



Factors influencing perceptions of domestic energy information: Content, source and process

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HIGHLIGHTS

- A range of factors influence perceptions of energy information. These factors are interlinked.
- Energy information perceived as more relevant when it could be 'anchored' to everyday frames of understanding.
- Both qualified 'experts' and peers with personal experience valued as potential information sources.
- 'One-way' information communication perceived negatively. Two-way information exchange built trust and a sense of control.
- Participants' active information assessment very different to the passive consumer assumed by knowledge-deficit model.

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ABSTRACT

Reducing household energy consumption is an essential element of the UK Government's carbon reduction strategy. Whilst increased knowledge alone will not necessarily lead to tangible actions on the part of consumers, knowledge of various kinds is, we argue, still important if domestic energy usage is to be reduced. In an attempt to 'educate' the public, governments have typically resorted to 'mass information' campaigns that have been considered largely unsuccessful. Yet understanding what alternative forms of learning could be cultivated has been limited by the dearth of research that explores whether and why people consider information about energy and energy saving to be useful. By exploring this, we can move towards an understanding of how knowledge about energy saving can be better shared and communicated, enabling more meaningful learning to take place. Drawing on in-depth qualitative data with fifty-five participants, this paper highlights a range of factors that affect perceptions of energy information. It argues that these factors are not discrete, but are interlinked. A fundamentally different model of knowledge exchange is needed for more effective learning about energy saving to occur. A number of implications for policy are proposed in our conclusions.

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1. Introduction

Reducing overall domestic energy demand is currently a major concern for policy and research. As recent government policies like the Green Deal indicate, promoting household energy efficiency is considered key to helping the UK reduce its overall carbon emissions. But how best to bring about a reduction in domestic energy use is a matter of significant debate. In the past, successive UK governments have attempted to 'educate' the public about

domestic energy saving through top-down, mass information campaigns such as "Are You Doing Your Bit?" and "Act on CO₂", and through funding national advice services such as the Energy Saving Trust. The idea has been that providing information will lead to the know-how needed to make changes in consumption behaviour. However, academic research has found this approach to be relatively unsuccessful in either encouraging energy efficient behaviour or in creating a general public that is knowledgeable about energy saving (see, e.g., Catney et al., 2013). As others have argued, increased knowledge alone does not lead to people taking measures to reduce their energy consumption (e.g., Kolmuss and Agyemen, 2002; Owens and Driffill, 2008). For example, Lutzenhiser (2002) has argued that a person's capacity and motivation to act,

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alongside other conditional factors, are also crucial in shaping whether measures are taken. However, many scholars also recognise that knowledge is *one* important part of the package of elements required for action (e.g., Darby, 2006; Salmela and Varho, 2006; Faiers et al., 2007; Kenis and Mathijis, 2012). As such, there is value in researching the effectiveness of strategies which attempt to spread and communicate knowledge about domestic energy saving.

In this article, we argue that information provision does not necessarily lead to increased knowledge: information and knowledge are not synonyms. Whereas knowledge is an understanding collectively constructed through interactions between individuals, information is the 'messages' through which knowledge is communicated and which must be filtered, processed and 'anchored'¹ to become knowledge (Nonanka, 1994; Catney et al. 2013). It matters, therefore, how information is received and perceived by the people it is designed to reach, as this influences whether it can be processed and 'translated' into meaningful and useful knowledge and an increased understanding (Scarborough, 2013). Yet in light of the plethora of programmes based on the public dissemination of information about energy efficiency, it is surprising that very little empirical research has examined, in depth, how people perceive energy information of various kinds, and, moreover, the factors that shape these perceptions. It is here that this paper makes a contribution. By filling this gap in this literature, we offer some insights into how information about domestic energy use might be better communicated, enabling more meaningful learning – the development of knowledge about energy saving and efficiency – to take place. We draw on qualitative data from four case studies, collected as part of a research project titled "Reducing Energy Consumption through Community Knowledge Networks" (RECKKN), to highlight a range of factors that affect the perceived usefulness of energy saving information.

In Section 2, we briefly review relevant literature on this topic. Section 3 then outlines the methodological approach we adopted to collect the data. Section 4 details our empirical findings, focussing on factors relating to: (i) the *content and form* of information, (ii) the *source* of the information, and (iii) the *process* through which the information is communicated. Finally, we summarise the findings and discuss their implications for policy, theory and practice, arguing that there is a need for strategies of information provision to be designed around the multiple factors highlighted.

2. Existing literature on the factors influencing perceptions of energy information

There are several quantitative studies which attempt to measure the impact, in terms of energy consumption, of providing information or energy saving 'tips' to domestic consumers (for example, Brandon and Lewis, 1999; Henryson et al., 2000; Wood and Newborough, 2003; Ueno et al., 2006; Ouyang and Hokao, 2009). Some of these studies also investigate the impact of providing people with personalized feedback on their consumption patterns (for example, Wood and Newborough, 2003). The degree of 'impact' the information provision has on energy consumption is varied (Steg, 2008), ranging from very minimal change to estimated reductions of around 9% over a two year period (Wilhite and Ling, 1995). However, these studies are often unable to explain what it is that influences the degree to which information has been effective in reducing consumption. The papers by Green et al. (1998), Darby (1999) and Boardman and

Darby (2000) are the most revealing on this matter, focussing on factors that enable effective advice to the fuel poor. However, each of these studies gathered their empirical data from those advising fuel poor residents, rather than through the perspectives of those actually receiving the information. Despite this relative lack of literature, an analysis of these and other studies enables us to identify a few factors that might influence perceptions of energy information.

A common theme in the literature is that information will be more useful if it is tailored to the recipients' lives and context (Green et al., 1998; Boardman and Darby, 2000; Steg, 2008). Henryson et al. (2000) include evidence drawn from qualitative data from focus groups to make this point, with their participants arguing that energy information was often too generalised. Similarly, Brandon and Lewis (1999, p. 84) included focus group analysis alongside their quantitative data, wherein participants criticised "general leaflets" with "inappropriate information or vague statements", calling instead for more personalised advice. Similarly, the time at which information is provided is also seen as important, with work by Darby (1999) arguing for the effectiveness of 'opportunistic' advice provided at a time of change, such as moving home or undertaking renovation work. Research also suggests that the comprehensibility of information is important (Wood and Newborough, 2003). Darby (1999) is sceptical of the use of written, paper-based advice for this reason, arguing that this may not be suitable for many adults. Several studies have also suggested that information which allows people to compare their levels of overall consumption to one another can be effective (Stern and Aronson, 1984; Arvola, 1993; Henryson et al., 2000; Steg, 2008; Allcott, 2011).

One limitation of this literature is that it largely focusses on the psychological dimensions of perceptions of energy information (Steg, 2008). In doing so, it de-emphasises the influence of the wider social, institutional, political and cultural context (Shove, 2010) and places weight solely on factors relating to the content of information and the characteristics and responses of the individual. In effect, such approaches take the individual out of their social and political contexts, ignoring the interactional nature of learning (see Wenger, 1998; Catney et al., 2013). In contrast, literature from the sociology of scientific knowledge (SSK) highlights how perceptions of science and scientific information are as much a social issue as a psychological one (Irwin, 1995). This body of work suggests that public perceptions of an information source shape, and are entwined with, perceptions of the information itself (Irwin and Wynne, 1996). Trust in the source is crucial if information is to be considered reliable (Wynne, 1992). Yet such insights have rarely featured in studies that focus on information about domestic energy consumption. Exceptions are Boardman and Darby (2000) and Green et al. (1998), who highlight the importance of a recipient trusting those providing advice if they are to subsequently take action, and also discuss the need to build this through face-to-face interaction (although, as noted above, their empirical data were limited to eliciting responses from 'experts', not households themselves). However, there has been little empirical literature beyond this point. Thus, the social nature of learning and information-sharing about more efficient domestic energy use is something we seek to investigate in the RECKKN project (Catney et al., 2013).

Another insight from the SSK literature is a critique of the 'top-down' model of information communication, where information is disseminated by powerful elites (such as government or companies) to the public. This model is criticised on theoretical and pragmatic grounds for being based on an ingrained 'information-deficit' view of the public (see, for example, Wynne, 1991; Burgess et al., 1998), a view that assumes people behave in particular ways (in this case, consume too much energy) because they lack

¹ By 'anchored', we refer to the process of connecting new ideas to familiar knowledge (see Devine-Wright, 2009).

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