

RESEARCH INSIGHT

TRANSITIONS IN HEAT

THE ARRIVAL AND DISAPPEARANCE OF GAS CENTRAL HEATING

Key points

- Changes in home heating matter for when and how different parts of the home are used and for what it means to be comfortable. Heating is important for the use of space, and vice versa.
- Gas central heating is now widespread but its arrival was a gradual, patchy and partial process. Different heating systems continue to co-exist.
- Evidence of past transitions suggests that future heating systems need not perpetuate the model of full central heating: other configurations are possible.

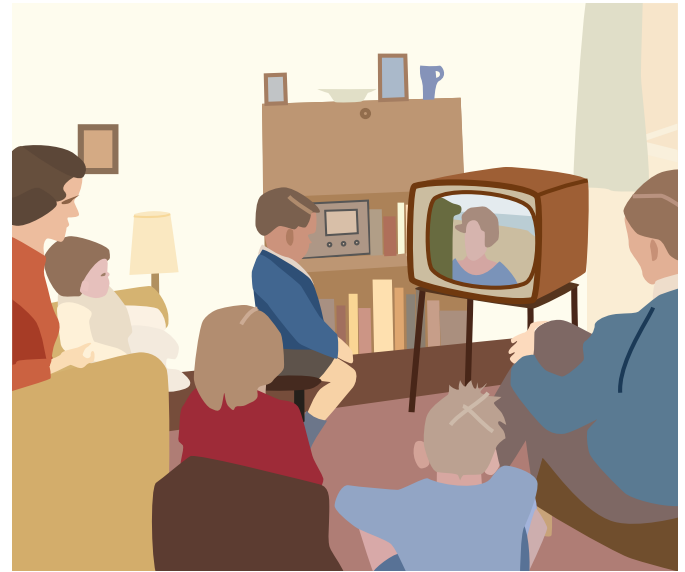
Introduction

The residential sector is responsible for 14% of UK greenhouse gas emissions, much of which relates to the gas used for central heating. Current proposals are to reduce this use of gas to 'close to zero'¹ by 2050, with some homes being connected to a heat network, but the majority using heat pumps.

Around 90% of homes now have central heating. Since almost all of these rely on gas, the conclusion that 'there is no role for standalone gas boilers in 2050'² implies a forthcoming upheaval in domestic heating.

This is not just a matter of swapping one technology for another. Methods of home heating are important for how homes are used, for what people do in different rooms and at different times of day, for what they wear, for what else is involved in keeping warm and for how experiences and expectations shift.

Our research was designed to capture these interwoven aspects: looking at past transitions in order to inform future strategy. As well as learning in detail about the installation and removal of fires, stoves, boilers, and heaters of different types from the 1930s to the present, we discovered how methods of heating have contributed to changing rhythms and practices of daily life. Council records from Stocksbridge, near Sheffield, and from Stevenage provided information about the kinds of heating installed as standard in different decades, and about when and how these systems were replaced or modernised. Oral history interviews with people who had lived in selected council estates in both areas and who had first-hand experience of different generations of heating technology showed what living with these systems entailed, and how heat was organised in the home.



Questions

- What can past developments – from coal fire to gas central heating – reveal about future transitions – from gas central heating to heat networks and heat pumps?
- How do heating systems and patterns of daily life shape each other?
- How have understandings of comfort changed and how are they formed?
- Does the experience of full gas central heating constitute a standard that future technologies have to match?

Findings

Innovations in home heating have had direct consequences for household routines and for the use of space in the home. In brief, solid fuel fires heated one or perhaps two rooms, and needed pretty constant attention: lighting, stoking and removing ash. Upstairs was cold. Closed stoves and radiators increased the extent of heated space and reduced some of the labour involved. Gas central heating made it possible to heat all rooms in the home, and do to so 'automatically' and at the flick of a switch.

“Well I mean everything happened in the kitchen in those days (1950s). You virtually lived in the kitchen. Rarely did you put a fire on in the living room, but there was an open fire in the living room as well. You really didn't live in the living room because there were no tellies ...

John, Stocksbridge: born in 1943, talking about his childhood.

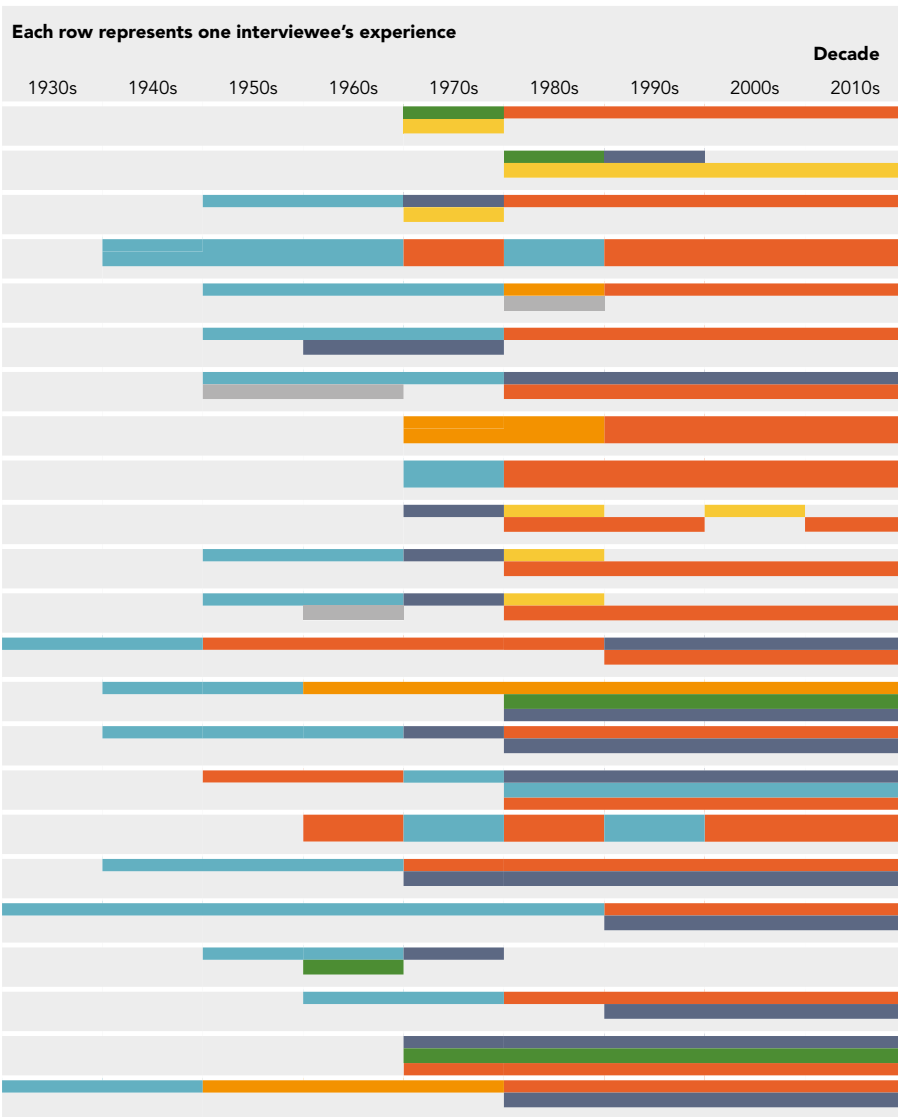
Figure 1 Type of home heating

- Coal fire
- Gas fire
- Electric fire
- Gas hot air heating
- Electric storage heaters
- Gas central heating
- Other e.g. paraffin

Heating technologies simultaneously reflect and enable changing practices of domestic life. For example, watching TV together as a family requires a heated living room. Watching TV in private, perhaps on a tablet or laptop, requires a heated bedroom. Forms of heating influence what goes on in the home and when.

People have experience of living with different systems and as the rows in Figure 1 reveal, what now looks like a widespread transition to full central heating has been patchy and uneven.

Individual histories give a sense of how deeply heating is enmeshed in the detail of daily life. When systems change, people adjust. Some move from full central heating to methods that involve background heating and ‘topping up’. Some get up to light the fire and wait until it warms the house, others simply switch the heating on or off. As our interviewees explained the existence of full central heating does not mean that it is always used, or used in the same way. There is no one normal or inevitable arrangement.



Significance

Our research shows that decarbonising home heating is not simply a matter of replacing one technology with another. Methods of heating are part and parcel of daily life: they matter for the use of space and for the rhythm of the seasons and the day. Understandings of comfort are themselves dynamic: expectations have changed over time. In recent years, gas central heating has become the norm, but it has a short history. Close analysis of the interrelation between heating technologies, the home, and ways of living demonstrates that other configurations are possible.

¹ DECC (2013) *The future of heating: meeting the challenge* p76. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/190149/16_04-DECC-The_Future_of_Heating_Accessible-10.pdf

² DECC (2013) *The future of heating: meeting the challenge* p77. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/190149/16_04-DECC-The_Future_of_Heating_Accessible-10.pdf

DEMAND research insight #7 TRANSITIONS IN HEAT THE ARRIVAL AND DISAPPEARANCE OF GAS CENTRAL HEATING (2016)
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Implications

Heat networks enable people to heat their home as if with a stand-alone gas boiler. The source of heat is different, but the effect is much the same. By contrast, heat pumps are currently most efficient if used for background heating. The widespread adoption of heat pumps implies a combination of heating technologies (background, and ‘top up’) which has more in common with partial and decentralised systems than with a model of full gas central heating.

Our research points to the potential for more varied and also more flexible interpretations of comfort, perhaps focusing on person rather than space heating and perhaps making more of the distinction between background heat and ‘topping’ up. These are options to be explored and embraced rather than precluded by the ambition of perpetuating and mimicking a ‘standard’ of full central heating that has only recently taken hold.



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