

Social and psychological drivers of energy consumption behaviour and energy transitions

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Tyndall°Centre
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Societal engagement with energy transitions

Transition to low-carbon society

- Human causes of, and impacts from, climate change (IPCC 2007)
- Energy security – ‘generation gap’
- Converging agendas: fuel poverty, obesity, etc.

Need for concerted societal response

- e.g., UK Climate Change Bill (80% target); renewables targets
- 3 approaches: decarbonise supply, increase efficiency, reduce demand
- Role of public(s) at individual and community levels:
 1. Direct energy use (ca.40% of emissions from domestic energy use and travel) and indirect energy use (products and services)
 2. Support for policies (for new tech/infrastructures +behaviour change)
 3. Community engagement and grassroots innovation

Role for social science research

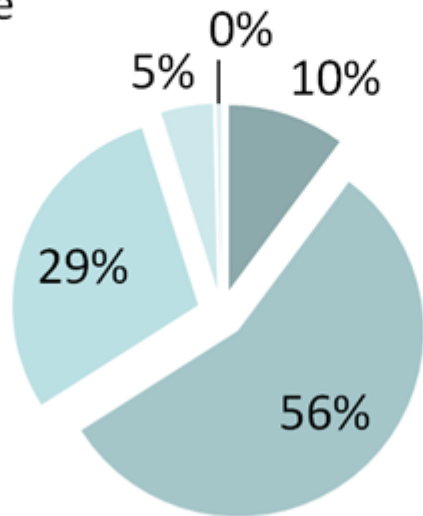
1. Social and psychological drivers of energy use
2. Roles of the public in energy transition – active vs. passive

**How engaged is the
public with climate
change and carbon?**

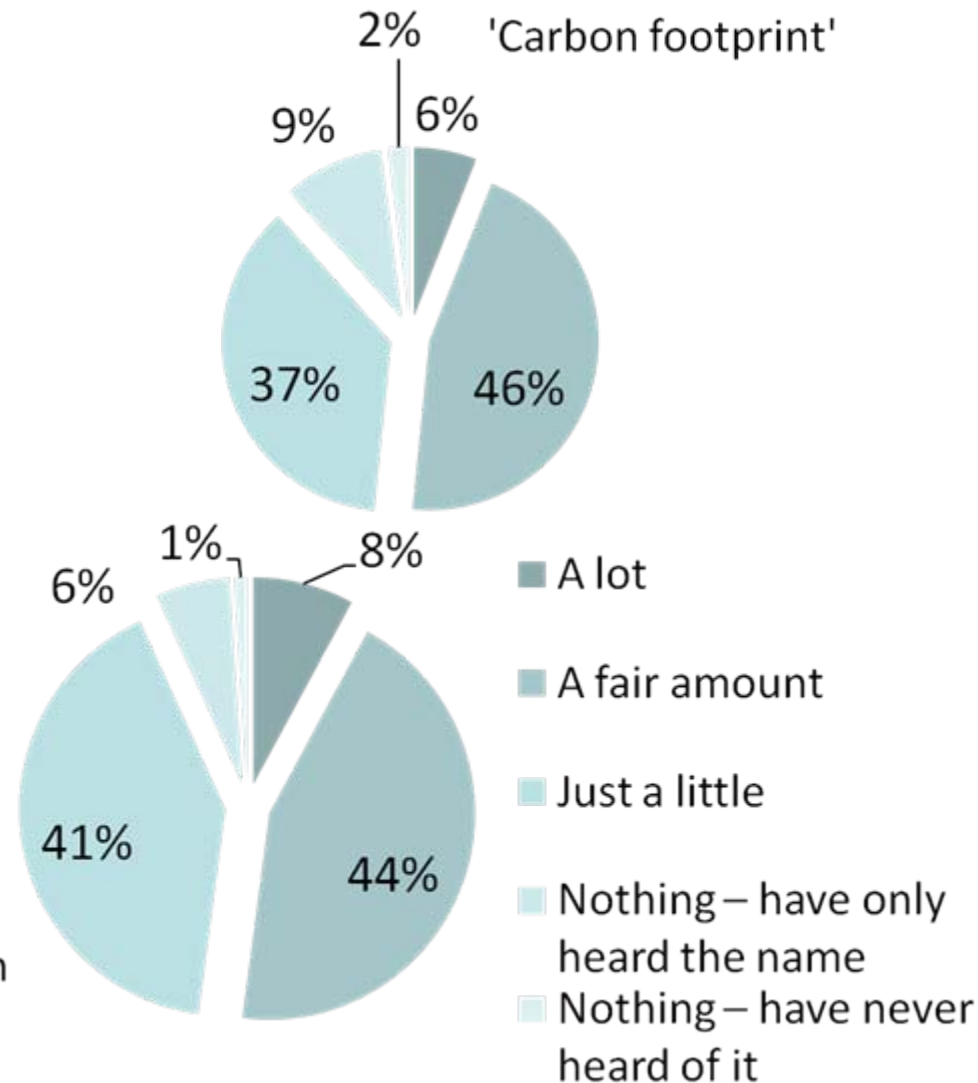
Most are aware of key terms

How much, if anything, would you say you know about the following terms:

'Climate change'



'CO₂ / Carbon
Dioxide
emissions'



Climate change is distant and intangible

Climate change is a low priority issue compared to other day-to-day concerns

- Most people profess concern, but other personal, social and even environmental issues (e.g., pollution) are more concerning (Poortinga & Pidgeon, 2003)

Seen as a social – not personal – risk

- In the UK, 52% believe that climate change will have ‘little’ or ‘no effect’ on them personally (BBC, 2004)
- 85% believe the effects of climate change will not be seen for decades (EST, 2004)

Understanding remains vague

- Diverse understandings about ‘carbon’, encompassing technical, social, and moral discourses (e.g., CO₂, toxic, pollution)

“Element (atomic no.12) essential in organic compounds and acidic gas emissions. Carbon neutral activity aims to maintain the status quo in atmospheric influences”

“I would take it to mean a toxic substance, a polluting gas that clogs up the air and rips off the ozone layer”

“The irreversible impact humans have on planet”

Whitmarsh et al., 2009

- Abstract language
- Some confusion with other issues (e.g., ozone, carbon monoxide)
- Large minority remain sceptical (ca. 18% - DEFRA, 2008)
- Linked to other’s activities (e.g., industry)
- *Little connection to personal choices/actions* (e.g., Whitmarsh et al., 2009; Thompson & Rayner, 1998; Whitmarsh, 2009b)

Most people support action to tackle climate change ...

- 62% say *every possible action* should be taken against climate change; a further 32% say *some action* should be taken (Poortinga et al., 2006)
- Top choices: renewable energy sources and (voluntary!) demand reduction

... but few take action themselves

- Main responsibility for change identified with governments: individuals as “passive bystanders”
- Recycling is more popular than energy reduction
- *Value-action gap* - due to individual and institutional barriers (e.g. Whitmarsh, 2008, 2009a; Lorenzoni et al., 2007)

Action extends little beyond recycling and domestic energy conservation

	Always (%)	Often (%)	Occasionally (%)	Never (%)
Recycle	70.7	23	5.1	1.1
Turn off lights you're not using	67.2	28.8	3.4	0.6
Drive economically (e.g., braking or accelerating gently)	36.2	40	12.6	11.3
Walk, cycle or take public transport for short journeys (i.e., trips of less than 3 miles)	33.3	37	21.8	7.9
Cut down on the amount you fly	23.8	17.6	23.2	35.4
Eat food which is organic, locally-grown or in season	12.6	50.3	28.6	8.6
Avoid eating meat	8.7	9.8	24.3	57.2
Share a car journey with someone else	8.3	22.4	44.6	24.8
Buy environmentally-friendly products	8.3	42.1	43.4	6.2
Use an alternative to travelling (e.g., shopping online)	6.1	24.6	30.5	38.8
Take part in a protest about an environmental issue	0.6	1	7.7	90.7
Write to your MP about an environmental issue	0.4	1.5	7.1	91

Psychological and social drivers of energy use

Psychological & social drivers of energy use (1)

Individual and structural drivers of consumption

- Hedonic and financial motives – e.g., comfort in domestic heating (Gatersleben & Vlek, 1998), convenience, aesthetics, re-sale value (Layton et al., 1993)
- Energy conservation motivated by personal (e.g., financial) benefits; environment may be secondary motive (Brandon & Lewis, 1999; Whitmarsh, 2009a)
- Social identity, symbolism, and status – e.g., in car choice and use (Steg et al., 2001), air con (Wilhite et al., 1997); materialism (Gatersleben et al., 2009)
- Energy use as embedded within wider cultural trends towards consumerism, insatiable wants transformed into ‘needs,’ shifting conventions of normality, increasing individualisation, the use of consumption to define the self and, (un)sustainable socio-technical systems of provision or supply (e.g., Røpke, 1999; Jackson and Marks, 1999)

Psychological & social drivers of energy use (2)

Energy use is irrational and unconscious

- Multiple motivations and roles may lead to behaviour appearing 'irrational' (Layton et al, 1993)
 - e.g., cooking two meals at once to save electricity, but leaving heating on for the cat
- Energy use behaviours move quickly from considered deliberations over personal costs and benefits to the habitual sphere (Bamberg & Schmidt, 2003; Verplanken et al., 1997 1998)

Policy implications – 'upstreaming' interventions

- Limitations of information campaigns – need to break (and create) habits
- Target multiple (not only economic) motivations; and change structures



Roles of public(s) in an energy transition

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Socio-technical transitions

- Focus on technology (diffusion) in transitions literature
- Transitions perspective intended for analysing both technical and social changes symbiotically (e.g., Rotmans et al., 2001; Geels and Schot, 2007)
 - “For all the talk of sociotechnical-co-evolution, there is almost no reference to the ways of living or to the patterns of demand implied in what remain largely technological templates for the future” (Shove & Walker, 2007, p.768)
- Consumer/citizens may play passive or active role in energy transition

Supporting/passive role for energy consumers

- Policy support for new energy supply infrastructure
- Purchase of energy efficient technologies
- Reduced energy demand – via, e.g., carbon labelling, info, smart meters
- *More likely in a centralised energy supply system (Foxon et al., 2008, 2009)*

Active innovation role for energy consumers

- Changes in norms/symbolism of consumption, or uses of technologies
- Community/ domestic micro-generation (CHP, solar PVs, wind turbines, etc.)
- Consumers now also electricity producers (Devine-Wright, 2006)
- *More likely in decentralised (distributed) system (Foxon et al., 2008, 2009)*

Conclusions and implications

Drawing on psychological/sociological literatures...

- Limited public engagement with climate change and carbon
- Energy use determined by multiple financial, hedonic, social and structural factors – *and often not conscious or conspicuous*

Applying this to energy transitions...

- Consumers/citizens may play passive or active role in energy transition
1. Transition to centralised low-carbon energy system may have little impact on psychological/social aspects of energy use (techno-fix)
 2. Transition to decentralised low-carbon energy system (micro-generation) offers potential for active role of consumers and to restructure producer-consumer relationships (*but* soc/tech obstacles)

5 ways to facilitate active roles for consumers in energy transition:

1. Facilitating deliberate energy conservation via changes in energy visibility
2. Changes in habits/routines to more sustainable lifestyles
3. Changes in normative/conventional understandings of proper energy use
4. Increased demand for, & new uses of, low-carbon/more efficient technologies
5. Influencing the shape of the socio-technical regime

Thank you

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