

# Internet sustainability or Internet for sustainability: what really matters?

Brunilde Sansò  
Professor  
École Polytechnique de Montréal

Can we think of Internet for sustainability ...

with an unsustainable Internet?

Making systems more sustainable through Internet technology means more

- ▶ base stations
- ▶ wireless devices
- ▶ routers, switches, computers
- ▶ datacenters
- ▶ etc..

...a larger, more energy hungry and more ubiquitous Internet.

Therefore we cannot separate the two issues

The question is What is the real meaning of Sustainability ?

- ▶ Energy efficiency ?

or

- ▶ Carbon efficiency ?

- ▶ Can we say that an inefficient Internet system in Québec (100% hydroelectric) would really be more sustainable than an efficient one in Michigan ?
  - ▶ Some people working in Green Networking claim that only carbon efficiency should be accounted for.
  - ▶ They also claim that energy efficiency in the end increases demand, and, therefore, consumption
- ▶ I disagree ! In clean energy environments reducing consumption implies that more energy will be available for exports.

- ▶ We must try everything :
    - ▶ reduce Internet energy consumption
    - ▶ reduce Internet carbon footprint
    - ▶ Use the Internet to reduce
      - ▶ energy and
      - ▶ carbon footprint
- of other systems.

## Research prospects

- ▶ Systematic Benchmarking
- ▶ Design and performance of on-off systems
- ▶ Protocols for on-off systems
- ▶ Network planning and operation with unreliable energy sources