

Anything that benefits from a network connection will be connected

Networked devices will go mainstream if users see a benefit

We have moved rapidly from connecting places to connecting people to **connecting things**

More than 50 B things connected by 2025?



Everything is becoming SMART - network connected products - could be ten but could be up to 100 products per home...

Summary

- ICT is part of the problem AND part of the solution
- Energy efficiency is worth re-thinking architectures, protocols, standards ...
- Need to stimulate technology developers
- Need to focus on design
- Energy usage that follows need - **from always on to always available**
- All networks are different – no one size fits all
- Products are different – need different approaches
- **Resume time** is important
- Key-word – SERVICES – **end-user perspective is crucial**
- Need to balance **costs and benefits**

DRIVERS

- Drivers: pressure from customers
- Money & environment
- Stimulate market driven solutions
- Voluntary agreements and standards
- Regulators/Governments need to play an active role
- How to create a virtuous cycle towards energy efficiency – legislation or are there other ways?

STANDARDS

- Standardisation landscape is fragmented
- Urgent need for coordination
- Protocol standardisation is needed
- Get energy efficiency into technology standards
- Proprietary solutions are a problem



PANEL DISCUSSION



PANEL DISCUSSION

- **Holistic approach**
- **Clear definitions - harmonised worldwide**
- **Level playing field**
- **Avoid overlapping regulation**
- **Effective market surveillance**
- **Clear direction, tough but achievable targets**
- **No single target**
- **Value of simple message to rally forces**
- **Who is using the product**
- **Good policy is based on good data**
- **No time for long term targets - we need action NOW**
- **Disincentives for slow movers**
- **Educate consumers (trade-off instant gratification vs energy efficiency)**

WHAT IS THE MAGIC EQUATION?

xx W in 20yy

+ TIME (flexibility + innovation)

+ NUMBER OF PRODUCTS

POWER targets

ENERGY targets

- STABILITY/PREDICTABILITY TO ENABLE INNOVATION AND DEVELOPMENT COST RECOVERY
- RESUME TIME

PROCESS INSTEAD OF TARGETS



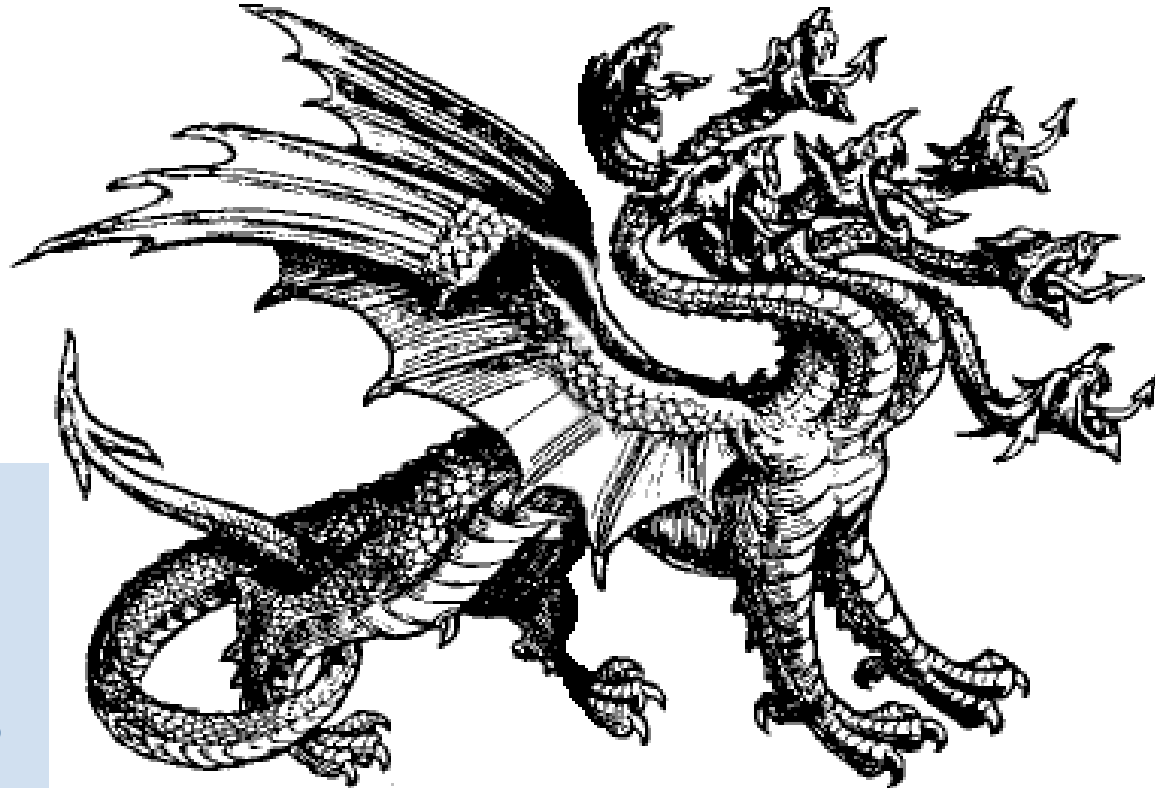
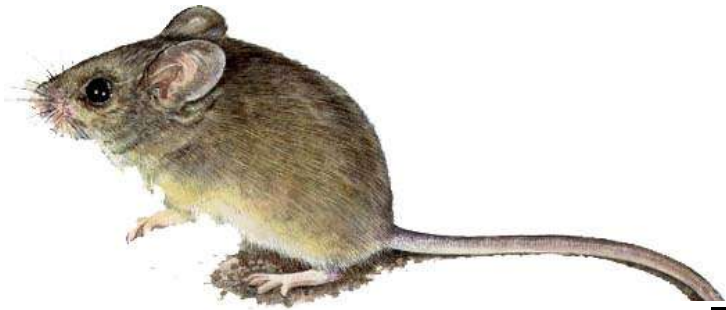
- Future networks?
- What drives connectivity?
- Non-grid connected networked systems
- Number of products

- **Process for starting something that is updated/improved at regular intervals**
- **Self-improving process**

COMPETITION INDUCING PROCESS

- Ensuring that industry has a vision and a goal
- Stability
- Move market through stimulating competition
- Create continuous pressure to outperform competitors
- Stimulate continuous improvement
- Ratings or tags
- EU labels + Energy star
- Knock off worst performers
- BUT – product by product approach, need everyone in the tent...

STANDBY AND NETWORK STANDBY ARE COMPLETELY DIFFERENT ANIMALS



WHAT IS THE
RIGHT MIX OF
HORIZONTALITY
AND VERTICALITY?