

Energy Justice, a Whole Systems Approach

KIRSTEN JENKINS, DR DARREN MCCAULEY, DR RAPHAEL HEFFRON,
AND DR HANNES STEPHAN¹

Energy is moving up the global political agenda, with poverty, climate change and energy security bringing new awareness of the links between energy and social justice. Amidst these challenges, the new and emerging concept of energy justice has evolved. With its roots in the environmental justice movement, energy justice aims “to provide all individuals, across all areas, with safe, affordable and sustainable energy”. The current energy justice framework, as with its environmental justice counterpart, considers distributional, procedural and recognition tenets. The full extent and diversity of justice implications within the energy system, however, is currently neglected, as many debates on energy do not consider the impact of the energy system in full, from resource extraction to waste disposal. Against this background, this article makes the case for a re-conceptualisation of energy justice that includes a systems perspective at its core using the example of fuel poverty. Systems theory typically considers a set of subsystems that coordinate to accomplish defined goals, in this case, energy production. This ‘interactionist’ understanding focuses on the impacts of the relationships between the governors and the governed, and the moments at which there is the possibility to intervene and steer the system. As a form of critical systems theory, it contains the idea that – by bringing greater awareness of human needs and actions – it is possible to improve the system overall. This re-conceptualisation thus contributes to the theoretical concept of energy justice, as well as informing justice in practice: presenting knowledge that is essential for understanding the ways in which energy justice is constructed, understood, and tackled across a range of scales.

¹ Kirsten Jenkins is a first year ESRC PhD student at the University of St Andrews, Scotland (kj84@st-andrews.ac.uk). Dr Darren McCauley is a lecturer in Sustainable Development and Geography at the University of St Andrews, Scotland (damm7@st-andrews.ac.uk). Dr Raphael Heffron is a lecturer in Law at University of Leeds (R.J.Heffron@leeds.ac.uk). Dr Hannes Stephan is a Lecturer in Environmental Politics and Policy at the University of Stirling, Scotland (h.r.stephan@stir.ac.uk).

Introduction

The energy sector faces serious sustainability challenges, including the depletion of natural resources, air pollution, questions of long and short-term security of supply, and energy poverty (Markard *et al* 2012: 955). Such challenges are re-working the established patterns of energy supply, distribution and consumption (Bridge *et al* 2013: 332) and have led to the widespread acknowledgement that our current ways of life and consumption patterns are unsustainable (Shove 2010: 1273). As energy moves up the political agenda, such contemporary challenges are generating new awareness of the links between energy and social justice (Hall *et al* 2013: 413). Amidst these challenges, the new and emerging concept of energy justice has evolved (Bickerstaff *et al.* 2009). This article first introduces energy justice and whole systems approaches, before exploring the case of fuel poverty from a systems perspective. This article responds to the current neglect of system-wide justice implications and builds on the conclusion from a previous, 2013 paper, that academia is increasingly required to pay greater attention to justice concerns throughout the energy system, from production to consumption (McCauley *et al* 2013: 1). It is asserted, throughout, that by bringing greater awareness of human needs and actions it is possible to improve the system overall (Bevier 2009: 202). Improvement is understood in normative terms as more just processes and outcomes and also in pragmatic, consequentialist, terms as leading to more broad-based acceptance, more durable investment decisions, and greater trust in political institutions (Gross 2007: 2730).

With its roots in the environmental justice movement, energy justice aims “to provide all individuals, across all areas, with a safe, affordable and sustainable energy” (McCauley *et al* 2013: 2). The current energy justice framework, as with its environmental justice counterpart, considers distributional, procedural and recognition tenets. The concept of energy justice has received early favour, appearing in a growing body of literature, both within and outside of academia. Numerous studies have, for instance, begun to apply the three tenet framework to cities (Bickerstaff *et al* 2009; Bickerstaff *et al* 2013) and fuel poverty (Walker and Day 2012; McCauley *et al* 2013). Further, recent books by Bickerstaff *et al* (2013) and Sovacool *et al* (2013) explore energy justice in depth, forwarding the energy justice agenda. To date, however, the full extent and diversity of justice implications within the energy system is neglected, as many debates on energy do not consider the impact of the energy

system in full, from resource extraction to waste disposal (Gagnon *et al*, 2002: 1267). Bickerstaff *et al*'s (2013) book, for example, has received criticism for taking a primarily production and consumption-based approach to energy justice, failing to explicitly acknowledge their apparent duality (McCauley 2014: 706). The penultimate section of this article gives the example of fuel poverty to develop its case.

In promoting the increasingly recognised concept of energy justice and proposing a reconceptualisation of current theory that includes a systems perspective, this article contributes to the theoretical concept of energy justice. In addition, it informs justice in practice; presenting knowledge that is essential for understanding the ways in which energy justice is constructed, understood, and tackled across a range of scales (Schlosberg 2013: 37).

The Foundation of Energy Justice

Energy justice has its roots in the environmental justice movement and carries the same basic philosophy. The environmental justice movement emerged in 1970s North America as a response to the unequal distribution of environmental ills – pollution and waste facilities, for example - alongside the risks associated with them, which were more often than not situated next to poor, coloured communities (Davies 2006: 710). Thus, the movement represents a concern for the “fair treatment and meaningful involvement of all people regardless of race, colour, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies” (Bullard 2000: 7) and is driven by aspirations for empowerment, social justice, and public health (McCauley *et al* 2013: 1).

Initially, environmental justice complaints focused on local, activism-led, community-oriented means of ensuring the just distribution of toxic burdens. This first wave looked for a form of environmental justice that could be operationalised and measured (Holifield, Porter and Walker 2009: 596). The scope of environmental justice has grown, however. Holifield (2009: 4) and his colleagues note that, “recent critical research takes the term’s multiple, shifting meanings as an important entry point for inquiry and theorising”. They highlight a change towards a more multi-faceted understanding of environmental justice. Indeed, environmental justice is increasingly

used in coalition with other theories and agendas, including the capabilities approach, social movement theories, assemblages and Actor Network Theory². This methodological and theoretical expansion, Holifield, Porter and Walker (2009: 593) note, has seen environmental justice focus on broader cross-disciplinary debates about knowledge, representation and meaning, opening it to more epistemological and ontological possibilities. The topic of concern for the environmental justice movement has grown too, expanding from its original race, activism and toxic industrial practice roots to include, amongst other themes, access to food, forest management and energy provision (Walker 2009: 616). Hall (2013: 422) comments, for example, that there is a growing body of work around issues of energy, justice, equity and vulnerability. It is from this emergent literature and the growing awareness of the links between energy and social justice that energy justice has emerged, incorporating literature from climate and atmospheric justice as it develops (Hall *et al* 2013: 413). Energy justice, therefore, emerged with an aim to “to provide all individuals, across all areas, with a safe, affordable and sustainable energy” (McCauley *et al* 2013: 2). Energy justice, like its environmental justice counterpart, carries three core tenets, emphasising distributional, procedural and recognition justice (Bickerstaff 2009). Each is explored in turn below.

The first tenet, distributional justice, is most classically suited with the original environmental justice movement. Energy justice is an inherently spatial concept that includes both the physically unequal allocation of environmental benefits and ills and the uneven distribution of their associated responsibilities (Walker 2009: 615), for example, exposure to risk. Thus, energy justice can appear as a situation where “questions about the desirability of technologies in principle become entangled with issues that relate to specific localities” (Owens 2008: 4414) and represents a call for the distribution of benefits and ills on all members of society regardless of income, race etc.

Procedural justice, the second of the three tenets of energy justice, manifests as a call for equitable procedures that engage all stakeholders in a non-discriminatory way

² Actor-network theory (ANT) was pioneered by Latour (1991, 1992), Callon (1986) and Law (1986). ANT is an approach to studying the interaction of technology and society, which acknowledges an increasingly inter-connected world. ANT is increasingly applied to questions of participation (in Jolivet and Heiskanen, 2010: 6748).

(Walker 2009: 625; Bullard 2005: 439). It states that all groups should be able to participate in decision making, and that their decisions should be taken seriously throughout. It also requires participation, impartiality and full information disclosure by government and industry (Davies 2006: 711) and appropriate and sympathetic engagement mechanisms (Todd and Zografos 2005: 485).

The third and final tenet of energy justice is recognition justice. Although often as a core element of procedural justice, recognition entails more than fair and effective participation. Drawing on Fraser (1997), Schlosberg (2007: 18) conceptualises recognition injustice as (1) practices of cultural domination, (2) patterns of non-recognition (invisibility of people and their concerns), and (3) disrespect through stereotyping and disparaging language.

Thus, recognition justice is more than tolerance, and requires that individuals must be fairly represented, that they must be free from physical threats and that they must be offered complete and equal political rights (Schlosberg 2003: 82). It may also appear not only as a failure to recognise, but as misrecognising – a distortion of people’s views that may appear demeaning or contemptible (Schlosberg 2003: 82). Thus it includes calls to recognise the divergent perspectives of different ethnic, racial and gender differences (Fraser 1999: 3).

These three tenets, according to Walker and Day (2012: 69), are informed by a body of academic work that is directly interested with how justice is made sense of in real-world contexts. The three tenets, however, are not always distinct. Indeed, according to McCauley *et al* (2013: 1), they are frequently seen as interlinked, and are perceived to share many overlapping issues. So too, this article contends, do many energy issues when seen through a systems lens. This article begins to make the case for systems approaches within the energy justice literature. To build the case, this article first considers current theoretical discussions around the issues of scale and the roles of actors within the justice literature.

Bickerstaff and Agyeman (2009: 783) comment that the environmental justice literature, particularly the first wave, is characterised by formal, literal representations of scale. Yet such representations, they add, appear unable to cope with “multiplicity,

change, and, by implication, the socially and politically constructed nature of scale” (Bickerstaff and Agyeman 2009: 783). There has been a move, therefore, to reimagine environmental injustices as multi-scalar and interconnected. The need for this is clear. Take, for example, Holifield, Porter and Walker’s 2009 exploration of pollution. They state, in this classic case, that the paths of chemicals in air, water, and social are not only temporally but also spatially complex, noting too that vulnerability to pollution among bodies, households, and neighbourhoods does not map neatly. In this vein, and with consideration of the complexity of interconnections, Bickerstaff and Agyeman (2009: 783) go on to write that there remains a high level of spatial ambiguity in energy justice research - a statement supported by Kurtz (2003: 888) who writes that there is “no indisputable rationale for favouring one scale of analysis over another” (Kurtz 2003: 888). As a response to such criticisms, many authors argue for a multi-scalar focus; an acknowledgement that “place-specific policies and practices can have consequences that cross national boundaries, affect multiple scales, and extend across global networks” (Holifield, Porter and Walker 2009: 4).

Not only have conceptions of space become more complex within the justice field, but also the role and characteristics of actors are frequently called into question. Research frequently considers the burden of racial minorities, and more recently indigenous communities, for example, but neglects other sectors of society. According to Reed and George (2011: 838) not enough attention is paid to the role of gender in justice disputes. Environmental justice is also frequently criticised for regarding communities as coherent, homogenous and united groups of people, whereas, in fact, residents are frequently far from that (Fan 2006: 432). Assuming this kind of collective advocacy, according to Bickerstaff and Agyeman (2009: 795), neglects the potential for it to be parochial or inequitable at another scale. In the same vein, and of particular relevance here, Heynen (2003: 993) points out, “little attention has been given... to understanding how socio-natural injustices at particular scales do not necessarily translate into injustices at other scales”.

This article contends that these criticisms of the justice literature are best overcome by a systems approach, considering, in the case of energy justice in particular, the stages of an energy system from extraction to waste.

A Systems Approach

Whilst it provides millions of people across the world with an undeniable public good, the energy system raises theoretical questions of human rights, concerns and values, and unquestionably, justice (Fox and Ward 2008: 3). All of these challenges have to be acknowledged in the decision-making process, as recognition of energy's far-reaching social, economic and environmental impacts (Stagl 2006: 53). However, many debates on energy do not consider the impact of the energy system in full, from resource extraction to waste disposal (Gagnon *et al* 2002: 1267). Indeed, energy currently appears to be governed through piecemeal, mostly ad-hoc responses (Florini and Sovacool 2009: 5239). Using the example of fuel poverty as a justice concern, this article makes the case for combining the energy justice and whole systems literature, thus providing a re-conceptualisation of energy justice that has a systems perspective at its core.

The energy system is defined as the entire energy chain, from production, conversion, transmission, and distribution, right through to energy consumption and waste (Alanne 2006: 541; Gagnon *et al*, 2002: 1267). Thus, systems theory is appropriate, as it typically considers a set of subsystems that coordinate to accomplish defined goals, in this case, energy production (Bevier, 2009: 202). Throughout, the system is taken not only to be a set of physical infrastructures and processes, but as a socio-technological entity that represents complex human-technology interactions (Kern 2008: 4094). This "interactionist" understanding focuses on the impacts of the relationships between the governors and the governed, and the moments at which there is the possibility to intervene and steer the system. Conceived of as a form of critical systems theory the concept builds to the idea that by bringing greater awareness of human needs and actions it is possible to improve the system overall (Bevier 2009: 202). This article illustrates the utility of taking this approach through a brief exploration of the fuel poverty literature.

The Case of Fuel Poverty

Within the contemporary literature, energy justice is often thought to be synonymous with fuel poverty, which, although it is increasingly under review, is traditionally

defined as a household that spends over 10% of their income on all heating services (Moore 2012: 19). This article argues instead, in line with Hall *et al* (2013: 413) that as energy moves up the political and academic agenda, it is increasingly clear that this is just one way in which power relations, fairness, and disadvantage are created and expressed. Moreover, alongside consideration of fuel poverty as a consumption issue, it is necessary to consider the production and waste of energy to ensure a just outcome.

Goldthau & Sovacool (2012: 236) discuss fuel poverty and energy justice as a lack of *access* to energy for deprived people and the financial and health-related repercussions. In so doing, they give a primarily distributional tone to fuel poverty concerns, stressing a “have/have-not” situation. McCauley *et al* (2013: 2), however, indicate that fuel poverty policies in the United Kingdom have recently begun to recognise the needs of particular sections of society. This includes the elderly and infirm, who, by nature of their age, require a higher than average room temperature (Walker and Day 2012: 72). Attention also goes to deprived households who often pay more for their electricity simply due to the lack of accessible payment options. Burningham and Thrush (2003: 526) highlight that pre-pay metres, one of the most expensive means of purchasing electricity, are most often found in low-income homes. In so doing, the fuel poverty literature has begun to incorporate an element of “recognition” into its discourses. Yet, on the whole, system thinking within fuel poverty literature is largely neglected.

Critically, traditional approaches to “solving” fuel poverty – education and access provision, for example – do nothing to tackle or engage with the pricing of energy as a production issue, or efficiency as a waste concern. However, by taking a systems approach numerous other considerations and arguably, potential solutions become apparent. The consideration of energy pricing and public engagement with it, for example, may lead to a radical appraisal of energy sources, with appropriate emphasis being given to balancing affordability of energy against the environmental benefits or dis-benefits of differing energy sources. In a parallel way, the benefits of energy efficiency could be balanced against the overall cost of energy provision to society as a whole. This article argues, then, that whilst each stage of the system may present its

own unique justice concerns, it is only by conceptualising the system as a whole that its true justice nature and challenges can be understood.

Summary

This article first introduced energy justice and whole systems approaches, before exploring the case of fuel poverty from a systems perspective. It has sought to demonstrate the utility of combining a whole systems approach with the burgeoning concept of energy justice. Despite its growing popularity and increasing application, to date the energy justice literature has neglected the full extent and diversity of justice implications within the energy system, as many debates on energy do not consider the impact of the energy system in full, from resource extraction to waste disposal (Gagnon *et al* 2002: 1267). Thus, this article has made the case for a re-conceptualisation of energy justice that includes a systems perspective at its core. In so doing, it overcomes critiques of scalar ambiguity and failures to account for actor diversity within the current environmental and energy justice literature.

In exploring the case of fuel poverty, an archetypal energy justice case, this article has shown the weakness of a “silo” approach to justice concerns, and the benefits of conceiving of fuel poverty as part of a wider justice system. As a form of critical systems theory, this article builds on the idea that by bringing greater awareness of human needs and actions it is possible to improve the system overall (Bevier, 2009: 202). This re-conceptualisation, therefore, contributes to the theoretical concept of energy justice, as well as informing justice in practice; presenting knowledge that is essential for an understanding of the ways in which energy justice is constructed, understood, and tackled across a range of scales (Schlosberg 2013: 37).

However, whilst this theoretical discussion demonstrates great potential, the framework would benefit from further refinement and increasing empirical application. Further analysis therefore, is required that explicitly engages with systems approaches to energy justice; a test-bed for further research.

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