

Reducing Energy Demand: lifestyle or technology?

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UK ENERGY POLICY GOALS

- put ourselves on a path to cutting CO₂ emissions by 60% by 2050
- maintain reliability of energy supplies
- ensure that every home is adequately and affordably heated
- raise the rate of sustainable economic growth and improve our productivity, through competitive markets

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LIFESTYLE OR TECHNOLOGY?

- the answer is both....
- drawing on two pieces of work
- the “40% house”
 - how to reduce carbon emissions from households by 60% by 2050 in line with UK government objectives
- “motivating sustainable consumption”
 - how can we encourage, motivate and facilitate more sustainable attitudes, lifestyles and behaviours?



ELEMENTS OF THE 40% HOUSE

- building design means that heating requirements for new homes are close to zero
- the least energy efficient houses are demolished more quickly - new homes are built more quickly
- electricity consumption in lights and appliances is halved
- two “low to zero carbon technologies” per house (e.g micro-CHP, building integrated renewables) - houses export electricity!
-but on average people have more access to warmth, hot water, space and appliances!

BUILDING DESIGN

ELEMENT	PASSIVE HOUSE	NEW BUILD 2001
Building shell	U-value 0.1	U-value 0.2 - 0.45
Airtightness	0.15 air changes per hour	0.45 air changes per hour
Building orientation	Main living space oriented within 30° of south	no specification
Glazing ratio	Optimised for solar gain	No optimisation
Space heating needs	15 kWh/m ²	90 kWh/m ²

APPLIANCES AND LIGHTING

- vacuum insulated panels for fridges and freezers - ↓ 80%
- LED lighting (light emitting diodes) - ↓ 75%
- consumer electronics - dealing with standby power for set-top digital boxes etc.

LOW TO ZERO CARBON TECHNOLOGIES

- solar thermal - 60% take-up
- photovoltaics - 30%
- micro-CHP (combined heat and power) - 38%
- community heating - 20%
- heat pumps - 8%
- biomass - 5%
- wind - 5%

BUT ARE WE RUNNING UP THE DOWN ESCALATOR?



“an individual’s main objective in consumption is to help create the social world and to find a credible place in it” - Mary Douglas



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WHY IS BEHAVIOUR DIFFICULT?

- people don't always act the way economists say they should...
- social factors shape and constrain individual choices
- people emote rather than deliberate
- energy in the home - inconspicuous consumption
- habit and routine
- locked in behaviour because of incentive structures, institutional barriers, restricted choices

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WE NEED TO ACCOUNT FOR...

- motivations, attitudes and values
- context
- social influences
- personal capabilities
- habits

SO WHAT CAN GOVERNMENTS DO?

- change incentives (taxes, subsidies)
- set facilitating conditions (public transport, recycling)
- set institutional context (rules and regulations)
- address the social context (strong communities)
- business practices (energy efficiency commitments for utilities)
- lead by example (public procurement, politicians' behaviour)

OR GET RADICAL...



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“We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.”

Roy Amara,
Institute for the Future

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FIND OUT MORE...

- “The 40% House”, Environmental Change Institute, Oxford

<http://www.eci.ox.ac.uk/lowercf/40house.html>

- “Motivating Sustainable Consumption”, Tim Jackson for the Sustainable Development Research Network

<http://www.sd-research.org.uk/documents/MotivatingSCfinal.pdf>

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