ICT as part of the solution – EU approaches to Green ICT

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Overview

- Reducing environmental impact through ICT
  - ICT as part of the solution
  - Smart Grid
  - Smart Metering

- Reducing environmental impact of ICT
  - Eco-design / EuP / ErP
  - Carbon footprinting

Reducing environmental impact through ICT

ICT as part of the solution

- ICT enables its users to reduce GHG emissions
  - ICT as an enabler
  - Virtual meetings, dematerialisation, …

- Industry & European Commission: allies
  - 2 Communications & 1 Recommendation
  - ICT is part of the solution!
  - Focus on buildings, transport & logistics

Voluntary reduction commitment

- But industry should reduce its own emissions as well…
  - 20% by 2015?
  - Industry voluntary commitment: yes!
  - ICT4EE Forum
    - Need to develop common methodology and metrics to calculate and report reductions
    - EC: focus on cooperation with building & housing, transport & logistics sectors
    - Involvement of Taiwanese ICT manufacturers?

Smart Buildings

- Smart Buildings: July 2009 European Commission report
  - Advisory group from ICT & building industry
  - Recommendations:
    - Develop & implement smart metering
    - Develop & implement home energy management device
    - EU & national legislation on energy neutral buildings
      - Energy infrastructure must accomodate locally produced energy
    - New lighting technology
    - Harmonised European standards

- 2008 proposal for Energy Performance of Buildings law
 - New buildings to be 'energy neutral' by 2020?

Smart Grid

- European Commission definition:

  - *"electricity network that can intelligently integrate the actions of all users connected to it – generators, consumers, and those that do both – in order to efficiently deliver sustainable, economic and secure electricity supplies"*

  $\Rightarrow$ Transport not only electricity but also information in both directions:

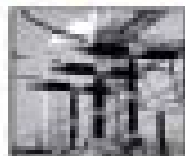   remote reading, smart meters, digital fault detection & repair, …

EC July 09 Smart Grids report
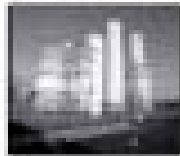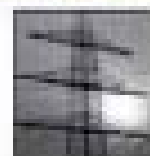
Standardisation & Task Force

- Report recommendations:
  - Enable real time pricing & consumption decisions
  - Enable real time visualisation of home appliance consumption
  - EU harmonisation & standardisation, incl. interoperability
    - No EU efforts yet – Task Force to identify

- Smart Grid Task Force launched Nov 09
  - Strategic decisions & roadmap by mid-2011
  - Biggest hurdle is regulatory
    - Privacy, energy & telecoms liberalisation

Smart Grid funding

- Various funding sources and programmes will be relied upon to finance smart grid development:

  - Strategic Energy Technology Plan (SET-Plan)
    - European Industrial Initiatives cover smart grid, CCS, solar, wind, bio-energy, nuclear fission
    - Total funding estimate: €50 billion
    - Smart Grid: 50% by 2020, @ cost of € 2 billion
    - Mixed funding sources: private, EU budget, EU Investment Bank

  - 7th EU Framework Programme for R&D (FP7)
    - 2007-2013

Smart metering

- Allow consumers, through interoperability, access to actual energy consumtion in real time
  - Electricity, gas, water, heat
  - Consumer empowerment, optimized decision taking & energy use

- Goal: 80% of households & consumers by 2020
  - Requires 200 million meter points & € 40 billion
  - Requires EU standards to allow mass production & full competition

- EC Mandate M/441 to Standard Setting Organisations
  - Accepted / working plan by Dec 09-Jan 10/ deadline Oct 11
  - Regulatory hurdles incl. privacy concerns & data ownership

Reducing environmental impact of ICT

Eco-design of products

- 2005 directive: framework for setting eco-design requirements for Energy-using Products (EuP)
    - 2-3 year process: preparatory study to Eco-design Implementing Measures
    - 31 product categories targeted so far, including PCs, stand-by, set-top boxes, imaging equipment, lighting equipment, TVs, …
    - Less than 10 adopted / 3 voluntary agreements being considered
    - Often inspired by Energy Star, Codes of Conduct
    - Target is usually energy efficiency, but sometimes noise, water consumption, chemical content, …
    - Products that don't meet minimum performance levels are banned from the EU market
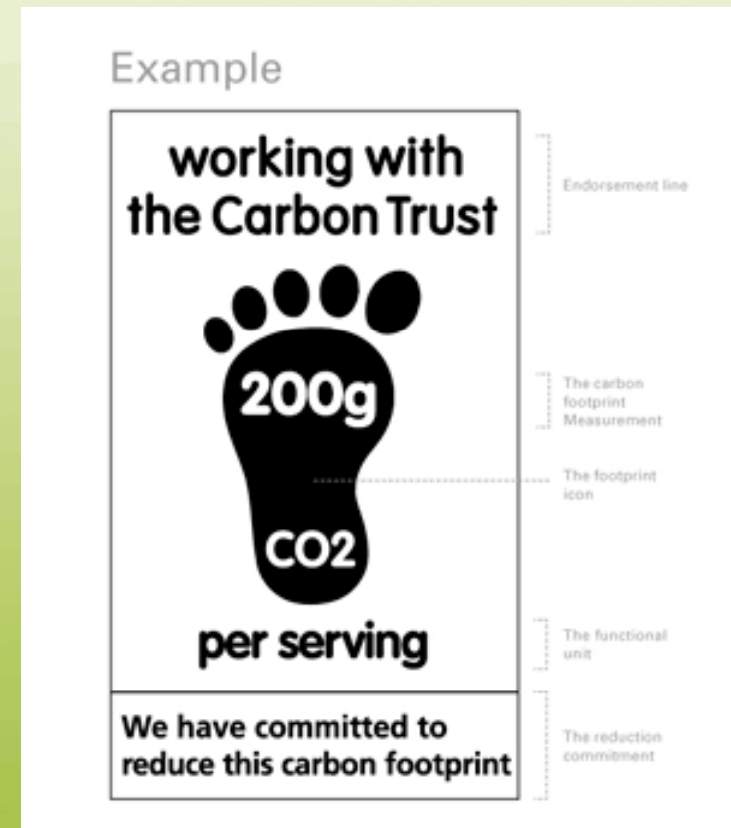
Eco-design of products

- Scope broandened to Energy related Products (ErP) in 2009

- By 2012: assess possible broadening to ALL products

- ICT remains first and main focus
  - Existing eco-design requirements will be updated and made stricter every few years

- Preparatory studies are also being used for mandatory energy labelling, voluntary eco-label, Green Public Procurement

Carbon footprinting

- Rationale: allow consumers to compare similar products, and chose lowest carbon impact

- More limited than LCA
  - Carbon as proxy for full environmental impact?

- Methodological problems & differences
  - You cannot compare results from different calculation methods

- Suited for which products?
  - Food: simple supply chain
  - ICT: very long & complicated supply chain…

UK: Carbon Trust label

- "Carbon Reduction Label"
- Makers of labelled products must commit to reduce impact
- Re-certify every 2 years to check
- Considering removing the number
- Focussed on food producs first
  - Potato chips
- 2008 started with Irish household appliance producer
  - Developed specific methodologies

Example

working with the Carbon Trust

200g CO2

per serving

We have committed to reduce this carbon footprint

Endorsement line

The carbon footprint Measurement

The footprint icon

The functional unit

The reduction commitment

UK: PAS 2050

- Precursor of a regular standard
- Published in 2008
- Does not lay down footprinting methodology
  - But establishes boundaries for methodologies
    - Home-work travel emissions excluded
    - Capital equipment emissions excluded
  - To make them comparable

- Carbon Trust and PAS 2050 source of inspiration for draft ISO 14067
  - International carbon footprinting standard
  - Annex D lists limitations (estimates, label confusion…)

France: carbon or environment label?

- 'Grenelle' flagship environment law project
  - Focus shifted from carbon to "Environmental Communication of Mass Market Products"
  - Including small electronic appliances, clothing, cleaning, food
    - TVs, mobile phones, drills, screwdrivers
  - Assesses Greenhouse Gases (CO2), chemicals, waste, …
    - To be identified per product group

- Methodology – Good Practice Guide (BP X30-323)
  - To be made more detailed per product group
  - Always covers carbon! Other impacts depend on product
  - Very similar to PAS 2050 & ISO 14067

European Commission intentions

- EC mandated to examine carbon footprinting

- April 09 informal meeting:
  - Officials appeared sympathetic & considering EU initiatives

- August 09 EC tender for study
  - Identify all EU initiatives, costs & benefits
  - Recommend EU wide scenarios:
    - Voluntary only for manufacturing
    - Voluntary for consumers
    - Minimum requirements for labelling schemes
    - Mandatory carbon labelling
  - Best suited for which products?

- If more than 2 Member States have national rules, EC must harmonise…

Conclusions

- ICT is now entrenched as 'part of the solution'
  - Instead of a problem… compare regulatory pressure on cars…

- Lot of room for pro-active voluntary improvements

- Legislation as stick behind the door…
  - If not good or fast enough

- Financial assistance available for smart grid/metering

- Carbon footprinting under consideration
  - Feasible for ICT?

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