More support needed to help households transition to green energy, UK research concludes

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Citizens will need greater financial support and advice as they make the switch to decarbonized heat sources, research from Cardiff University shows.

Published in the journal *Nature Energy*, this is the first paper to examine in-depth householder perceptions across a diverse range of low carbon heating technologies including heat pumps, hydrogen, hybrid heating and heat networks, as well as upgrades to home insulation and energy networks that will be needed to make each technology work.

New gas boiler installations need to be phased out before 2050 in order for the UK to meet its climate change targets. There are grants of £7,500 available in England and Wales to help with the cost of installing heat pumps.

The study draws on data from deliberative workshops representing a diversity of geographic and housing contexts across the UK.

Academics found that while participants were open to the fact that there needed to be a move away from fossil fuel use for heating, there were also concerns about the impact such changes might have on their finances as well as the upheaval of retrofitting homes.

No one retrofit measure was seen as preventing uptake of low carbon heating. Rather the study identified a range of specific, highly valued aspects of people's homes that might be impacted, and that installers will need to attend to as new heating technologies are rolled out.

Worries over affordability and frustration at uncertain cost estimates made the prospect of comparing different heating options stressful for many participants.

Feelings of precarity were most pronounced among tenants in the private

rental sector, where participants worried about them being forced to pay for an increase in rent and bills.

Homeowners living in more affluent areas, who felt more financially secure, were more prepared to consider that households such as theirs might need to contribute towards the cost of retrofitting.

Participants tended to view network upgrades or temporary service disruption as the least problematic aspect of heat decarbonization.

Dr. Gareth Thomas, based at the University's School of Social Sciences, said, "It's clear from our research that while the public is supportive of the need to transition away from fossil fuels, they do not expect to bear these intellectual and financial burdens alone. Current financial incentives will therefore not be enough to increase uptake.

"Householders feel that selecting between low carbon heating ought not to be a risky process that leaves some households worse-off, victims of questionable tradesmen or opaque energy or appliance markets.

Opinions on heating infrastructure provision and perceived disruptions varied around the UK, highlighting people's relationships with their wider environment. Focus groups in Liverpool were receptive to the idea of district heating schemes, in line with their "feelings of local solidarity and collective identity."

Dr. Thomas said, "There are many factors which can make people feel insecure or conversely, less worried about moving to green energy sources.

"For those with secure housing and a financial cushion to fall back on, heat retrofit may appear more akin to an inconvenience than a fundamental disruption to valued ways of life. While recognizing the

material disruptions such changes may entail, participants discussing heat decarbonization from a position of security were able to articulate positive benefits for themselves, the environment and their community.

"Our findings indicate that policymaking should give less emphasis to the decision making of individual consumers, and establish ways of supporting citizens financially, intellectually and emotionally so they can live well while engaging in heat retrofit and other low-carbon lifestyle projects."

More information: Gareth Hugh Thomas et al, A relational approach to characterizing householder perceptions of disruption in heat transitions, *Nature Energy* (2024). DOI: 10.1038/s41560-024-01506-w

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