

## Title

**“My home is my castle - and it better be warm” – Difficulties in reducing energy consumption in the household.**

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## Abstract

One of the biggest challenges of today is to achieve environmental sustainability. Reducing energy consumption in the private realm is of prime importance, considering that 27% of all carbon emission stem from domestic households (HM Government, 2006). Space heating reflects the largest share of private energy use with 53%, followed by appliances and lighting (22%) and water heating (20%), making these the most relevant areas to address (HM Government, 2006). In fact, in recent years, most energy suppliers have started to provide their customers with information on how to reduce energy consumption, and gadgets such as energy monitors are easily available. Yet, consumption needs to decrease further to meet the ambitious targets defined by the Climate Change Act 2008 (<http://www.theccc.org.uk/about-the-ccc/climate-change-act>). One question that arises is how much energy consumption can be reduced without impacting negatively on personal comfort.

We addressed the question what comfort means and how people feel about their level of comfort in a study among social housing tenants in England. Participants were asked to define what comfort in the home means to them and how satisfied they were with the comfort their home provided. In a survey, their current behavioural practises with regard to energy consumption were assessed, together with a variety of related variables, such as perceived knowledge on energy saving and environmental awareness. Participants also gave information on how they operated their heating system. The data was completed by assessing the stock condition and average energy consumption.

Preliminary data show that “warmth” was the most important aspect of comfort, followed by security, space and privacy, and cleanliness. Likewise, discomfort was most often ascribed to coldness and drafts. The questions on current practices revealed that most participants took positive actions to reduce their energy consumption, such as turning off appliances completely. The study also revealed that many participants were unsure on how to most efficiently operate the heating system.

Taken together, three important factors emerged that make energy reduction in the household difficult: Firstly, personal comfort is mainly determined by warmth. Secondly, behaviours other than cutting back on heat are already performed to a large extent. Thirdly, information on how to best operate the heating system are missing. The implications of these results for landlords and energy suppliers are discussed, with emphasis on how to use this information to reduce energy consumption in social housing.