

Editorial

Special Issue: The uneven and increasingly complex dynamics of decarbonisation and energy poverty in the context of unprecedented energy and climate crises

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Energy as headline news

The relationship between climate change, decarbonisation and energy poverty is particularly topical. When we organised our international conference ‘Making Decarbonisation Fair’ in March 2021, the event from which this Special Issue emerged, we aimed to build upon a body of research that, whilst simmering for decades, had rightly become increasingly mainstream. Since then, we have been plunged into an energy crisis of a severity not seen in over half a decade owing in no small part to the geopolitics unleashed by the Russian invasion of Ukraine (Gatto, 2022). The interplay between this deep international energy price crisis and the increasingly manifest impacts of climate change (Clarke *et al.*, 2022; King and Henley, 2022) mean that *energy* and all its intricate economic, social and political corollaries, is frontpage news.

Price pressure in wholesale gas markets has meant spiralling energy prices, and although the exact extent of the price crisis - and Government responses - has varied between countries, households are almost universally facing energy bills that would have been unimaginable even a year ago (Foucart, 2022; Kalkuhl *et al.*, 2022). In the UK, for instance, there has been a doubling of household energy bills in only a year, triggering a 50 per cent increase in fuel poverty (NEA, 2022). A direct outcome of this is additional financial stress for those managing household energy bills and inevitable rises in the number of households experiencing energy poverty and the attendant impacts it brings for health, wellbeing and social and economic inclusion. These current challenges also highlight the interconnected nature of energy, transport, and food, both in the ways they compete within household budgets (Simcock, 2020) and in the extent to which these energy-intensive sectors are vulnerable to fluctuations in energy markets. Whilst current global events have turned attention away from decarbonisation and towards energy security, this is happening at a time when the impacts of climate change are increasingly evident in the form of heatwaves, flooding, wildfires and drought. There is now little

disagreement that these, and the disruption and suffering they cause, are the impacts of historic emissions on the part of Global North nations and our collective failure to decarbonise our energy supply and futureproof our infrastructure more rapidly (Pörtner and Roberts, 2022).

A crisis of inequality

The inequalities at the heart of our energy provision are clear: not only are poorer households struggling the most to pay for the energy they need, they are also amongst the lowest emitters yet least well positioned to improve the resilience of their homes to extreme weather and to repair and recuperate after floods and fires. This social gradient is evident within countries and at a larger scale between the Global North and South. A transition to a fairer and more sustainable energy system is therefore urgently needed and it is clear that energy poverty and decarbonisation must be tackled together. Failing to decarbonise now will intensify injustices in coming years. Failing to decarbonise in a way that is socially inclusive risks poorer communities being left with old, inefficient technologies that rely on fuels that grow more expensive as they are phased out, or burdened by new systems that are more expensive to run in the medium term. Those in energy poverty enter the energy transition at a disadvantage (Middlemiss, 2022) and, whilst the transition can bring net social benefits, it can also increase vulnerabilities (Sovacool *et al.*, 2021).

In presenting this collection of papers, we start from the point of view that decarbonisation and energy poverty reduction are *both* important and urgent agendas. There is no question of doing one without the other, but we should not assume that the relationship between these two transitions is necessarily symbiotic. Not everything that reduces carbon emissions will help to reduce energy poverty.

The global dimensions of energy poverty and decarbonisation

There are therefore important questions for the research community to consider. How should the decarbonisation of our energy system and the development of renewable technologies be paid for and by whom? How do we ensure that people on low incomes are supported in retrofitting their homes and installing new heating and cooling systems? How do we make new technologies available to everyone and ameliorate the hurdles of high upfront costs and running cost increases in the short to medium term associated with new technologies, such as heat pumps and household battery storage? How do we empower households to make the changes they need to in order to participate in the transition whilst not ignoring the clear responsibilities of government and business at a systems level? And how does the interplay between decarbonisation and energy poverty play out at a global scale, where priorities differ significantly between Global South and Global North, with the former doing whatever it takes to roll out electricity access whilst grappling with the worst impacts of a climate change crisis that is not of their making. Global North nations, on the other hand, struggle with affordability due to their continued dependence on fossil fuels to deliver domestic energy.

Greenhouse Gas emissions do not respect borders and the extent of inter and intra national inequalities and interconnectedness has never been more apparent as energy poverty soars and decarbonisation grows ever more overdue. These themes and more are examined in this wide ranging special issue which includes contributions from a mixture of academics and practitioners on the frontline of the energy crisis.

Which bodies matter?

We open the special issue with a short article by Professor Gordon Walker which prompts vital reflection on the historic, colonial world views that so often dominate how knowledge is generated and presented and lead to the domination of Western worldviews about what and who matters. The field of energy studies is no exception, with both the volume of research activity and the dominant assumptions and proposed solutions to both energy poverty and decarbonisation challenges heavily skewed towards the Global North. For example, this worldview taints understanding of the fundamental nature of energy poverty, leading to assumptions that it is primarily characterised by issues of affordability, thus obscuring the more fundamental challenge of securing access to basic energy services in many Global South nations. It also leads to unquestioned assumptions that we are all equally responsible for climate change as a global society despite countries in the Global North collectively producing a carbon footprint 100 times higher than that of the Global South (IEA, 2020). A decolonisation perspective lays bare the intense complexities inherent in striving for global and local equity in responses to decarbonisation and energy poverty. Despite seeming intractable, they must be fully acknowledged. This is exemplified by Walker's discussion of whose bodies matter when it comes to thermal comfort:

"... we could well imagine a future in the UK in which, with ever increasing summer temperatures and extremes, rich bodies are kept cool through high quality new builds and retrofits that do function to keep indoor temperatures under control; whilst poor bodies have to make do with battered old air conditioning units (as they do with battered old heaters) and are at the same time criticised for contributing to climate change. Or a future in which 'The Campaign for Cool Homes' make the case for affordable cooling for the vulnerable poor in the UK, whilst neglecting poor and far more severely at risk bodies in other parts of the world. Whose bodies and lives matter in such scenarios are full of contradictions and tensions that a decolonising perspective has a key role in drawing out." (Walker, 2022: 5)

Opening with this short paper provides a vital point of reflection for all those looking to contribute to the field.

An international perspective: differential experiences and dynamics

Within this special issue, we have sought to encourage awareness of the contextual specificity of dilemmas relating to energy poverty and decarbonisation. In pursuit of this, we feature a number of papers featuring case studies highlighting the distinct nature and dynamics of energy in particular countries. For example, Palma *et al.*, highlight how the need for warm homes in winter and cool homes in summer in Portugal necessitate far reaching changes in domestic heating and cooling equipment. Despite improving thermal comfort, such changes may frustrate efforts to alleviate energy poverty in a socially just way, due, amongst other things, to the high upfront costs associated with the kind of deep renovation necessary.

We also delve into the dynamics of energy poverty and decarbonisation in a country rarely associated with the former. Through the case study of Norway, Sareen *et al.*, expose the complex interrelationships between energy and transport poverty in the context of the push for decarbonisation and digitalisation. This is followed by a paper situated in a very different perspective in the form of Shenga *et al.*'s unpicking of the uneven dynamics of energy access in Mozambique via lived experience research that reveals how political allegiances can form a surprising determinant of access to

electricity. It also reveals that where connections are available, affordability and the limited availability of fuels and technologies can hamper uptake and deepen reliance on non-renewable fuels.

Underlining the importance of contextually sensitive understandings of energy poverty, Cortes and Amigo highlight the (often overlooked) significance of connections between air quality, transition and energy poverty in Chile. In doing so, they reflect on the vital importance of considering the socio-cultural implications of energy transition and how communities may resist transition when it threatens established cultures and ways of life.

How should different sectors contribute?

The special issue then turns to a call to building designers by Abbasi *et al.*, to embed considerations of fuel poverty into the design of new homes, as opposed to the more established practice of considering the consequences of building design for energy costs at the post intervention stage when it is too late. Continuing on the theme of how different actors within the energy system can contribute, Kotak and Ede debate what the role of energy regulators and utility companies should be in supporting a just transition away from fossil fuels, highlighting the complexity of the decarbonisation challenge in terms of balancing the needs of innovators, investors, retailers and end users.

Fuel poverty may rise in the rush to decarbonise

We close the special issue with a paper that captures the essence of the collection in setting out six 'risks' to the development of a research agenda situated at the intersection of fuel poverty, climate change, and decarbonisation. Sherriff, Butler and Brown outline that while these three areas represent current prominent agendas, there is often an assumption that they are complementary and synergistic. However, drawing on insights from international research and policy experts, they warn that an effective research agenda must consider risks, such as the ways in which decarbonisation may deepen fuel poverty in the medium terms or detract from fuel poverty alleviation. They also highlight pitfalls for the most vulnerable in the transition with elements such as the electrification of heat, the cost of renewables and low carbon technologies being potentially exclusionary.

This special issue could not come at a more critical moment for those working on energy, fuel poverty, decarbonisation, and the climate crisis. Never before have Governments, the research community, policy actors, industry, and other key stakeholders been required to act at such pace or scale to address the overlapping crises of Covid-19, spiralling living and energy costs and intensifying climate change. It is our hope that the papers here capture and begin to unpick some of the complexities embedded in the problems in front of us - across geographical regions, conceptual frames, policy shortcomings, and the impacts and inequalities rooted in the lived experiences of energy vulnerability.

At the very least, we hope that this special issue will provide a vital pause for reflection in the clamour to respond to these multiple crises, reminding us of the complex and deeply uneven conditions we operate within at the global and more local levels. Interconnectedness is a binding theme within this special issue and is manifest in the discussion surrounding the complex interplay between decarbonisation and energy poverty as well as that relating to the way that events and actions in one part of society

or even the world impact those elsewhere. To avoid deepening the plight of others that are often out of sight and mind as we seek to make things better for those immediately around us, we must always remember that all bodies matter.

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References

- Clarke, B., Otto, F. and Harrington, L. (2022) How likely would Britain's 40°C heatwave have been without climate change? *The Conversation*. Available at: <http://theconversation.com/how-likely-would-britains-40-c-heatwave-have-been-without-climate-change-187368> [Accessed: 16/08/2022]
- Foucart, R. (2022) Energy crisis: why French households are largely protected from soaring costs while British families struggle. *The Conversation*. Available at: <http://theconversation.com/energy-crisis-why-french-households-are-largely-protected-from-soaring-costs-while-british-families-struggle-188417> [Accessed: 16/08/2022]
- Gatto, A. (2022) The energy futures we want: A research and policy agenda for energy transitions. *Energy Research & Social Science*, 89, 102639. Available at: <https://doi.org/10.1016/j.erss.2022.102639>
- International Energy Agency (IEA) (2020) *Global Energy Review: Co2 Emissions in 2020*. Available at: [Global Energy Review: CO2 Emissions in 2020 – Analysis - IEA](https://www.iea.org/reports/global-energy-review-co2-emissions-in-2020)
- Kalkuhl, M., Flachsland, C., Knopf, B., Amberg, M., Bergmann, T., Kellner, M., Stüber, S., Haywood, L., Roolfs, C. and Edenhofer, O. (2022) *Effects of the energy price crisis on households in Germany*. 36.
- King, A. and Henley, B. (2022) It's a savage summer in the Northern Hemisphere – and climate change is slashing the odds of more heatwaves. *The Conversation*. Available at: <http://theconversation.com/its-a-savage-summer-in-the-northern-hemisphere-and-climate-change-is-slashing-the-odds-of-more-heatwaves-100582> [Accessed: 16/08/2022]
- Middlemiss, L. (2022) Who is vulnerable to energy poverty in the Global North, and what is their experience? *WIREs Energy and Environment*, n/a (n/a), e455. Available at: <https://doi.org/10.1002/wene.455>
- National Energy Action (NEA) (2022) *Supporting vulnerable energy customers through the energy crisis: A Policy Briefing Paper*. Available at: <https://www.nea.org.uk/wp-content/uploads/2022/05/Supporting-vulnerable-energy-customers-through-the-energy-crisis-2.pdf>
- Pörtner, H.-O. and Roberts, D.C. (2022) *Climate Change 2022: Impacts, Adaptation and Vulnerability*. 168.
- Simcock, N. (2020) *Vulnerability to fuel and transport poverty*. 5.
- Sovacool, B.K., Turnheim, B., Hook, A., Brock, A. and Martiskainen, M. (2021) Dispossessed by decarbonisation: Reducing vulnerability, injustice, and inequality in the lived experience of low-carbon pathways. *World Development*, 137, 105116. Available at: <https://doi.org/10.1016/j.worlddev.2020.105116>