



# The relationship between justice and acceptance of energy transition costs in the UK



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## HIGHLIGHTS

- Energy justice often focuses on production and consumption concerns.
- A way to respond to concerns is government policies promoting justice.
- Costs associated with paying for such policies may create further injustice.
- The UK public often oppose such policies due to current perceived injustices.
- Public support, even for laudable programmes, is not certain if they must pay.

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## ABSTRACT

Relatively little energy research has attended to justice considerations. The limited energy justice inquiry that exists focuses on justice in relation to impacts of energy production, consumption, and policies that either exacerbate or seek to mitigate distributive and procedural concerns. Programmes aimed at facilitating the so-called ‘energy transition’ have strong implications for energy justice. For example, efforts to reduce energy consumption and/or carbon emissions, policies to increase energy security, and programmes to increase energy access and affordability all address distributive concerns. Nevertheless, the costs associated with meeting such goals and running such programmes also have justice implications and should be viewed alongside the other aforementioned normative issues as an aspect of energy justice. Here, we examine public perceptions of *who should* fund programmes designed to ease the transition to a more sustainable and equitable energy system, finding most responsibility assigned to energy companies, and beliefs about procedural justice meaningfully shaping thoughts on who should pay. Our UK-based mixed methods inquiry reveals that whilst our respondents (survey) and participants (focus groups) accept some personal costs directed towards governmental programmes that could reduce energy injustices, acceptance is dependent on several factors, including perceived importance of distributive justice and whether the energy system exhibits procedural justice. The influence of normative factors on cost acceptance has implications for feasibility of policies to promote energy justice. We conducted a survey (N = 3,150), followed by five focus groups (N = 6–9 each) throughout Great Britain with survey respondents to explore further their answers and explain some of our quantitative findings. We conclude this paper with tangible policy recommendations for government, such as the amount (cost) and types of environmental and social levies that are viable, based on their public acceptance, and suggestions for other approaches to funding energy transitions, so as not to exceed the limits of public acceptance.

## 1. Introduction

As evinced by the rationale for this special issue, relatively little energy research has attended to justice considerations. The limited energy justice inquiry that exists focuses on justice in relation to impacts of energy development (i.e., ‘production’) and differences in

energy use across populations (i.e., ‘consumption’) [30]. This focus requires an analysis of energy policies and programmes that either exacerbate or seek to mitigate the distributive and procedural concerns arising from such issues as: access to affordable energy, siting of energy production infrastructure, and involvement in decision making on energy issues [33,39].

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Sovacool and Dworkin [58] define ‘energy justice’ as ‘a global energy system that fairly disseminates both the benefits and costs of energy services, and one that has representative and impartial energy decision-making’. For the system to accomplish these goals, policies and procedures must be in place to facilitate such just means and ends [34]. Resultantly, energy justice, as an incipient area of theoretical and empirical investigation, recognises the need for governmental programmes, such as efforts to expand low-carbon energy production and offers of financial or infrastructural assistance to vulnerable and disadvantaged populations [36].

Low-carbon efforts or programmes to reduce overall energy consumption could improve justice by stemming the worst effects of climate change, which are predicted to differentially affect vulnerable peoples worldwide [52,53,63]. Direct assistance to vulnerable and disadvantaged peoples (e.g., relief on energy bills or subsidised infrastructure updates, such as insulation installation) can increase energy access and affordability for marginalised populations [8,40]. Programmes to ensure energy security and reliability of energy supply could promote justice by preventing blackouts that affect certain populations disproportionately, and by protecting against severe price shocks due to supply problems [33].

In the UK, and other nations, the costs for such programmes are increasingly paid by the general public via levies on energy bills [13]. There has been a progressive shift from general taxation to bills over the last decade in the UK; previously such programmes were funded more through general government tax revenue [48]. These costs, as a percentage of energy bills, are predicted to increase substantially over the next couple decades to keep pace with governmental commitments to carbon reduction [13]. One reason we focus on the UK in this research is the UK policy context in which numerous programmes funding social and environmental transitions exist, with costs being directly transferred to energy consumers. Efforts to transition to a more just energy system are generating costs with potential justice implications.

Environmental and social levy costs are consistently incorporated into estimation of possible energy transition pathways [1,26,49,62] and in high-level policy discussion of energy transitions [13,21], but there has been far less critical engagement of who will pay such costs, and no academic discussion of the normative or justice implications of who pays these costs or how much members of the public are asked to pay. Therefore, few questions have been asked about the justice implications of who pays for government programmes that, themselves, have the objective of increasing justice [66]. Modelling of energy transitions often merely assumes the public will pay [66] or eschews the question entirely as extraneous to technical estimates of cost [28,43]. Nevertheless, popular discourse in mass media has increasingly decried increasing levies, implying potential justice concerns (e.g., [11,47]). In this paper we focus specifically on public perceptions of energy transition costs, seeking to better understand perspectives on how costs should be distributed and the extent to which the public are willing to accept costs personally.

## 2. Public perceptions of energy transition costs

Research repeatedly establishes the importance of public perceptions and social structures in facilitating energy transitions [37,50,69,72]. Without public acceptance, policies that seek a transition to a more sustainable and fairer energy system will likely be met with opposition that delays or derails such efforts, or relevant policies might never even be proposed. By ‘transitions’, we mean movement to a more sustainable, fair, clean, and secure energy system [60,67]. We consider costs associated with four types of energy system change here (i.e., increasing low-carbon energy, helping vulnerable populations pay for energy, reducing energy use, and increasing energy security) because these are the primary foci of current and planned UK government programmes that facilitate a fairer energy system. Members of the public are paying via their energy bills to enable all of these goals

simultaneously.

Surveys of the British public reveal that energy costs are a leading concern and that government policies that pass transition costs on to consumers via energy bills could receive substantial push back if not carefully tailored [66,73]. This poses potential difficulties for policies and policy recommendations that seek to address energy justice concerns through government programmes that eventually pass costs on to energy consumers. Therefore, understanding the extent to which the general public is prepared to accept responsibility for costs associated with energy transitions, and why, is essential for catalysing programmes to achieve energy transition goals commonly funded through levies on energy bills (e.g., reducing emissions, reducing energy poverty, reducing overall energy use, and increasing energy security) [48,66].

Previous research has also revealed that public conceptions of energy transitions are affected by a range of personal values [9,18,20], particularly normative considerations such as perceptions of justice and trust [18,20,42,50,51,66,68]. Most prior research on public perspectives in relation to energy transitions, however, has examined perceptions of transitions themselves and not the costs associated with transitions. Nonetheless, empirical qualitative research has shown that members of the general public frequently find other entities responsible for funding energy transitions [10,42,51,66], whilst leaving open the possibility that under certain circumstances, people would take responsibility for shouldering a portion of these costs.

Furthermore, survey research [19] reveals that perceptions of the importance of energy affordability (one aspect of energy transitions) are more dependent on beliefs about who should be responsible for paying than on personal finances. The authors suggest that their findings point to the importance of distributive justice and equality in affecting support for energy transitions (although not explicitly *cost* of energy transitions). The questions, thus, remain: to what extent does the public accept a role in shouldering costs associated with energy transitions, under what conditions, and what role does perception of justice play in assessment of transition costs?

## 3. Methodology and methods

Our study was guided by mixed-methods inquiry that combined an online survey of the general public in Great Britain (England, Scotland, and Wales; N = 3150) with five focus groups throughout Great Britain. Data collection for the survey occurred from 8 July – 1 August 2016. The focus groups, which were comprised of respondents to the survey, were held in November–December 2016.

### 3.1. Survey procedures and sample

The survey was designed with quotas to make the sample approximate the British public on income, sex, age, education, and population distribution across the eleven census regions. See [Supplementary Table 1](#) for demographic statistics for the survey sample and the supplementary text for the full survey wording. The panel survey was administered through Qualtrics, a firm that works with multiple partners who maintain their own online panels. Median completion time was 22 minutes. This survey explored public attitudes and beliefs about energy system change – also called ‘energy transitions’ – specifically in relation to costs associated with governmental programmes that facilitate such change. Our analysis herein examines factors that affect two key constructs: (1) perceptions of public responsibility for bearing some of the costs of such change and (2) personal acceptance of such costs.

To ensure that data quality was maintained, Qualtrics only included in the final data set respondents who answered at least 90% of the questions and who spent at least eight minutes responding to the survey. A pre-test established that these were reasonable thresholds to exclude respondents who were likely engaging in strong satisficing (including actions such as repeatedly picking the same answer –

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