

Energy Poverty and Vulnerability

A Global Perspective

Edited by Neil Simcock,
Harriet Thomson, Saska Petrova
and Stefan Bouzarovski

First published 2018

ISBN: 978-1-138-29445-5 (hbk)

ISBN: 978-1-315-23151-8 (ebk)

15 Conclusions

*Neil Simcock, Harriet Thomson,
Saska Petrova, and Stefan Bouzarovski*

(CC BY-NC-ND 4.0)



ROUTLEDGE

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

earthscan
from Routledge

15 Conclusions

Neil Simcock, Harriet Thomson,
Saska Petrova, and Stefan Bouzarovski

We began this book with the aim of providing the first global and comparative perspective on energy vulnerability, in order to advance debates on the systemic processes and conditions that (re)produce domestic energy deprivation. By bringing together 13 chapters that cover 14 countries in total, the volume provides the first instance where such divergent contexts are brought together to discuss energy vulnerability in one common space. In this concluding discussion, we look across the range of contributions and draw out some overarching lessons, policy implications and future research directions.

Commonalities and differences across the chapters

One of the key advantages of considering studies from such diverse settings through a single lens is the ability to identify commonalities and differences in the underpinning drivers of energy poverty across the globe. In terms of similarities, it is notable that many of the factors identified in the existing literature as direct causes of energy deprivation were present in some form in all of the national settings analysed. The ‘triad’ of low incomes, high energy prices and the material condition of the home is highlighted as important contingencies shaping energy vulnerability in every chapter.¹ Beyond this, the expanded list of factors identified in more recent conceptualisations of energy poverty (Bouzarovski 2014; Middlemiss and Gillard 2015; Snell et al. 2015) are also evident across the chapters. All document the important role of households’ particular *needs* and *everyday practices* in determining how energy poverty emerges and is experienced. These are shown to shape how (much) energy and what forms of energy services are required and used in the home (see, for example, Chapters 6 and 11), or whether and how households engage with energy poverty amelioration policies and support networks (see Chapters 3 and 4). Several of the chapters also report a lack of *access* to adequate and appropriate energy carriers as an issue, further disturbing the representation of this as solely an issue for households living in the ‘Global South’. Overall, that these various factors were present across such a diverse range of settings validates their positioning as central causes of domestic energy deprivation in many contemporary theorisations of energy poverty.

However, alongside such commonalities, the chapters also provide detailed accounts of a range of differences in some of the processes that (re)produce domestic energy deprivation in particular spaces and contexts. Firstly, comparing nation states, the chapters evidence how in each national context the aforementioned 'direct' causes of energy poverty are underpinned and driven by wider-scale processes and contingencies that are specific to the historical, cultural, material, economic and political context of each country, and which shape the particular emergence, form, prevalence and patterning of household energy vulnerability (Bouzarovski et al. 2017). To name only a few examples, Knox, De Groot and Mohlakoana (Chapter 5) and Wolpe and Reddy (Chapter 14) provide rich accounts of how a particular set of spatial planning regimes and housing policies in South Africa, deeply linked to the past Apartheid system of governance, have contributed to a geographically dispersed and segregated urban landscape, resulting in an increased risk of energy poverty for those living on the urban peripheries and in informal or low-income housing. Meanwhile, in China, a very different history and set of underpinning processes are at play, and consequently, a unique geography of vulnerability is evident (see Chapter 6). The Huai River policy developed in the 1950s has led to vast differences in thermal comfort infrastructures in the north and south of the country and subsequently differences in vulnerabilities of residents in these two regions – whilst those in the south often suffer from inadequate thermal comfort in the winter, people in the north have their thermal comfort needs met at the expense of air quality. In the UK context, both Connon (Chapter 4) and Cronin de Chavez (Chapter 10) document how the emergence and subsequent mainstream dominance of neoliberalism since the 1980s has had several repercussions for energy vulnerability. These include a hardening of stigmatising attitudes toward those living in material deprivation – with the consequence that households suffering from energy poverty feel ashamed of their situation – and recent welfare reforms that have made accessing financial support more difficult for vulnerable households. These are just a few examples – we could also have highlighted the role of economic crisis and austerity policies in Greece (Chapter 7), communist legacies of out-dated district heating systems in the Western Balkan region (Chapter 12) or building standards in New Zealand (Chapter 3 and 11), among others.

Secondly, at finer scales of analysis, many of the chapters also point to spatial and social differences *within* nation states, in both the extent of energy poverty and the specific causes that are most fundamental. In line with current literature (Baker et al. 2008; Kaygusuz 2011; Roberts et al. 2015), several chapters discern important distinctions between rural and urban areas. For example, Lis, Miazga and Safach (Chapter 8) find that larger dwelling size and lower incomes are key drivers of energy poverty in rural Poland, whilst poor energy efficiency and dated heating systems are the prime cause in urban settings. In China, alongside the North-South divide, there is uneven infrastructural development related to heating between urban and rural areas. Spatial variation and unevenness are also reported within the grain of cities themselves; as noted, those living on the

peripheries of South African cities often face particular energy vulnerability-related difficulties (Chapter 5). In Chapter 7, Chatzikonstantinou and Vatali report vast spatial differences in the quality of housing infrastructure and price of heating fuels across Athens, Greece, whilst those who live in apartment buildings with shared heating systems face a unique set of challenges and constraints that shape their energy vulnerability. Finally, multiple chapters also demonstrate differences in the specific drivers of vulnerability between households (e.g. Chapters 2, 3, 6). Households vary in terms of their energy needs, practices or the material configurations of their home, with some groups, based on factors such as age, gender, ethnicity or health status, facing particular disadvantages due to increased energy requirements or systemic relations of prejudice and misrecognition – pointing to the importance of wider systems of inequality and discrimination in underpinning household energy deprivation (see Chapter 2).

Table 15.1 summarises the multiple commonalities and differences discussed thus far. The key point is that these differences lead not only to spatially unequal vulnerabilities – i.e. those living in certain countries, regions, cities or neighbourhoods are at a heightened risk of experiencing domestic energy deprivation (see Chapters 8 and 9) – but also that the very processes and contingencies that (re)produce energy poverty vary across space. Not all of the ‘direct’ causes of energy poverty, although broadly shared across national contexts, will always be present or equally significant for particular places or households.

How do such broad conclusions bring us into conversation with established academic concepts and debates? The spatial and social variation in the causes and extent of energy poverty supports an explicitly *geographical* reading of energy vulnerability and the operation of energy systems more broadly (Bridge et al. 2013). In particular, two concepts can usefully explain the differentiated geographies described in this volume. The notion of ‘landscape’ draws attention to how the dynamic economic, material and cultural features of particular geographical settings interact to (re)produce particular outcomes, in this case energy vulnerability, that vary over space and time. ‘Spatial embeddedness’, meanwhile, explains how distinct landscape features may become ‘locked-in’ to particular spaces and thus produce path-dependencies (*ibid.*), as is evident in the chapters here that demonstrate how historical policies and decisions continue to have agency in shaping forms and patterns of energy vulnerability in the present.

The elucidations in many chapters of how underpinning processes and contingencies, operating at wider temporal and geographical scales than the household, work to produce and maintain domestic energy deprivation also draws us into synergy with recent literature on energy justice. Of particular relevance here is work that highlights how energy poverty and vulnerability can be seen as an outcome of structural inequities that are engrained in various stages of the energy system (Jenkins et al. 2016) and, more fundamentally, of wider dynamics of discrimination and injustice in the political, economic and cultural relations of societies (Bouzarovski and Simcock 2017; Walker and Day 2012). Energy poverty is, we would argue, a geographically *constituted* phenomenon, rather than an issue that simply *affects* places.

Table 15.1 Commonalities and differences between the chapters in the driving forces of energy poverty

<i>Driving forces of energy poverty</i>	
Common factors	<ul style="list-style-type: none"> • Inadequate energy efficiency or poor material conditions of the home • Low or insecure household incomes • High or rising energy prices • Household needs and/or practices increasing energy requirements and consumption • Lack of access to adequate or appropriate energy carriers (most countries)
Country-specific contingencies	<ul style="list-style-type: none"> • China: Huai River policy and the 'Heating Line' lead to uneven heating infrastructure and affordability • Germany: Energiewende increasing energy bills for some households • Greece: economic crisis and subsequent austerity policies straining incomes of many households • Kenya: cultural preferences for biomass fuel and suspicion toward electric lighting; poor-quality transmission infrastructure • New Zealand: lack of insulation in homes and schools due to inadequate building standards • South Africa: dispersed and segregated planning patterns of Apartheid system; prevalence of poor-quality informal homes • UK: neoliberal ideology and policy reforms leading to hardening stigmatisation of the poor; reductions in availability of state welfare; increasing insecurity in labour market • Western Balkans: rapid energy price increases since liberalisation of energy market; socialist legacy of inefficient housing and heating systems; lack of political recognition
Intra-country spatial and social differences	<ul style="list-style-type: none"> • Rural vs. urban differences reported in the Western Balkans, Poland, UK, China, Kenya • In China, North-South divide in terms of heating affordability and infrastructure, alongside differing household expectations of thermal comfort • Spatial variation within urban areas – in Athens, Greece, reduced energy efficiency and access to natural gas network in central areas; heightened vulnerability on urban periphery in South Africa • Differences between individual households depending on needs and practices; particular disadvantages based on age, gender, ethnicity, health or other aspects of social status

Policy recommendations

From these overarching findings, some broad policy recommendations can be made. First, it is clear that, in many settings, improving domestic energy efficiency remains a crucial part of tackling energy poverty and enhancing living conditions and quality of life (see Chapter 12). However, whilst measures to improve domestic energy efficiency are undoubtedly vital, it is also important to

recognise that the causes of energy poverty are often multiple and complex, and infrastructural investment in energy efficiency will not necessarily be the only (or best) solution to energy vulnerability problems. The appropriateness of housing stock upgrades will depend on the specifics of the place in which they are set, the features of the housing and individual household needs. This is a point made by the authors of several chapters, including McKague et al. (Chapter 3), Lis et al. (Chapter 8) and Robić et al. (Chapter 12).

Policy-makers should attempt to develop comprehensive and holistic strategies that account for and are sensitive to a wider range of issues than only energy efficiency – such as household needs, practices, incomes and also other factors relating to the materiality of the home (for example, its ability to absorb passive heat). Beyond the household level, policies are likely to be more effective at addressing energy poverty in the long-term when they address the larger-scale processes and histories, such as uneven development, the operation of energy markets and stigmatising cultural discourses, that contribute to households being unable to meet their basic energy needs (Bouzarovski and Simcock 2017). These often extend beyond the typical domain of ‘energy policy’, and thus, there is a need for ‘joined-up’ policy-making and collaboration and communication across conventional departmental divides (see Chapter 14). A focus on only one or two causes of energy poverty – such as *solely* energy efficiency (Middlemiss 2016) or household income (see Chapter 12) – can obscure this range of complexities, nuances and broader structural factors, offering simple but ultimately limited policy prescriptions.

Second, and relatedly, the fact that the causes of energy poverty are spatially embedded and contingent suggests that policies to alleviate the condition would do well to be attuned and tailored to the particular context in which they are being implemented. This cautions against one-size-fits-all measures that can simply be ‘plugged-in’ to new localities or settings and instead calls for a greater openness to diversity – both in terms of the exact measures that are implemented and the particular manner in which they are implemented.

The findings of this book come at a time when improving access to affordable, modern energy services has moved into the mainstream of international policy-making (Brunner et al. in press), with increased policy recognition for the role of energy in human and economic development (Sustainable Energy for All 2016). The UN declared 2012 the ‘International Year of Sustainable Energy for All’ and in 2015 adopted the ‘Sustainable Development Goals for 2030’ (SDGs). Goal 7 of the SDGs recognises that whilst access to electricity is increasing globally, a significant proportion of the world’s population still lacks access, thus there is a need to “ensure access to affordable, reliable, sustainable and modern energy for all” (UNDP 2015). In 2016, the historic Paris Agreement reached the threshold for entry into force, having been ratified by 145 parties. This global agreement seeks to reduce vulnerability to climate change, with a core goal of “holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels” (United Nations Framework Convention on Climate

Change 2015, 3) via investment in mitigation and adaptation strategies. Crucially, the Paris Agreement recognises the specific needs and circumstances of ‘least developed’ countries, as reflected by common but differentiated responsibilities and requirements for developed countries to fund adaptation work in least developed countries. At the same time, we have seen a fundamental shift change in the European Commission’s approach to tackling energy poverty, in which it has moved from a position of historically opposing efforts to measure and define energy poverty (Thomson et al. 2016), to investing over a million euros since 2014 in new studies and the European Energy Poverty Observatory. These global processes of institutional thickening around the issue of energy poverty represent significant opportunities for enacting path-breaking changes to the policy agendas followed to date and create an even greater need for robust scientific knowledge on the contexts in which energy vulnerabilities are (re)produced.

Future research directions

This volume also suggests a number of directions for future research. Similar to much scholarship on energy poverty that utilises primary data, the chapters in this book are largely single-country studies. Although clearly valuable, research projects that studies of energy poverty and vulnerability in multiple countries, through a consistent research design, could be particularly useful in terms of enabling systematic and detailed comparison of the prevalence, causes and consequences of the condition – and the role of economic, social, political and cultural contexts in shaping these. Such a method has been successfully adopted to unpack the lived experiences of income poverty (Walker et al. 2013), and a similar approach could also be utilised in the energy poverty domain.

Several studies in this volume also demonstrate the value of qualitative methods for enabling detailed and contextualised insights into the complex causes of energy poverty and the practices, perceptions and experiences of those living with domestic energy deprivation. However, such approaches remain relatively rare in the field, which tends to be dominated by more quantitative methodologies. There would therefore be value in future research adopting a qualitative methodology in order to understand the drivers and experiences of energy deprivation in different settings – or, perhaps even better, in adopting a mixed-methods design that combines both the strengths of both qualitative and quantitative approaches.

Although much of the energy poverty literature has historically focused on deprivation of adequate space heating, there has recently been recognition of the need for energy poverty research to also engage with other energy services to provide a fuller account of the causes and consequences of the condition. Several chapters in this volume highlight how deprivation of non-heating energy services, such as lighting and even mobility (see Chapter 5) can also be implicated in how energy vulnerabilities manifest and are experienced by households – not to mention the relation of energy services with water provision and usage, as explored by Browne et al. (Chapter 6). Future research can continue to explore such avenues. Two particularly pertinent areas may be, first, the capacity for

households to attain adequate space *cooling* (particularly during summer months) in a context of rising global temperatures and, second, the ability for people to access and use information and communication technologies (ICT) as they proliferate and become an increasingly important part of participating in many contemporary societies.

While this book has not adopted a justice framing, the need for a more explicit dialogue between energy vulnerability and justice approaches is a consistent thread throughout many of the contributions presented here. Therefore, a key avenue of future research could centre on the manner in which justice frameworks can be used to understand the distributional or procedural drivers of energy vulnerability – including both ‘whole-systems’ thinking and energy end-use issues. Of particular importance in this context are notions of recognition – as it is clear that energy poor households often fall through the gap in terms of being identified and supported by public policies and discourses (Bouzarovski and Cauvain 2016). The suggestion that energy vulnerability is both constitutive and constituted by the socio-spatial context in which it arises also opens a number of questions around the spatial embeddedness of the phenomenon and its relationship with wider spatial and economic inequalities. This is where scholarship on energy poverty connects with feminist work on intersectionality, as well as critical theories of precarity and precarisation. We hope, therefore, that the chapters presented here signal the start of a new generation of efforts to study and address energy poverty and vulnerability, both building on existing scholarship while pushing knowledge and policy boundaries.

Note

- 1 In rural Kenya (see Chapter 13), because the major concern for many households is (a lack of) access to electricity, the crucial material contingency of the home is not its thermal efficiency but the ability for the structure to safely incorporate electrical wiring.

References

- Baker, W., White, V. and Preston, I. (2008). *Quantifying rural fuel poverty: Final Report*. Bristol: Centre for Sustainable Energy.
- Bouzarovski, S. (2014). Energy poverty in the European Union: Landscapes of vulnerability. *Wiley Interdisciplinary Reviews: Energy and Environment*, 3(3) (May 1), 276–289.
- Bouzarovski, S. and Cauvain, J. (2016). Spaces of exception: Governing fuel poverty in England’s multiple occupancy housing sector. *Space and Polity*, 20(3) (September 1), 310–329.
- Bouzarovski, S. and Simcock, N. (2017). Spatializing energy justice. *Energy Policy*. Available at: www.sciencedirect.com/science/article/pii/S0301421517302185.
- Bouzarovski, S., Herrero, S. T., Petrova, S., Frankowski, J., Matoušek, R. and Maltby, T. (2017). Multiple transformations: Theorizing energy vulnerability as a socio-spatial phenomenon. *Geografiska Annaler: Series B, Human Geography*, 99(1) (January 2), 20–41.
- Bridge, G., Bouzarovski, S., Bradshaw, M. and Eyre, N. (2013). Geographies of energy transition: Space, place and the low-carbon economy. *Energy Policy*, 53 (February), 331–340.

- Brunner, K-M., Mandl, S. and Thomson, H. (in press). Energy poverty. In Davidson, D. J. and Gross, M. (ed.) *Energy and Society Handbook*. Oxford: Oxford University Press.
- Jenkins, K., McCauley, D., Heffron, R., Stephan, H. and Rehner, R. (2016). Energy justice: A conceptual review. *Energy Research & Social Science*, 11 (January), 174–182.
- Kaygusuz, K. (2011). Energy services and energy poverty for sustainable rural development. *Renewable & Sustainable Energy Reviews*, 15(2), 936–947.
- Middlemiss, L. (2016). A critical analysis of the new politics of fuel poverty in England. *Critical Social Policy* (October 18), 261018316674851.
- Middlemiss, L. and Gillard, R. (2015). Fuel poverty from the bottom-up: Characterising household energy vulnerability through the lived experience of the fuel poor. *Energy Research & Social Science*, 6 (March), 146–154.
- Roberts, D., Vera-Toscano, E. and Phimister, E. (2015). Fuel poverty in the UK: Is there a difference between rural and urban areas? *Energy Policy*, 87 (December), 216–223.
- Snell, C., Bevan, M. and Thomson, H. (2015). Justice, fuel poverty and disabled people in England. *Energy Research & Social Science*, 10(November), 123–132.
- Sustainable Energy for All. (2016). *Strategic framework for results 2016–2021*. Vienna: Sustainable Energy for All.
- Thomson, H., Snell, C. and Liddell, C. (2016). Fuel poverty in the European Union: A concept in need of definition? *People, Place & Policy*, 10(1), 5–24.
- UNDP. (2015). *Sustainable development goals*. New York: United Nations Development Programme.
- United Nations Framework Convention on Climate Change. (2015). *Paris agreement*. Geneva, Switzerland: United Nations.
- Walker, G. and Day, R. (2012). Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth. *Energy Policy*, 49. Special Section: Fuel Poverty Comes of Age: Commemorating 21 Years of Research and Policy (October), 69–75.
- Walker, R., Kyomuhendo, G. B., Chase, E., Choudhry, S., Gubrium, E. K., Nicola, J. Y., Lødemel, I. et al. (2013). Poverty in global perspective: Is shame a common denominator? *Journal of Social Policy*, 42(2) (April), 215–233.