



Digital technologies in the transition to a sustainable energy system: knowledge-related challenges from everyday life

Ana Horta and Matthias Gross



Fundação para a Ciência e a Tecnologia
MINISTÉRIO DA EDUCAÇÃO E CIÊNCIA
Research grant SFRH/BPD/96878/2013



Digital technologies in the transition to a sustainable energy system at the everyday life level

- energy efficiency
 - renewable sources
 - empowerment of consumers
-
- through smart energy technologies
 - as prosumers
 - by providing them better information about the energy market and thus “enable them to be more in control of their choices”

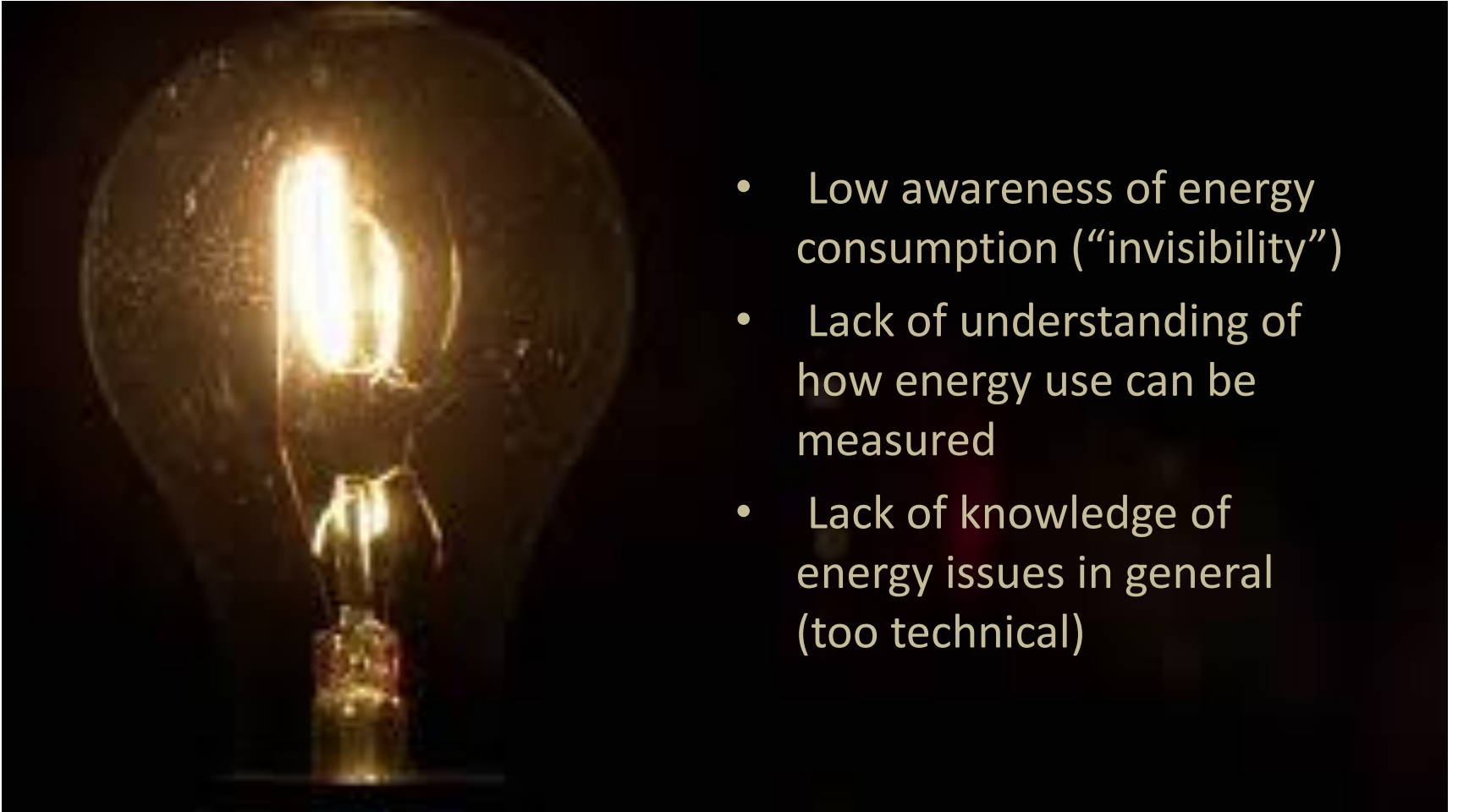
European Commission.
2016. Communication
on ‘Clean Energy for all
Europeans’



Some smart energy technologies



Knowledge-related challenges from everyday life



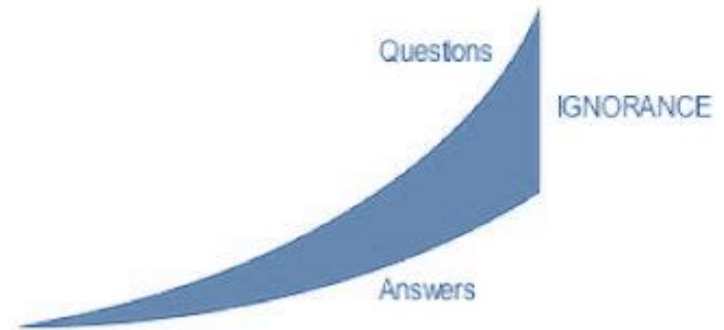
- Low awareness of energy consumption (“invisibility”)
- Lack of understanding of how energy use can be measured
- Lack of knowledge of energy issues in general (too technical)

Energy issues + digital technologies = new unknowns

- Privacy
- Security
- Control
- Health
- Cost
- Complexity
- Information overload
- ???
- ...



Does the unknown always have to be rendered negative?



- Whenever knowledge grows, so too does the perception of ignorance
- Varying shadings of knowledge and ignorance that can be distinguished
- “The real world”: acknowledging ignorance & offering creative strategies to successfully cope with inevitable nonknowledge and surprise

Just one example



- Opinions on smart meters in a survey representative of U.S. population conducted in 2011:
 - Most common reasons for an unfavorable opinion:
 - 57% concerned that the devices would lead to an increase in electricity bills
 - 48% concerned about the electric utility having “Big Brother” capabilities to monitor and control electricity usage



Thank you!