

# LET'S TALK ABOUT ENERGY

How to communicate energy issues to tenants



## **BEEM-UP Building Energy Efficiency for Massive Market Uptake**

BEEM-UP

[www.beem-up.eu](http://www.beem-up.eu)

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# Some words on the way!

**A**pproximately 40 % of the EU's total final energy use (i.e. delivered energy) stems from residential and commercial buildings, responsible for 36 % of the EU's total CO<sub>2</sub> emissions.

*What can we do to reduce our energy use?*

Implementing technical energy efficiency measures in our homes is a good start. However in order to exploit the full potential of reducing the energy use, we need to broaden our view and complement technology development with modification of user behaviour and application of strategies to influence the behaviour of end-users – here, the tenants.

*“Supporting tenants to take steps in the right direction is an important role for a building owner!”*

**The main message of this brochure** is that property-owners can work with their tenants to reduce their individual and collective energy use. Sometimes this benefits the owner, and sometimes it benefits the tenants, but the environment always benefits! The brochure provides background information, how energy issues can be communicated to tenants and how the property-owners can facilitate energy-efficient behaviour. Hopefully, it will provide readers with some new insight and reflections, and the references and tips will be found valuable.

# Saving energy, in the interest of whom?

*Energy saving and energy efficiency are needed for many reasons, such as to conserve natural resources for future generations and to reduce the emission of greenhouse gases in the fight against human-induced climate change. A mixture of these reasons is relevant for building owners – tenants have their own reasons, too.*

**“Low energy cost helps to limit the total cost of living in the future”**

Investments by home owners in renovation to a high energy standard bring dwellings up to date and better able to face a future in which energy becomes steadily more expensive. When any building is being renovated, the opportunity can also be taken to improve its energy performance. The extra costs for the improvement are offset by the energy savings, so low energy costs help to limit the total cost of living in the future.

The tenant has a role in energy saving as well. A low-energy house, for example, requires acceptance of some requirements and restrictions, with possible associated changes in occupants’ habits. Customised information on energy use can support a more energy-efficient user pattern. Examples of such information include the effect of bathing and of major electricity consuming appliances. A changed user pattern does not necessarily mean a great difference in lifestyle/standard of living or a reduced indoor comfort.

Many energy-saving projects are also welcomed by the tenants. Energy efficiency and indoor climate are closely linked, and energy-saving projects usually also improve the maintenance standards. Energy-efficient renovation is therefore a way of dealing with problems and complaints, provided

that the improvements are robust and user-friendly. And in the end tenant satisfaction is a great social capital, which makes renting out of houses and apartments easier.

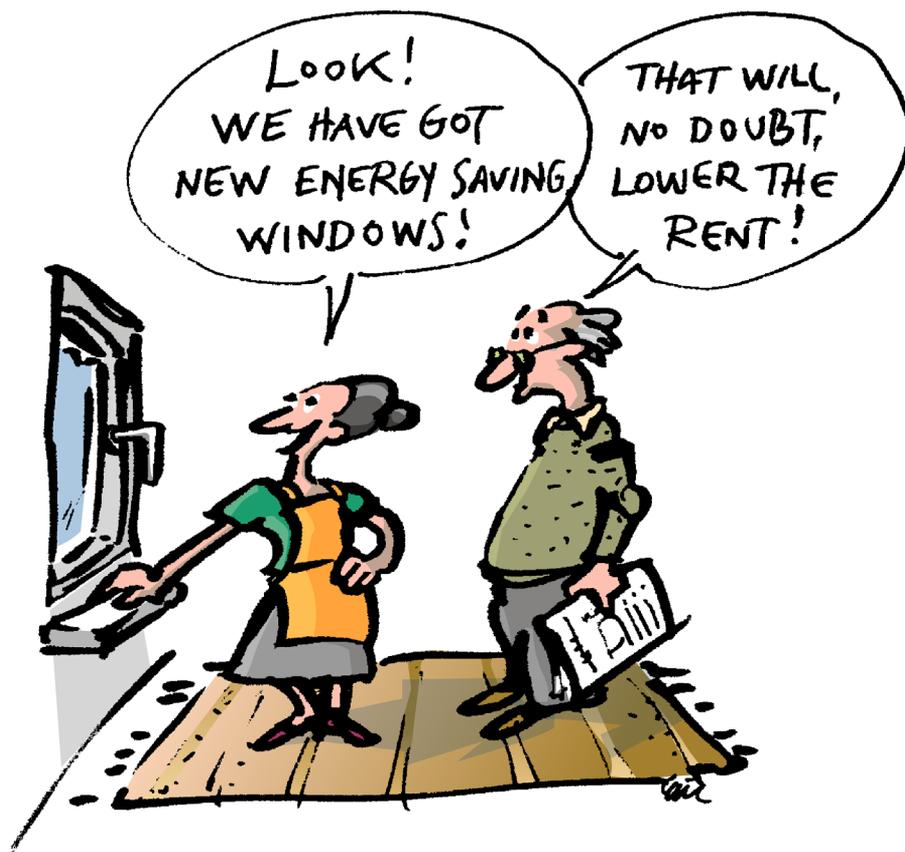
### SAVING ENERGY...

#### What's in it for the property-owner?

- » Economic benefits
- » Taking environmental and social responsibility
- » Improving housing quality
- » Enhancing tenant satisfaction

#### What's in it for the tenants?

- » Gaining awareness and making active decisions on energy use
- » Opportunities for savings
- » Reduced energy bills
- » Improved indoor comfort



# Energy behaviour - does it really matter?

*The estimated potential for energy-savings through behavioural change is about 20 %, but some studies show savings as high as up to one third of electricity consumption. This is not only significant for property-owners' bottom lines, but represents a significant reduction in greenhouse gas emissions and significant help for the environment.*

**T**o tackle climate change requires not only improvement of the energy efficiency of technical measures, but also changes in users' energy-related behaviour. Although behavioural change measures are not easy to implement, they are, if successful, more cost-efficient than many technical measures.

Tenants have a major impact on a building's energy use. They influence the domestic electricity use and hot water use as well as (to some degree) electricity use for building service systems. The heating energy is affected by the required indoor temperature and airing/ventilation habits.

***"If the tenants use domestic technology correctly they can save energy, money and the environment without compromising quality of life."***

Figure 1 illustrates different kinds of energy-related behaviour. Some decision situations occur relatively infrequently. Replacing traditional light bulbs with compact fluorescent lamps is quite inexpensive, but the effect can be significant. Other decisions involve high costs and more consideration, such as the purchase of refrigerators and freezers, televisions or computers. This is usually done when the old appliances are discarded. Then there is the behaviour that occurs on a daily basis and that often becomes a habit. Small changes in daily activities can eventually make big differences, and often cost nothing! They can be changes as how we dry our laundry or turn off lights when we leave a room. As far as behaviour is concerned, both large and small decisions matter!

Several behavioural measures cost little or nothing, which makes them very effective.

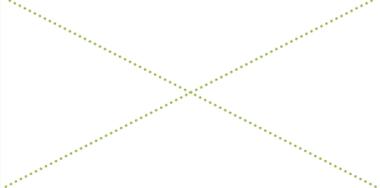
	Infrequent	Frequent
No/low cost	<p>Stocktaking Low-energy bulbs Turning the temperature down at night Draught proofing</p> 	<p>Habitual behaviour and lifestyle Shut off stand-by Air-dry laundry Short showers Use energy-efficient washing programs</p> 
Higher cost/investment	<p>Consumer behaviour Energy efficient white goods and equipment, such as TVs and computers, vacuum cleaners, air conditioning fan:</p> 	

Figure 1 Energy related behaviour can be divided into frequency of action and cost.



PREPARING FOR TEENAGERS

# What is so complicated with behaviour change?

*This discrepancy between knowledge, attitude and behaviour has been referred to as the "attitude action gap". Overcoming this attitude action gap is one of the challenges of the climate change agenda – and a key issue to address for successful energy efficiency.*

**P**lanned behaviour is a consequence of behavioural intentions. These intentions result from attitudes, standards, beliefs and perception. Social and personal standards play an important role in explaining the prevalence of environmentally friendly activities, but at the same time individual responsibility has its limits. In addition, an "attitude action gap" has been found, which means that we say one thing but do another.

**The fields of economics, psychology and sociology contribute to a better understanding of energy-related behaviour and the complexity of human behaviour:**

» **Economics**

The key insight of the field of economics is the importance of market conditions for persistence or change in behaviours. In particular, investment behaviour can depend on low risk and profitability.

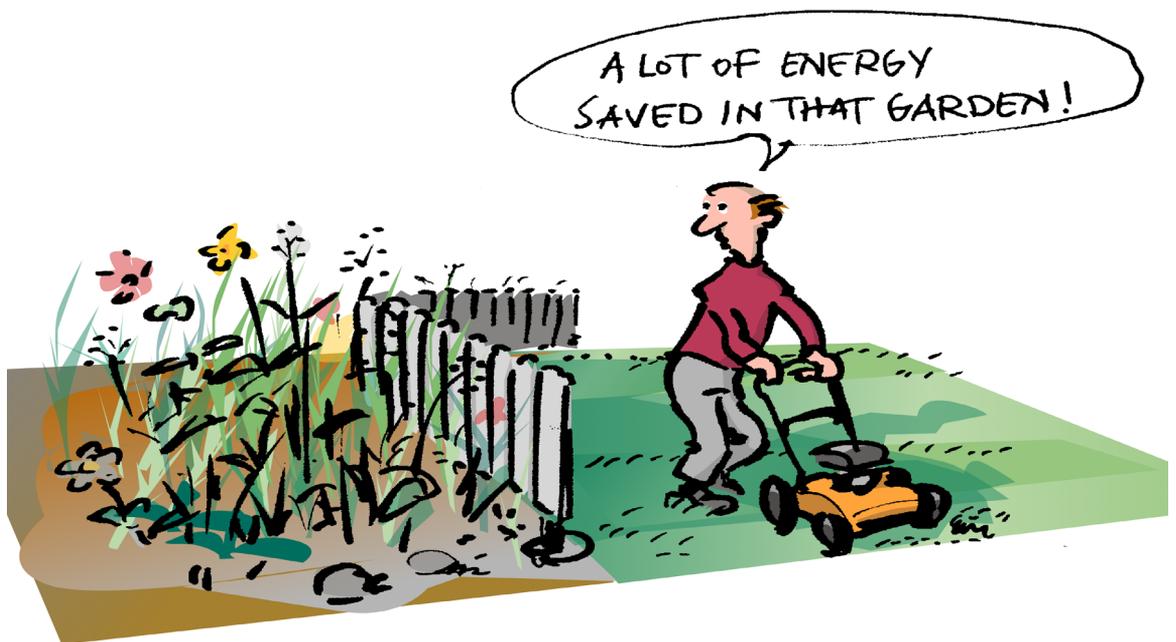
» **Psychology**

The psychological approach focuses on the interplay of attitudes and values, on conflicting intentions and on cognitive processes that lead to energy-saving decisions or energy-using behaviour.

## » Sociology

Sociology emphasises the social embedding of consumption patterns. For example, when analysing young people's behaviours, take into account their "connectedness" to online social networking platforms.

These approaches should be seen as complementary, each explaining part of the picture. Thus, rather than adopting a strategy based on one single field, practitioners should be aware of ideas from several research perspectives into behavioural change. This could help the design of an intervention strategy together with pragmatic probability assumptions. If the process is done well, the outcome should be better than that from a uniform approach – positively contributing in to bridging the attitude action gap.



# Energy is invisible — right?

*The estimated potential for energy savings through behavioural change is significant. But energy is not a visible element of a product.*

*By visualization of energy and using energy feedback systems, users can be made aware of their impact while providing them with the opportunity to influence their use of energy.*

**M**any feel that there is unlimited access to the earth's resources, including energy. For those unaware of the limits of resources, it is easy to overestimate them, and thus the use of them. Many people have no idea how much energy they are using: if they do not understand the metric and what it means, it's not easy to understand how and in what ways they can change their behaviour.

Even though there is a need for more information, information strategies alone seem to have little effect on behaviour. Studies indicate that it is only when combined with other measures, such as individual feedback, that significant behavioural change can be achieved.

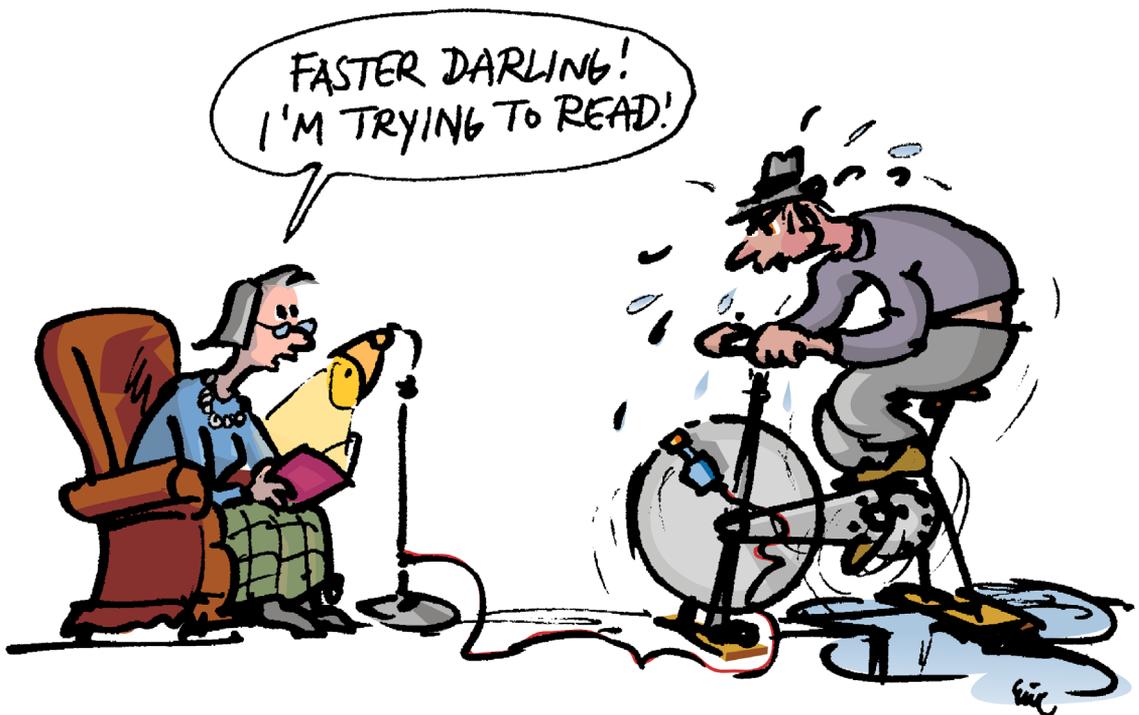


**Feedback on energy use and visualisation of energy use can be carried out in many ways, such as by the use of:**

- » Frequent metering
- » Displays that show real-time power levels
- » Warning LEDs indicating that hardware is on standby
- » Feedback from energy providers (e.g. on the energy bill)
- » Access to detailed information from smart electronic meters

Real-time, personalised feedback, as delivered by smart metering systems, makes hidden energy use more obvious. It increases understanding of the effect of behaviour, and motivates improvement. Energy monitors can point out peak energy levels of heating, cooling and power consumption and encourage conscious control of these applications. The feedback mechanism is also essential in the learning-by-doing process.

*"By visualization of energy, people can be made aware of their own impact"*



# Communicating kWh – how difficult can it be?

*Energy is not always a priority topic for users. Kilowatt-hours can be difficult to relate to in daily life. Considering how to communicate energy issues and inviting to a dialogue is a good start!*

**K**nowing the interest of the tenants is important in communication about energy, in order to provide customised and specific advice and information. If your tenants do not understand the metric and what it means, it is not easy spontaneously to understand how they might change their behaviour. Much can be gained by making communication into a dialogue, giving tenants the chance to ask questions.

**This can be summarised into three key points:**

1. Start from the customer's interest, needs and knowledge.
2. Concentrate on what is good/useful for the customer - keep away from the technology.
3. Use other ways than kWh to describe energy use.

Anything that feels overwhelming, boring or imposed will be automatically ignored and rubbished. Avoid this trap, if possible. Aim to build relations with your tenants - trust both ways is important - and prepare for a long period of interaction. Learning requires both knowledge and practice - "learning by doing". Combine energy-saving advice and feedback for those with positive attitude towards sustainability, listen to their ideas, and facilitate actions taken by tenant groups.

*"Anything that feels overwhelming, boring or imposed will be automatically ignored and rubbished. Avoid this trap, if possible."*

In addition, clear communication is important: say what you mean, and do what you say. But forget about the traditional ways of communication and discussion. The role of tenants has changed.

Traditionally, communication has been about reading text, produced by a source/expert for the reader/consumer, and information has usually been politically correct (even if misleading). Contemporary communication tends to be more focused on social interaction, with the reader producing the text, a mindset of “learning by doing” and free information exchange (uncorrected). Discussions have shifted from participants having fixed roles, listening to experts and decision-makers, to discussions involving all partners. The emphasis is on consent and sharing experience, rather than on emphasising differences.

### AN EXAMPLE FROM SWEDEN OF HOW TO COMMUNICATE ELECTRICITY USE – How to make kWh and electricity costs easier to grasp!



This example is from the Swedish Energy company Alingsås Energy, who compared energy costs and the price of the well-known Magnum ice cream (SEK 20 or EUR 2).

#### For the price of one ice cream you could:

- » Boil 133 litres of water in an electric kettle **or**
- » Whisk 89 litres of cream with your electric whisk **or**
- » Toast 356 slices of bread **or**
- » Listen to your kitchen radio for 3 months **or**
- » Surf the Internet on your laptop for 181 hours **or**
- » Use the dishwasher 11 times **or**
- » Keep the lights in the kitchen on for 3 days **or**
- » Vacuum-clean the kitchen 27 times

*Note that these are very rough estimates, where many factors have an impact, not the least being the electricity price (which in Sweden is usually low in comparison to many other European countries).*

# ...household no. 234, household no. 235... get to know the tenants!

*It is vital not to treat tenants as an anonymous and homogenous group. Landlords who know their tenants are more likely to address them as real people and thus gain trust and understanding for the changes intended.*

**T**enants can be grouped by socio-economic or demographic factors. However, grouping persons only by age, culture, income etc. will not explain what is important to them.



The following is an example from a Swedish study on household lifestyle profiles, illustrating how people look at their homes. **Housing means more than just somewhere to live, and means different things to different persons.**

*A person's household lifestyle profile says more than age, ethnicity, social class or education. The profile is linked to the personality, with six dimensions being considered:*

1. The dwelling's importance for personal identity
2. Relation to the dwelling (rational or emotional)
3. Economising with resources (passive or active)
4. Personal orientation (global or local)
5. Relation to work (livelihood or lifestyle)
6. Location (rural tranquillity or the city's pulse?)

From these dimensions, the study suggests that residents fit into five household lifestyle profiles:

- » *Petra* – who is often more interested in the location than in the actual dwelling.
- » *Fredrik* – who likes to have projects around the house.
- » *Tina* – who identifies with her home.
- » *Rene* – who regards the home as somewhere to live (roof over her head).
- » *Krister* – who has more of an attachment to the neighbourhood than to the home itself.

The idea is that this knowledge will inspire housing companies and other actors in the housing market to create offers that consist of a mix of different factors in order to be interesting for everybody. **There is no one-size-fits-all solution!**

The next step is to develop these profiles with attitudes towards energy issues related to the home, and to use this to create energy action plans suited for different recipients with various drivers related to energy-savings.



# Be sociable! It may be a good investment

*Any issue that brings people together in a positive way, that involves cooperation and social action, brings about the social capital. Energy can become this bonding issue, if based on community activities.*

**A**cting together and talking together increases the likelihood of lasting behavioural changes. Defining habits as "normal", through 'social norm' marketing, can make a real difference in bringing about behavioural change. Many motivational approaches to shape energy use appear to fail because the suggested "good behaviour" is seen as abnormal or very strange, and is therefore not imitated.

Positive involvement in the neighbourhood and social interaction between tenants create trustful relations, both between the tenants and between tenants and other actors, such as the property-owner. It will also lead to better communication about plans for renovation and energy-related performance. There is a huge potential in people who want to become involved as active citizens, if opportunities for collaboration are created.



## **There are numerous activities that could be facilitated by the property-owner, such as:**

- » Helping the neighbourhood to design and implement strategies that benefit the local economy as well as the local environment and quality of social life.
- » Finding and interacting with green neighbours (i.e. active and knowledgeable persons giving personal support to the neighbourhood).
- » Organising an event, such as a fair, market or café, concentrating on energy-saving products, services etc.
- » Providing kits of free or low-cost items and materials

that cut the energy bill, such as reflective foil, LED lights, shower timers, information brochures or DVDs. They are cheap but surprisingly helpful.

### Dutch example of a social and energy event

A fun awareness programme on energy saving in the form of a street festival about climate was arranged in a street in Gouda in the Netherlands. It started with points being awarded for all actions to save energy - most points were gained by doing something that involved other residents in the area.

*"We collected points by reading our energy meters, by having our dwellings energy-labelled and even by inviting a weather-man to present his TV weather forecast in front of a cooperatively owned wind turbine in the area. Of course, we tried to encourage people to buy shares in the wind power cooperative. The campaign brought us to number 96 on a list of 5000 participating streets, and we had a big street party to finish the campaign."*

*Occupant living in a street in Gouda*



# Time for a strategy!

*To implement behavioural change actions and succeed in energy-saving activities it is crucial to select a strategy for your efforts and the involvement of tenants.*

**“Fundamental to adapt the strategy to your organization’s requirements”**

**T**here is a range of possible services and intervention strategies with which practitioners can work, such as media campaigns, goal-setting strategies (rewards) and real-time individual feedback. It is essential to tailor the strategy to your organisation’s requirements. This means that both financial and personnel aspects should be considered. The employee who is expected to carry out the mission should be given fair conditions for this, and should possess the necessary knowledge or be offered further training. It is equally important that the activities are reasonable in relation to the measures intended.

The fields of economics, psychology and sociology (see *“What is so complicated with behaviour change?”* Pages 8-9), together with examples of household profiles (see *“...household no. 234, household no. 235... get to know the tenants!”* Pages 14-15) may help you to identify different factors that might shape your target group’s behaviour and to reflect upon which variables might be especially relevant for them. This could help with the design of an intervention strategy, of which the outcome should be better than a one-size-fits-all approach. In any case, it is helpful to involve your target group for designing your intervention strategy. Take the time to visit users at home to understand their situation, or invite them to a discussion. Based on this relationship, you can then create an energy service which is more likely to fit the particular situation of your target group.

The following are some very general steps that can be included in your strategy.

**The BewareE project\* developed a six-step approach for creating and implementing services that target energy-related behaviour:**



*Step 1:* Analyse the situation of your target group and your own situation

*Step 2:* Create services together with your target group

**Service design:**

*Step 3:* Adapt the service to your specific case

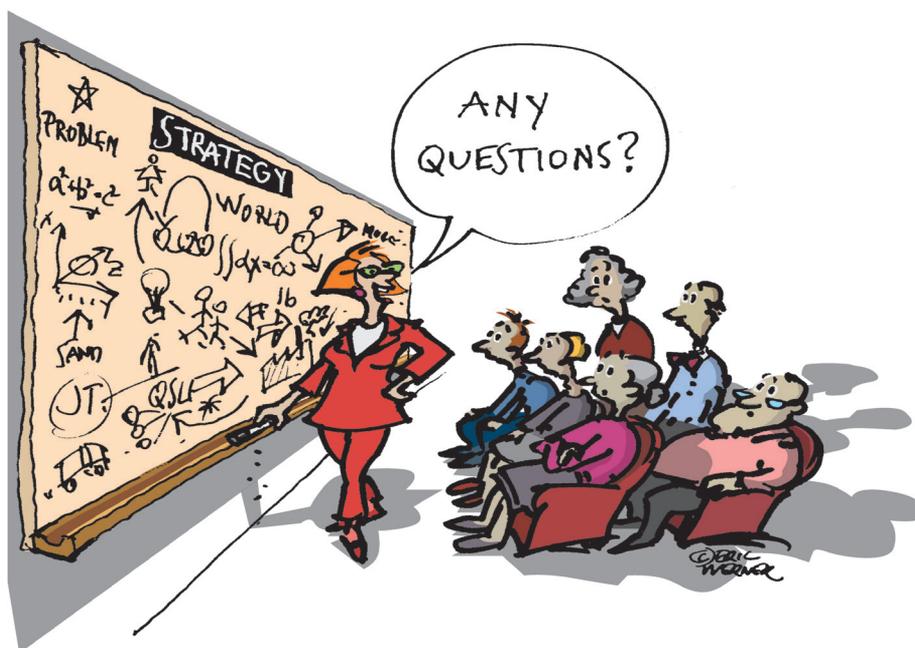
*Step 4:* Test the service, train staff and prepare resources

**Service management:**

*Step 5:* Implement the service professionally, patiently and passionately

*Step 6:* Evaluate and optimise service

*\*BewareE was a project co-funded by the Intelligent Energy Europe Programme. For more information read their manual "Developing and Implementing – Effective Household Energy Awareness Services".*



# Usability, a question of... ...using a product as it was intended

*Energy performance and usability are connected. If a refurbishment is intended to make a building more energy-efficient, it is important that the tenants understand how the new apartments are meant to be used, in order to minimise the rebound effect. This can include the indoor temperature settings or the use of a new kitchen fan.*

***“If you fail to educate the tenant it can lead to damage to the building, no energy gain – and frustrated tenants”***

**U**sability is a question of using a product or system as it was intended. It is measured by effectiveness, efficiency and satisfaction. A user-friendly dwelling has understandable control systems, devices that support self-learning, robust installations with reliable performance (no breakdowns) and easy maintenance at low cost.

As a property-owner you have the responsibility to provide an efficient building as well as the means for tenants to use it correctly. The latter can be done by:

- » Making systems and appliances etc easy to use.
- » Giving good instructions.
- » Offering the opportunity to ask questions.
- » Not leaving the tenants to fend for themselves! Do follow-up checks.
- » Do not demand too much of the tenants. No-one is able to cope with that for a prolonged period of time.

User-friendliness is a design and maintenance issue. User manuals come last, but cannot correct shortcomings in the design of building services and technologies.

For occupants, the best “manual” is that services are robust

and allow learning by doing, and that opportunities for a dialogue with relevant staff are given. In some countries a porter/ caretaker plays a key role here.

### The Passive House

The passive house is a clear example of an instance when it is important that the tenants know how to “use” the building. A passive house is an extremely air-tight and well insulated building, having almost no need for additional heating. A heat exchange system pre-heats incoming air from the outgoing air that has been warmed by surplus heat from the tenants and their electrical appliances.

When using the house, it is important to air and ventilate it correctly in order to achieve a good indoor climate. It is also of vital importance never to pierce the airtight layer in the walls. If the house is handled incorrectly, there is a risk that mould will start to grow and the house will become impossible to live in. If the house is used properly and is very energy-efficient, it provides good summer and winter comfort.



# Everybody can do something

*Nobody wants to pay for energy that is neither needed nor used. With simple means it is possible for everybody to reduce energy use in the home and save money – provided that they know how to do so. Give tips on energy-efficient solutions – from simple to more demanding – to the tenants.*

Involving tenants in achieving energy efficiency goals could lead to better awareness of opportunities for other energy savings, which in turn could lead to realisation of more such opportunities. Make tips on energy-efficient solutions so easy and appealing that it would be foolish not to act upon them. Make sure that everyone can feel involved. Easy solutions are more likely to be successful. This also ensures that the whole family can get involved on equal terms, and inspire each other. Children can often coach their parents in projects like these. Make sure that the energy issue is a topic of conversation during the family dinner!

There is plenty of material that gives advice on how to save energy (see Page 26 for tips).

## Here are some examples:



### Lighting

*Lighting is almost always needed. There are, however, different ways to use it.*

- » Make sure that you switch off the lights when you leave the room.
- » Use low-energy bulbs.

### Water

- » Shower instead of taking a bath.
- » Turn off the water while brushing your teeth or doing the dishes.
- » The right fittings can save a lot of water for you.

### *Cooking and washing up*

- » Always cook food with the lid on.
- » Make use of the residual heat in the oven.
- » Do not use the kitchen fan for longer than necessary.
- » Rinse the dishes with cold water. Make sure that the dishwasher is filled before using it. If you wash by hand, use a bowl instead of running water.

### *Washing and drying*

- » Wash at low temperatures as far as possible.
- » Use high spin speeds to reduce drying time.
- » If possible, let the laundry hang dry.

### *Electrical equipment*

- » Turn off appliances when you are not using them.
- » Unplug unused chargers!

### *Heating and cooling*

- » Adjust the indoor temperature.
- » Use curtains or blinds to shut out sunshine.
- » Do not put furniture in front of radiators.

### *Ventilation and airing*

- » Be aware of the ventilation – it is important that it works correctly. Consider inlets/outlets and use the kitchen fan when cooking. (important for a good indoor environment).
- » When airing, do it quickly and efficiently.



# To summarise, facilitate and encourage!

*Property-owners can do much to facilitate and encourage tenants to save energy. It is especially important to promote and follow up on energy-saving actions, such as by individual measuring and feedback to the tenants.*

**T**he previous chapters highlight many different aspects concerning energy issues related to tenants. Even though the property-owner cannot force tenants to change their energy habit, they have a very important role in facilitating and encouraging changes.

This brochure has explained that energy use needs to be visualisable (*Pages 10-11*), which can be done by different kinds of monitoring systems. The systems can show how much power and heat is being used, relate it to comfort, and support energy saving through a learning-by-doing process. Different kinds of feedback can be used to strengthen the impact of the data, but it is necessary to consider how the data is communicated (*Pages 12-13*). That social interaction can stimulate energy awareness and savings has been discussed (*Pagea 16-17*). There are numerous ways in which the property-owner can support these kinds of activities – for example, by facilitating the formation of active groups, educating energy ambassadors, creating digital and physical meeting places, providing opportunities for community activities etc.

There is no single and best solution for all tenants and owners. People respond differently to cost issues, comfort issues and involvement. This implies that communication works best when a range of channels is used and when there is honest contact between owner and tenants. It is important to know the tenants and their needs. By giving the tenants freedom to

become socially active, by looking at how they communicate and by helping them to collect the information they need, people are more eager to use information.



# Don't reinvent the wheel – use others' experience

*This brochure has drawn upon a number of sources, listed below for further reading. Much valuable information is also available that can be very useful when addressing tenants – examples of this are also included below. So before thinking of producing some communication material of your own – bear in mind that it probably already exists.*

## Useful information and tips

- **Electricity use in the home. Twenty ways to save.**  
Brochure from the Swedish ELAN Programme (2010). Available at [www.elanprogram.nu](http://www.elanprogram.nu)
- **HEATING - the largest part of your home's energy bill. 10 ways to reduce your heat consumption without giving up on comfort. A user manual for every home.**  
Brochure from the Intelligent Energy Europe project ISEES -Improving the Social Dialogue for Energy Efficient Social Housing (2007). Available at <http://eaci-projects.eu/iee>.
- **Energy Literacy. Essential Principles and Fundamental Concepts for Energy Education.**  
Brochure/guide from U.S. Department of Energy presenting energy issues from an educational perspective (2012). Available at [www1.eere.energy.gov/education/energy\\_literacy.html](http://www1.eere.energy.gov/education/energy_literacy.html)
- **Energy Management Guide for Tenants**  
Brochure that explains how energy savings can be made by tenants in office buildings (2012). Sydney: Office of Environment and Heritage. Available at [www.nabers.gov.au](http://www.nabers.gov.au).
- **Developing and Implementing – Effective Household Energy Awareness Services.**  
Manual/brochure from the Intelligent Energy Europe project BewareE (2010). Available at <https://projekte.izt.de/bewaree>
- **Data base Energy Awareness Services**  
The data base was compiled by the Intelligent Energy Europe project BewareE (2010). Available at <http://projekte.izt.de/de/bewaree/services/>
- **European Citizens Climate Cup**  
Energy saving competition of households in different countries (2012). Supported by Intelligent Energy Europe. Visit [www.theclimatecup.eu](http://www.theclimatecup.eu)

- **REMODECE project**

REMODECE stands for Residential Monitoring to Decrease Energy Use and Carbon Emissions in Europe, and was an Intelligent Energy Europe project (2008). More information at <http://remodece.isr.uc.pt>

- **Asset Based Community Development Institute.**

Situated at the School of Education and Social Policy at the Northwestern University in Illinois, US, working with sustainable community development. Information available at [www.abcdinstitute.org](http://www.abcdinstitute.org)



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# Get dressed for success – communicating energy issues to tenants

*We spend a lot of our time at home where many of our everyday activities require energy in the form of heat or electricity. Often we do things in a certain way by habit, without reflection. Through small changes in behaviour, we can contribute to both better reduced cost and a healthier planet.*

The main message of this brochure is that property-owners can work together with their tenants to reduce their collective energy use. Sometimes it benefits the owner and sometimes it benefits the tenants, but the environment will always benefit! The main emphasis of the brochure is on how to communicate energy issues to tenants. A number of success factors can be pointed out – here are some:

- Give tailored information based on tenants' values and interests
- Visualise energy use and give personalised feedback
- Consider the effect of neighbours' behaviour (social norms)
- Find and offer motivators
- Build trustful relations
- Use many different communication channels

 ***“Supporting the tenants to take steps in the right direction is an important role for a building owner!”***

This brochure aims at creating interest for energy issues for property-owners, tenant associations, consultants, authorities, etc. It provides useful information and tips when communicating energy to tenants. The overall goal is to encourage energy savings through tenant commitment and efficiency awareness.

The brochure has been produced in the BEEM-UP project, which is an EU-project within the 7<sup>th</sup> Framework Programme. BEEM-UP stands for Building Energy Efficiency for Massive market Uptake.

This brochure is available in English, Dutch, French and Swedish, please visit [www.beem-up.eu](http://www.beem-up.eu)