

Why don't consumers save (more) energy?

Horace Herring, The Open University (OU), UK.

- **Design Innovation Group project** (led by Robin Roy and Sally Caird) at OU that examined key influences on consumer adoption – and non-adoption – of domestic energy efficiency measures and renewable energy systems.
- **Previous research** shows no clear link between energy efficiency practices and environmental motivation.
 - eceee 2005 papers message: '*the social context is all important*'.
- **Our research** aims to understand the dynamics of consumption by finding out how people actually use products and systems, and what they want from them.

Our research

- **Initial survey** of 50 energy professionals.
- **On-line questionnaire** linked to the websites of a 2006 BBC TV programme on climate change (390 responses).
 - People who had adopted – or seriously considered but rejected – one or more of the energy efficiency measures or domestic renewables.
- **Telephone interviews** with 83 people, each lasting 30 to 60 minutes, to uncover reasons for adoption or rejection, and experience of use.
- **Sample bias:** respondents to the on-line survey were self-selected and were 'greener' and from higher socio-economic groups than the UK population as a whole.
 - N.B. Our research is on attitudes and feelings rather than measuring savings or performance.

Our results: energy efficiency

- Measures **adopted** – non-adopters in []:
 - Central heating timer/programmer **73%** [3%]
 - Compact fluorescent lamps (CFLs) **71%** [6%]
 - New or additional Loft insulation **59%** [15%]
 - Thermostatic radiator valves (TRVs) **55%** [14%]
 - Condensing central heating boiler **28%** [25%]
 - Light emitting diode (LED) lighting **7%** [16%]
- The majority had **adopted at least two** energy efficiency products, and about **half adopted three** products.
- **Adoption:** main reasons were to save energy and money, and concern for the environment.
- **Non-Adoption:** main reasons were belief that fuel savings did not justify cost
 - Loft insulation: loss of storage space in loft and disruption
 - TRVs: too much trouble to install
 - CFLs: ugly, unsuitable for fittings, poor/unpleasant light colour
 - Condensing boilers: reputation for unreliability
 - LEDs: not widely available

Our results: renewables

- Only 20% of those who considered getting a renewable energy system actually installed one – % of total sample in [].
 - **Most popular:** a wood stove [16%]
 - **Grey Greens 'status symbols':** Solar water heating [10%]
 - **Niche market:** a solar PV system [3%]
 - **Green pioneers:** a micro-wind turbine [2%]
- **BUT** half of those who seriously considered getting a wood stove actually installed one, compared to 20% for SWH, 8% for PV and 5% for micro-wind
 - The higher the cost the lower the adoption rate.
 - Wood boilers 500 €, SWH/micro-wind - 3,000 to 7,500 €, PV panels 15,000 €
 - Hence in UK low uptake of domestic renewables:
 - less than 100,000 solar water heating, and less than 5,000 other systems.
- **Adoption:** main reasons were to save energy, concern for the environment, and funds available to invest.
 - **Wood stoves:** wanting the warmth and appearance of a real fire
- **Non-Adoption:** main reasons were systems too expensive, poor payback time and low confidence in performance and reliability.
 - All except wood stoves need planning permission

Conclusion

- **Energy efficiency:** barriers depend on technology. Generally not financial:
 - **Loft insulation** (loss storage space), condensing boilers (unreliability), TRVs (hassle), CFLs (Ugly, light quality)
 - **Overall high satisfaction** with savings and performance, though some rebound.
- **Renewables:** cost too much, planning hassles, low confidence in performance.
 - Apart from wood stoves, **low levels of satisfaction.**
- **Only about 10%** of adopters of energy efficiency measures adopted renewables, even though about a third said they seriously considered doing so.
- In contrast adopters of renewables typically (had) installed other energy efficiency measures, such as loft insulation and CFLs.

Sell energy efficiency first, then renewables

- **Ascending the ladder** of energy measures:
- **Foot in the door** with (free/low-cost) CFLs,
 - then (up the ladder of cost) with loft insulation, heating controls and condensing boilers.
- Finally **at the top** sell renewables to energy aware—the prime market is the ‘grey greens’.