



User interaction with heating controls to improve energy efficiency in the UK

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Overview

- Why heating controls?
- Results from a local information and advice trial
- User interaction with technological advances in heating controls



Why heating controls?

- Domestic energy use accounts for a quarter of total UK emissions
- Space heating is responsible for 66% of energy use in homes





Most homes have gas central heating controlled by:

Programmable /
timers (97%)



Room thermostats
(77%)



Thermostatic Radiator
valves (66%)



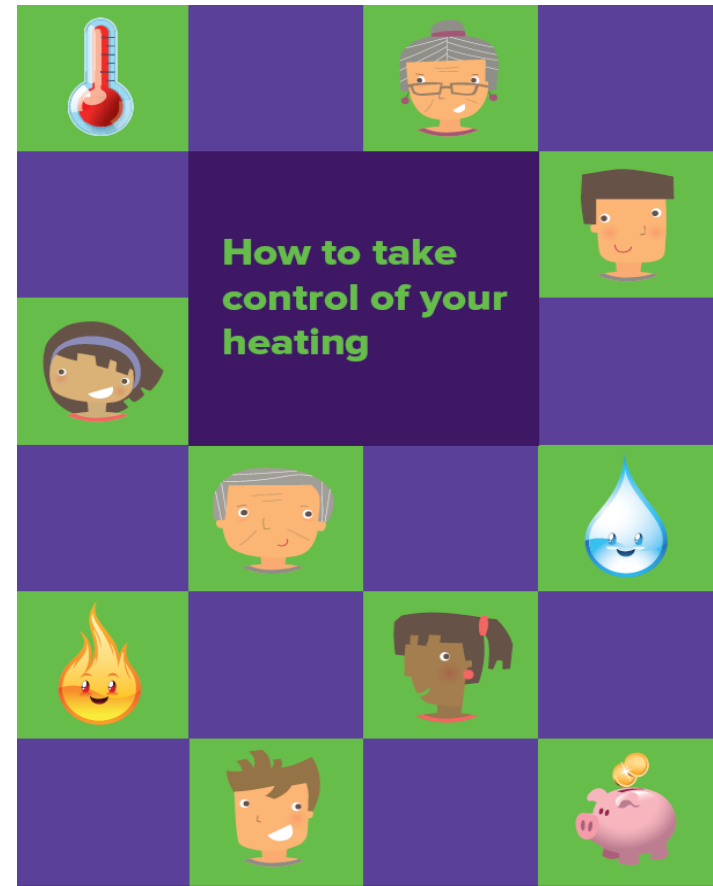


User issues with controls

- Design and location of controls affect behaviour
- Confusion around heating practices
- Variable occupancy and activities can lead to energy inefficiency / waste
- Knowledge and usability barriers



Newcastle trusted messenger trial





Intervention and evaluation details

- Piloted in 150 homes
- 18 engineers trained and randomly allocated
- 1,556 participants – social tenants
- Outcome – gas consumption over 6 months
- Qualitative evaluation of implementation



Qualitative findings – participants report positive impacts from advice



Knowledge outcomes



Behavioural outcomes



Financial outcomes

Variability – people; heating system; engineer



'Trusted messengers' welcomed



Varied delivery style depending on tenants' knowledge and context



Varied detail according to needs



Quantitative analysis showed no *overall* impact on gas consumption - why?

- Limited scope to save
- Inconsistent implementation
- Knowledge did / could not translate into behaviour change for many
- Indication that behaviour change may have reduced waste and increased comfort



Conclusions from Newcastle trial

- Further evidence of user difficulties with heating controls
- Evidence mixed depending on success factor - well-being vs energy reduction
- Need other solutions for social tenants
- Advice and information could be effective for other groups



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Technological solutions? Emergence of smart heating controls with different functions



Evidence on user interaction with smarter heating controls

- Significant potential for energy savings *reported* but:
 - Lack of conclusive independent evidence
 - Issues with defining the baseline
 - Variable functionality and pace of innovation complicate
 - Interaction with Smart Meters, etc. unclear
 - Evidence of usability issues
- Energy Technologies Institute development and trial
- Discussions with manufacturers and energy suppliers to get better evidence



Questions?

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