



# What is the relevant support package for users in order to achieve energy savings? Illustration from smart meters and NZEB projects

**ADEME**



Agence de l'Environnement  
et de la Maîtrise de l'Énergie

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	<b>Minor change</b>	<b>Major change</b>
<b>Investment decisions</b>	<p>Choosing the most environmentally-friendly product</p> <p><i>Ex: buying low energy light bulbs</i></p>	<p>Making significant investment in the environment</p> <p><i>Ex: insulating the house</i></p>
<b>Lifestyle, habits</b>	<p>Changing one's habits</p> <p><i>Ex: switching off appliances</i></p>	<p>Changing one's lifestyle</p> <p><i>Ex: living in flats rather than individual houses</i></p>



1. Smart Meters and Information Provision
2. Living in Low Carbon Buildings





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## 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)

### Linky (Electricity)

Roll-out decided in 2011  
35 million meters to be rolled-out  
2015-2021

### GAZPAR (Gas)

Roll-out decided in 2014  
11 millions meters to be rolled-out  
2016-2022

## 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

### Watt et moi

- 1 116 households living in social housing in Lyon (France)
- Recruited on a **non voluntary** basis (235 households left the experiment)
- Web portal
- 2 years

Source: ErDF



#### 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

### Afficheco

- 28 households around Tours (France)
  - Recruited on a **voluntary** basis
  - **Tablet computer app**
    - 15 to 28 months

Source: Legrand



#### Results

##### 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

## 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)*

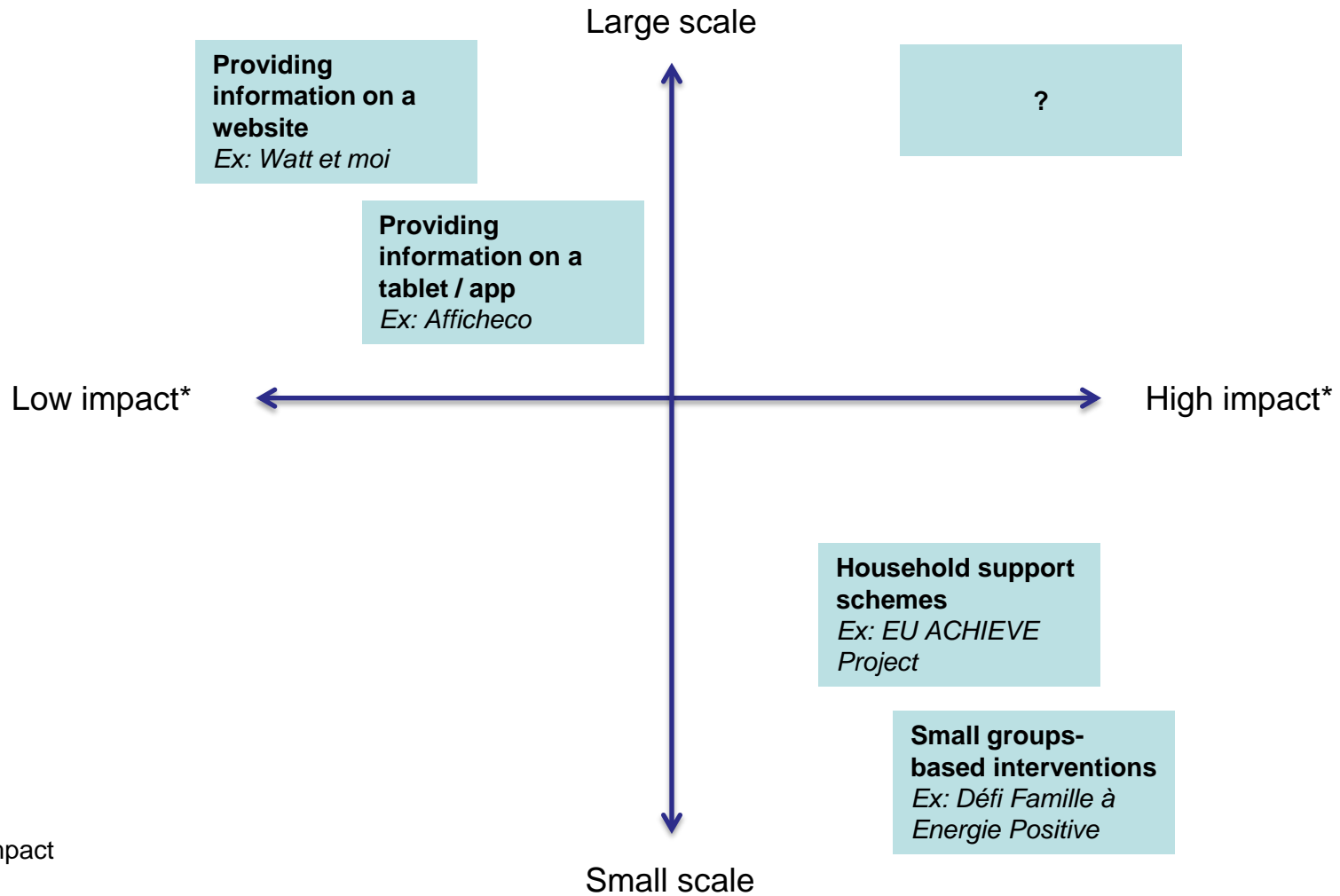
<b>materials</b>	Objects, tools, infrastructures
<b>competence</b>	Knowledge and embodied skills
<b>meanings</b>	Cultural conventions, expectations and socially shared meanings

Source: Spurling et al (2013), *Interventions in practice: re-framing policy approaches to consumer behaviour*





## Large scale vs high impact interventions?



\*short term impact

## Exploring Options for Large-Scale and High-Impact Interventions...





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## Low energy houses – Brittany (France)



© photo Xavier BENONY / ADEME

## Low energy community hall – Brittany (France)



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## 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]

## Living and Working in NZEB

- 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 it 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)



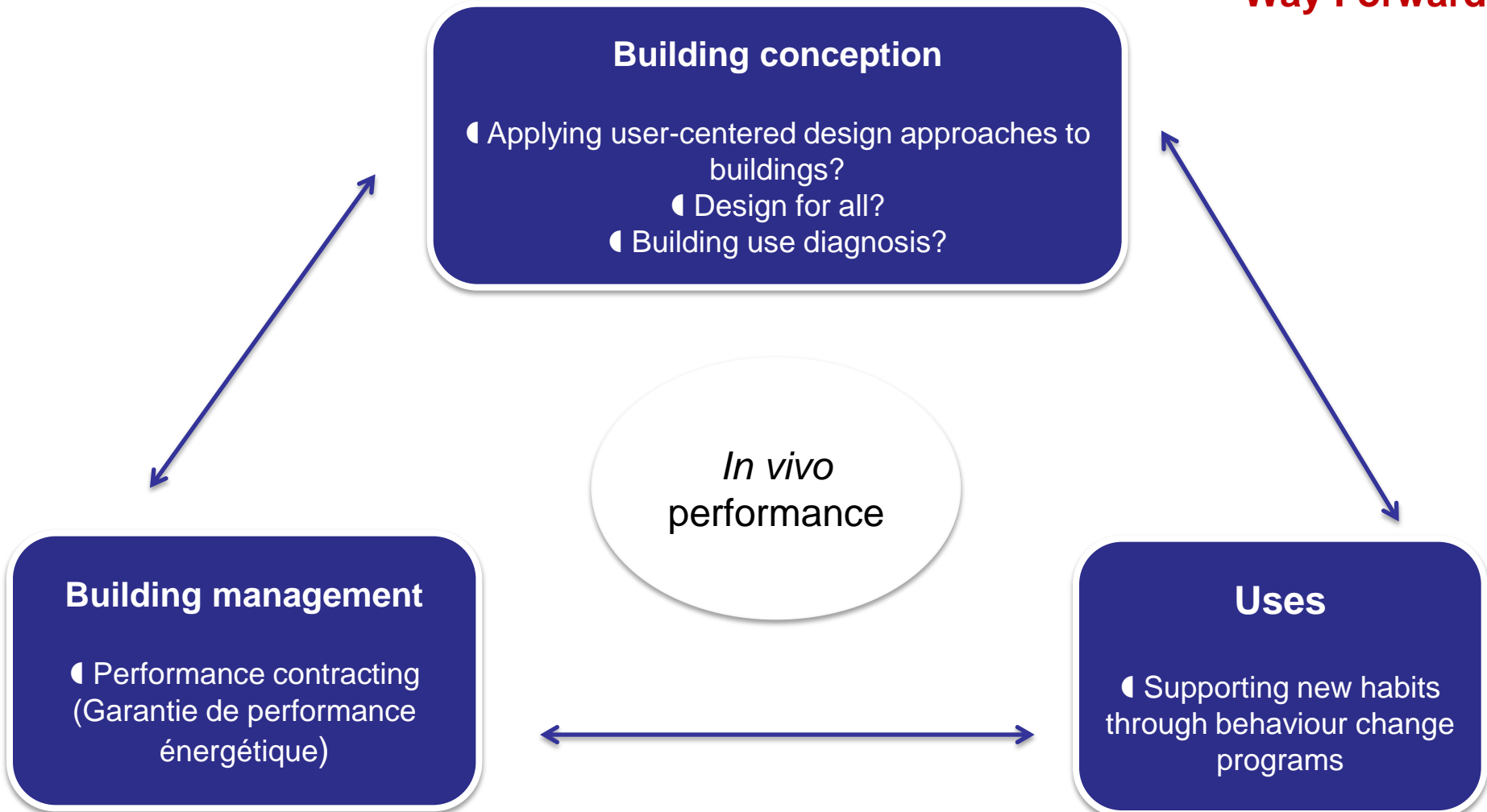
**Individual houses**  
(Les Hauts-de-Feuille)



Source: Briseperre (2013), *Les conditions sociales et organisationnelles d'une performance énergétique in vivo dans les bâtiments neufs*



## Way Forward





Thank you for your attention

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