BewareE

Intelligent Energy Europe

eceee Summer Study June 5th 2009, La Colle sur Loup

Energy awareness services for households - European good practice

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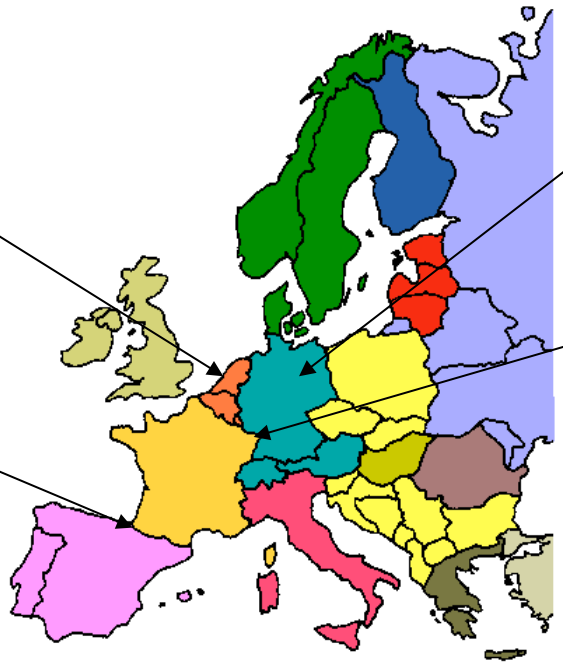
Agenda

1. Overview
2. Context and objectives
3. Methodology
4. A selection of good practice
5. Conclusions

(1) Overview

- Run time: 30 months: December 2007- May 2010
- European project co-funded by the IEE-programme
- Four partners and four target countries



IVAM, Amsterdam, The Netherlands

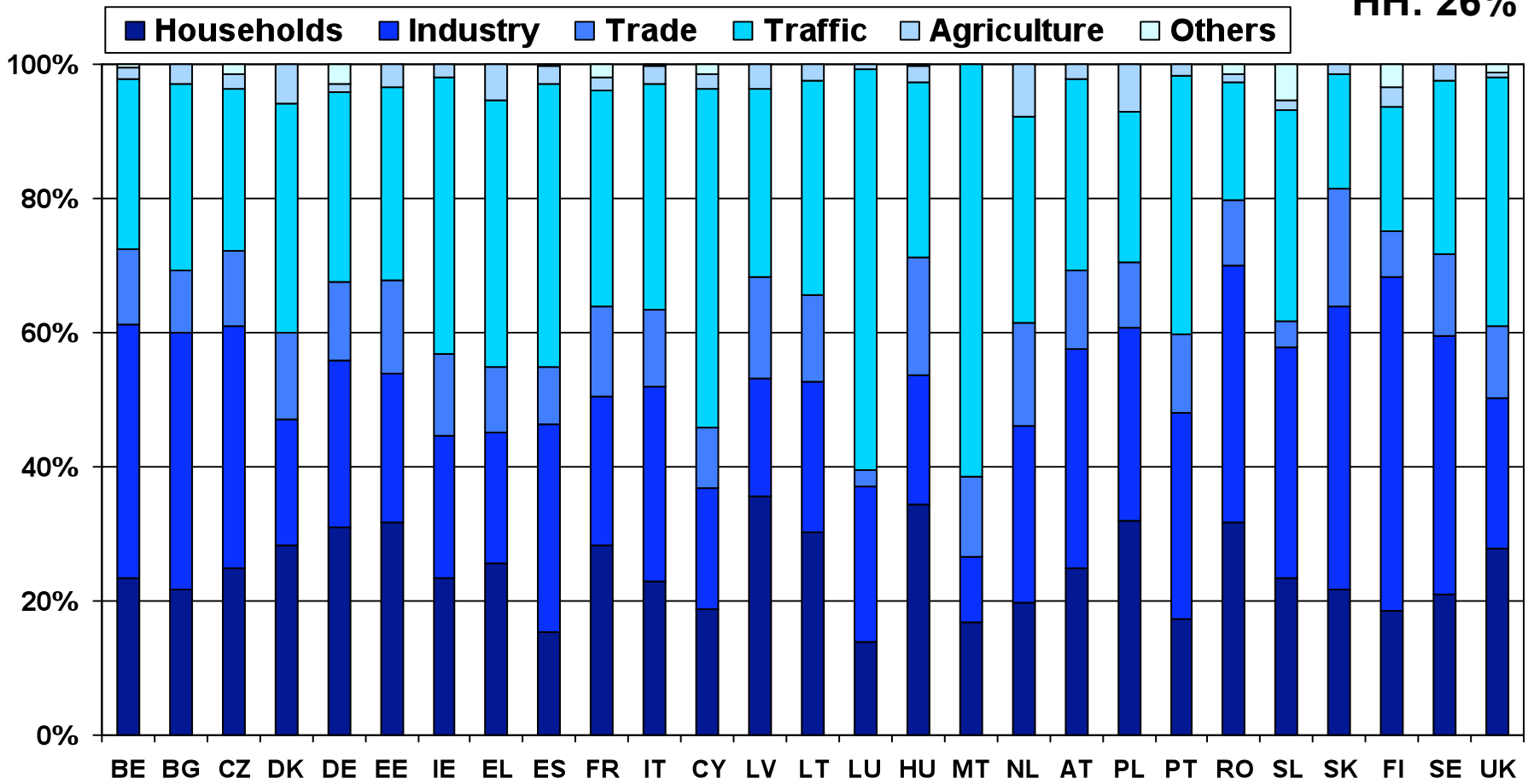
IZT – Berlin, Germany (coordinator)

INASMET-Tecnalia, San Sebastian, Spain

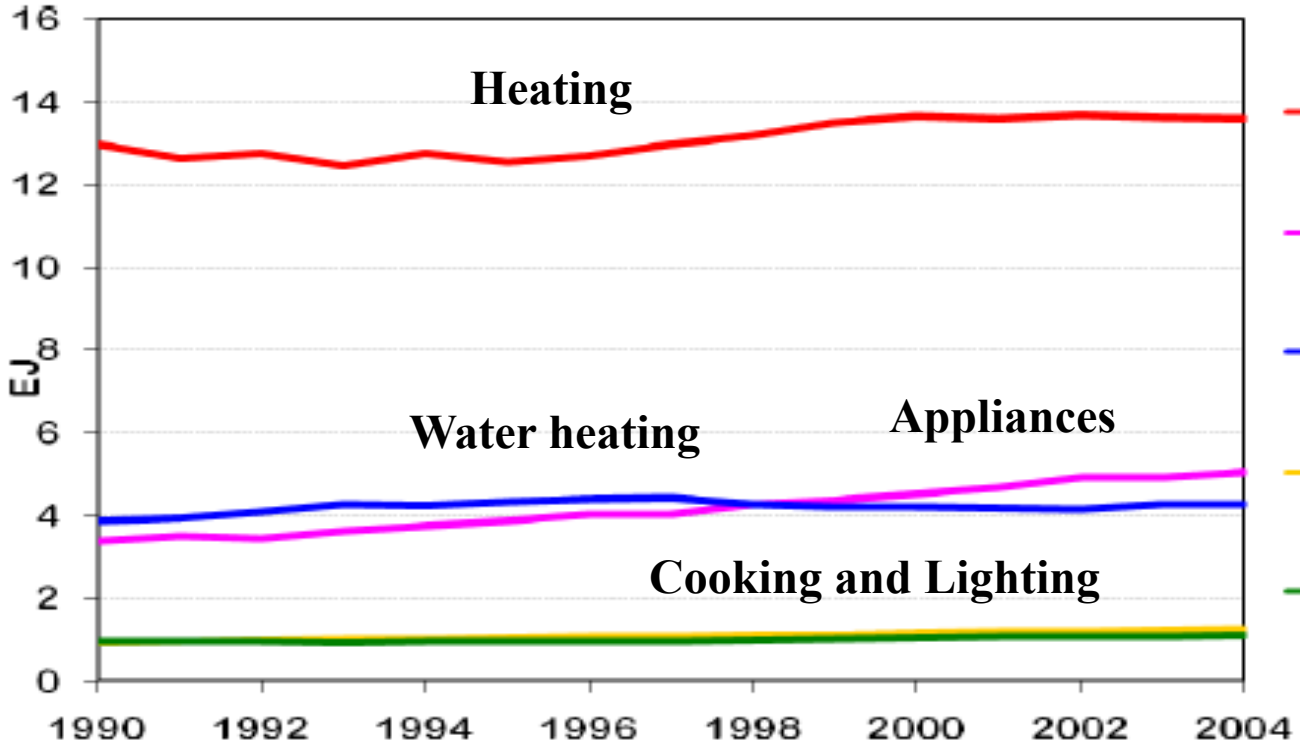
EIFER, Karlsruhe, Germany, responsible for France

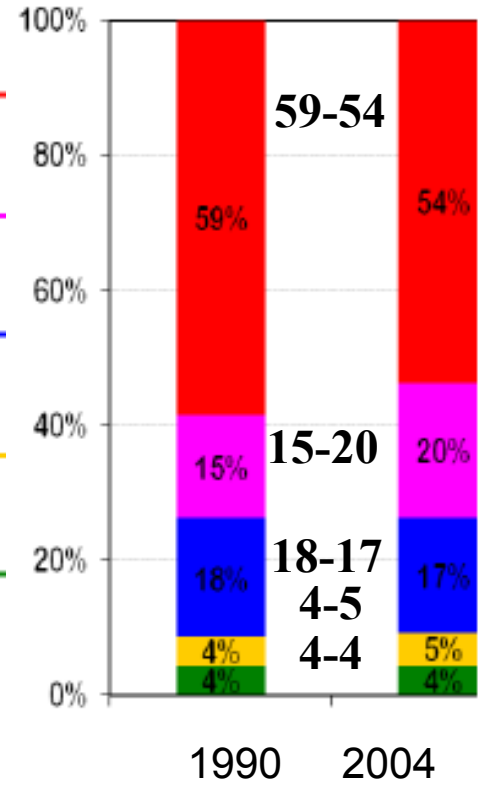
(2) Context and objectives: Energy consumption by sectors (2006)

Source: Eurostat (n.d.): Environment and Energy. Online: energy – energy statistics



(2) Context and objectives: Developments in subdivision of energy consumption





----- Heating
----- Water heating
----- Cooking
----- Appliances
----- Lighting

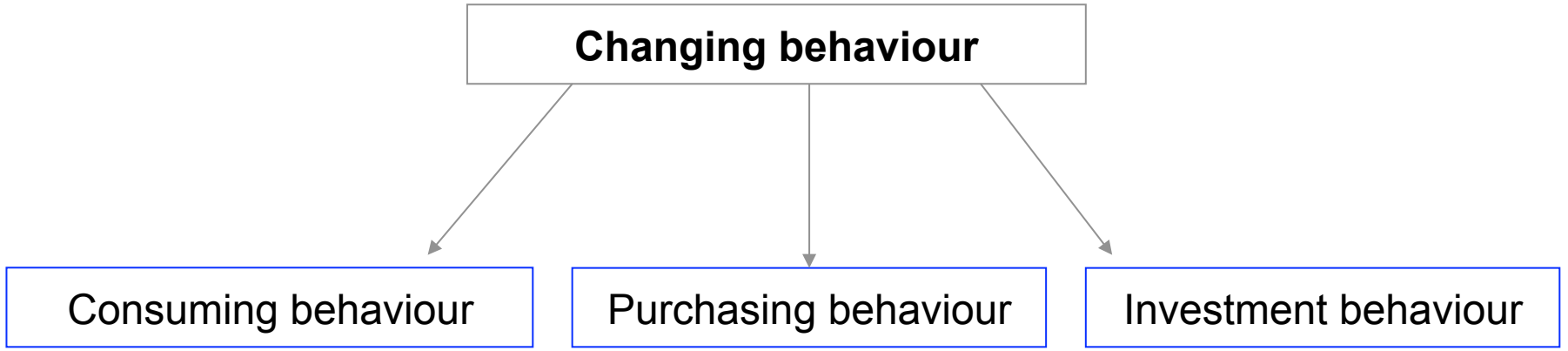
Quelle: IEA 2008

(2) Context et objectives

- Households account for around 26% of total energy consumption in Europe (not counting mobility)
  - ✓ A huge energy saving potential;
  - ✓ a considerable part of the energy might be saved merely by changing habits – without losing comfort!

(2) Context et objectives

- BewareE is about compiling, evaluating, disseminating and implementing **energy awareness services** in the residential sector
- **Definition:** *"A household energy awareness service is any kind of action or tool targeted to residents which is emphasizing the user role for energy savings and supports residents in adopting more sustainable behaviours related to energy. These changes of behaviour relate to purchasing and investment behaviour; (daily) routines with regard to the use of energy consuming devices in homes and (daily) routines that influence the household energy consumption in broader sense"*

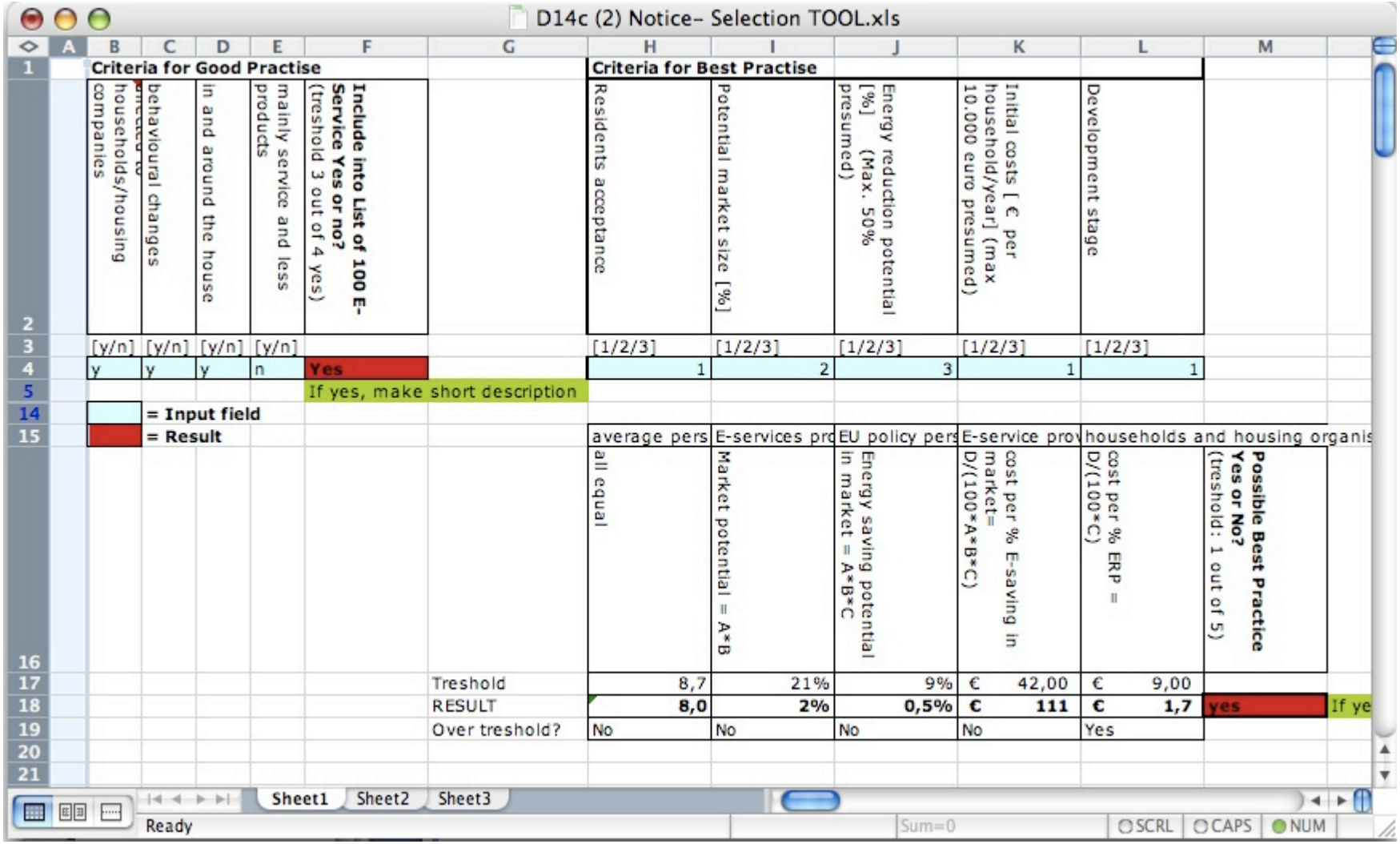


(3) Methodology

Phase 1: Selection of good practices

- **Compiling 136 energy awareness services** coming from almost all EU countries (by phone and internet)
- **Quantitative selection** of good practice examples according to
  - energy saving potential [0-1; 1-10; >10%]
  - Initial costs per household [>1000; 100 -1000; < 100€]
  - Target group acceptance [low; medium; high]
  - Potential market size[<10; 10-50; >50%]
  - Degree of development [idea; pilot; mature]
- **Qualitative selection** according to
  - Degree of innovativeness
  - Interest for certain regions in Europe

Selection tool



(3) Methodology

Phase 2: Implementation and dissemination

- Discussing the **transfer and implementation** of selected services with national housing associations and companies as well as other relevant actors
- Conceiving a **manual**
- **Communication:** newsletters, articles, presentations

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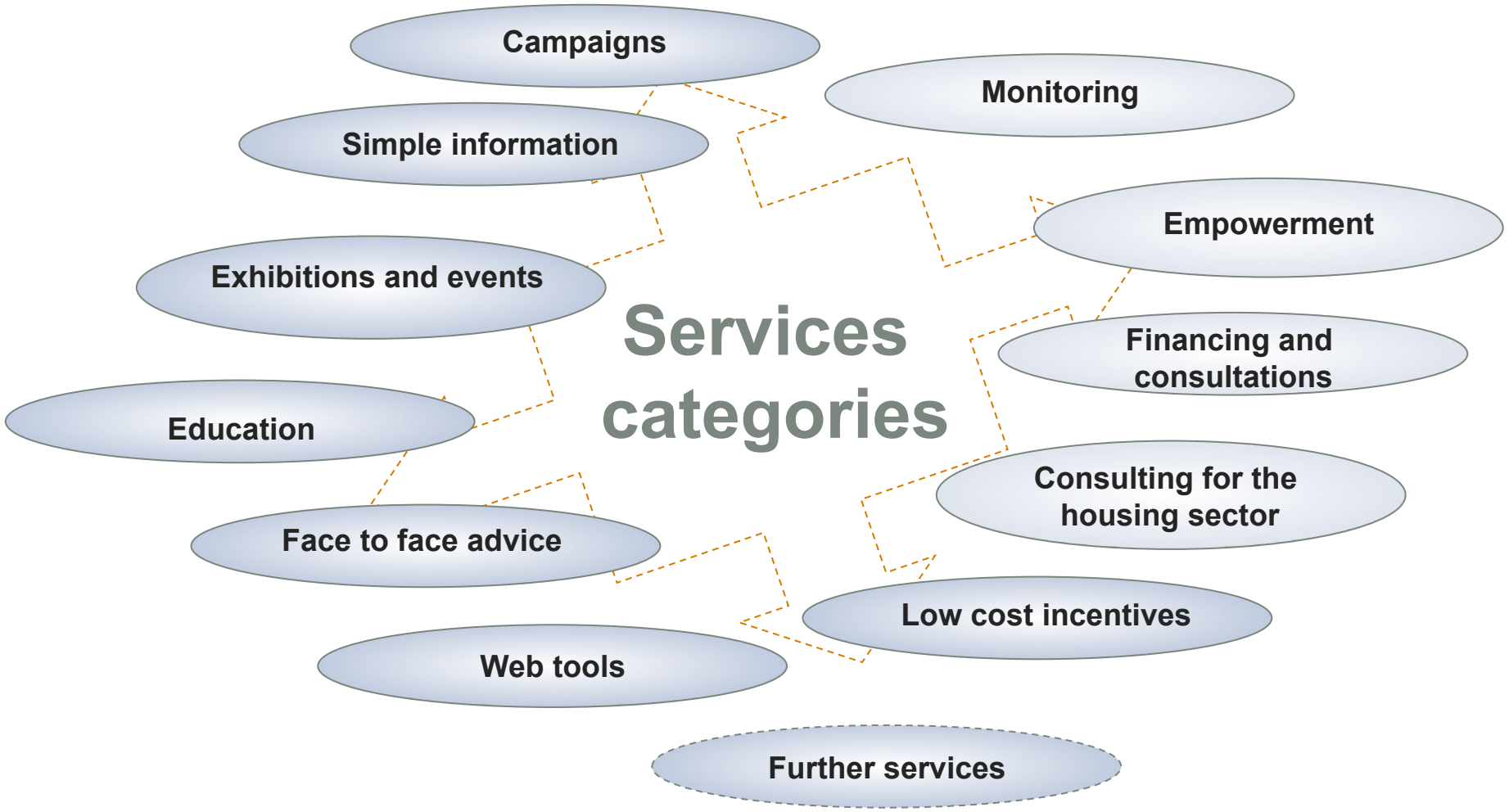
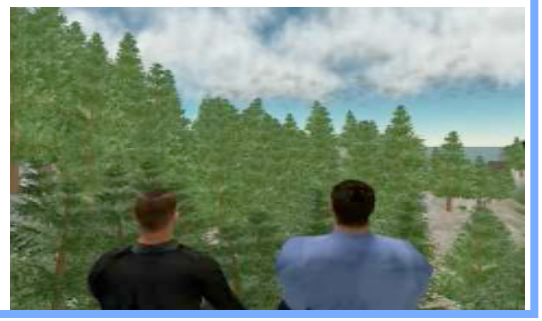
(4) A selection of good practice



General Information
Web tools: Union Fenosa Virtual Forest (ES)

- Union Fenosa Virtual Forest
  - The project “Virtual Forest” aims at guiding households towards a more **efficient use of energy** by inviting them to fill out an on-line questionnaire on their consumption habits and, at the same time, receive advice on possible actions for reducing energy consumption.
  - The promoter of the “Virtual Forest”, the Spanish electricity company Unión Fenosa, donates **1€ to a reforestation project in Brazil** for each participant who responds to the on-line enquiry and also plants **half a tree in Second Life**. The funds for reforestation are managed by the NGO AccioNatura.

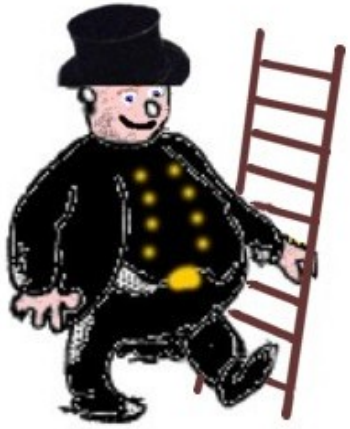
http://www.bosquevirtual.com/



Face to face advice: chimney sweepers as energy ambassadors (A)

Who

- Ministry for Agriculture and Environment
- National Austrian Energy Agency
- Industrial partners



Measures

- Chimney sweepers advice residents on
  - ✓ heating systems and efficient use
  - ✓ replacing old heating installations by efficient ones;
  - ✓ thermal insulation and replacement of windows
- Other similar examples: boiler inspectors in Italy

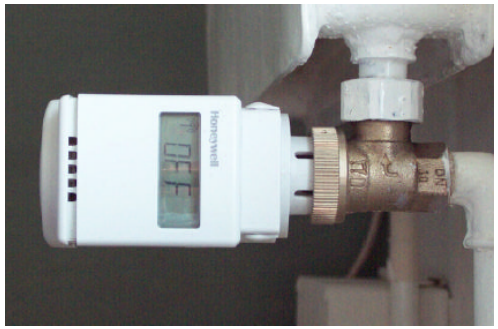
Findings

++ Chimney sweepers appear neutral without commercial interest

++ Chimney sweepers visit most of the homes

Energy monitoring service
Displaying Energy consumption (D)

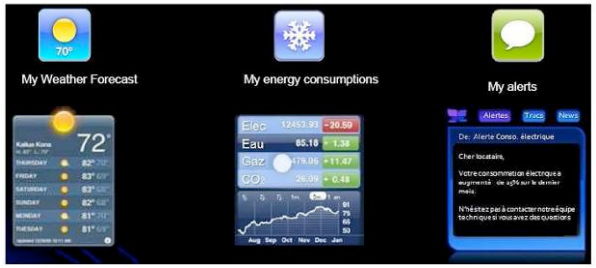
- Social housing company **„Volkswohnung GmbH – Karlsruhe“**; project save@workforhomes
- Refurbishment of buildings, making them fulfil low-energy standards.
- Equipping buildings with electronically thermostats, sensors, and consume indicators (displays).
- Displaying of daily energy consumption using smileys (depending on comparison with other apartments).
- Users with displays used 7% less energy than users without displays.

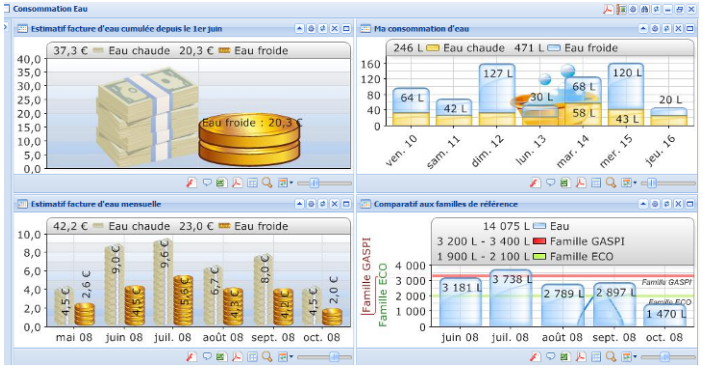


Energy monitoring service
Internet Platform for Controlling Consumption (F)

- **Internet platform for controlling energy consumption“** (social housing company Moulins Habitat, software company Vizelia)
- In the framework of EU project **Save@workforhomes.**
- Apartments were equipped with sensors to transmit consumption data to Moulins Habitat
  - **Moulins Habitat** assesses the performance of its buildings, effects of rehabilitation works and detect possible leaks.
  - **Tenants** have access to their consumption data in real time. Warning message if consumption is excessive. It is possible to compare it with former consumption to check behavioural changes and control the energy budget.

http://tf1.lci.fr/infos/jt/0,,4089637,00-comment-se-chauffer-plus-intelligemment-.html





Empowerment Services

- **Objective: Making residents skilled actors** in the detection of energy wasting, in the conception and in the implementation of energy saving measures
- **Idea:** Giving people a feeling of agency is likely to create a sustainable impact on behaviors
- **Hard to get reliable data that can be generalised,** but very successful examples (5-10% savings)
- **Examples**

  … involving residents in monitoring and decision making,

  … training them to help themselves or their neighbours

Empowerment Services
Motiva Oy (FI)

- **Training of energy experts by Motiva Oy** (energy agency)
- Motiva trains residents on energy saving behaviours and enables them to give advice to other residents.
- The trained energy experts give advice to the residents of the buildings they live in.
- They control the general consumption of energy and water in their buildings.
- Effect: water savings of 20%, electricity savings of 10%, and heat savings of 5%.

Empowerment: Residents' advisory board (D)

The social housing company **WGB Marzahn** established a residents' advisory board that:

- checks the evolution of costs and energy consumption
- suggests and co-decides measures for further energy saving measures
- shares its findings with other tenants.

Very low cost but positive effects on the company's corporate image.

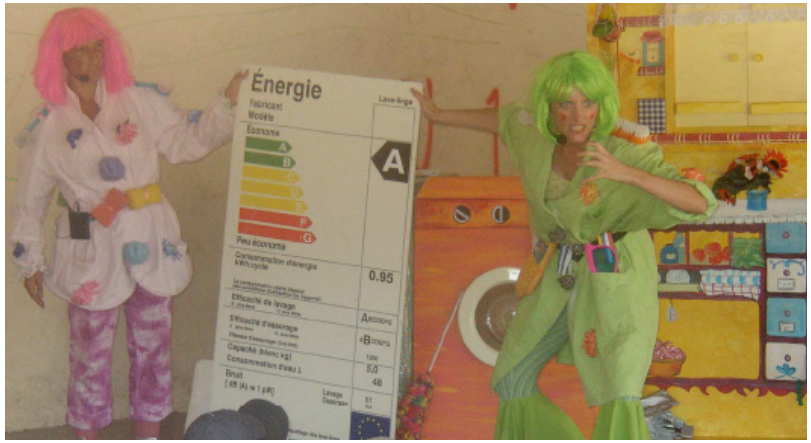
Closer relation between company and residents

Residents are actors instead of just receiving information.

Risk:

Protection of data privacy

Events and exhibitions: street theatre play (F)



Who

- Prioriterre, NGO and
- Tartine, théatre group

Aim

- Addressed to the kids and their parents, this service shows energy saving measures in an entertaining and “light” way

- 32 presentations between 2001 and 2004; 2300 people attending;
- Received considerable media coverage

- Real impact on behaviours unclear

Conclusions

- Energy awareness services help to reduce energy consumption in buildings through behavioural changes (up to 10%)
- Technology is needed in some cases to reduce energy consumption but changes of human behaviours are essential.
- Energy monitoring and empowerment of residents seem to be the most efficient measures
- Combine different measures
- Keep energy efficiency on the agenda, not only punctual measures
- Develop creative measures that make energy efficiency attractive
- Collaboration between organizations: housing companies, Administration, NGOs, energy companies, energy and environmental agencies, etc.
- Adapt measures to target groups

Thanks for your attention!

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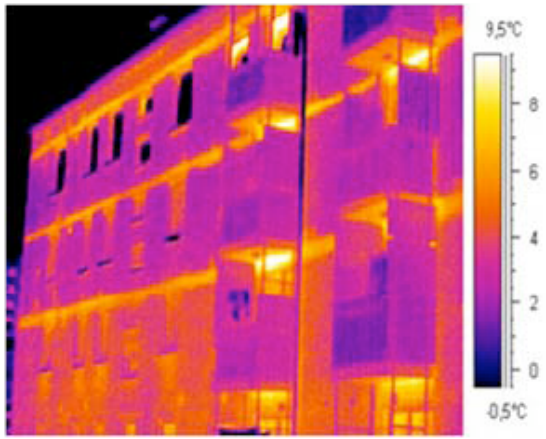
→ More information:
www.izt.de/bewaree

Consulting for the housing sector: JEKO-In company's online benchmarking (SL)



Measured energy consumption

season 98/99:	230 kWh/m²
year 2005:	150 kWh/m²
year 2006:	139 kWh/m²

Normalized energy consumption
(reference DD 20/12 KO Jesenice)

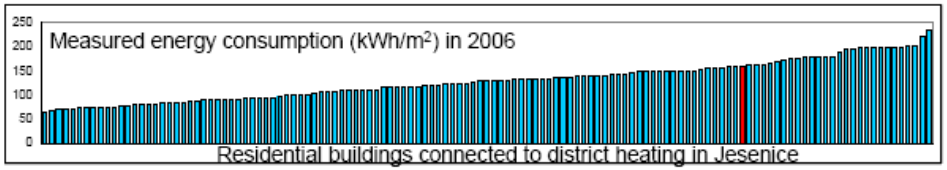
season 98/99:	250 kWh/m²
year 2005:	163 kWh/m²
year 2006:	159 kWh/m²
Calculated energy demand for heating	**214** kWh/m²

Jeko In – a public district heating company

- **Objective:** push building owners and managers to carry out energy efficiency renovation projects
- Information on the energy consumption status, recommended measures and estimation of investment for 40 high consuming buildings. Annual evolution and energy performance certificates
- Graphically presented using Google map tool
- + transparency;
- - pay back time (up to 3 years)

Cesta Toneta Tomšiča 8
Cesta Maršala Tita 1a
Cesta Maršala Tita 4a
Cesta Cirila Tavčarja 5
Cesta revolucije 11

Measured energy consumption above 200 kWh/m²
Measured energy consumption between 100 and 200 kWh/m²
Measured energy consumption) bellow 100 kWh/m² (measures implemented



Face to face advice: Energy ambassadors for low income households (F)

- NGO Prioriterre-Conseil Géneral de Haute-Savoie
- In the context of growing **“fuel poverty”**, NGO Prioriterre proposed its Energy Ambassadors service to the district authority “Conseil Général de Haute-Savoie”.
- **Energy ambassadors** help low income families to save money and energy by the following actions:
  - ✓ Training on energy and housing is offered to social workers.
  - ✓ Telephone service for social workers and volunteers, who are in contact with people at risk of poverty rate.
  - ✓ A written manual (the “ant guide”) was developed and distributed among targeting social workers and volunteers.
  - ✓ Home visits are offered to families.