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Citizens' perceptions

Paula Maria Bögel

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The shift towards low-carbon heating technologies and associated infrastructure often disrupts citizens' lives. Research now demonstrates how the socio-psychological context may influence the circumstances under which citizens are willing to accept heating transitions and related construction work, and those where reactance and rejection is to be expected.

Citizen engagement is key to accelerating energy transitions¹. Researchers from social sciences have therefore intensively worked on this topic, often in close collaboration with colleagues from engineering and natural sciences, to improve our understanding of factors influencing social acceptance². Despite increasingly interdisciplinary approaches to the issue, many studies still rely on specific disciplinary viewpoints, which runs the risk of considering a narrow set of associated implications. For example, socio-structural barriers may be identified from a sociological approach versus those at the individual level, as highlighted in psychology studies³. Following from this, we often fail to provide innovative, interdisciplinary strategies to improve acceptance and engagement of citizens in energy transitions⁴. Writing in *Nature Energy*, Gareth Thomas and colleagues from Cardiff University, Imperial College London, University of Strathclyde offer insights into how interdisciplinary, explorative studies could help to broaden our understanding of citizens' perceptions of heating transitions⁵.

The team reports on six workshops with 49 carefully selected citizen participants in different socio-spatial contexts in the UK to discuss inconvenience and disruption associated with heat decarbonization. The diverse sample provides an inclusive view on citizens' perceptions of energy transitions, and especially contributes to calls to include perspectives of marginalized and underrepresented groups⁶.

With a focus on the effect of disruptions to everyday life through heat decarbonization, Thomas and colleagues examine UK citizen perceptions of four low-carbon heating technologies: heat pumps, hydrogen, hybrid heating and heat networks. They also address the associated upgrades of distribution network infrastructure and the resulting need for construction and changes in infrastructure in citizens' everyday life. Namely, they ask the question: what changes in people's lives if heating infrastructure changes?

To address this question, the researchers take a relational approach to theorizing disruption as a socio-psychological phenomenon. Studying heating transition this way means that they explicitly overcome disciplinary viewpoints by connecting the individual-level and the societal, structural level to understand how citizens react to heating transitions. In particular, the researchers study sense-making processes as an interplay of social and societal discourse and individual

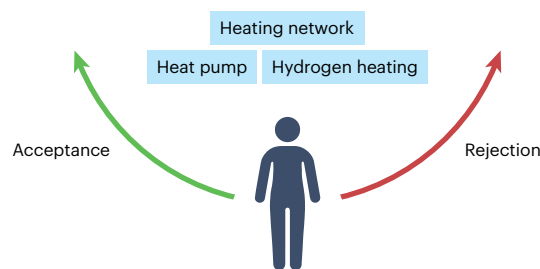


Fig. 1 | Perceptions and acceptance of heating transitions. Several socio-psychological aspects may influence citizens' acceptance or rejection of new heating technologies, such as heat pumps, heating networks and hydrogen heating. Figure by Anne Möller.

relationships, feelings and experiences. For this purpose, they combine agentic, individualist-centred, decision-oriented approaches found in much of the perceptions literature on new retrofit technologies with practice-based approaches. While the first approach highlights individual agency, the latter one stresses, in contrast, the embeddedness of our action in a given social and societal structure.

Through this interdisciplinary perspective, the researchers reveal insights on the interplay of the individual perception and the social and societal background in which all of us are embedded. In particular, the study shows that construction work for heating transitions is perceived as problematic if it interferes with socio-cultural expectations of tasks such as care giving and those related to hygiene. For example, if construction work leads to disconnections for a longer period, this was seen as being incompatible with socio-cultural expectations for good parenting, such as bathing and food preparation routines. Such threats to their everyday life routine and practices were perceived as stressful by citizens. This finding also contributes to the call to pay more attention to the role of emotions in transitions⁷.

Regarding structure–agency relations, the theoretical perspective presented by Thomas and colleagues not only connects the individual, lived experience with the social and societal level but also relates it to changes in the physical environment, for example, material changes in heating transitions and effects on urban design. Such a perspective that connects actors and space is still quite rare in (energy) transition research but offers much potential for novel insights⁸.

Through the study by Thomas and colleagues, we are able to reflect on the role of place and social identities on perceptions of construction work for heating transitions. In particular, the researchers show that citizens in Liverpool, a traditionally working-class city, expressed strong connections with its densely packed Victorian terraced streets (which may be affected by construction work for heating transitions), both for their historic character and as a symbol of working-class identities. Thus, potential alterations to such properties were seen as a symbolic disruption to class heritage and related social and place identities. Further work could follow-up on these insights and use socio-spatial frameworks from sustainability transition research to systemically

explore the relation between the physical environment, its cultural and symbolic meaning and the related social identities⁹.

Overall, this interdisciplinary and exploratory work offers – in the best possible way – surprising perspectives for studying diverse citizen engagement in energy transitions and empowering future work in this area. Although beyond the scope of this study, future research on this topic will need to consider in depth the underlying ontologies and epistemologies of structure–agency debates and respective theoretical viewpoints. This will be critical if we are to further develop novel interdisciplinary models in transition studies¹⁰ in order to learn more about how to engage citizens in energy transitions.

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Competing interests

The author declares no competing interests.