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Position Paper Presentation at
COST Foresight 2030 Energy Workshop
WG1 ICT and Energy Efficiency



1. What should Energy in Europe look like in 2030?

On track towards

- 2 °C increase of mean global temperature, and/or
- 1 t CO₂ / cap., or 2000 Watt /cap.

and secure and economically viable

Many paths, e.g.

- -20% energy demand (rel. BAU), very massive market penetration of CCS as early as 2020, 30% renewables
- -40% energy demand (rel. BAU), 30% renewables

2. What should Energy Efficiency in Europe look like in 2030?

3. What is needed to get there?

(Technology (ICT/CCST & others) and Non-technical)

(20-40)% energy savings (rel. BAU) = “best practice”

1. **Very fast, very low energy buildings: new and renovated**
 - ICT → optimal design, construction and **operation**
2. Fast structural changes in cars (light, hybrid, electric, ...)
 - ICT → smart grid
3. Road → rail
 - ICT → EU-wide goods transport logistics platform
4. Fast top-ten / top-runner equipment / services
 - ICT → control, regulate appliances; low energy ICT

4. Challenges/ constraints

(that could hinder the scenario's attainment (slides 1-3))

- Behavioural (value) changes needed at all levels of society and economy: politicians, investors, consumers/users, ...
e.g. ICT to substitute natural resources (and not time only)
- Innovation and investment cycles
- Capital shortage
- Public transport and rail capacity
- Know how
- Lock-ins (1st “smart” meters?)

5. Drivers

(that might stimulate/ advance the scenario's attainment (slides 1-3))

- Internationally coordinated agreements/commitments
- High and increasing energy price
- Negative impacts of climate change (extreme events)
- Tax reform

6. Recommendations (ICT-side)

(What needs to be done to achieve the scenario/ vision on slide 2)

Do more applied oriented R&D for ICT, e.g.

- machine-user interfaces,
- self-learning optimisation systems,
- smart meters,
- smart grids, DSM by ICT,
- standardisation of hard-, soft-ware and applications

Think about regulation of “public” infrastructure, e.g.
for ICT-users (capacity sharing, “cloud”)