Investigating cognitive effects of energy poverty

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Rationale

Citizen energy communities and initiatives are increasingly expected to contribute to a socially just energy transition and to help alleviate energy poverty. Enabling local citizens to participate, community energy provides a voice and choice to all energy consumers. Their membership data, however, often suggests a different picture. Vulnerable and energy-poor households, especially, do not participate. As a consequence, the most vulnerable miss out on energy communities' benefits such as affordable and clean energy. The reasons for their exclusion – although speculated about – remain widely unknown. This project investigates the perspective of the energy poor and the reasons that hinder their participation in the energy transition. How do they perceive energy communities and their participation in them?

Key research aims

1. Exploring energy-poor households' perspective on the energy transition
2. Finding out whether these households know about and are interested in different ways of citizen participation in energy transition, in relation to energy communities in particular
3. Understanding energy-poor households' perspective on community energy initiatives such as renewable energy cooperatives and whether they think such initiatives can help them tackle energy-related challenges
4. Exploring energy communities' perspective on energy poverty mitigation

Summary of research activity

As a first step we talked to Caritas Germany and the Electricity Savings Check in Berlin. Caritas has years of experience working with energy-poor households in Germany. Prior to our meeting we developed a preliminary interview guideline which we discussed with the regional coordinator of the Electricity Savings Check. Caritas also helped us in reaching out to members of energy-poor households in Berlin, Erfurt and the region of Saarland. Over the course of several months, we contacted individual household members to conduct interviews with them. After the first set of interviews, we reviewed our questions and discussed the experience we had during the interviews. Based on these discussions we slightly adapted the interview questions. In the end, we conducted 41 interviews with individual members of energy-poor households or households that had suffered from energy poverty in the recent past. In a next step we transcribed and coded all interviews and mapped different thematic sections as the basis for drafting an open access publication. At the same time, we distributed an online survey (developed in 2020) to 900 energy communities in Germany to explore their perspective on energy poverty mitigation. We cleaned and analysed the data and applied the energy justice framework to investigate the extent to which energy communities contribute to a more just energy transition in Germany.

Methodologies

Quantitative interviews, online survey, content analysis, grounded theory, literature review.

Findings

Policy documents pursue a win-win situation of climate policies and combatting energy poverty. Nevertheless, current energy transition policy instruments do not achieve true participation of energy or income-poor households in the German energy transition. Structural factors like the organisation of welfare policies and institutions, housing market mechanisms, the energy market design, housing ownership or preconditions for energy transition instruments hinder vulnerable households' access to energy transition benefits. Based on in-depth interviews with 41 German energy-poor households, our research describes how vulnerable households remain excluded from energy transition without a sense of ownership and belonging. Further, this exclusion and alienation occurs independently from households' support of energy and climate change mitigation.

Perspectives on the energy transition

In our findings, we portray three groups of energy-poor households: households supporting energy transition with limited possibilities to get active in energy transition beyond energy saving; indifferent households with low energy consumption due to financial precarity, and overburdened households with (mental) health issues impairing their ability to think about or engage with the energy transition. What stands out, is that although a vast body of literature describes energy transition opponents during our interviews we did not come across such opinions.

All energy-poor households we talked to have one thing in common: current instruments addressing energy vulnerable households are restricted to energy-saving or one-time relief measures such as energy checks, that quickly reach their limits, especially in times of inflating energy prices. Furthermore, these measures do not change the structural causes of (energy) vulnerability. Most importantly, such instruments do not achieve a sense of ownership among vulnerable groups for the energy transition, let alone empower vulnerable groups' participation in the energy transition.

Energy-poor households that support the energy transition and want to contribute to a more sustainable way of life have very little scope for action. The main difference between households proactively supporting the energy transition and those who are indifferent is their choice of energy tariffs: while indifferent households go for the cheapest option, energy transition supporters opt for a green energy tariff – a luxury choice given a price difference of up to 35 per cent. Further, all households engage in energy saving behaviour - a daily practice rather than a choice - often passed on by their parents during childhood. Although both energy transition supporters and indifferent households engage in very similar energy saving behaviour, the framing of and motivation behind such behavioural patterns differs. Energy transition supporters engage in energy efficient behaviour to be part of what they refer to as a more sustainable way of living (the energy transition), saving money is an additional outcome; energy transition indifferent households primarily engage in such behaviour to save money and pay the bills, a sustainable lifestyle is not mentioned. Other measures such as exchanging appliances, heating systems or thermal insulation remain unaffordable and existing support or funding instruments remain inaccessible for all household members we talked to. Finally, household members did not consider or mention participation in initiatives, information events or energy communities in connection with the energy transition. The only way to participate in energy transition, and its underlying narrative of a more sustainable and less carbon intensive lifestyle, is in the way households consume – in short: changes in individual energy consumption patterns.

Energy efficient behaviour is often fully exploited

With respect to the current situation, inflating energy prices pose a considerable threat to the households we talked to. With energy efficient behaviour at its limits and new appliances such as energy efficient washing machines remaining unaffordable, reducing energy consumption further results in more deprivation. And while one-time relief measures such as energy checks help, bureaucracy hinders immediate relief (e.g., the heating bonus for last winter will be paid out during the next summer). Further, such one-time relief measures do not tackle the more structural challenges: energy prices are likely to remain high for the next years while real income levels decrease and rising rents force vulnerable households to endure energy inefficient housing conditions.

Finally, an additional aspect often mentioned during the interviews is the recently introduced CO_2 tax. Although the individuals we talked to support the general idea, they criticise the additional tax burden for vulnerable groups. They point out that driving a combustion engine or heating their homes with oil or gas is sanctioned (more expensive with the CO_2 tax on top) while existing alternatives even with financial incentives and funding schemes (which often remain inaccessible because they either require taxable income for deductions or up-front capital) remain unaffordable and often more expensive than conventional technology. The fact that German policy makers have still not agreed on how to redistribute CO_2 tax revenues creates the impression of a particular burdensome and unfair tax.

Energy communities remain unaware of energy poverty

These experiences are mirrored by the online survey we distributed among 900 energy communities in Germany. After cleaning the data set, the data sample consists of 113 replies. While roughly one third of the energy communities in the sample report that they address vulnerable households and only nine energy communities proactively address energy poverty. The main reasons for not addressing energy poverty are energy communities' unawareness of energy poverty in the local community. Further, energy communities often struggle to stay operational in a highly competitive energy market; they thus need to allocate all organisational resources to their business activities. Inclusive action, on the other hand, is highly resource intensive; successfully addressing vulnerable households requires a door-to-door approach and special financial schemes to finance membership such as reduced share prices or membership fees or internal cross financing. In the end and without enabling policy frameworks that support energy communities in reaching out to the most vulnerable, inclusive action remains a form of philanthropy often not affordable for energy communities.

Recommendations

On a policy level, only a radical shift towards inclusive, democratic policy design can overcome this exclusion of the energy-poor from the energy transition.

1. In the short run social transfer payments must cover energy expenses (including electricity) according to the household's situation.
2. Policy makers must recognise that energy poor households tend to have exploited their potential to save energy through efficient behaviour and changes in consumption patterns.
3. Energy efficiency upgrades on all levels must be financed for the most vulnerable households e.g., kitchen appliances, hot water supply and insulation.

4. The tenant power model offers benefits for vulnerable tenants in the form of access to renewable and affordable electricity; energy policy should strengthen these approaches and provide incentives for social housing providers to offer tenant power models.
5. Policy makers must further recognise that energy communities in Germany differ considerably when it comes to the extent to which they can and want to engage in inclusive action and energy poverty mitigation; policy makers must develop a clear taxonomy that distinguishes between investor-led and citizen-led energy communities. The latter focus on generating social welfare (e.g. energy poverty mitigation) rather than generating profits for their shareholders. Energy communities adding social welfare would gain access to an enabling policy framework (as demanded by the recast of the European renewable energy directive) that supplies energy communities with needed resources or competitive advantages to enable inclusive action and energy poverty mitigation.

Outputs (to follow)

1. One peer-reviewed open access publication; working title: Leaving the energy-poor behind – Insights into the social exclusivity of the German energy transition; Authors: Florian Hanke, Katrin Großmann & Leona Sandmann
2. One peer-reviewed publication; working title: Energy communities' struggle to enhance energy justice – Insights from 113 German cases; Authors: Florian Hanke & Rachel Guyet

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Florian Hanke: Research Gate

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