

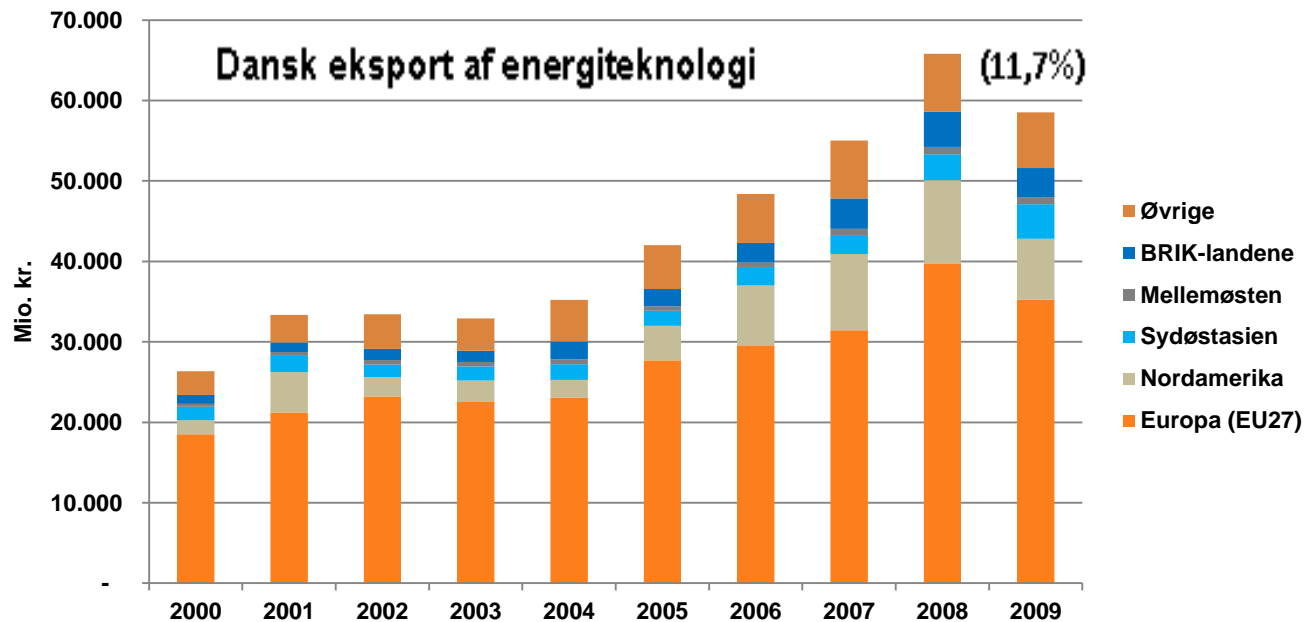
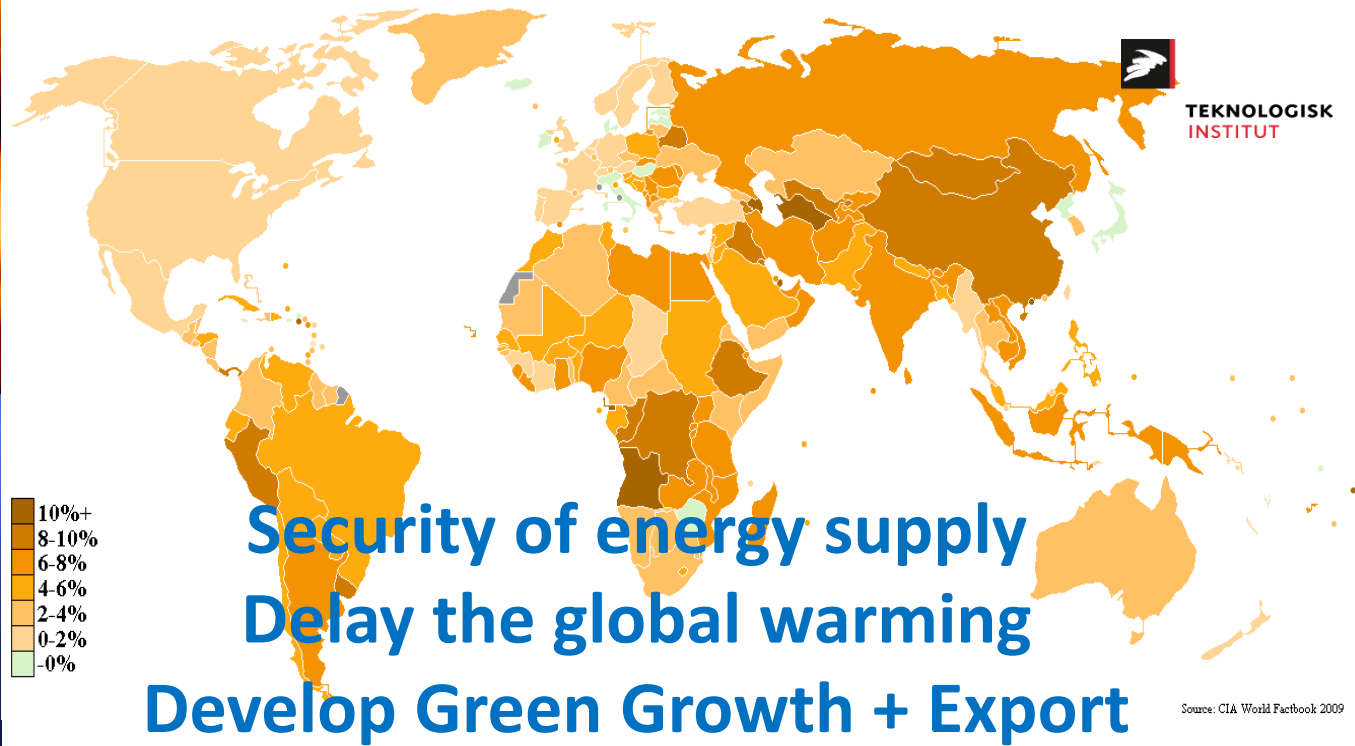


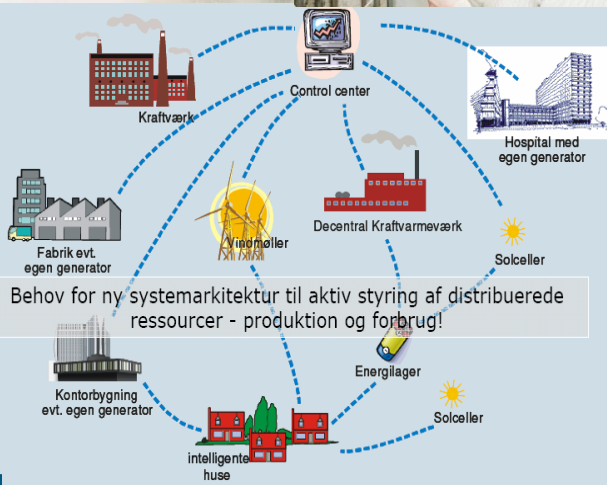
EnergyFlexHouse – innovation and development of energy efficient technology

Mikael Grimmig, head of section
Danish Technological Institute - Energy and Climate

RE 19% in 2010

RE 100% in 2050

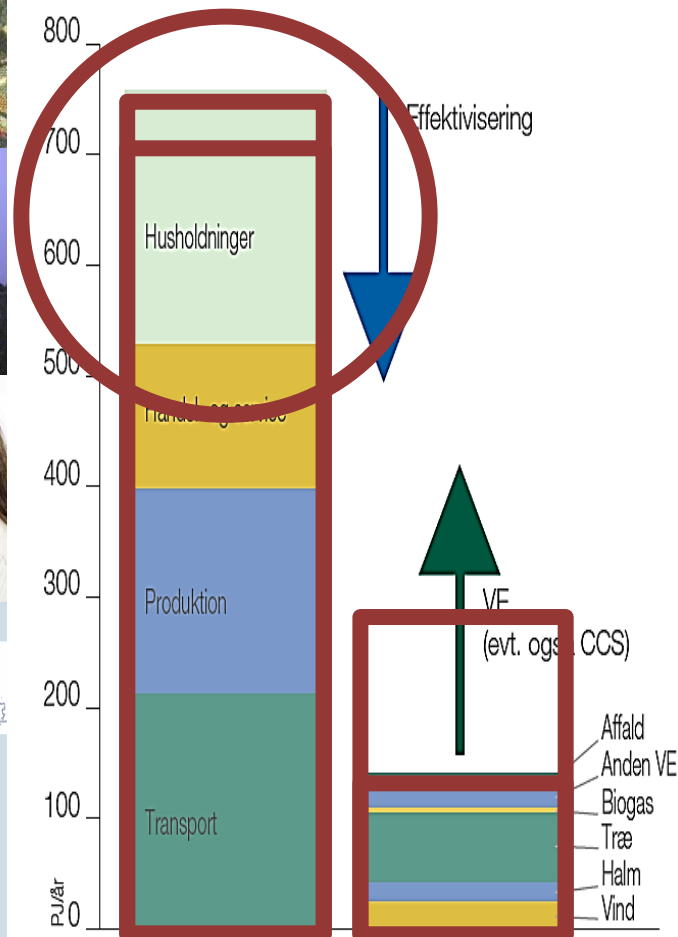




2011-2020

Energy efficiency + Renewable energy

Fossil fuels — 35-40%



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Security of supply ! + Climate challenge

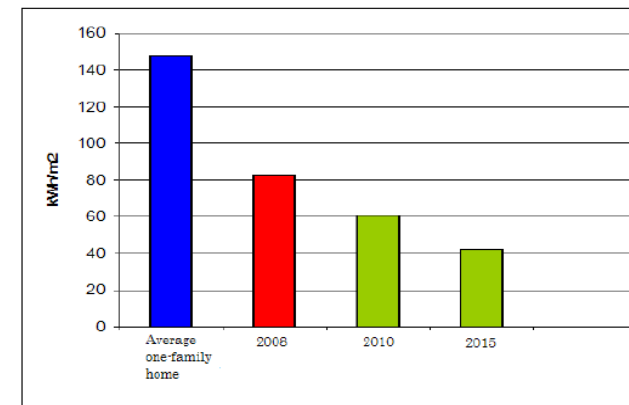
➡ Innovation, growth and export

Accelerated technology development

Accelerated technology outdated

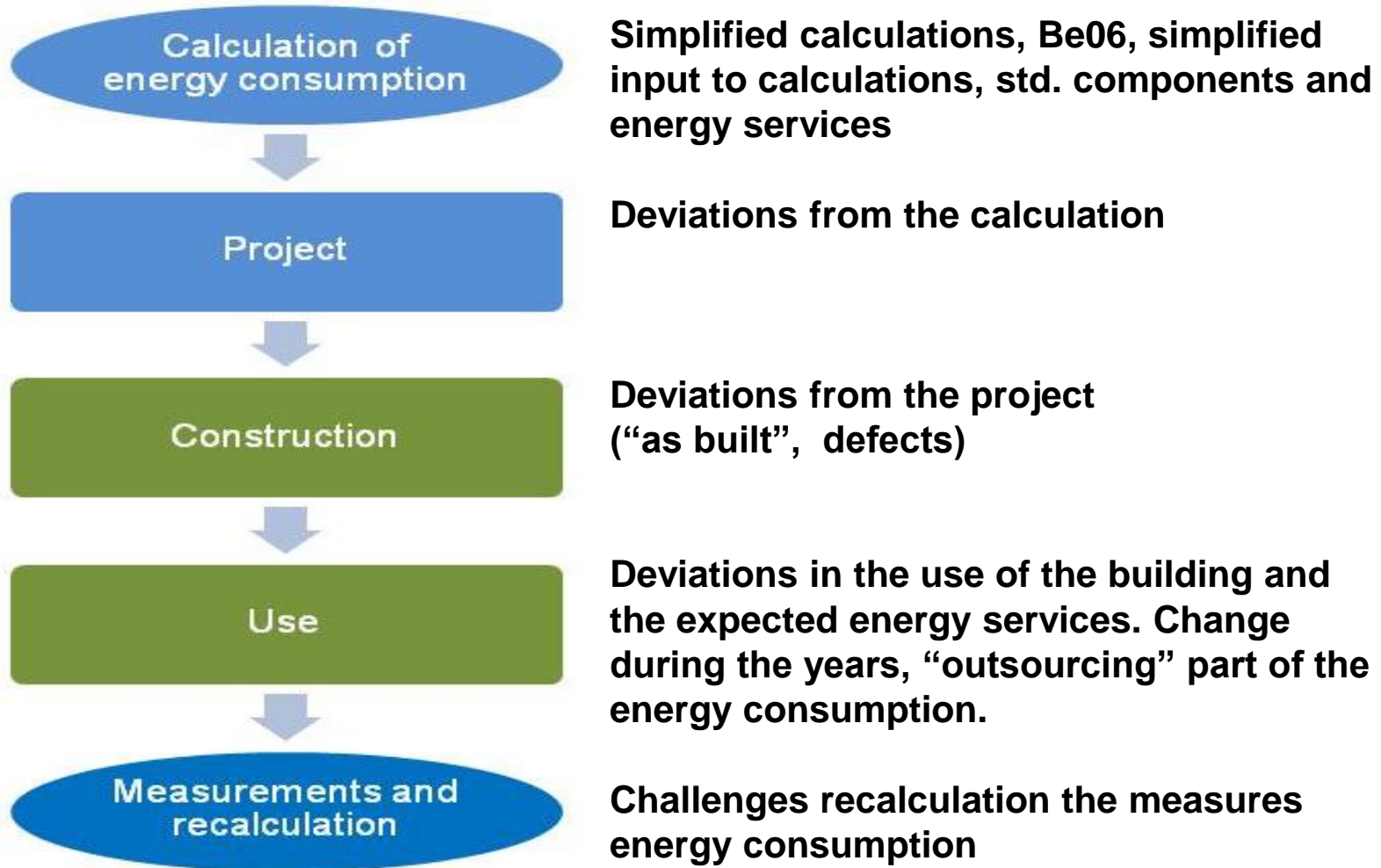
➡ Need for flexible facility

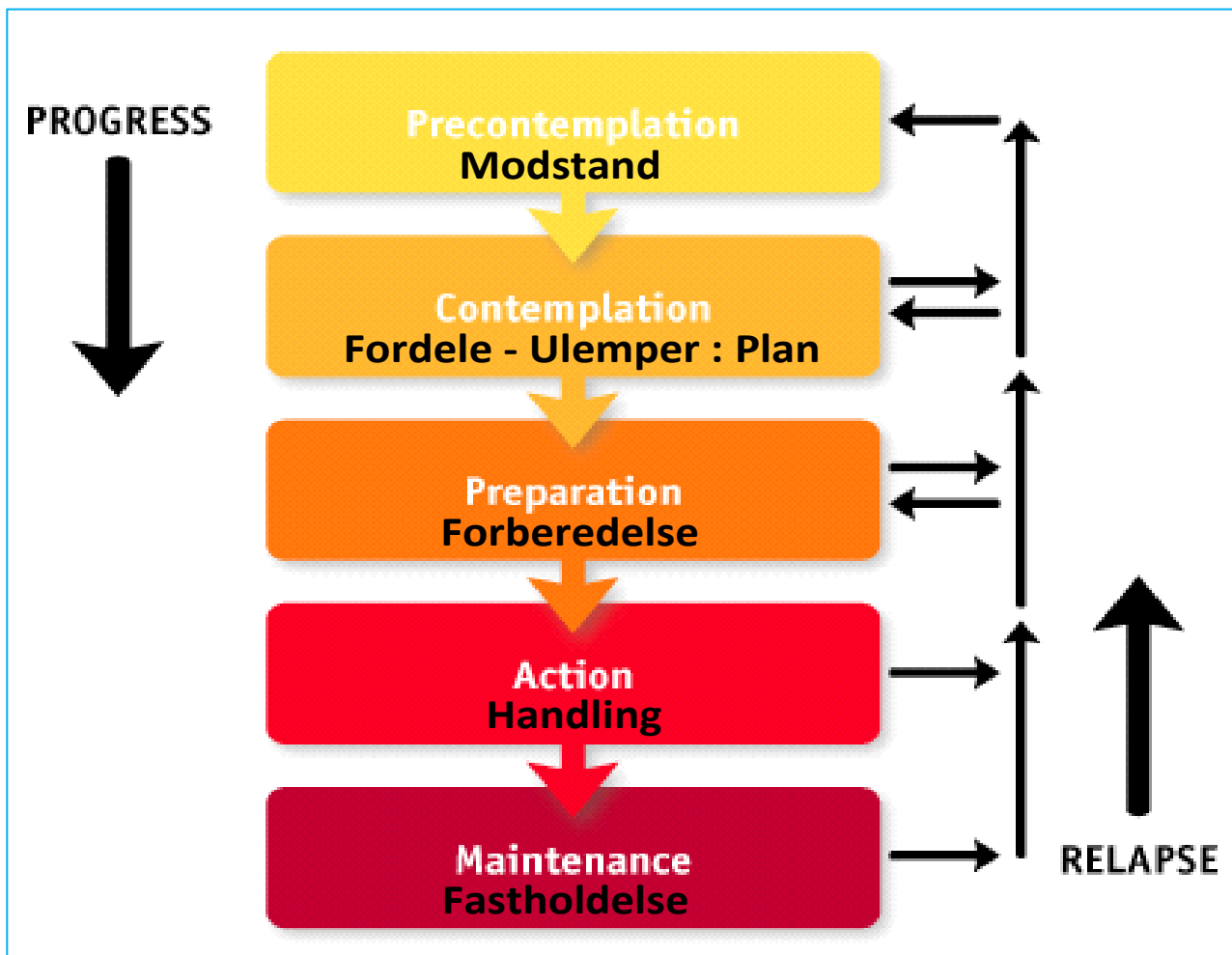
- Energy efficient buildings - **all energy services**
- Technology - components AND systems – and operation !
- The interaction between **end user** and technology, adoption of technology
- Demand side and supply side – the building is a part of the energy system
- Cost effective components and systems
= cost effective energy services
- **Idea** - architecture - design
- International cooperation



The energy challenge:

Calculated consumption \neq Actual consumption



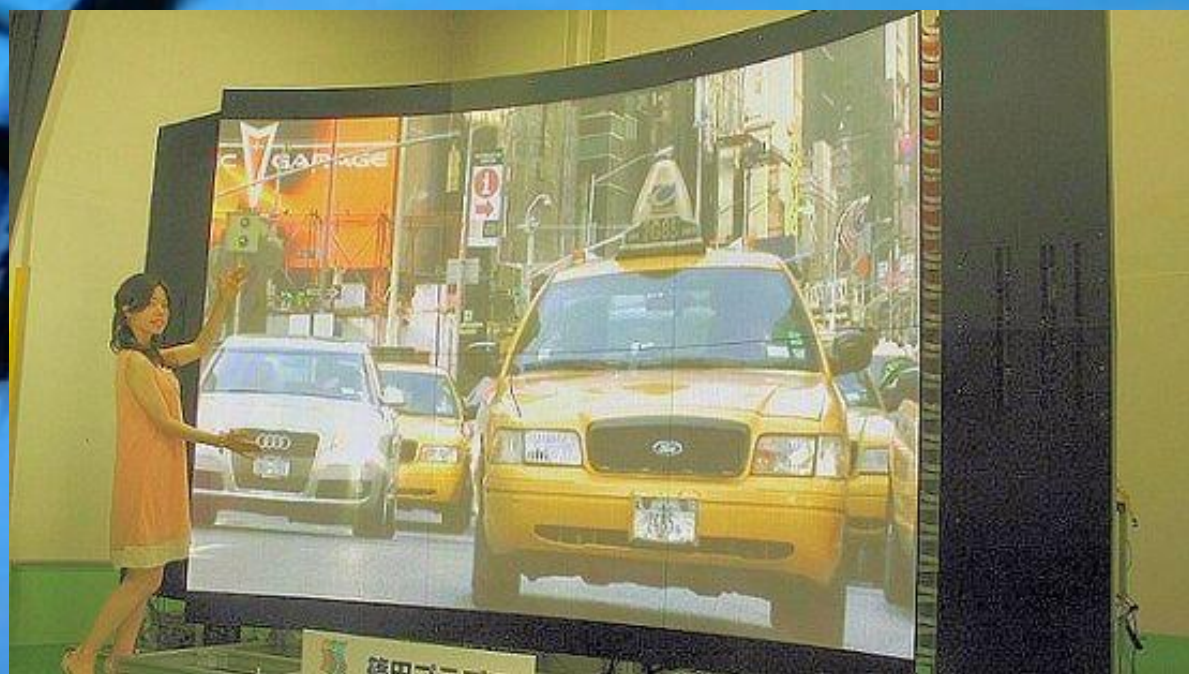


Step one: Energy (and rainwater)

Step two: Sustainable building (DGNB, BREEAM, LEED, C2C, HQE, ..) – EFH approx 50% of DGNB

Step three: Sustainable living





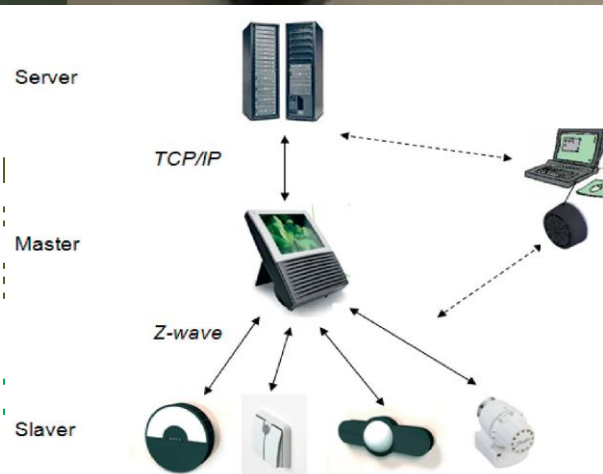
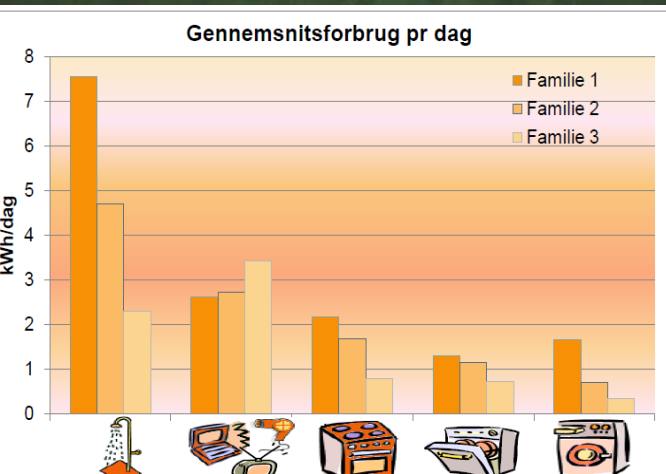




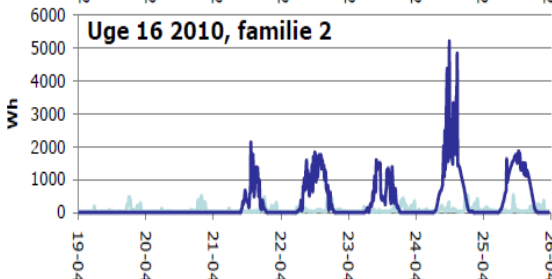
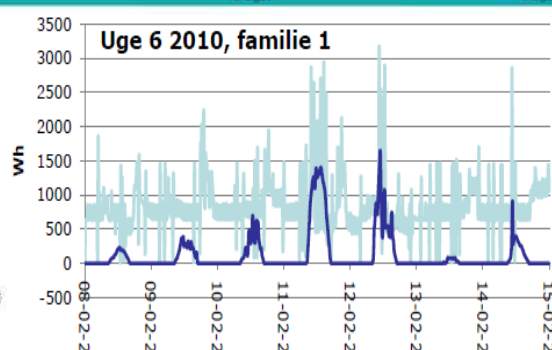
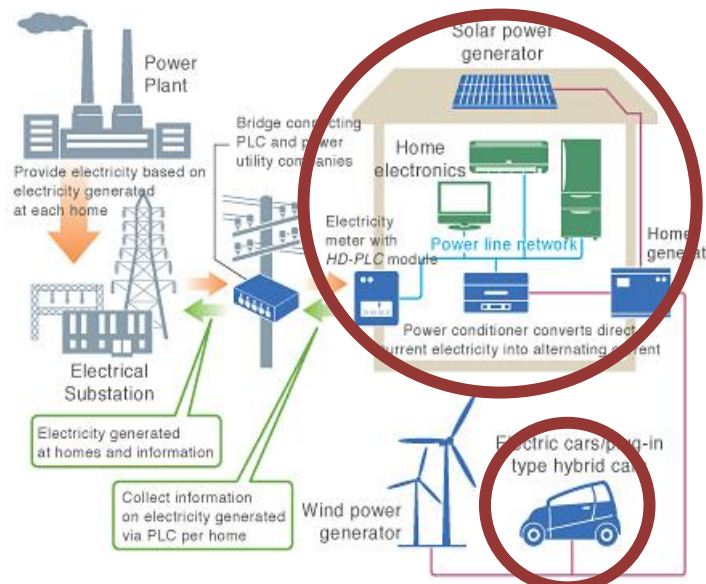
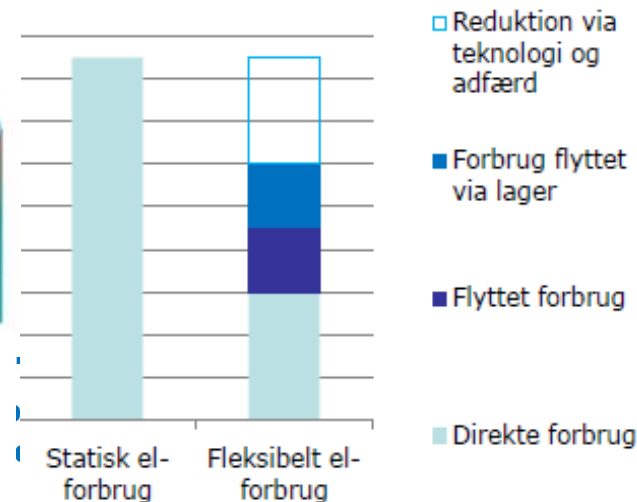
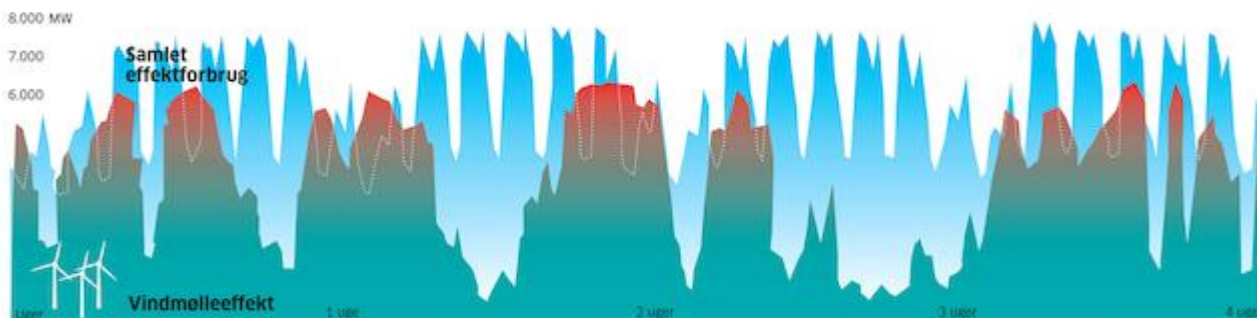


Living lab: Use and operation of Technology

Energiforbruget i EnergyFlexHouse Family
Følg familiens energiforbrug live – opdateres hvert 12. minut



Interaction – supply - demand – decentralised RE



A framework for national and international cooperation, with focus on:

- Technology development and use of technology – components and systems
- Living lab - operation of systems, quality of energy services (measured and experienced)
- The interaction of building, installations, users and the overall supply systems
- Invention and innovation
- Pre market quality assurance

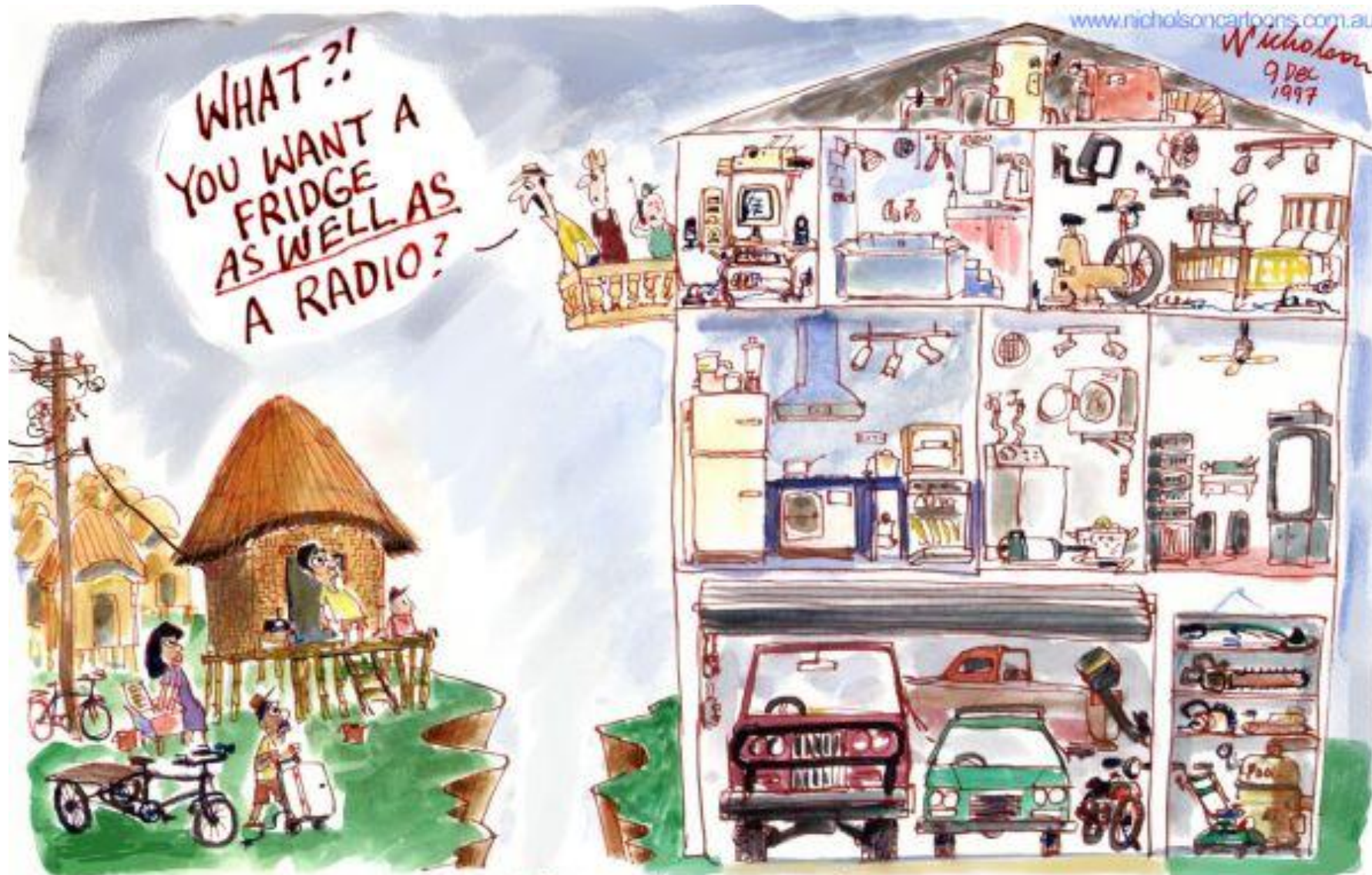




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