What is the relevant support package for users in order to achieve energy savings?

Illustration from smart meters and NZEB projects

Albane GASPARD – ADEME

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### Investment decisions

<table>
<thead>
<tr>
<th>Minor change</th>
<th>Major change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choosing the most environmentally-friendly product</td>
<td>Making significant investment in the environment</td>
</tr>
<tr>
<td><em>Ex: buying low energy light bulbs</em></td>
<td><em>Ex: insulating the house</em></td>
</tr>
</tbody>
</table>

### Lifestyle, habits

<table>
<thead>
<tr>
<th>Minor change</th>
<th>Major change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changing one’s habits</td>
<td>Changing one’s lifestyle</td>
</tr>
<tr>
<td><em>Ex: switching off appliances</em></td>
<td><em>Ex: living in flats rather than individual houses</em></td>
</tr>
</tbody>
</table>

*Minor* and *major* changes refer to the extent of the changes one can make towards a more environmentally-friendly lifestyle. *Minor* changes are smaller adjustments, while *major* changes involve more significant interventions.
1. Smart Meters and Information Provision
2. Living in Low Carbon Buildings
1. Smart Meters and Information Provision
2. Living in Low Carbon Buildings
Smart Meters Roll out in France: Overview

- Smart-meters roll-out will start in 2015 for electricity, and in 2016 for gas
- Minimal information provision to households by energy grid operators to be decided in 2015 as part of the Energy Transition Law (at least access to personal consumptions through a web portal)

<table>
<thead>
<tr>
<th>Linky (Electricity)</th>
<th>GAZPAR (Gas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll-out decided in 2011</td>
<td>Roll-out decided in 2014</td>
</tr>
<tr>
<td>35 million meters to be rolled-out</td>
<td>11 millions meters to be</td>
</tr>
<tr>
<td>2015-2021</td>
<td>rolled-out</td>
</tr>
<tr>
<td></td>
<td>2016-2022</td>
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</tbody>
</table>
Main Recent Projects with a Behaviour Focus in France

Studies

• **SoEcoMDE** (ended 2013): bibliographic overview of Demand Side Management tools and their impact on energy efficiency [ADEME]

• **Sociological study on energy efficiency awareness raising campaigns based on consumption data** (ended 2013): Evaluating different campaigns based on information provision. In partnership with GrDF (France’s gas grid operator) [ADEME - GrDF]

• **Case study on innovative smart billing for household consumers** (ended 2013): Assessing the potential for smart billing to save energy. As part of ADEME’s World Energy Council activities [ADEME]

• **BRAZIL** (ended 2014): Analysing national and industrial actors’ visions of smart grids development. [ADEME]

Experiments

• **MODELEC** (first results 2014): Assessing households’ readiness for peak-hour saving schemes based on load-shifting (this project was funded by the Investments for the Future programme). [ADEME – Direct Energie]

• **Reflexe** (ended 2014): Assessing office workers’ readiness for consumption load-shifting schemes (this project was funded by the Investments for the Future programme). [ADEME - Véolia]

• **Watt et moi** (ended 2014): Assessing households’ use of information on electricity consumption provided on a website [ERDF]

• **Afficheco** (ended 2014): Assessing households’ use of information on energy consumption provided on a tablet computer [Legrand]
### Watt et moi and Afficheco: Quick Overview of Results

<table>
<thead>
<tr>
<th>Watt et moi</th>
<th>Afficheco</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,116 households living in social housing in Lyon (France)</td>
<td>28 households around Tours (France)</td>
</tr>
<tr>
<td>Recruited on a <strong>non voluntary</strong> basis (235 households left the experiment)</td>
<td>Recruited on a <strong>voluntary</strong> basis</td>
</tr>
<tr>
<td>Web portal</td>
<td><strong>Tablet computer app</strong></td>
</tr>
<tr>
<td>2 years</td>
<td>15 to 28 months</td>
</tr>
</tbody>
</table>

#### Results

**Quantitative and qualitative analysis**

- 216 households visited the website, of which 21 became regular users (more than 12 visits over the 2 years)
- Households that were already concerned about energy visited the website by themselves.
- For others, additional actions were needed (mail, emails, visit by an energy ambassador…), with contrasted results
- 40% of users think they have reduced their consumption

**Qualitative analysis**

- The project had an empowerment impact on households
- Households need some time to understand how to use the device and to make sense of the information for their own needs
- The information given allowed households to
  - Experiment
  - Learn step by step
- Cycles of interest

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Source: ErDF

Source: Legrand
Key Results

- Evaluating the impact of a one-off program on energy consumption is extremely difficult and does not only consist in measuring savings.
- Providing households with information about their energy consumption is key to forging a “culture of energy” that will empower them to act upon their consumption [competence].
- But providing raw information does not guarantee energy savings.
- Support programs to foster behavioural change are necessary. Information should be provided as part of wider behaviour change programs [materials – competence – meanings].

Social practices are made of three types of element: material, competence and meaning (Shove et al., 2012: 23)

<table>
<thead>
<tr>
<th>materials</th>
<th>Objects, tools, infrastructures</th>
</tr>
</thead>
<tbody>
<tr>
<td>competence</td>
<td>Knowledge and embodied skills</td>
</tr>
<tr>
<td>meanings</td>
<td>Cultural conventions, expectations and socially shared meanings</td>
</tr>
</tbody>
</table>

Source: Spurling et al (2013), Interventions in practice: re-framing policy approaches to consumer behaviour
Large scale vs high impact interventions?

- Large scale interventions
  - Providing information on a website
    - Ex: Watt et moi
  - Providing information on a tablet/app
    - Ex: Afficheco

- Low impact interventions
  - Ex: Défi Famille à Energie Positive

- High impact interventions
  - Household support schemes
    - Ex: EU ACHIEVE Project

*short term impact
Exploring Options for Large-Scale and High-Impact Interventions…
1. Smart Meters and Information Provision
2. Living in Low Carbon Buildings
Low energy houses – Britany (France)

Low energy community hall – Britany (France)

NEZB in France: Overview

- Buildings represent 43% of energy consumption in France and 23% of carbon emissions;
- **Objective**: reducing the carbon emissions from the building sector by 4 by 2050
- Main policy for **new buildings**: French building regulations 2012
- Main policy for **existing buildings** (refurbishment): reduction of energy consumption by 38% by 2020 [Grenelle Law – 2009]
• NZEB do not always deliver their promises: real consumption can exceed *ex-ante* calculations.

• These differences can come from a variety of factors (miscalculations, poor building works…), uses are only one of them.

• *As its happens in any technical innovation process, occupants hardly ever use new buildings as building designers and architects intended them to*…
Living and Working in NZEB: Insights from three Buildings

Residential building (Le Patio Lumière)

Office building (La Cité de l’Environnement)

Individual houses (Les Hauts-de-Feuilly)

Source: Brisepierre (2013), Les conditions sociales et organisationnelles d’une performance énergétique in vivo dans les bâtiments neufs
Way Forward

**Building conception**
- Applying user-centered design approaches to buildings?
- Design for all?
- Building use diagnosis?

**In vivo performance**

**Building management**
- Performance contracting (Garantie de performance énergétique)

**Uses**
- Supporting new habits through behaviour change programs

Source: adapted from Brisepierre (2013), *Les conditions sociales et organisationnelles d'une performance énergétique in vivo dans les bâtiments neufs*
Thank you for your attention

albane.gaspard@ademe.fr