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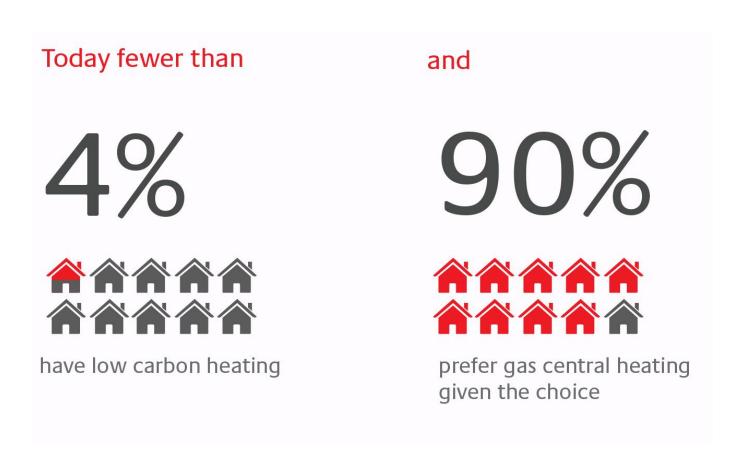
Learning from how people use heat at home to reduce UK CO₂ emissions

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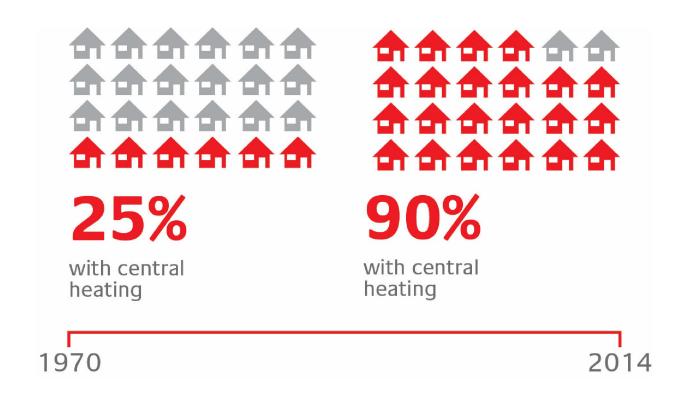
Decarbonising heat is the most cost effective way to tackle climate change in the UK, but







Rapid change is possible







We must focus on tackling 3 key challenges

- 1. Improve low carbon heat experiences
- 2. Simplify installations
- 3. Enhance control





Based on 5 stages of consumer research

Stage 1

Stage 2

participants in four parts

Stage 3

times over a year to reveal use: we used sensors to did; and we modelled relate their behaviour to energy used;

Stage 4

Quantified variation in representative sample of 2,313 British households for an hour in their homes by learning from stages 1-3;

Stage 5

Visited 33 households living with high levels of insulation, district heat and/or heat pumps to evaluate how well low carbon technologies perform today; discussed what people expect from smart heat technologies with 30 people; and trialled remote and zonal heating controls in 12 homes.

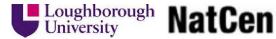
Sensors



Partners







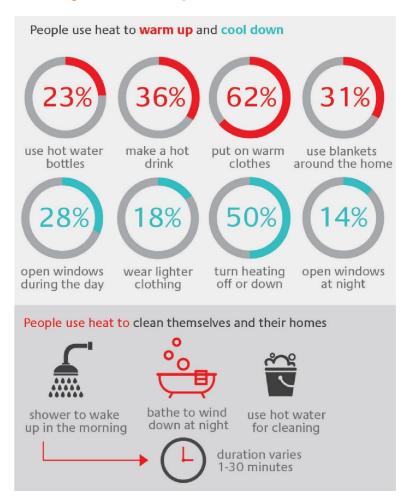




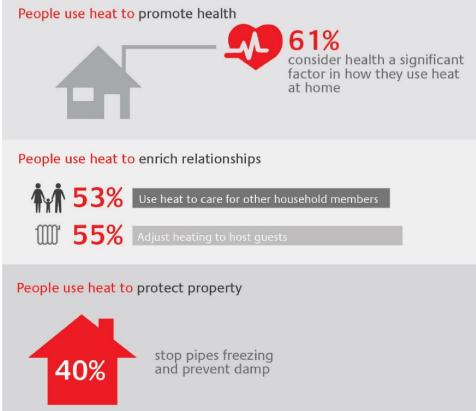




Ways to improve low carbon heat experiences



 Systems should allow people to use heat to get clean and comfortable in diverse ways







Ways to simplify low carbon heating installations

Location limits what solutions will be available in any area



- Design solutions that can be installed in a similar timeframe to replacing a gas boiler
- Encourage people to prepare their properties during renovations
- Enable people to consider thermal details when making renovation decisions
- Explain what solutions will work in each area





Ways to enhance control



~£15 per week

on heating and hot water in 2014 this equated to an annual spend of £750 or ~£15 per week



80%

On average households use 80% of their energy for home heating and hot water



Rising Prices

The proportion households have spent on energy has risen 6% per year in the last decade



Control

People are frustrated that they cannot control how much they spend making their homes feel comfortable

- Public concern over heating bills conceals private confusion over what heat costs
- People hold very different views on how they think heat should be used
- Controls should help people get the heat experiences they want
- Improved controls could prove key to unlocking deeper decarbonisation





Three consumer challenges to decarbonising heat







Improve low carbon heating experiences







Make low carbon heat systems simple to install



Make low carbon heating easy to control







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