



“They are grinding us into the ground” – The lived experience of (in)energy justice amongst low-income older households



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HIGHLIGHTS

- Explores retrofits as capability enhancing mechanisms.
- Investigates social practices as functionings or enactments of capabilities.
- Reveals energy justice on four levels of social relationships on the home stage.
- Provides evidence of the multi-dimensional vulnerability of older householders.
- Advocates for minimum standards to protect people who lack capabilities and agency.

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ABSTRACT

This article contributes to the literature on energy justice by revealing how the principles of energy (in)justice manifest at the domestic scale. We use data from a retrofit intervention trial to reveal recognised and hidden vulnerabilities and practiced distributive and procedural energy fairness in the lived experiences of low-income older and/or frail householders near Melbourne, Australia. Combining the capability and practice approach for the transition to lower carbon housing to provide a rich description, we chart householder functionings of heating and paying energy bills and their choices in keeping warm and affording energy before and after simple retrofits. Energy justice was experienced on four separately distinguishable levels of social relationships: intra-households, household-energy retailer relations, immediate social networks and wider social relations. The outcomes of the trial showed that combinations of simple retrofits improved householder heating capabilities. Policies and programs aimed at transitioning to low-carbon energy systems need to acknowledge and address the changing demand for energy of an ageing population, and acknowledge social differentiation within households. This includes using a capabilities approach to recognising multiple vulnerabilities.

1. Introduction

Energy justice is increasingly advocated for guiding policies, programs and practices [1]. A growing body of research grapples with the tension between energy as an essential good [2] and the imperative to transition to low-carbon energy systems across multiple scales [3–5]. Much contemporary work on energy justice has focused on the global scale of energy production, allocation, consumption, distribution and responsibilities on political, infrastructure and economic levels [6,7], however there is a paucity of literature on the experiences of energy (in)justice at the household scale.

Current households literature focuses on fuel poverty as the manifestation of energy inequity. This was pioneered in the UK [8], where the risk of the combination of poor housing conditions and low income

was recognised as a source of cold homes and potentially adverse health effects. Since then, governments at several levels have implemented housing retrofit policies and programs in response [9]. The implications of energy related deprivation in housing for human health and well-being have also been brought to attention elsewhere [10–12].

Much of the existing research on mitigation of energy poverty has evaluated housing retrofits from a building physics or economics perspective, e.g. Oreszczyn et al. [13]. However, energy justice is grounded in the humanistic approach of the social and legal sciences. It addresses the social relationships between people, nations and regions [1,14] rather than the thermodynamic links between housing quality and energy performance. Specifically, it concerns ethical and moral values of susceptibility, power, control and human capabilities in interventions [14]. Although there are various interpretations of energy justice, the

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term may be understood as the integration of the three elements of recognition, equity or distributive fairness and procedural justice as suggested by Jenkins et al. [6], and three dimensions of claim-making, i.e. vulnerability, need and responsibility, as posited by Walker [15]. The translation of justice principles beyond the distributional inequity of the traditional conceptualisation of fuel poverty is emerging to highlight social and political intent, activities and responsibilities [16,17]. However, the lived experience of energy (in)justice in vulnerable households [18] and the impacts of retrofits remains poorly understood.

Hence, our contributions to the literature on energy justice are twofold. Firstly, we seek to address the gap in research by relating the energy justice framework to daily experiences at the microlevel of households. Secondly, in the context of retrofitting housing to reduce fuel poverty, we wish to contribute to a better understanding of the meanings and values attributed to residential energy efficiency interventions beyond energy inequity. Through a case study of simple retrofits of the homes of older and/or frail people in Australia, we aim to show how vulnerability, power and control, fairness and disadvantage were recognised, shaped and expressed, and how simple retrofits of homes related to experiences of injustice. This knowledge is of direct relevance to applied energy studies of energy efficiency to climate change mitigation and is intended to inform both our conceptual understandings of changing energy relations amongst low-income older households and the design of interventions, which is of direct relevance to policy makers and practitioners.

1.1. Capabilities framework and social practices

A prerequisite for interventions aimed at reducing energy injustice is the identification of potentially affected population groups. Several methodologies to identify energy inequity, which is one dimension of energy injustice, have been published. These can be divided into quantitative and qualitative approaches [19,20]. A recent approach to defining, identifying and mitigating energy poverty has been suggested by Day et al. [14]. Their proposed capabilities framework for energy poverty is based on the capabilities approach as developed by the economist Amartya Sen, the philosopher Martha Nussbaum [21–23] and others. The framework promises analyses of fuel poverty across geographical, social and technological contexts, and the integration of influences and expressions of poverty beyond the metaphorical and physical boundary of dwellings. In this study we apply this approach to all three aspects of energy justice, that is including the elements of recognition and procedural fairness.

Energy injustice identified using a capabilities approach would rely on the identification of instances in which the full potential of ‘functionings’ in the sense of valued and meaningful activities or outcomes [21] cannot be achieved. Consequently, interventions should aim for specific outcomes in achieving each individual’s potential rather than aiming for an equal distribution of the means, such as income, which has been proven to be a poor predictor of human wellbeing and other valued ends [23,24]. Based on these tenets, Day, Walker and Simcock define energy poverty as:

an inability to realize essential capabilities as a direct or indirect result of insufficient access to affordable, reliable and safe energy services, and taking into account available reasonable alternative means of realizing these capabilities.

[14]

Drawing on the distinction between ‘basic’ and ‘secondary’ capabilities [25], Day et al. [14] suggest that basic capabilities may concur with Nussbaum’s proposed list of ten “central capabilities” [21], while secondary capabilities may be prerequisites and enablers of these valued endpoints. With reference to the dominant theme in the discourse on energy poverty in European countries, these UK researchers explain that “being in good health” would constitute a basic capability, while

the necessary secondary capability would be “being able to adequately heat or cool” the home [14]. The inclusion of “taking into account available reasonable alternative means of realizing these capabilities” [14] acknowledges coping and adaptation practices that may enhance the householders’ resilience. With regard to the decision making in establishing these capabilities, they favour a deliberative approach, positing that this would be “most in keeping with the fundamental ethos of the capabilities approach” [14]. The element of deliberation raises not only the question of who makes or should make the judgment but also of the factors and preconditions that shape or should shape decisions on who is considered vulnerable, who is considered worthy, to whom priority should be given and which form any interventions should take. These questions relate to the public perception of decision-making processes and, hence, the acceptance of decisions made.

Researchers have previously encouraged the combination of the capability approach with a practice approach to capture the complexity of individual decision making within structural and social constraints and to address shifts in sociotechnical landscapes [26]. Social practices research on energy consumption in buildings as defined by Shove et al. [27] has particular relevance to the capabilities approach as it can draw attention to shared perceptions of worth and preconditions that may restrict the freedom of choice. Firstly, the capabilities idea hinges on the concept that freedom to engage in valued functionings is an indication of wellbeing. Social practices may be understood as the enactments of normative functionings, thus highlighting shared values. Secondly, the concept of social practices is bound by the three elements of material, competence and meaning, and this framing can be used to highlight the limitations of opportunities to execute functionings. Hence, this study aims to provide a better understanding of social practices around the secondary capability of “being able to adequately heat”, to explain or expose implicit or latent inequities or unfairness, reveal patterns in recognition of vulnerabilities, and highlight interpretations of procedural justice with regards to the functionings of heating to adequate temperatures and affording energy.

2. Methods

Based on the leading question “How was the freedom to heat to adequate temperatures and to afford energy enhanced or compromised?”, we explored the building or restriction of these secondary capabilities as prerequisites for the basic capability of “being in good health” among low-income older and/or frail householders near Melbourne, Victoria, Australia. The study consisted of a mixed methods evaluation of a quasi-randomised controlled trial of residential energy efficiency improvements.

2.1. Case selection: Victoria, Australia, and the affordability of heating

As in many other jurisdictions, in Australia, energy equity and procedural fairness is related to housing quality and tenure, as homes with sub-standard thermal performance are more likely to be occupied by low-income households and tenants, whose lack of financial resources and agency are likely to prevent them from retrofitting their homes [28,29]. Accordingly, low-income households spend a higher proportion of their expenditure on heating and electricity [30], are more likely to experience financial stress [31,32], and are likely to be disproportionately affected by rising energy prices [33]. In Victoria, households in the lowest income quintile and the elderly (65 and over) are the population groups that spend the biggest part of their disposable income on domestic fuel and power [30]. In this cool temperate climate zone, heating accounts for the biggest share of residential energy costs [34].

The Australian Government recognises that low-income households may compromise on adequate heating in winter [28], which may present a health risk. Although the need to mitigate financial difficulties of tenants through improved energy efficiency of rented housing has been

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