What counts in energy efficiency – attitudes or behaviour?

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Which is more important: what people believe, and think they ought to do? Or how people actually behave? An idealist may think that the two are, at least, strongly linked. But we don’t have to think very hard about our own behaviour to see that they’re not. We all know we should exercise more, use the car less, eat fewer sweet things, and so on. Yet we don’t. The situation is certainly true for environmental behaviour in general and energy efficiency in particular. Product policy, my own area of energy efficiency, has been very successful in changing both behaviour and attitudes, but the focus has been on the former. I argue that we may be missing opportunities for greater energy efficiency by failing to look more deeply at both attitudes and behaviour, and how these things interact.

The 'attitude behaviour gap' is widely recognised and has been extensively studied, being of both academic and practical interest. There are logical reasons for this gap. For example, systems may not be in place to enable the desired behaviour. There are other reasons which are arguably less rational - force of habit, risk aversion, the effect of social norms, for example.\footnote{1} The good news is that if you know what is making people behave a certain way you can do something about it: address the practical or psychological issues (e.g. loft clearance service for loft insulation, financial incentives to get over future discounting). The best behaviour change programmes use as many of these at the same time as they can, and, as a result, they can be very effective. Moreover, this can be achieved without changing attitudes (or at least without addressing them directly).

One example of this concerns smoking. In the UK there have been decades of campaigning on the dangers of smoking, from both Government and health professionals. Each has tried to change attitudes and beliefs so that people recognise and believe that smoking is bad for health. To a large extent they have succeeded - most of us know that smoking is bad for us (and those around us). Yet millions have carried on smoking anyway and, worse, there
are thousands of new, young smokers every year.\textsuperscript{2} Then the smoking ban in public places was introduced and this had a notable effect, with evidence linking the ban to reduced smoking levels, smoking cessation, and wider health benefits.\textsuperscript{3} So why put the effort in the attitudes and beliefs when, especially at a time of limited resources, the money may be better spent on making the wrong behaviour harder to do or the right one easier? This debate applies to my own area of energy efficiency, 'product policy'. Product policy is a bit of a shorthand for the areas of policy concerned with the energy use of products – varying from domestic to commercial to industrial. The products concerned can be small (such as a lamp) or large (for example, a distribution transformer).

How does product policy relate to behaviour? Energy behaviour can be described as either investment behaviour or habitual behaviour. The former typically involves the adoption of a new technology, perhaps the purchase of a new appliance. Habitual behaviour is routine behaviour, such as turning off the lights when leaving a room. Product policy is largely concerned with investment behaviour - ensuring that new appliances have a minimum level of efficiency and making more efficient appliances more attractive (most habitual behaviour change comes under more general energy efficiency policies).

Product policy is sometimes referred to as Standards & Labels (S&L for short). This is a reasonable shorthand as standards and labels are two of the major instruments in the product policy toolbox. The standards are generally Minimum Energy Performance Standards (MEPS) which set the energy efficiency that a product must achieve in order to be sold. In the EU these are set as regulations under the Ecodesign directive.\textsuperscript{4} This is the 'make people do what they should' aspect of product policy (also known as 'choice editing'), where the worst choices are taken off the market.

Labels are a way for more efficient products to distinguish themselves, by making the products more attractive to consumers, and by encouraging people to do the 'right thing'. Labels may be comparative, showing how the product does compared to benchmarks (like the EU A-G energy label in Fig 1.\textsuperscript{5}); or they may be endorsement labels, stating that the product meets one or a set of standards (e.g. ENERGY STAR\textsuperscript{6} or Energy Saving Trust Recommended\textsuperscript{7}).
Beyond standards and labels there are a whole host of other policies used to encourage efficient products – some of them are shown on the diagram in Fig 2 note 8 - which illustrates how different policies work on different parts of the market.
Product policy is a success story of energy efficiency: it has a very low or negative cost to society (often amongst the lowest cost policies in reducing carbon emissions note 9 ) and has transformed the market for appliances over time, saving consumers money, while retaining a wide market choice. As a result it is very popular, with most economies with existing S&L programmes increasing their coverage and more countries adopting them. But could product policy do more? Members of the International Energy Agency Implementing Agreement for a co-operative Programme on Energy Efficient End-Use Equipment (IEA 4E) wanted to look at how practicable it would be to take a more ambitious approach than is common, particularly in setting MEPS. In the development of MEPS policy makers are constrained by what they know about current and likely future technologies and often rely on technology-cost information from industry, who may have an interest in not being forthcoming. IEA 4E wanted to look at the use of 'Technology Forcing Standards' (TFS) in other areas of environmental regulation – standards which required technology which went beyond those commercially available, or which may be available but not currently cost effective. A colleague (Kevin Lane) and I undertook research for IEA 4E to identify the benefits and risks of developing TFS based on the experience to date and take an initial look at how appropriate this approach would be for setting...
As part of our research, Kevin and I looked at published reviews of a range of policies that could be termed TFSs as well as reviews of the TFS approach itself. The standout example was the Montreal Protocol – the international agreement to phase out the use of ozone depleting substances. It was remarkable for the number of signatories (the greatest of any international agreement), its effect on markets and ultimately its environmental effect (there is evidence that the hole in the ozone layer is now reducing). It also appears to be a genuinely forcing standard – when it was adopted back in 1997, alternatives to the ozone depleting substances were not available outside of the labs of the manufacturers and were certainly not cost effective. The agreement forced the development and deployment of those alternatives over an accelerated timescale and on a massive scale (which reduced costs).

Reviewers identified a number of factors that made the Protocol so successful. But the one that really stood out was the political will behind it (a stumbling block to taking a technology forcing approach in product policy). Scientists and Environmental NGOs convinced the general public, initially in the US but then around the world, that the hole in the ozone layer was a really bad thing for them personally, right now, and it required urgent and comprehensive action. The public convinced the politicians to act (or at least, gave the opportunity to already convinced politicians to act), so agreements were signed, regulations were passed and change happened.

In this example, beliefs and attitudes changed regulation. The regulation, forcibly, changed behaviour – you didn’t buy an aerosol spray can of anti-deodorant product which used the worse ozone depleting substances (CFCs) not just because you didn’t want to but because they were banned.

This is not a new discovery. Most people would accept that the smoking ban could only have been introduced because of all the years of campaigning and information dissemination about the damage of smoking, both to smokers and those near them. This, of course, is one of the chief benefits of such information campaigns – they build widespread acceptance so that when a politician introduces ‘banning regulation’ it is acceptable to her/his constituency. While money spent on changing attitudes may look wasted in the short term, it can give a good long term return on investment. The effects may not be immediate and direct but they are real nonetheless.

If we want to change behaviours we can’t leave attitudes out of the equation. Attitudes may not have as much influence as we would
like on individual behaviours. However, if they are widely enough held attitudes enable regulations which change behaviour. We need to change both attitudes and behaviour to get where we want to be in terms of energy efficiency and the health of the planet.

References


2 - ASH fact sheet 108 Young people and smoking

3 - 'The impact of smokefree legislation in England: Evidence review', Professor Linda Bauld, Mar 2011


7 - [http://www.energysavingtrust.org.uk/](http://www.energysavingtrust.org.uk/)

8 - From “Saving Energy Through Better Products and Appliances”, Defra, Dec 2009

9 - "Review and update of UK abatement costs curves for the industrial, domestic and non-domestic sectors", Ecofys for the Committee on Climate Change, Aug 2008


11 - Energy standards and labelling programs throughout the world in 2013, Lloyd Harrington, Energy Efficient Strategies and Melissa Damnics, Maia Consulting, May 2014

12 - [http://www.iea-4e.org/about-4e](http://www.iea-4e.org/about-4e)

13 - Technology-Forcing Standards for Energy Efficiency, Kevin Lane and Fiona Brocklehurst of Kevin Lane (Oxford) Ltd. for IEA 4E, Jun 2012

14 - Including the US Clean Air Acts for vehicles, the US SOx cap and trade regulations and the UK Climate Change Agreements


16 - Lessons from the Montreal Protocol for Climate Policy, Economics for Equity and Environment, SJ DeCanio 2009

17 - Evidence for the effectiveness of the Montreal Protocol to protect the ozone layer, Atmospheric Chemistry and Physics. 10:12161-12171 J.A. Mäder, J Staehelin, T Peter et al. 2010
18 - The development of substitute for Chlorofluorocarbons: 
Public-private co-operation and environmental policy, Ambio vol 
19: no 6-7 AS Miller 1990

19 - Lessons from the Montreal Protocol for Climate Policy, 
Economics for Equity and Environment, SJ DeCanio 2009

20 - Of Montreal And Kyoto: a Tale of two Protocols, Harvard 