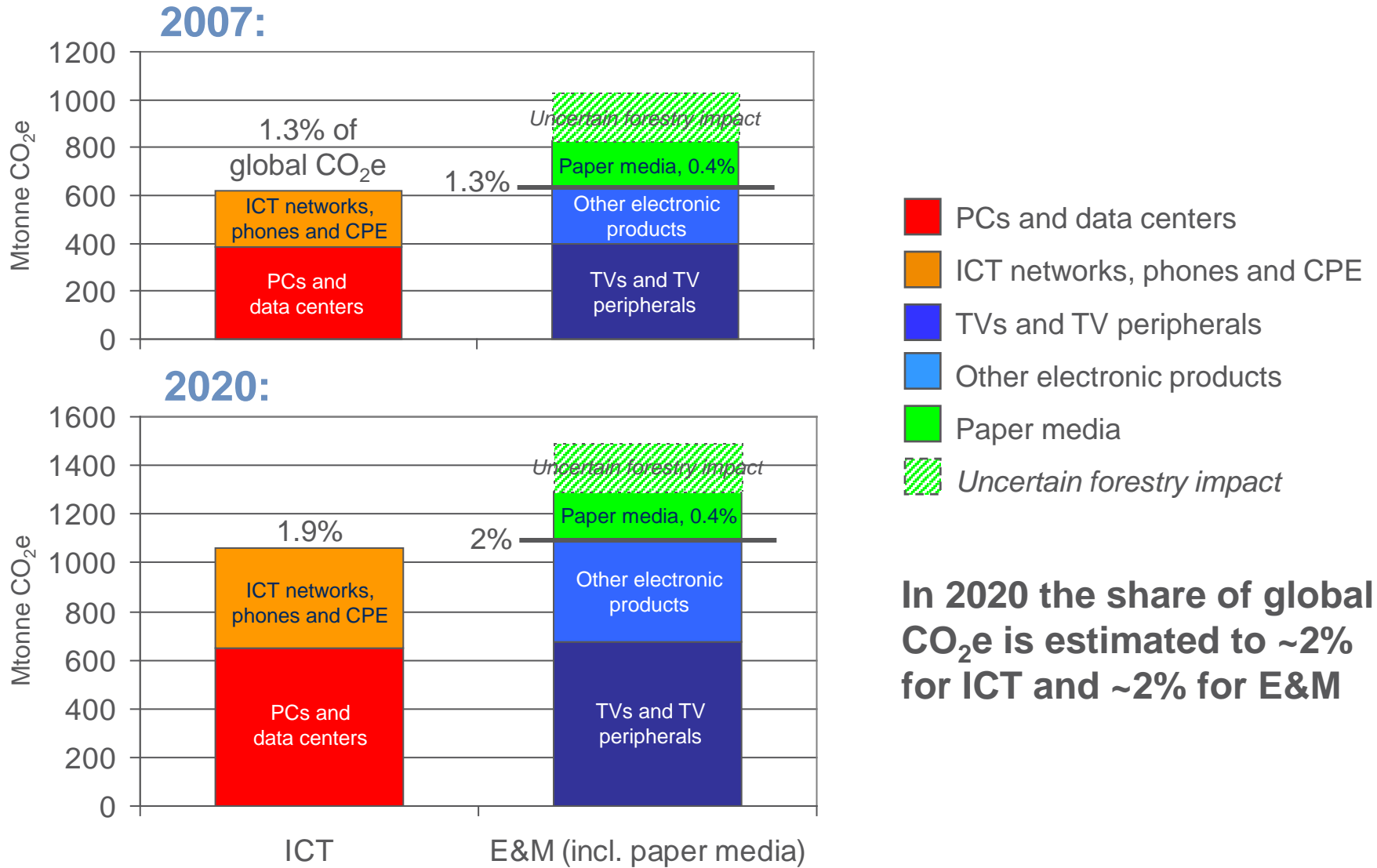
## Absolute carbon footprint:



## Intensity metrics:



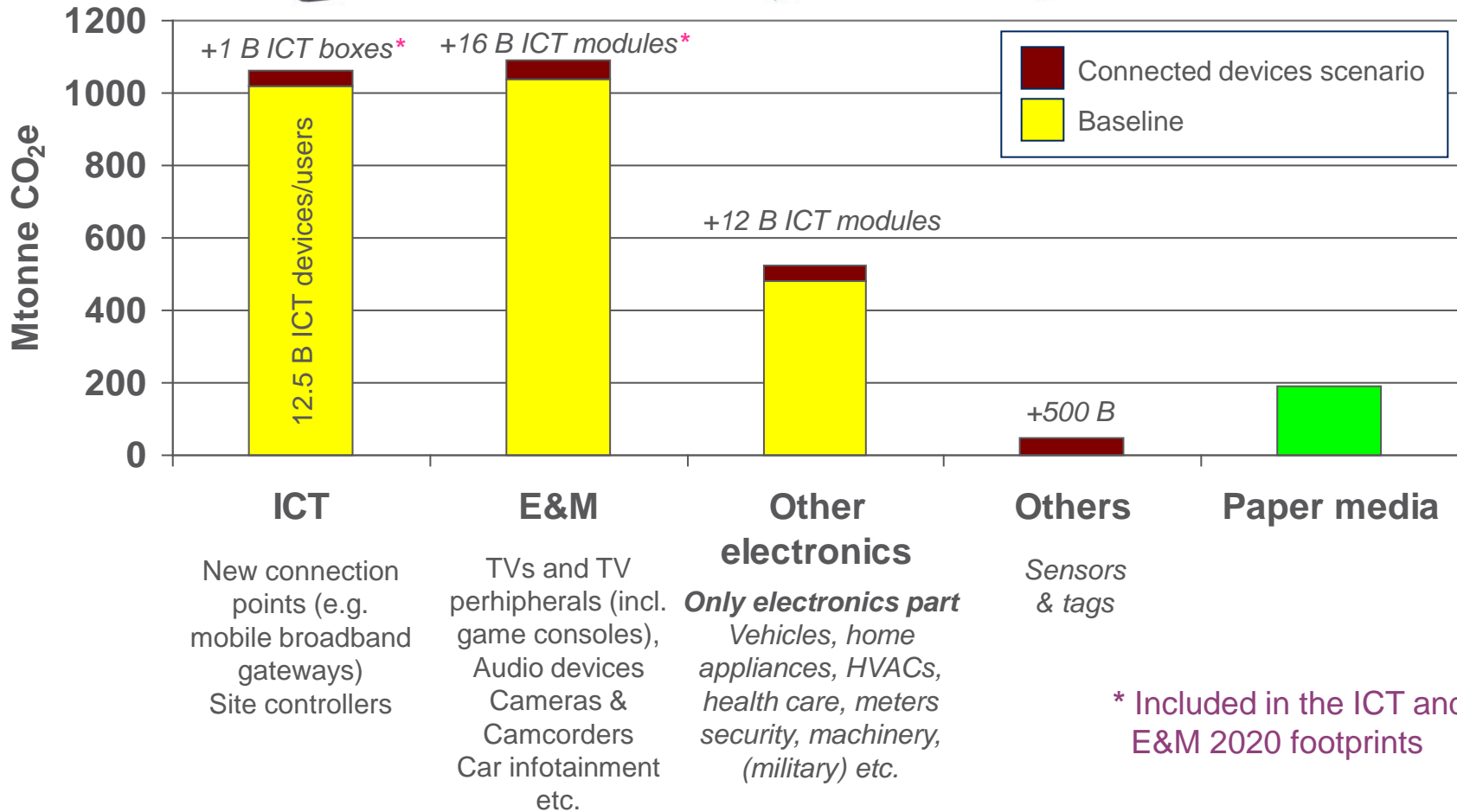
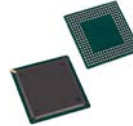
# ICT and E&M footprint 2020



# How Connected devices impacts



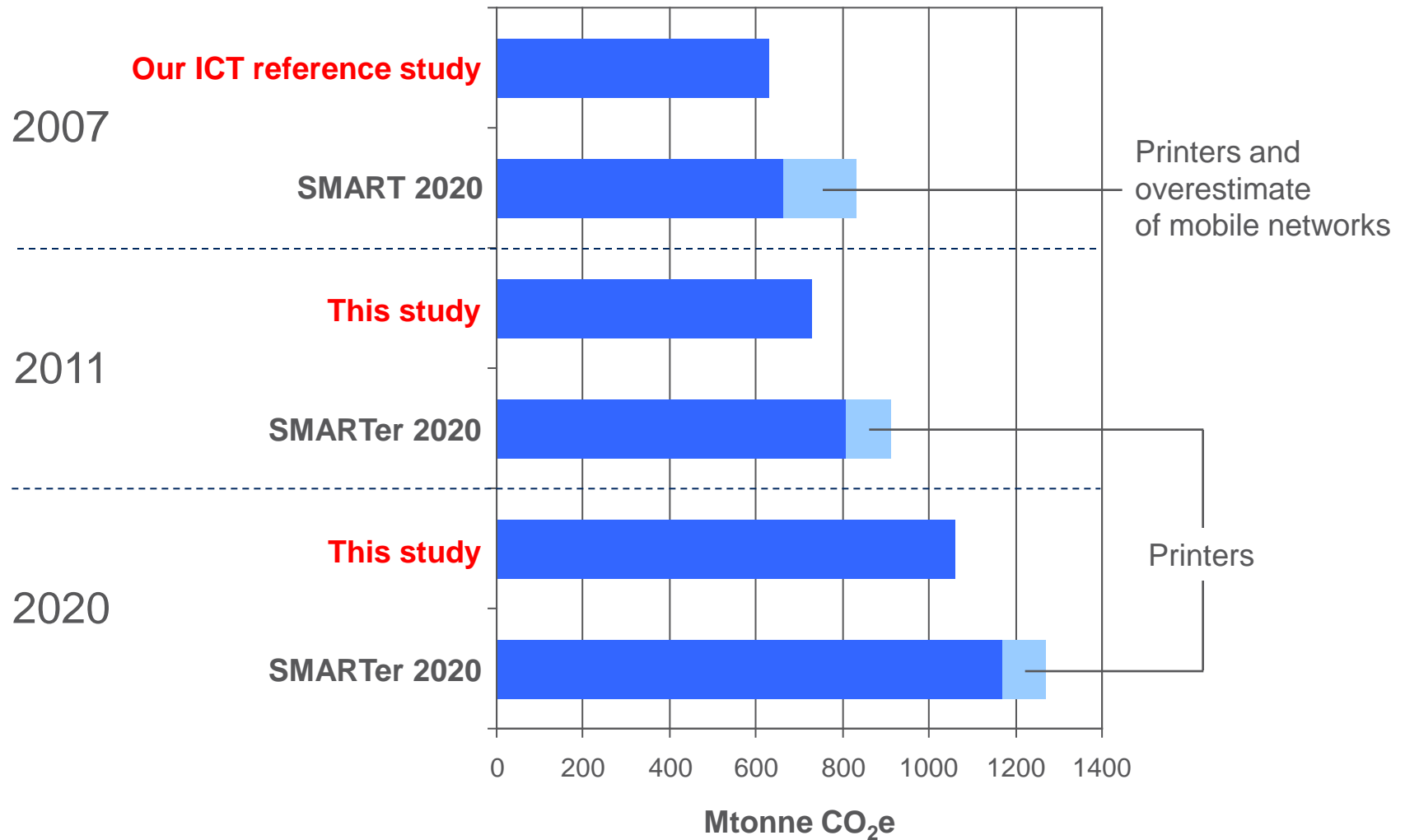
2020:



# Benchmarking to SMARTer 2020



## The carbon footprint of the ICT sector





# Conclusions

- › ICT represents 2 % of global carbon footprint (CO<sub>2</sub>e) in 2020
  - Limited growth in spite of substantial increase in data traffic, number of users and connectivity of devices
- › E&M sector represents another 2%
- › *Discussion areas identified*
  - *Boundary setting, uncertainty and sensitivity, data availability, metrics*
  - *The use of sector assessments and technology potential assessments*





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