

Abstract #: 330

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Abstract Title: Why do people use heat at home and what does this mean for reducing the 20% of UK carbon emissions it produces?

Abstract Text:

The UK aims to eliminate the 20% of emissions that come from domestic heating. Previous reductions have been relatively simple, cheap and delivered clear advantages. To reach these targets, future strategies require households to endure more disruption for less obvious benefits. Therefore solutions must be designed around how people want to use heat in their homes. The Energy Technologies Institute (ETI) has: (1) built on a review of 500 publications; (2) discussed heat with 153 participants in 32 groups around the country (3) visited 30 households four times over a year to reveal how home life shapes heat use (using sensors to see beyond what people said to what they did and modelling to relate behaviour to energy use); (4) quantified variation by surveying 2,313 households for an hour in their homes; and (5) visited 33 households living with insulation, heat pumps or district heat; trialled advanced controls in 12 homes and discussed the potential for smarter heating technologies with 30 people. People want to use heat in diverse ways to create healthy, harmonious homes, but they cannot control how much they spend on comfort. People with different priorities can move into or out of the same property, so solutions that suit each building must appeal to a broad range of occupants. More will retrofit technologies to improve their homes than to reduce what they cost to run. The ETI's Smart Systems and Heat programme is using this evidence to improve the design and control of low carbon heating systems.