

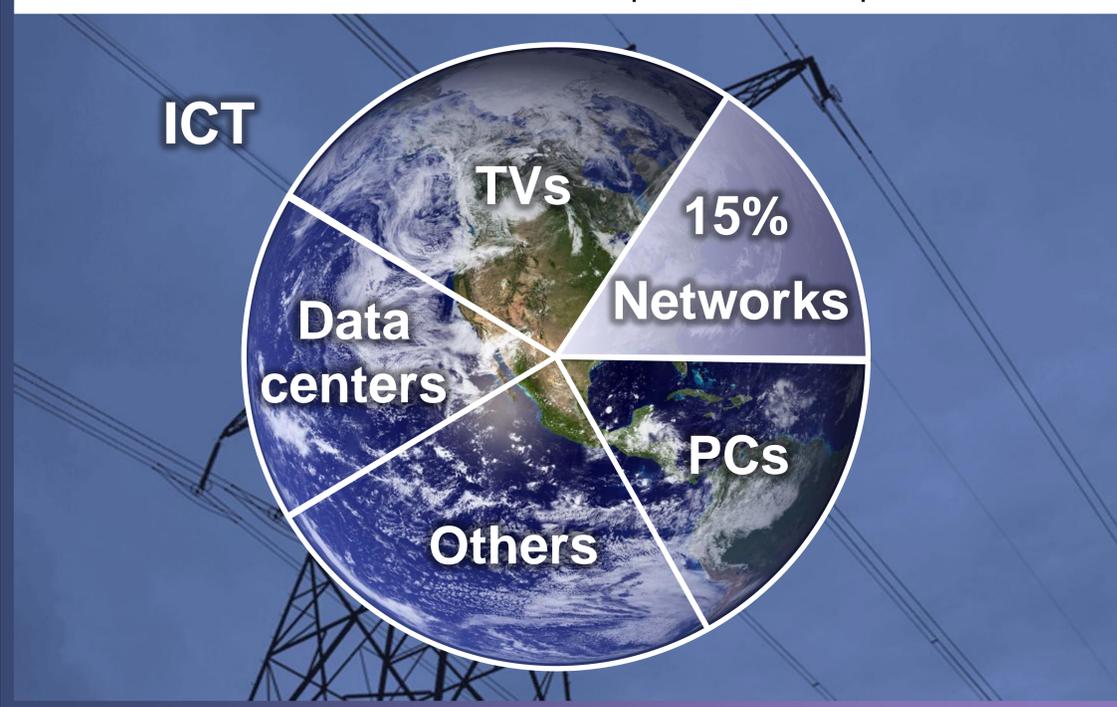
# ICT Network Power Consumption

Ward Van Heddeghem • Willem Vereecken  
Supervisors: Didier Colle • Mario Pickavet  
ward.vanheddeghem@intec.ugent.be

## 1 ICT networks – a lot of power !

### ICT network power consumption is large, and growing

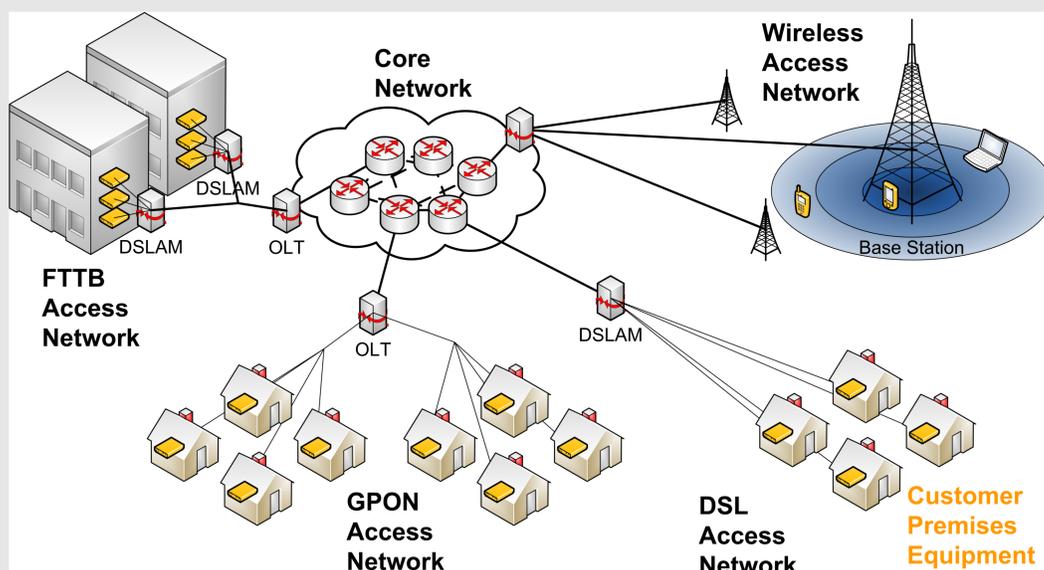
- ICT power consumption is estimated to account for 8% of the global electricity consumption (or about 4% of the primary energy consumption).
- Networks account for 15% of the ICT power consumption.



## 2 Network breakdown

The 'network' can further be split up in:

- the **core** network (like the Internet or the telephone network)
- the **access** network (connecting e.g. your home or phone wirelessly or through a fixed medium to the core network)
- the **customer premises equipment** (like your modem or mobile phone)



## 3 Who consumes what?

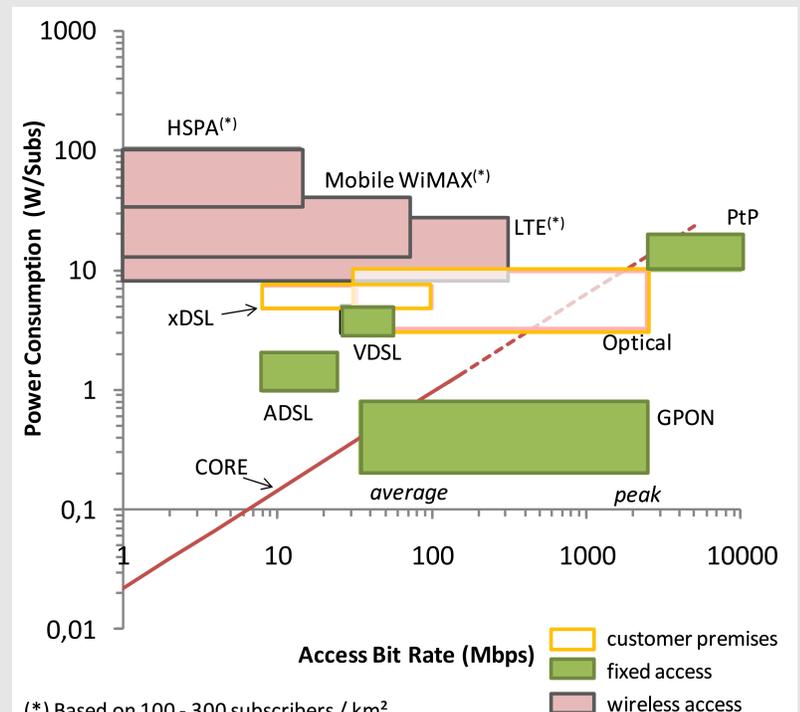
We estimated the power consumption for the different network parts and a number of access technologies using:

- Measurements
- Product data sheets
- Power consumption estimates in scientific papers
- Power consumption targets in EU guideline documents



## 4 Results

The following chart shows the power consumption for the different network parts and various technologies. The power is given per subscriber, and for changing access bitrate.



## 5 Conclusion

Main network power consumption

- for fixed line access  
→ at customer premises (modems)
- for wireless access:  
→ base stations
- core network:  
→ will increase with rising access bit rates

