



What Future Internet means for Smart Energy ?

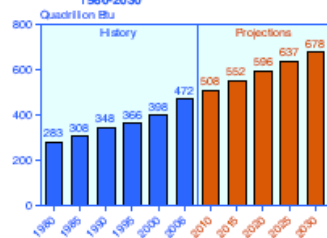
France Telecom/Orange Labs

pierreyves.danet@orange-ftgroup.com

22 Feb 2010



Figure 10. World Marketed Energy Consumption, 1980-2030



Sources: History: Energy Information Administration (EIA), International Energy Annual 2006 (June-December 2006), web site www.eia.doe.gov/ia. Projections: EIA, World Energy Projections Plus (2009).

Context

Scientists, economists and policy makers are calling for CO₂ emissions targets of at least 20% below 1990 levels in 2020.

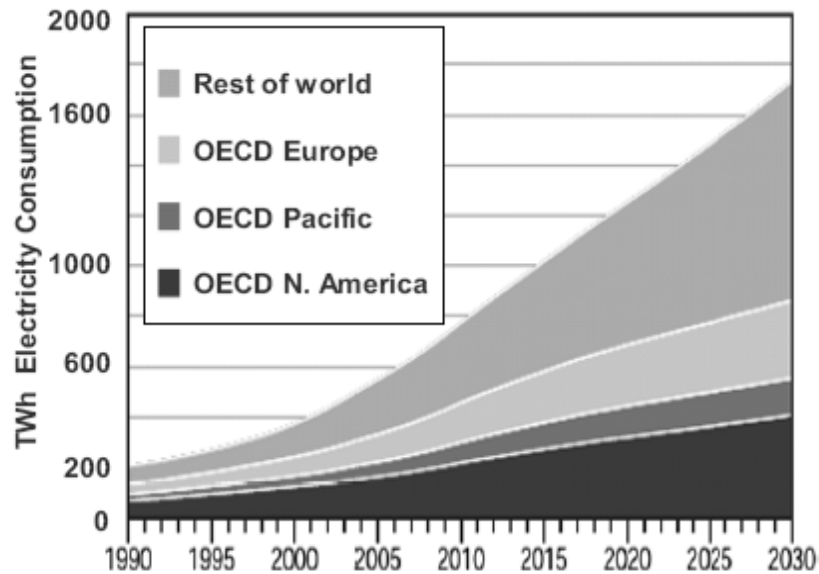
ICT could bring its contribution reducing the global carbon footprint on three main aspects :

- by reducing non-ICT carbon-footprint through smart use of ICT
- by enabling green energy, i.e. the generation and distribution of energy without CO₂ emissions
- by reducing the carbon-footprint of ICT itself.

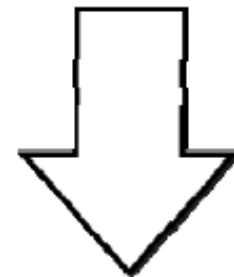
➔ In fact it has been estimated that ICT may help other sectors to reduce their CO₂ emission by 15% in 2020 which is a significant step towards reaching the 20% objective.

The dilemma

Estimated electricity consumption by ICT in the residential sector: 1990-2030



Pros and cons of broadband development



- Stimulate growth and jobs
- Enable energy efficiency in other sectors



Rebound effect of ICT
(growing proportion of the
global energy budget and
greenhouse gas emission)



Existing activities



- FP7 projects : 9 projects presented at the last ICT for sustainable home conference
- X-ETP : Future Internet SRA
- NEM : Position paper
- EFII : Future Internet PPP work program
- **Other related programs :**
 - FP7 Energy call 2010-2 (03-03-2010) AREA ENERGY.7: SMART ENERGY NETWORKS
 - Large scale demonstration of smart distribution networks with distributed generation and active customer participation
 - ITEA2
 - CIP (Competitiveness and Innovation framework Programme) IEE (Intelligent Energy Europe)
 - PPP FI (Future Internet)
 - PPP EeB (Energy Efficient Buildings)
 - possible follow-up on 2009 call under FP7-ICT “energy-efficient buildings and spaces of public use”
 - SET (Strategic Energy Technology), 6 EII (European Industrial Initiatives)
 - 1 sur smart grids
 - EIT KIC (Knowledge & Innovation Community) InnoEnergy,

Smart Energy FIA Session objectives



1. Get a common vision of where ICT and the Future Internet could help in energy savings (PPP, ETPs). 2 different areas :
 - Network savings (protocols, infrastructure, ...)
 - Application savings (smart metering, home automation, ...)
2. Identify the research topics where ICT could bring features to decrease energy consumption
3. Identify those research topics which are already covered by existing research projects and see how they could contribute to the Future internet design.
4. Propose new projects ideas for the missing ones

Smart Energy session proposal

11h30 – 11h45 : Introduction of the session (M Arndt – ETSI M2M chairman ?)

11h45 – 13h00 : Presentation of the two aspects of Energy efficiency :

- Network efficiency :
 - Infrastructure : speaker from eMobility/ISI/Photonics21/EPOSS
 - Protocols : speaker from NESSi
- Service efficiency :
 - speaker from NEM
 - speaker from electricity utility (EdF, Endemol ??)
- PPP : EFII
 - speaker TBD

13h00 -13h30 : Brainstorm session with the objective to collect from the participants innovative research topics ideas in the 2 areas.

- Moderator PY Danet + R Torrenti

Next steps

- Analyse/classify ideas
- Identify which one are already covered by existing projects
- Come back to PPP and ETPs with the non covered topics (if any) in order to help new project proposals to rise.
- Facilitate existing research projects to participate to the Future Internet design.
- Provide recommendation to any ICT project to help them to take into account this cross issue.

NEM research topics

- Smart metering
- Remote control of equipment
- NEM Technologies as drivers of end-user behaviour change
- Balanced energy supply and demand
- Monitoring of energy consumption, and control for zero-emission buildings
- Identification of major energy users and optimization
- Collaboration and Remote services (avoiding transports):
 - Videoconferencing, Teleimmersion,
 - Tele-working, decentralisation of work places,
 - E-learning,
 - E-commerce,
 - Sustainable M2M services,
 - E-Government,
- Energy saving devices,
- E2E Energy saving communication concepts
- Coaching services helping people to save energy

Some energy efficiency related projects



- **BeyWatch**
- **IntUBE**
- **REEB**
- **eDiana**
- **PREMIO**
- **BeAware**
- **SmartHouse/SmartGrid**
- **AIM**
- **HosPilot**

→ A need to complete the list if any other relevant projects

Thanks !