

FinSH Financial and Support Instruments
for Fuel Poverty in Social Housing

Efficient energy using behaviour and energy-efficient renovation - barriers and starting points



With the support of:

Intelligent Energy  **Europe**

Efficient energy using behaviour and energy-efficient rYbcj UHcb - barriers and starting points

Project report within the scope of
FinSH 'Financial and Support Instruments for Fuel Poverty in Social Housing'
www.finsh.eu

December 2007 – May 2010

Project no. EIE / 07 / 146 / SI2.466277

April 2009

Otto-von-Guericke-Universität Magdeburg
Forschungsgruppe Umweltpsychologie
Prof. Dr. Petra Schweizer-Ries
als Juniorprofessorin für Umweltpsychologie
Kaiser-Otto-Ring 6
39106 Magdeburg

www.fg-umwelt.de

contact person:
Dipl.-Psych. Irmela Benz
Tel.: 0049 (0)391-67-11049
Mail: irmela.benz@fg-opsy.com



Content

CONTENT	3
INTRODUCTION	4
1. EFFICIENT ENERGY USING BEHAVIOUR	5
• MAIN BARRIERS	5
• DESIGN OF EFFECTIVE INTERVENTIONS	7
2. ENERGY-EFFICIENT R9BCJ5 HCB	9
• MAIN BARRIERS	9
• MOTIVATIONAL FACTORS FOR LANDLORDS.....	11
REFERENCES	15

Introduction

The project FinSH aims at the alleviation of the energy poverty situation in Europe by providing guidelines for design and implementation of financial and social support schemes to increase low-income households' energy efficiency by behavioural and technical measures.

Energy or 'fuel' poverty is a term used to describe the situation a household finds itself in when it is not able to afford the energy bills for its everyday needs, such as heating, the use of electric devices/lighting and hot water.

The major factors affecting the risk of energy poverty are high energy costs and low incomes as well as poor energy efficiency of the building stock combined with a non-efficient energy using behaviour of private households. The improvement of energy efficiency will be the most sustainable strategy in order to fight fuel poverty, since realised savings will permanently relieve both households and climate.

A lot of environmental psychological studies¹ prove that the following parameters play a central role for the question whether or not a person for example heats or ventilates efficiently, buys class A++ refrigerators, turns off the water during the process of soaping or invests in energy-efficient rehabilitation measures:

- perception that there is an „energy problem“, which can be reflected through short resources, climate problems or outstanding energy bills
- perception that ones own behaviour is relevant to the problem
- sense of personal commitment regarding energy-efficient behaviour
- social standards, i.e. perceived expectations of important characters (e.g. family, friends, role models)
- evaluation of expected benefits and costs that are linked to the efficient use of energy (monetary parameters as well as expectations regarding profits and losses of comfort, prestige or spontaneity)
- perception of possible behaviour (e.g. one`s own abilities, perceived availability of consulting services or financial and technical resources)
- usual habits regarding the consumption of energy in everyday life, which are very change-resistant since they have been trained for years

The present paper targets to illustrate what these parameters are like in socially and financially disadvantaged households respectively their landlords. The first part focuses on the energy using behaviour of low-income households, which are at high risk of energy poverty and therefore a central target group within the project FinSH. The second part highlights different barriers and starting points for investments in a building's energy efficiency, concerning both landlords and tenants. The paper is based on a review of documents dealing with the domestic use of energy as well as the implementation of energy-efficient rehabilitation measures. The data was completed with results from expert interviews that were carried out in either face-to-face situations, via telephone or email.

¹ see e.g. Krömker & Werner, 2009; Mack, 2007; Matthies, 2005; Wortmann, 1996

1. Efficient energy using behaviour

The improvement of energy consumption behaviour in households affected by energy poverty officiates as a kind of low-cost immediate aid. It provides prompt energy savings, which should not be underestimated. The potentials range between 5% and 15% on average.

The following chapter highlights specific barriers, which were picked out as a central theme by the interviewees, and can be assigned to the psychological determinants mentioned above. The reported barriers did not vary significantly between the UK, France, Germany, Italy and Poland in the majority of cases. Existing characteristics within the reviewed countries will be identified in the following paragraphs.

Subsequently, relevant aspects for the design of interventions aiming to improve peoples` energy-efficient behaviour will be described.

■ ■ ■ Main barriers

Interviewees concordantly entitled the lack of **energy-relevant knowledge** as being the most important barrier towards an efficient energy using behaviour. The archival data analysis produced a similar result and it could be pointed out that there are huge gaps in knowledge, regardless of the socio-economic background². Those missing information especially affect efficient heating and ventilation. However, the comprehension of energy bills, the underestimation of one`s own energy consumption as well as individual saving possibilities, the perceived availability of consulting services or financial and technical resources and the overestimation of knowledge regarding energy are concerned as well.

A barrier linked to this lack of knowledge is the lack of **problem awareness**, which was assumed to be very common amongst energy-poor tenants. According to the experts, they often denied that there is an energy problem and did not see that their own behaviour is relevant to it. Energy poor tenants were described as having little or no awareness on how they can contribute to energy savings or efficiency in their homes, and therefore do not consider it as an issue. An impression received from interviews in Italy is that environmental awareness was often associated with the feelings of hopeless resignation and doubtful forecasts.

According to representative socio-scientific studies³ the Germans` environmental awareness is comparatively high and in general people feel responsible for an economical use of energy. However, concerning the **sense of responsibility**, according to the survey, industry is expected to provide customised technical solutions, public institutions are expected to serve as a role model and politics is expected to establish appropriate basic conditions. In contrast to the power consumption, private households only have small needs regarding their own action or regarding political action in order to reduce energy used for heating. The interview partners` evaluation of socially and financially disadvantaged households was very similar: most of the time tenants would not feel responsible for the reduction of their energy consumption, especially when it comes to heating.

Being asked about characteristic **habits** of energy behaviour in low-income households, some experts supposed either an unthoughtful handling of energy or insufficient (e.g. focussing on strategies with little savings potential) or even too restrictive energy saving measures (e.g. the excessive reduction of the room temperature which can provoke mould or heating one room rather than the entire property). In addition to that the experts named some group specific inefficient habits: elderly people tended to overheat their

² see e.g. BMVBS, 2007; forsa, 2004; Hacke, 2007; Hacke & Lohmann, 2006; Riedel & Born, 2006; Kuckartz et al., 2006; ROSH, 2008; Seifried, 2008

³ see e.g. BMVBS, 2007; forsa, 2004; Kuckartz et al., 2006; Mosler & Gutscher, 2004

apartments and younger people often showed a thoughtless consumption of warm water. Turkish migrants paid less attention to the avoidance of stand-by-losses, used less energy-saving bulbs, and often used improper ventilation through tilted windows⁴. Another habit influencing a person's energy consumption was the purchase of latest electric gadgets "dictated" by advertising.

There are some behavioural patterns, characteristic for each country: In France measures taken by households to try to reduce their energy consumption and heating bills were described as sometimes dangerous and not very appropriate. Draught-proofing of ventilation ducts in an attempt to avoid heat loss through the outlets is commonly seen, as is the use of supplementary heating (often paraffin heaters which increase humidity in the room). Such behaviour increases the risk of carbon monoxide poisoning and the development of mould due to the high level of humidity. The use of supplementary heating was often seen as a way of managing heating bills: the household will have heating so long as there is paraffin. Conversely, consumption of energy such as electricity, gas or fuel oil cannot be easily visualized which makes managing the energy budget much more difficult. A common behaviour described in Italy is that if the outside temperature increases for some days during the winter, tenants were used to open the window instead of regulating the centralised heating temperature or the radiator valves.

As regards low-income households' energy consumption, interviewees also asked to consider that a large part of low-income households would need much more energy simply because people usually spent a lot of time at home due to their unemployment (pensioners, unemployed). In addition to the continuous presence of people at home during the day, French experts cited overcrowding of apartments as a central reason influencing households' energy bills.

The **evaluations of expected benefits and costs** (monetary parameters as well as expectations regarding profits and losses of comfort, prestige or spontaneity) poses another psychological determinant linked to the efficient use of energy. According to the experts and different evaluation studies⁵ for low-income households financial savings were the main reason for saving energy or to see an energy consultancy. The protection of the climate or of present energy resources only played a secondary role. According to the experts, for low-income households (in contrast to households with higher incomes) a small amount of money that could be saved is already perceived as an incentive in order to change their behaviour. However, getting a future return on investment is not a meaningful concept when facing a difficult situation in the here and now. Speaking of costs and benefits, the German interviewees criticised the German welfare system, which pays for the heating costs for recipients of unemployment or social benefits, and as a result reduces their incentive to save energy. Interviewees also asked to consider that receiving an energy bill once a year was not very helpful in order to understand one's own energy behaviour and the financial benefits of energy saving strategies.

Further obstacles affecting the evaluation of benefits and costs can be based on the difficult overall situation households affected by energy poverty find themselves in. Low-income households struggle with many daily troubles and thus were assumed to be overstrained or resigned, which made it difficult to win them for the topic of energy savings. One German expert assumed that some might even perceive the comfort of a thoughtless use of energy as some kind of 'last luxury' left in their everyday life. In addition, it was often pointed out that most people were afraid of another instance of control and paternalism, with which they usually are confronted with in their daily life. Thus, they tended to be highly sceptical towards information and consultation offers provided by an unknown third. The feeling that measures they could take themselves are

⁴ see Riedel & Born, 2006

⁵ e.g. Dünnhoff et al., 2009; Hacke, 2007

less effective than what the landlord could do can lead to frustration and therefore inhibit permanent efforts.

Another general assumption in all countries was that low-income households surely had less electric devices than households with a higher income, but the ones they possess were more inefficient since low-income households often can't pay for more efficient devices. The perceived lack of financial means also concerns investments in retrofit measures: In Italy for instance, it was highlighted that in the opinion of Italian (energy poor) tenants the improvement of energy efficiency in their building was urgently necessary. But since they did not have the financial means to provide in it themselves, they were dependent on national, regional or municipal funds, which were almost always insufficient, if not unavailable.

■ ■ ■ Design of effective interventions

As a response towards the overall opinion that tenants have very little knowledge on energy related topics, the main starting point to promote efficient energy use behaviour experts pointed out is the need to facilitate the acquirement of knowledge. As regards existing products customised to the needs of low-income households, the interviewees in Germany for instance either could not name any or appraised those that are offered as not sufficient at all. The financial maintenance of local projects offering consultation services for low-income households turned out to be difficult and struggled to reach the target groups. Many of the initiatives failed although their approaches were promising⁶. The interviewees stated linguistic and financial barriers for low-income households, especially for immigrants, to access common consultation services like the ones offered by consumer agencies.

The recommendations concerning appropriate communication strategies presented in the following section constitute the basis for a variety of interventions, which are demonstrated in a second paragraph.

Communication strategies

Financially and socially disadvantaged households are often described as a target group that is difficult to reach with information campaigns and consultation.

Based on the experts' experiences and the analysis of the archival data recommendations on how to reach low-income households easier some general communication strategies can be summarised as follows:

- It is advisable to combine different communication media, e.g. the English experts suggested a broad communication approach including written information via local paper, mail and tenant newsletter combined with the use of different social environments of tenants like their school, their workplace or community as well as social institutions, e.g. health and social care services.
- It is important to choose media which are suitable for the accordant target group. In Germany for instance, it had been pointed out that television could be used to present entertaining energy topics in order to arouse public interest. To reach migrants, who are a central target group when dealing with energy poverty, information material should be prepared multilingual, if distributed in multinational neighbourhoods.
- Written information and such obtained from radio or TV should be complemented by information given personally, preferably in a face-to-face situation by persons and institutions tenants trust, e.g. social institutions or existing social networks/peers would be most suitable for that contact. Local job centres can be

⁶ see e.g. Dünhoff et al., 2006; Seifried, 2008

Content

CONTENT	3
INTRODUCTION	4
1. EFFICIENT ENERGY USING BEHAVIOUR	5
• MAIN BARRIERS	5
• DESIGN OF EFFECTIVE INTERVENTIONS	7
2. ENERGY-EFFICIENT R9BCJ5 HCB	9
• MAIN BARRIERS	9
• MOTIVATIONAL FACTORS FOR LANDLORDS.....	11
REFERENCES	15

in a kind of competition. It has to be considered though, that people tend to start to increase consumption after discovering that they use less than the norm. Thus, the provision of benchmarks should be complemented with motivational messaging in order to counteract this so-called boomerang effect.

- **Social models** are able to motivate one's own actions and to diminish the adaptation of a new behaviour. Such models can be provided by e.g. advanced training of multipliers from the same environment, the involvement of persons that act as a role model for the target group or campaigns that include group oriented activities. For instance Welsh housing associations make use of the concept of energy champions as local communicators. Some experts emphasized that interventions, which use social models can also target on the promotion of society's aspirations concerning an environmentally friendly behaviour.
- **Reminders** can avoid that inefficient habits could revive before the new behaviour could be automated. They could make people check whether or not they switched off the computer or they could regularly remind a person of his or her personal goals (to which they ideally obligated themselves in front of witnesses).
- The **provision of incentives** (e.g. certain laws concerning the regulation of energy prices, the revision of social benefits or financial support) can enable people to pay for their energy bills themselves. In the course of the interviews and investigations it has been suggested that low-income households should be financially supported when buying efficient electric appliances. Instead of paying for the heating costs for recipients of unemployment and social benefits, local authorities had been requested to offer financial incentives for a rational use of energy (for example with an usage-bound bonus).

2. Energy-efficient renovation

Energy-efficient rehabilitation measures without question have the biggest potentials for the alleviation of fuel poverty. The main target group within this context are social housing landlords respectively landlords of low-income households, because they are the one's investing in measures. The interviewed experts perceived energy efficiency as not being a topic of much concern to landlords currently, although the situation was assumed to be changing due to the emerging social pressure on housing and the increasing number of legal regulations applying to standards of existing buildings.

However, there is a multitude of barriers getting in the way of an expeditious and global rehabilitation of the building stock, which will be outlined in the following paragraph. Subsequently, it will be focussed on starting points (one being the inclusion of tenants, whose influence on the success of implementation measures should not be underestimated) to overcome the barriers.

■■■ Main barriers

There are two major barriers that are usually named when asking why the rehabilitation rate is still low: On the one hand a lot of investors (e.g. private landlords, municipalities) are encountered with a lack of cash exacerbating energy-efficient rehabilitation, which surely comes along with high costs. And even when some cash for investments is available there often are conflicting priorities imposing pressure upon the budget, e.g. ordinary maintenance costs or the already existing debt burden of municipalities as well as private owners. On the other hand activities are impeded by the so-called investor-user-dilemma in rental buildings, which means that those investing in energy savings are not those who financially benefit from them. It is a fact that tenants benefit more quickly through savings on fuel bills, but landlords can't get back all the money immediately, e.g.

through increased rents⁸. Nevertheless, it has to be taken into account that the obstacles are more complex and subjective than often assumed. Therefore decisions concerning rehabilitation measures are influenced by a complex set of external (e.g. economic, physical, legal) as well as internal (e.g. cognition, values, identities, knowledge) factors and processes⁹, which go far beyond a pure financial cost-benefit calculation¹⁰.

The research showed that investors often

- significantly overestimate the actual costs¹¹
- significantly underestimate the direct saving potentials¹²
- neglect the positive indirect and long-term effects (e.g. tenants' satisfaction, competitiveness on the housing market, avoidance of outstanding bills and mould)
- are not aware of financial support (grants and loans) available or perceive them as either not appropriate and/or not accessible
- do not know how to choose the most appropriate solutions: especially private investors are not well informed about and/or confused by the complexity of energy-efficient rehabilitations (e.g. wide range of measures, quality control in the scope of the implementation of measures). This leads to either no measures at all or the choice of ineffective solutions.
- fear social difficulties, such as inconveniences with their tenants (e.g. complaints if only some properties are improved and others not or due to the substantial change of the external appearance of a building and inconveniences caused during and after the works) or cumbersome decision-making processes in the case of joint ownership
- face technical difficulties, e.g. 'hard to treat' property which are costly/difficult to improve, few possible solutions in the case of external insulation, as well as anticipated difficulties with new technologies and accompanied concerns
- face administrative and organisational difficulties, e.g. lack of a well-thought-out schedule as regards the choice of professionals, the monitoring of the works and the assistance of the tenants being affected by the works
- do not know how to increase their competitiveness on the housing market by increasing their buildings' energy efficiency since the thermal quality is not yet an established competitive advantage influencing sales and rentals¹³; energy efficiency is more readily taken into consideration for new buildings

For Germany in particular, some experts pointed out that the existing welfare system does not only prevent energy-efficient behaviour as outlined above, but also inhibits technical measures: investors might not see a reason for improving their buildings' energy efficiency since the current rent is taken over by the municipalities anyway as long as it does not exceed a certain limit. Bringing it to an extreme one could say that there is no tenant that is more reliable than a tenant who receives unemployment money. Thus, landlords would be at risk of losing those reliable tenants if the modernisation provoked rent increases exceeding the maximum rent specified by the municipality.

⁸ For example in Germany, the retroactive allocation of modernisation costs is limited to 11% (BGB), which the majority of investors perceive as insufficient in order to refinance the investments. In addition to that, low-income tenants function as a particular constraint for the investor since they are less flexible concerning rent increases. Social housing providers are also confronted with a legal limitation of rent increases (WoFG), which go beyond the 11% stated in the tenancy law.

⁹ Kaufmann-Hayoz & Gutscher, 2001; Schweizer-Ries, 2008

¹⁰ see e.g. Opp, 1999

¹¹ see also BMVBS, 2007

¹² see also BMVBS, 2007

¹³ energy labels for buildings are still rarely a factor in tenants' choice and few tenants are aware of its existence

Tenants` barriers

Even though tenants are not in the position to decide about the implementation of measures themselves they perceive barriers, too, which can affect the rehabilitation process indirectly.

The following aspects can lead to a non-cooperative environment exacerbating rehabilitation processes:

- perception of a lack of security (could get moved out; landlord may put up the rent)
- a lack of trust in the landlord
- competing priorities (up to a total lack of interest or apathy)
- bad news stories from others
- no motivation to cooperate for improving someone else`s property
- perceived hassle involved: upheaval of having work done on home

■ ■ ■ Motivational factors for landlords

Apart from the barriers mentioned above, there are multifaceted factors from different areas that can motivate building owners and landlords to increase their buildings` energy efficiency, including:

- obligations based on legal regulations, e.g. energy performance certificates, obligations to achieve minimum thermal performance, other country specific regulations (e.g. the Welsh Housing Quality Standard or the Italian obligation to enact a municipal Energy Plan, which is followed by an Action Plan)
- obligations based on social aspects both voluntarily as well as demanded from tenants associations, e.g. having happier and healthier tenants, tackling fuel poverty
- financial advantages, e.g. improved saleability and value of property due to the improvement of its overall quality, increased lettability, easier rent collection and less rent arrears (having reduced tensions in dealing with tenants as a side-effect); according to this landlords starting to believe that sustainable measures are inevitable in order to survive on the housing market
- personal motives, e.g. an interest in technical innovations or a wish to be seen as a pioneer
- environmental awareness (even though this was perceived as secondarily by the interviewees)
- success stories told by neighbours, colleagues, family members or other people they trust

Financial mechanisms

An important pre-condition for putting rehabilitation plans into action is that sufficient financial resources are available. Therefore, the design of customized financial products, which guarantee an improved access to funding mechanisms and possibly include simplified application procedures, is vital. Flexible mechanisms that take the actual energy savings, and thus the saved energy costs, into account and allow a flexible redemption would be necessary. Ideally such programmes are accompanied by effective advice and communications to make sure that applications are prepared precisely and that the right funds as well as the most appropriate and energy-efficient solutions are chosen. In addition, financial assistance such as tax breaks are recommended.

The amount of financial support offers and their intended purpose as well as their evaluation by experts are different amongst the United Kingdom, France, Germany and

Italy. Therefore the following paragraphs give a detailed insight into the country-specific settings.

British experts described the usefulness of the existing financial support mechanisms as limited, because only some of the measures needed were funded. The availability of free loft and cavity wall insulation was significant, but support for heating measures was very limited and there was even less for more costly insulation measures and micro-generation. There are frustrations where funding is for small numbers only and it is not possible to expand/roll-out the programme (such as the heat pumps support from fuel suppliers). National programmes did not use local contractors and the quality of the work was sometimes poor.

Financial products do now exist in **France** which provide at least partial assistance in carrying out work to improve energy efficiency. The overall energy-efficient renovation approach is increasingly favoured, particularly following the Environment Round Table, but the financial tools are still evolving. The new mechanisms recently put in place have not yet been assessed (e.g. extending tax credit to landlords, establishing eco-loans from the *Caisse des Dépôts* for social housing landlords, etc.)

For their part, households affected by insecurity tend not to be creditworthy. For example, according to the experts, national measures to encourage renovation work and improvements in energy efficiency (tax credit, new eco-loan at 0% interest) are well-thought-of but not really effective in reducing energy poverty. Poor households often already have a high level of indebtedness, so cannot apply for loans (indebtedness in excess of 30%) or advance the cost of the work in order to claim tax credit.

None of these financial measures can therefore benefit households affected by energy poverty (whether directly for owner occupiers or via landlords) unless support is available, such as is presently provided by the social funds for building work, establishment of micro-credit, a degree of standardization/clarification of eligibility criteria and so forth.

Energy suppliers presently play an important role in funding mechanisms aimed at households affected by energy poverty and are increasingly taking part in initiatives at this level (e.g. participating in the social funds for building work or building work subsidies for owner occupiers). The new objectives of Energy-Saving Certificates (obliging energy suppliers to make energy savings with their customers) are presently being renegotiated (for establishment in July 2009) and should include more specific targeting of energy insecure households. Energy suppliers are making plans to reach this target group.

In **Germany**, the range of financial products designed to support the increase of energy efficiency in private households is vast. The majority of interviewees stated that it was too complex, confusing and not customised to the needs of especially private investors, who were assumed to be swamped with the range of offers. The experts added that the impact of products being offered by KfW Bankengruppe (the largest and most popular programme on a national level) could be much higher. The coordination of the products by local banks was seen as difficult since the banks might be interested rather in promoting their own products than informing objectively. Loans were perceived as inadequate since many investors would prefer grants or fiscal advantages and the requested standards were not realisable by a huge amount of investors. Experts furthermore criticised the products' focus on comprehensive upgradings instead of - often very efficient - small measures.

In order to stimulate energy-efficient rehabilitation measures where they are needed most, one of the interviewees proposed additional grants depending on the quota of low-income tenants and valued political approaches like the focus on multi-family buildings as a promising approach.

In **Italy** for instance, strategies have been developed to directly transfer specific financial support (EU funds, destined for the municipalities for energy efficiency in social housing, in the framework of the Regional Energy Plan) to the Housing Association network. Italian experts pointed out that this leads to efficient financial products, which had a positive

reply from the Housing Association network as well as the energy poor tenants, despite the fact that the latter does not have big monetary benefits in absolute terms. According to the interviewees they can be replicated in any other part of the country and Europe. The financial bottle neck representing the main limit to the access of loans to finance energy efficiency interventions in social housing has to be removed by the awareness of the big social and environmental advantages of energy efficiency in this sector. It is justified also by the high economical convenience due to the big energy saving potential that characterises the social housing stock.

Inclusion of tenants

In all participating countries experience - educed from data analysis as well as experts interviews - shows that involving tenants is vital to the success of thermal retrofitting projects. If nothing else such proceeding helps to avoid the risk of losing tenants due to rent increases or inconveniences caused by the work as well as tenants using legal possibilities against the works. Ideally the inclusion of tenants takes place in each step of a rehabilitation process.

Following the communication strategies mentioned above measures should be announced early, understandingly and honestly. Information needs to meet tenants' worries regarding the increase of rents as well as address inconveniences tenants will be confronted with.

In addition to the communication emanating from landlords it is important to use multipliers tenants trust, such as:

- tenants' associations, which are in direct contact with the target group and must be brought into renovation initiatives from the start;
- social workers, who regularly engage with households (helping with budget management, providing social support, etc.) and want to bring energy issues into their day-to-day work; it was pointed out that this enables them to speak to families about indebtedness and suggest some solutions, whilst bearing in mind that the position of families affected by energy poverty is complex and dealing with energy alone cannot eliminate their insecurity;
- associations/organizations dealing with social exclusion and/or the housing needs of families in difficulty (e.g. through assisted self-rehabilitation schemes) are also well placed to undertake practical work with tenants or owner occupiers affected by energy poverty.

After new instalments have been made, it is crucial to advise tenants on the new technical and structural devices and their specific handling¹⁴, e.g. how to regulate and programme the heating system or using the ventilation system. An example for this action took place in Italy: To optimize the energy benefit of newly implemented technologies technicians made door-to-door visits in order to explain the functioning of chronothermostats as well as its programming for the elderly people and those who expressed explicitly their having difficulties with such instruments.

In addition, much more can be done by organizing on-site training courses or info days on energy savings for all the tenants involved in energy efficiency measures. Moreover, initiatives to make energy consumption – which is perceived as intangible and “invisible” – more visible would help to enhance the positive effects of improvements (such as energy audits and metering consumption, using a show flat or neighbourhood workshops to raise tenants awareness, as well as quantitative assessments following retrofitting).

Experts pointed out that tenants are highly interested in being included when rehabilitation measures are affecting their own dwelling. However the participation of tenants does not guarantee an unlimited success of retrofitting measures. In some

¹⁴ see e.g. Schweizer-Ries, 2004

German cases participation processes failed, e.g. due to unrepresentative tenant advisory committees. Other examples showed that the inclusion of tenants resulted in a higher acceptance of the measures¹⁵ and even in decreasing requests concerning modernisation measures. Variables that experts perceived as making the involvement of tenants easier to realise are numerous although not consistent: small building sizes, housing estates, comprehensive measures, time and human resources on part of the landlord/housing association as well as positive experience and a positive attitude regarding participation.

The experts' opinion regarding the landlords' attitudes toward participation processes differed. While some stated that they are not interested in or even fear the communication with their tenants, others listed several good practice examples of landlords, which already include their tenants successfully or which were very thankful for guidelines for participation processes.

British experts referred to a few exemplary strategies, which already factor some of the named aspects in and therefore successfully include tenants in implementing improvements:

- The Stroud District Council Tenant Participation Compact aims to involve tenants in the provision of housing services, including the Tenant Energy Network which is a focus group of tenants, councillors and officers.
- The SWEA SHARE forum in Gloucestershire brings together social housing providers, tenants and energy experts on a regular basis to discuss issues and develop campaigns, training and advice services.
- The development of affordable warmth strategies and action plans (an approach encouraged by NEA (National Energy Action: Campaigning for Warm Homes), and supported by published resources) is a way to draw in engagement from all relevant parties has a Gloucestershire component, with some of the local groups joining in the energy saving competition being social housing tenants.
- The Energy Neighbourhood Programme (IEE), an energy saving competition in which neighbourhood groups aim to save energy over a six month period, included some social housing groups in Gloucestershire.

¹⁵ see also Hacke & Lohmann, 2006

References

- Abrahamse, W., (2007), The effect of tailored information, goal setting and feedback on household energy use, Department of Psychology, University of Groningen, Netherlands.
- Abrahamse, W., Steg, L., Vlek, C. & Rothengatter, T., (2005), A review of intervention studies aimed at household energy conservation, Department of Psychology, University of Groningen, Netherlands.
- Bartiaux Françoise, Vekemans Guy, Gram-Hanssen Kirsten, Maes Dries, Cantaert Madeleine, Spies Benoît and Desmedt Johan - Socio-technical factors influencing Residential Energy (SEREC). Sustainable production and consumption patterns.
- BMVBS, Bundesministerium für Verkehr, Bau und Stadtentwicklung, Referat Öffentlichkeitsarbeit (Hrsg.) (2007). *CO2 Gebäudereport 2007*.
http://www.bmvbs.de/Anlage/original_1032130/CO2-Gebaeudereport.pdf
- Boardman, B., Darby, S., Green, J. & Maby, C., (1998), Advice into Action: an evaluation of the effectiveness of energy advice to low-income households, eaga Charitable Trust, UK.
- Boardman, B. & Darby, S. (2000), Effective advice: energy efficiency and the disadvantaged, Environmental Change Institute, University of Oxford.
- Compagnons Bâtitseurs and GERES, (2005), Report on introducing water and energy savings in private renovation work with the support of specialists.
- Darnton, A., (2006), Shaping the energy-related behaviour of future generations, University of Westminster (for the Energy Saving Trust), UK.
- Dünhoff, E., Stieß, I. & Hoppenbrock, C. (2006). *Sondierungsprojekt: Energiekostenanstieg, soziale Folge und Klimaschutz. Endbericht*. Heidelberg, Frankfurt: Institut für Energie- und Umweltforschung Heidelberg GmbH (ifeu), Institut für sozial-ökologische Forschung GmbH (ISOE).
- forsa, Gesellschaft für Sozialforschung und statistische Analysen mbH (2004). *Evaluierung der Effizienzkampagne der Initiative EnergieEffizienz*.
http://www.initiative-energieeffizienz.de/fileadmin/InitiativeEnergieEffizienz/dachmarke/downloads/Studien_Evaluierungen/Abschlussbericht_IEE_2004.pdf
- Hacke, U. (2007). *SAVE@Work4Homes, Supporting European Housing Tenants In Optimising Resource Consumption. Deliverable 2.1: Tenant and organisational requirements. Version 1a (additional version to V1)*. Darmstadt: Insitut Wohnen und Umwelt GmbH. <http://www.iwu.de/downloads/fachinfos/altbausanierung/>
- Hacke, U. & Lohmann, G. (2006). *Akzeptanz energetischer Maßnahmen im Rahmen der nachhaltigen Modernisierung des Wohnungsbestandes. Abschlussbericht*. Darmstadt: Insitut Wohnen und Umwelt GmbH.
<http://www.iwu.de/downloads/fachinfos/altbausanierung/>
- Kaufmann-Hayos, R. & Gutscher, H. (2001). Transformation toward Sustainability: An Interdisciplinary, Actor-Oriented Perspective. In: R. Kaufmann-Hayos & H. Gutscher (Eds.), *Changing Things – Moving People. Strategies for Promoting Sustainable Development at the Local Level* (pp. 19-26). Basel: Birkhäuser Verlag.
- Kidd, A. and Williams, P., (2008), The Talybont Trial – Exploring the Psychology of Smart Meters, The Prospectory.

- Krömker, D. & Werner, J. (2009). *Interventionen für den Klimaschutz im Bau- und Sanierungsbereich: Eine Bewertung aus handlungstheoretischer Sicht*. *Umweltpsychologie* 13.Jg., Heft 1 (24).
- Kuckartz, U., Rädicker, S. & Rheingans-Heintze, A. (2006). Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, Referat Öffentlichkeitsarbeit (BMU) (Hrsg.): *Repräsentativumfrage zu Umweltbewusstsein und Umweltverhalten im Jahr 2006*. Berlin. www.bmu.de; www.umweltbewusstsein.de
- Mack, B. (2007). *Energiesparen fördern durch psychologische Interventionen - Entwicklung und Evaluation einer Stromsparkampagne in einer Energiesparhaussiedlung (Dissertation zur Erlangung des akademischen Grades Dr.phil.)*. Münster: Waxmann.
- Matthies, E. (2005). Wie können PsychologInnen ihr Wissen besser an die PraktikerInnen bringen? Vorschlag eines neuen integrativen Einflusschemas umweltgerechten Alltagshandelns. *Umweltpsychologie* 9(1), 62-81.
- Martiskainen, M., (2007), *Affecting Consumer Behaviour on Energy Demand*, Sussex Energy Group, SPRU, University of Sussex, UK.
- Mosler, H-J., Gutscher, H. (2004). Die Förderung von Energiesparverhalten durch Kombination von instruierter Selbstverbreitung mit Interventionsinstrumenten. *Umweltpsychologie*, 8 (1), 50-65.
- Opp, K.-D. (1999). Contending Conceptions of the Theory of Rational Choice. *Journal of Theoretical Politics*. 11 (2), pp. 171-202.
- Pett, J. & Guertler, P., (2004), *User behaviour in energy efficient homes*, Association for the Conservation of Energy, UK.
- Riedel, U. & Born, M. (2006). *Vorstudie zu dem geplanten Projekt- und Forschungsvorhaben "Interkulturelle Energiebildung"*. Bremen: POLIS-Institut für Mensch-Umwelt-Beziehungen, Universität Bremen.
http://www.energiekonsens.de/Downloads/Service/Studie_Interkulturelle_Energiebildung.pdf
- ROSH, Retrofitting of Social Housing. Key Results: January 2006 to June 2008.*
http://www.targetgmbh.de/rosh/data/dateien_news/ROSH_Project_results.pdf
- Sadler, R. et al, (2002), *Benefits of energy advice New Perspectives and RMB International for the Energy Advice Providers' Group of the UK Energy Efficiency Partnership for Homes.*
- Schweizer-Ries, P. (2004). *Bericht zum Projekt: Energienutzung in energiesparenden Häusern. Eine Seminararbeit zum „Aufbauseminar – Umweltpsychologie“*. Magdeburg: Universität Magdeburg. Unveröffentlichtes Manuskript.
- Schweizer-Ries, P. (2008). Energy Sustainable Communities: Environmental-psychological investigations. *Journal of Energy Policy*, 36 (11), 4126-4135.
- Seifried, D. (2008). *Endbericht: Umsetzung von Energieeffizienzmaßnahmen in Hartz-IV-Haushalten*. Freiburg: Büro Ö-Quadrat.
http://www.bmu.de/files/pdfs/allgemein/application/pdf/endbericht_hartziv_energieeffizienz.pdf
- UK Department for Environment Food and Rural Affairs, (January 2008), *A Framework for Pro-Environmental Behaviours*, www.defra.gov.uk.
- Wortmann, K. (1996). *Psychologische Determinanten des Energiesparens*. Weinheim: Beltz PVU.