European Commission

Science for Environment Policy

Understanding the 'why' is key to effective energy-saving behaviour

To increase energy efficiency, many countries are encouraging their citizens to make individual energy-saving changes, such as changing the type of light bulbs they use. This study investigated the relationship between understanding of environmental issues and effective energy-saving behaviour and shows that informed citizens are key to successful policy.

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Source: Cotton, D., Miller, W., Winter, J., Bailey, I. & Sterling, S. (2015). Knowledge, agency and collective action as barriers to energy-saving behaviour. *Local Environment* pp.1-15. DOI: 10.1080/13549839.2015.1038986.

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The depletion of fossil fuels, and the climate change caused by their combustion, has made energy saving a political priority. As well as national and international policies, there are numerous initiatives to encourage energy-saving changes at the individual and household levels, by educating citizens about energy efficiency. However, improving knowledge about environmental impacts alone may not be enough to change behaviour. A 2011 study for example found no link between knowledge and energy-saving behaviour.

Yet it may be misleading to draw such conclusions by focusing only on behavioural change. After all, without the correct information about what constitutes an energy-saving action, even motivated people are unlikely to make beneficial behavioural changes.

This study therefore assessed knowledge, attitudes and behaviour relating to energy use. Some government campaigns focus on behavioural change without providing adequate information on the impacts of this change. One example of this is encouraging people to turn off lights without providing any information about how much energy this saves in comparison to other activities. The researchers therefore aimed determine the risks of targeting behaviour at the expense of knowledge.

The researchers surveyed 1136 students from Plymouth University, a UK university internationally recognised for its focus on sustainability, thus providing a sample that is likely to be concerned about energy efficiency. To assess 'energy literacy', participants were asked to complete a detailed online questionnaire.

The participants were first asked to self-assess their knowledge on energy issues. Self-reported knowledge was generally high and likely reflected the composition of the sample group.

The questionnaire next tested attitudes by asking respondents about the importance of issues facing the UK, revealing the economy to be by far the biggest concern. Each participant was also assessed on their sense of responsibility, as well as the extent to which they could influence events related to energy use. Although the majority believed climate change was caused by human activities, and that their own energy use made a difference to the national energy situation, only around a quarter said they felt they could influence the actions of government or business. Even fewer said they trusted the government on energy issues.

There were several indications that knowledge does influence behaviour. For example, those with low self-reported levels of knowledge were less likely to identify effective behavioural changes, whereas those with high self-reported knowledge levels were more likely to answer factual questions correctly and report undertaking energy-saving behaviours.

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Understanding the 'why' is key to effective energy-saving behaviour *(continued)*

The connection between attitude and behaviour was less close. When asked about the factors that prevented them being more energy efficient, participants most frequently cited money. As one respondent put it: "If it costs me money I probably won't do it!". This suggests that, while most respondents were motivated by climate change and believed that they could contribute to national energy savings, making the decision to undertake energy efficient behavioral change is ultimately guided by money.

This study reveals that lack of knowledge may reduce the effectiveness of energy-saving actions. At the national level, it revealed a lack of trust in governments to act on energy issues and a contrasting faith in scientific innovation to provide solutions. Most importantly, at the individual level, it shows a clear link between levels of understanding and effective energy-saving behaviours, reinforcing the importance of improving knowledge alongside encouraging behavioural change. In other words, governments need to tell citizens not just the changes they should make, but *why* they should do so.

The authors say informed behaviour change, as opposed to 'unconscious competence' (learned behaviours, such as turning off lights without knowing how much energy it saves) will allow people to respond to new developments in energy conservation.