

Consumer inertia to energy saving

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Abstract

Many years of energy saving consultancy, energy labelling and research on energy-consumption have revealed a great potential for energy saving. At the same time many consumers give the impression that they are conscious of energy consumption. Nevertheless there is evidence that a great potential is not being utilised and that profitable energy-saving investments are not made. The reason is attributed to barriers, which in different ways prevent the responsible household consumers from taking the steps required for changing their behaviour, replacing electrical appliances or investing in energy saving measures.

The notion of barrier comes from a barrier model rooted in a techno-economic paradigm. A contrasting alternative model, rooted in a socio-cultural paradigm, was developed which is called the inertia model. Following this, it is fear of harming your reputation rather than barriers that creates an inertia to energy saving.

In the study new owners of detached houses eligible for an obligatory energy assessment was questioned about their disinclination for energy saving. The study revealed that different kinds of disinclination correlate to different house owners and their situations in life. A main finding was that energy saving rarely supported conspicuous, i.e. clearly visible consumption, although it is the essence of being a new house owner.

The aim of the project presented was to provide energy advisers, consultants and others with new methods for exploiting ever more energy saving potentials.

Introduction

New technological solutions constantly open for higher efficiency of the use of energy for heating. Thus, in buildings constructed since the 1973 energy crisis, an ever-smaller part of total energy for heating comes from energy supply and an ever-growing part from free gains. As a consequence building researchers and the building industry now endeavour to construct a so-called passive house, i.e. a house without a central heating system. Prototypes designed for the Nordic climate in southern Scandinavia have been erected for instance in Denmark, where the average temperature is below 10 degrees Celsius and the temperature in the wintertime near 0 degrees Celsius.

Most building technology developed in the last two or three decades is also applicable for old buildings. Consequently, new potentials for energy saving in buildings will constantly appear, and the expectation to new energy savings, higher energy efficiency of the society, less dependence on fossil fuels and lower CO₂ emission will increase correspondingly.

This is emphasised by the EU Directive on the Energy Performance of Buildings (EU 2002). In Denmark this was implemented in the revised Danish Building Regulations that demanding a 25% reduction of energy use in building.

For the last two decades the average annual energy consumption in households in Denmark has been rather stable at around 190 PJ (Peta Joule). 85% of this is used for space heating, 15% for electric appliances. Taking the increased comfort into account, a decreased energy consumption per households indicates that new energy efficient technology

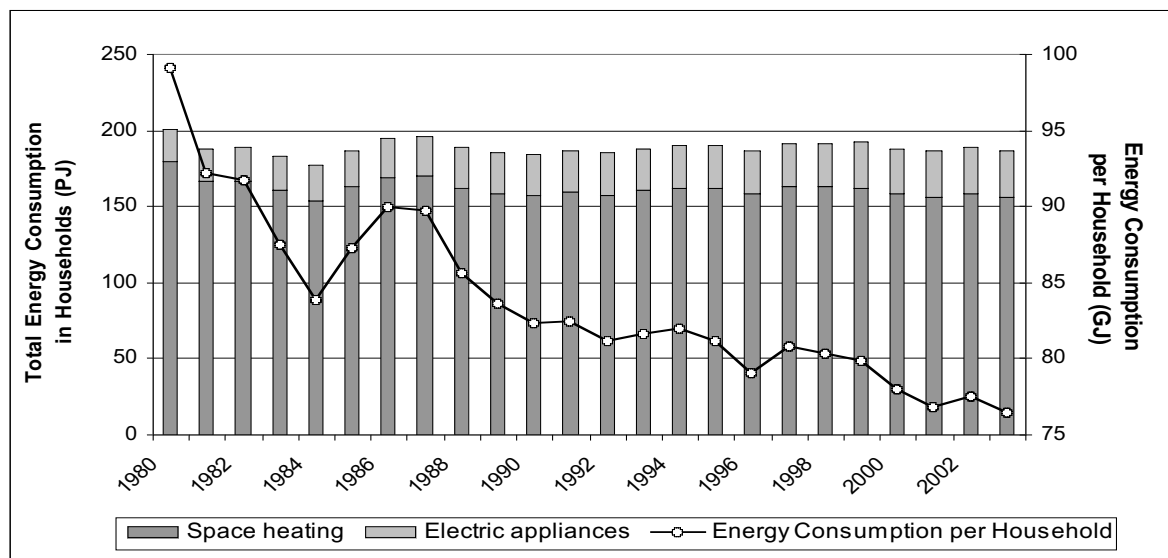


Figure 1. Energy consumption in Danish Households for space heating and for electric appliances, between 1980 and 2003. In the same period the energy consumption per household has decreased 25%. Based on Energy Statistics 2003 (Danish Energy Authority 2004).

has been applied, but also that much energy saving took place in the period (see Figure 1).

Many energy saving measures have been promoted by the Danish Energy Labelling Scheme. According to the Act to Promote Energy and Water Savings in Buildings, all buildings since 1997 have been subject to mandatory energy labelling; large buildings like blocks of flats every once a year, small buildings like detached houses every time they are sold. An energy plan is probably the most important element of the scheme. The plan is appended a list of proposals for energy saving measures necessary to draw up the plan. An appointed energy consultant makes the plan and the proposals. However, much potential is still not realised. This can be seen in the individual assessment reports made as a consequence of labelling scheme. An analysis of several thousand energy consultant reports established that out of 125 PJ allocated for heating of detached houses and blocks of flats, 25% can still be saved in a profitable way by using new building technology available on the market (Wittchen 2004).

Thus, in spite of many energy saving activities, a gap has emerged between current practice and recognised technical potential for energy saving. Moreover, energy saving efforts do not compare with the results. Inertia, so to speak, among the energy consumers apparently preclude the consumer from closing the gap.

The inertia is usually attributed to human barriers that in different ways prevent the consumers from taking the steps required for replacing outdated electric appliances, for improving the property's insulation, for investing in alternative energy solutions etc. This attributing inertia to barriers is such a familiar operation that it is rarely questioned. By contrast, when barriers are identified, policy instruments are promptly made to overcome the barriers, whether through raising awareness, providing information campaigns, doing regulation or giving subsidies. This has taken place in Denmark and in other countries as well. The concept of barrier has however only been formulated quite recently, i.e. in the beginning of 1990s. For instance Trudgill (1990) explains

how different barriers addressing technology, economic, social and political factors sequentially restrain actions for a better environment, while at the same time stressing that the inertia in the final end is rooted in an individual resistance.

In Denmark the human barriers concerning energy saving are most often identified with lack of knowledge, lack of solutions and as lack of interests, respectively. Based on this interpretation a lot of public and private initiatives have been launched in order to help the building owners to overcome the barriers. The constant energy consumption for decades in Denmark indicates that overcoming barriers have to a certain extent succeeded. Nevertheless, the gap increases between current practice and recognised potentials for energy saving. Put otherwise, the help to overcome the barriers cannot keep pace with the speed of the technological development of building materials and the increasing demands of society regarding energy saving in the building stock as a whole.

This implies that the concept of barriers should be scrutinised more closely and at the same time it raises some basic questions with regard to the validity of the barrier model as a whole. Is the model adequate for explaining the disinclination among property owners to close the gap between their current energy consumption and what is technically feasible, or is it something other than barriers at work? So very deep-rooted and well estimated is this model that only few have found reason to consider an alternative model. However, Guy and Shove (2000) have created an alternative model in the form of an hourglass. This takes into consideration both the variety in the production of knowledge, and the variety in the contexts of action. Thus, to Guy and Shove it is not a barrier hindering energy technology transfer and energy saving activities but the 'waist' of an hourglass narrowed by what they call "techno-economic conventions" (See Figure 2).

In this paper another model is developed, although acknowledgement I given to the hourglass model's saying that knowledge funnelled through the slim passage of the hour-

glass is immediately spread into an area of cultural variety. What is essential in this new alternative model is indeed the cultural variety. Thus, the model takes into consideration personal feelings and opinions concerning energy saving and not least the consumer's reputation among the similarly disposed. The model has its roots in the socio-cultural paradigm, where consumption is a matter of communication, moreover, a matter of exclusion and inclusion. Outwardly it is about distinction, inwardly about social acceptance. All the same, via consumption – including non-consumption and 'consumption' of energy savings – your reputation is at stake.

However, in a top-down perspective the barrier model is still on stage. First of all this model outlines how technology transfer to begin with follows a very rational way easy to portray as an obstacle course with a growing number of obstacles in the form of barriers (Guy and Shove 2000: 60ff). Furthermore, when the barrier model is applied to practical life, a number of new barriers appear. Finally, when focus is trained on the decisive human barrier: lack of motion, it becomes clear that this barrier in the context of action, i.e. in bottom-up approach, is not a barrier but rather some kind of disinclination. The inertia model was developed to examine this disinclination. With reference to a questionnaire survey this model was used for analysing a number of statements made by house owners in order to uncover make clear different kind of disinclination to energy savings.

Barriers to energy saving

The barriers model as well as the concept of barriers is rooted in a techno-economic model of technology transfer (Guy and Shove 2000: 62). This again, assumes the notion of a technically and economically rational way of thinking. The model sets out the stages of technology transfer from research and development at one end to implementation in

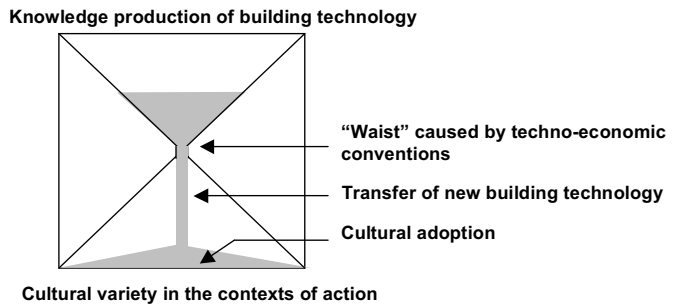


Figure 2. The hourglass figure explains how new building technology enter to the realm of social life, and if it falls on fertile ground may be adopted in a context of action. Freely adapted from Guy and Shove (2000).

practical life at the other, and relates to energy saving technology applicable to buildings as well. Having left the stage of research and development, the way passes by the stage of demonstration and the stage of dissemination. All difficulties, that might appear on the way in laboratories, by demonstration set-ups, in shows and by advertising, are seen as technical or economical barriers, easy to overcome by using the right means (See Figure 3).

According to the model there is a long way from the invention of an energy saving technology to the final implementation of an energy saving measure. However, the crucial barrier is found not in the realm of technology or economy but in the realm of society and individuals. It really is a human barrier. It is here that the manufacturer of energy saving technology and society's interests in energy saving knock on the door of the energy owner in the form of energy saving campaigns, energy labelling, taxes and so on.

As a result a lot of energy savings measures are carried out. In Denmark however, a great many house owners are still

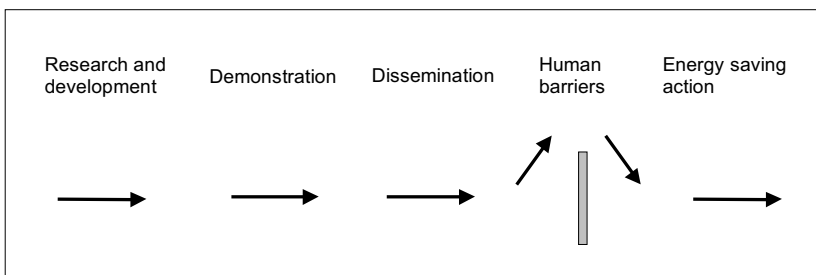


Figure 3. The barrier model. This techno-economic model of technology transfer has the form of an obstacle course with only one barrier: the human one. Adapted from Guy and Shove (2000).

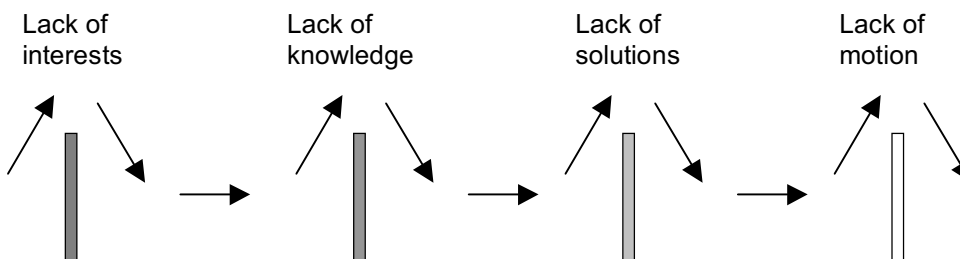


Figure 4. Human barriers. Examining the human barrier in Denmark, several sub-barriers and thereof several obstacles at the obstacle course have appeared.

disinclined to listen or to conform the message. To explain this several sub-barriers were introduced. And still with the optic of the barrier model in mind, lack of knowledge and lack of solutions are commonly accepted barriers. To complete the picture of barriers, lack of interests at one end and lack of motion at the other must be added (See Figure 4).

Lack of interests, which means 'no answer' at all, is a possible barrier, although disarming. Faced with this, there is nothing to do except carry out campaigns with increasing intensity. It is otherwise with the knowledge barrier, which is somehow tangible. Education and publication of information material targeted at specific segments of house owners can overcome it. The same way with the next barrier: lack of solutions. This might be the real obstacle, because it relates to the absence of practicable solutions such as well-confirmed workman or do-it-yourself solutions, and financial solutions as well. Of course, no barrier is visible in itself. However, results or lack of results by running campaigns indicate the existence of something that can easily be described by the metaphor of a barrier. Energy consumers like house owners that ask for knowledge and solutions for energy saving also indicate the existence of a barrier.

This applies to the final barrier exposed in the figure, which is lack of motion. The notion of this barrier refers to consciousness but is at the same time averse or disinclined to energy saving, if not in general, then to some specific measures. Also lack of motion is a disarming 'barrier'. While lack of knowledge and lack of solutions is easy to identify as barriers, and, in principle, easy to overcome, lack of motion is not. Like lack of interests, lack of motion provokes no question and therefore no cause for to action. Of course the profound question is whether barriers appear as barriers only through the optic of the barrier model, or whether they really exist, also from a bottom-up approach. The inertia model will comments on this.

Inertia to energy saving

A widespread disinclination for energy saving found among house owners in Denmark eligible to do profitable energy savings lays the foundation for the inertia model. Thus the inertia model was designed in order to get a better understanding of the lack of motion among house owners, where no lack of knowledge, no lack of technical solutions or no lack of money with regard to energy consumption seems was found. So instead of a continued search of still more individual sub-barriers, a turning was made to stress a bottom-up approach, where socio-cultural elements were taken into consideration.

This inertia model made to understand the disinclination mentioned, is primarily based upon an anthropological understanding of consumption. According to this, goods carry meaning and are as such material manifestations of culture. This way consumption is linked to the social system of categorisation and to the social exchange of signs. (Douglas & Isherwood, 1996). Furthermore it is linked to the taste which in itself classify the consumers by their way of classification (Bourdieu, 1984). Finally it must be taken into consideration that the house, which is the "principal character" in this energy conservation activity, is not only some physical structure but merely a dynamic entity intimately related to

the living of the house owner (Carsten & Hugh-Jones, 1995). In short, inertia in this interpretation depends on taste, reputation and respect of architecture among house owners inclined to do energy conservation on their house. So far the inertia model does not draw attention to the post-modern argument, among others stated by Featherstone (1991), that extra-ordinary consumption of spectacular groups belonging to a gentrified new middle class set the agenda. By way of contrast, consumption in order to save energy among house owners is rather ordinary, like buying a new kitchen (Southerton, 2001). If extra-ordinary, energy saving is an extra-ordinary action in an ordinary way, like taking a short cut on your way home in order to save time, money or energy. What is more, this kind of extra-ordinary consumption usually tends to be non-consumption, i.e. a peculiar consumption that pays for it self, easily to mix up with the capitalist's postponed consumption or the environmentalist's disregarded consumption.

It is a basic element of the model that different groups of the society, belonging to each their own lifestyle, find their bearings in a different way. Social background, childhood, education, income and neighbourhood create the framework for a meaningful life. By contrast, a 'meaningful life' has continuously to be confirmed as such by consumption of goods as well as non-consumption of goods. In this interpretation also energy saving activities must be confirmed as consumption. This way consumption takes part in the social interaction at the ground away from home as well as at the home ground.

At the ground away from home, meaning transport, leisure, and purchasing, social interaction is visible. At the home ground, mainly family life, social interaction revolves around mutual acceptance. All the same, it is about communication, more profoundly about making visible, what is invisible and making invisible, what is visible.

At the ground away from home the cultural agenda defines the dress code and the choice of means of transport. This concerns the choice between public and private transport and between ostentatious and humble vehicles. As an example, not everybody is 'allowed' to bike to work and in so far to expose his or her clothes and shoes to dirt. In the public space it is enjoined everybody to be distinguished, i.e. to signal what status group you belong to and what status group you do not belong to. Only use of visible signs like dress code, means of transport, car make and other signs, linked to moving around in the public space, can do this. The necessity of each individual to maintain his front in order to promote his performance or that of his status group reduces the possibility of dissent (Goffman, 1956).

At the home ground visible and invisible signs, what is said and what is kept private define the limits of the home, although limits between the home's front stage and back stage have been moved over time. (Corrigan, 1997) This is about the type of housing, the size of the home, furnishing and equipment and the opportunity to choose between energy demanding and energy saving appliances. Also the opportunity of doing without is on stage. Hence, not anybody is 'allowed' to wash dishes by hand and lower the indoor temperature to 17 degrees Celsius.

The problem of being poor is not the lack of money, but the lack of means of communication, in short the lack of

communicating in a dignified manner and thereby social relationships. (Douglas & Isherwood 1996, p 64) As a poor person, with or without money, you will be excluded if not being able to communicate through consumption. This probably explains why the poor either isolates him self or constantly stay visible in the public space. Having no other communicating signs than merely his body, this must be exposed.

In the context of energy saving, the inertia model is a lifestyle model as well. It explains that everybody depends on social and cultural belonging, i.e. lifestyle or social class, and depends on what lifestyle will react more or less inert to specific demands on energy savings. A decisive factor for the specific individual will be the visibility of the energy saving measure, and if visible, it will promote or restrict communication in a meaningful way.

At this stage it becomes clear that something more than an economic surplus is needed in order to carry out an energy saving activity. Also the prospect of a symbolic surplus in the form of symbolic capital is part of the social game based on mutual cognition and recognition (see Bourdieu (1984, 1986). In practical life this means that an energy saving effort as a minimum must contribute positively to the outward communication. If not, it might reduce the reputation (symbol capital) of the house owner among neighbours and friends, and consequently it must rather be kept hidden. Here the economic argument enters the stage. Will it be possible to carry out an energy saving measure which pays for itself without destroying the reputation of the individual, this will be satisfactory. By contrast, it is sufficient if an energy saving measure has a 'pay back' in the form of symbolic capital that outshines a possible loss of economic capital, i.e. money.

Altogether the inertia model draws a picture of a world in which the final barrier: lack of motion is not a barrier, but rather a dead weight, inertia that cannot be jumped over or removed, so to speak, but has to be moved in itself. According to the inertia model, any action will depend on the balance of forces, indeed a balance between surplus and loss of reputation. Following the vocabulary of Bourdieu (1977, 1986), this is a subtle balance between surplus and loss of cultural capital, and at the end of the day it depends on the individual's capability to transform social and economic capital into symbolic capital, indeed into model consumption.

To people imbedded in a specific lifestyle, some goods are easy to 'consume' in the right way, others are not. So far the inertia as a point of departure can be crucial different, not least concerning the 'goods' of energy consumption (See Figure 5).

Energy saving inclination

Energy saving activities are not at the top of the daily-life programme. However, in some life situations there will be a tendency to give this subject higher priority. Seen from a top-down approach, the keyword is "moments of intervention" (Beerepoot, 2003), seen from a bottom-up approach, the keyword is 'situations of opportunity' (Svane, 2002,). In any case, for house owners moving to another dwelling, because he is the buying a 'new' house, this is probably the most obvious time to make improvements. And improvements such as energy saving measures profitable to the owner may naturally enter. Furthermore, when buying a house much money is spent, and compared with the money needed for energy savings; this is just a small business. The Danish Energy Authority has been conscious of this moment of intervention, and in 1996 the Energy Labelling Scheme was provided by statute. According to this system the sellers of small buildings (less than 1 500 m²) must pay and the new owner may profit by it (The Danish Energy Management Scheme, 2005). All the same, disinclination for energy saving among newly fledged house owners is indeed widespread.

To get a closer look at this situation of aversion and house owners' disinclination for energy saving activities, a number of new house owners were interviewed. These were picked from of a database managed by the Danish Secretariat of Energy Labelling. The Secretariat has taken on the responsibility of registering all energy labels mandatory for sellers of single family houses. This way it was possible to make a selection, which on one side represented new and old houses, on the other side represented new, one- or three-year-old house owners and on the third side represented three levels of energy saving potentials. The three levels of energy saving potentials refer to the classification of the labelling into three categories of heat consumption: low (A), medium (B) and high (C) consumption. A distribution of A, B and C labels on 25, 50 and 25% was targeted by selection. Seventy addresses were picked and based on these 50 house owners were interviewed by telephone, half men and half women.

The interview had two sections. One reserved for simple statements easy to quantify, the other reserved for a discussion of advantages as well as disadvantages of energy savings and at the same time aimed at possible reluctance for energy savings. In some cases the second part of the interview became friendly and rather long, in other cases it was less friendly and short. Sometimes a second telephone call was needed.

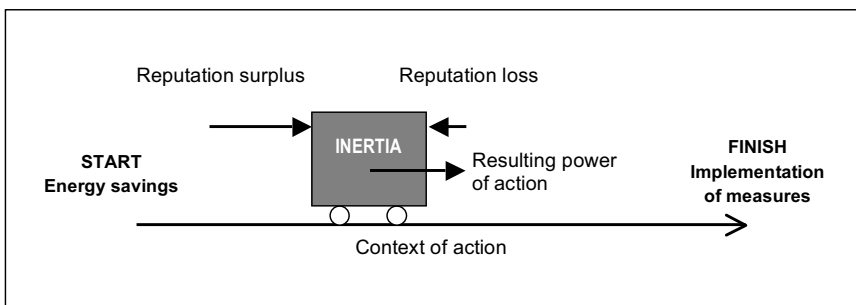


Figure 5. The Inertia model adjusted to the context of energy saving.

The second section of the interview was in itself divided into two sections, one about acquaintance with the labelling scheme and another on the performance of actual energy conservation measures. An overall result showed that 75% of the interviewed persons, all of whom had become house owners within the last three years, knew about the energy label carried out by the seller. Just over half of the interviewed persons did remember that the energy label contained proposals for actual energy savings.

Focussing on performance of actual energy saving measures almost half of the interviewed persons stated that radical energy conservation measures had been carried out, such as extra insulation of the roof, cavity wall insulation, and change into low energy windows. However, only a third these, exactly 17% of all persons interviewed, acknowledged that they knew about the labelling scheme and at the same time had benefited from proposals. As mentioned, one third of the houses with a new owner had adopted up-to-date energy (radical) saving measures. Altogether one half of the answers indicated that energy saving measures either had been made or were planned to take place within the next few years. The other half had not made or had not planned to make any measures. And of course the question addressed to this half part was: "why this aversion?"

Disinclination

During the telephone interviews a broad variety of answers were given. Some answered in a hesitant way other answered promptly starting with statements like: "we know, we know, but for us it was very important to..." Typical samples of the answers are presented in the textbox.

Examples of 'poor excuses'

A first impression of listening to the answers was that 'poor excuses' were dominating. However being informed about the circumstances, it became obvious that the lifestyle of the new owners, the life situation of the persons involved and the specific condition of the house had, very much influenced the dispositions made among the new house owners. During the interviews it became more and more clear that

new owners of detached houses roughly belonged to four types of lifestyles. House owners belonging to the first type of lifestyle (1) is well educated and has obviously a medium or high income, and their house is no doubt a well-estimated house. Both the male and female inhabitants of the house were conscious of energy saving but also possible changes of the appearance of the house, not least caused by energy saving measures. The acquaintance with the energy label was limited. In a few cases the interviewed person (or husband) had a professional insight in technical features of buildings. House owners that belong to the second type of lifestyle (2) can be described as medium educated but technically well informed. He or she had studied the energy-labelling scheme seriously, and in contrast to what might be expected, both sexes do have an understanding of technical features. In the case of an old house, a family of that kind will probably be in the middle of a comprehensive renovation of the house, in which the appearance of the house, as well as potential energy saving measures are taken into consideration. House owners that belong to the third type of lifestyle (3) can be described as technically well informed as well, although the educational level is probably not high. Especially the man knows very well what it is all about, and discusses very often with enthusiasm the energy-labelling scheme. But not very much has been changed since the family took possession of the house, and if so, only small and very obvious measures have been carried out. Several plans of energy saving measures do exist. Finally, house owners that belong to the fourth type of lifestyle (4) has no knowledge of the energy labelling scheme and usually knows very little about energy saving except the use of simple energy saving measure like use of a wood burning stove. The representatives of this lifestyle typically had lower education and incomes, if not poor incomes, in the light of their being house owners. In this case the acquired house is as a rule located on the outskirts of a town or in the countryside. Lack of money is among other excuses mentioned as a reason for the lacking of efforts to do energy saving measures.

Also the life situation among the house owners, dealing with the interviews, differs. Half of the owners had within

Box 1.

1. "We, know, we know very well, but first of all we must finish the kitchen. The old one was beneath standard - and indeed, also the bathroom is"
2. "It's OK, but there is only one problem: It will be unattractive, ungraceful or even ugly"
3. "We don't let in workmen - they are too expensive and their work too slovenly made. Half of the workmanship must be remade afterwards"
4. "We have already done a lot. For instance, we changed the windows - with nice bars"
5. "Well, as soon as we have time. You know, we have to do it ourselves. Maybe in a year or two".
6. "It will come one day, when we are going to convert the first floor anyway"

the last three or five years' become new-established families. A quarter had acquired the house late in their life course, for instance to get a smaller house when their children had left home. The last quarter was a mixture of second and third time house owners, sometimes caused by a new job situation, sometimes caused by the desire for a bigger house.

Finally the specific condition of the actual house changed from one interview to another. At the one end of a scale were new houses with only few proposals for energy saving, very often proposals of low-energy windows. At the other end of the scale were old houses being recommended all kinds of energy saving measures.

The "poor excuses" as well as different answers showing disinclination was interpreted as reflecting the variety of life styles combined with different life situations and different conditions of the house. But common to most new house owners is an extra amount of "free" money made available for the move into the new house, included a larger amount of money available for renovation of the house. On this background, it can be stated that the majority of new established house owners give a kitchen renovation and a new bathroom very high priority, normally higher priority than energy savings. Only among high income people faced with an old house ready for total renovation, energy saving measures like new windows and extra insulation get such a high priority.

Next, it can be stated that aversion to energy saving that might disturb the aesthetics of the house was widespread in Lifestyle 1, especially among elderly people in old houses. A corresponding aversion was found among Lifestyle 2 concerning admittance of workmen. Again it was clear that an aesthetic argument was maintained. Also in Lifestyle 3 an aversion to workmen was maintained. But instead of a pure aesthetic argument, a belief in better craftsmanship by doing it your-self was dominating. Some other statements also refer to the aesthetics. These are found for instance among answers emphasising that energy savings had been carried through from the very beginning, foremost being changed windows with low energy glazing. This was performed, in order to save energy – but also to produce an attractive appearance of the house. Such statements are most common among house owners belonging to Lifestyles 2 and 3.

The statement: "a lot of things will be done, when we get time one day" is common among house owners belonging to Lifestyle 2, but also widespread within Lifestyle 3. This excuse is also heard from members of Lifestyle 4, although with the addition: "and we have the money".

Across lifestyle situations the most common disinclination to energy saving can be related to the fact, that the house owner has planned a bigger renovation of the house and therefore has the intention to postpone energy saving until then. All told, house owners do what they do very often independent of possible energy saving proposals. This said, it implies that many house owners are very conscious of response elicited by the money they have spent. This becomes clear in the way the argumentation is carried through. Talking about new kitchens, for instance, universal values are referred to: "the old one was beneath standard" or "nobody would ever cook in a kitchen like that". Questioned closely, several interview persons admitted that buying a

new kitchen is like buying a new car. Everybody does it, and if energy saving is on the agenda, low energy refrigerators as well as energy efficient cars might be discussed, at least among people belonging to Lifestyles 2 and 3. Consequently, giving a new kitchen lower priority than energy saving measures seems to be out of question.

Radical energy saving, just as buying a new kitchen or a new car, requires money, not like buying a house, but still. So far, it is common to look at money, to think about the size of the investment and to think about interest rates and pay-backs. However most people admit that money is not the real reason. Being a new house owner it is important to be satisfied with the decisions made, secondly it is important to start somewhere spending the extra amount of "free" money made available as a result of the move. In this respect, energy saving measures seems to obtain low priority.

Findings

The notion of barrier is a well-consolidated concept in the discussion of disinclination for energy saving measures. In this study looking at the inertia among new house owners to use money on energy saving measures although profitable, it was concluded, that the barrier model was not able to explain special circumstances about the final barrier, in the barrier model called lack of motion. To achieve a better understanding of this barrier, or inertia so to say, an alternative model rooted in a socio-cultural paradigm was outlined. Following this, named the inertia model, it became clear that much inertia to energy saving expressed in a series of interviews, is rooted in possible profit and loss of symbol capital, i.e. obtaining or losing reputation among family members, friends and neighbours. Although, energy consumption is very often invisible, it now has become clear that energy saving measures, if possible to mark luxury is easier to sell. Veblen's concept of conspicuous consumption has now reached the world of building technique as well (see Curri-gan 1997).

Generally speaking, money is important, but what money can make visible is more important. So if energy saving measures can serve two purposes, most often a reasonable payback combined with aesthetic benefits, they have a bigger change of being carried out. If they have a well-documented payback, they will be carried through, implying that they don't harm the appearance of the house. If, by contrast, a considerable aesthetic or symbolic benefit is within reach, the question of money gets low priority - with respect of life style. Having wealthy house owners in mind, the balance turns to aesthetic or symbolic values, having poor house owners in mind the balance turns to money values, alternately to do-it-yourself work. In this, the main finding is that energy saving measures supporting conspicuous consumption will succeed.

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