Original research article

Framing energy justice: perspectives from activism and advocacy

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A B S T R A C T

Concepts of justice are now routinely mobilised in environmental and climate change activism, with movements for environmental and climate justice emerging around the world. More recently, the concept of energy justice has gained prominence, most frequently framed in terms of access to affordable energy and fuel poverty but also related to the politics of energy infrastructures. To date however, there has been little critical interrogation of energy justice in relation to actions undertaken by activist and advocacy movements. In this paper, we set out an analysis of the concept of 'energy justice' from the perspective of framing. Drawing on research with organisations in Philadelphia, Paris and Berlin, the paper explores the articulation and elaboration of an energy justice frame. In so doing, it explores how such actors strategically frame their interpretation of energy justice, considers the overall emergence of an energy justice frame, and draws out an agenda for future research.

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1. Introduction

Movements for environmental and climate justice have emerged around the world. Environmental justice, an established movement connecting environment, race, class, gender and social justice issues [43] has been recently complemented by emerging literature on climate justice which seeks to articulate the connections between climate change and human rights [17,32]. Within such movements, energy increasingly comes to the forefront becoming what some have termed "a new front-line in environmental justice research and activism" ([42]: 1339). Alongside this, as Bickerstaff et al. ([8]: 2) note, the concept of energy justice itself "provides a way of bounding" and separating out energy concerns from the wider range of topics addressed within both environmental and climate justice analysis campaigning". To date however, there has been little critical interrogation of the specific concept of energy justice in relation to actions undertaken by activist and advocacy movements.

In this paper, we draw specifically on the concept of framing in order to interrogate energy justice. The notion of framing has emerged in geographical literature within justice scholarship [26,41,44], from a well-established body of political sociology or 'contentious politics' literature [19,5,49,4,12,29]. In this body of literature, the existence of a perceived injustice is a pre-requisite for framing processes, highlighted through a wide body of environmental justice literature that articulates the politics and practice of frame construction [43,46]. Additionally, the emerging literature on climate justice seeks to consider the development and application of a climate justice frame [17]. This suggests that the connection between the political process of framing and the construction of justice claims in the energy arena is ripe for further interrogation. In this study, we seek to assess the emergent framings of energy justice through an investigation of activist and advocacy organisations in three cities—Philadelphia, Paris and Berlin.

The paper is situated within an emerging body of literature seeking to interrogate the connection between a social science energy research agenda on the one hand and questions of equity and justice on the other (e.g. [6,35–38]). In its broadest form, this research sets out to interrogate questions about the costs and benefits of energy systems. In so doing, it brings questions of justice to the forefront in various ways including the material infrastructure of energy technologies, access and cost of energy services and intergenerational equity in terms of current and future generations, among others. As such, questions about energy production and energy consumption are important, both in terms of procedural decision making and distributive outcomes [38]. While this suggests that the framing of energy justice by activist and advocacy organisations is likely to have multiple configurations, it also presents an opportunity to consider if and how a broader energy justice frame may be emerging.

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The paper first sets out the central element of this study, namely the framing of energy justice. It does this in terms of understanding how the concept of energy justice is conceptualised, positioning framing as a political process, and articulating a framework for interrogating the concept of energy justice in practice. It then sets out the methodology for the research and introduces the three case studies of Berlin, Paris and Philadelphia. Next it presents the findings with regard to the framing of energy justice, in terms of contextual boundaries and normative claims. Finally, it reflects on the existence and emergence of an energy justice frame before drawing out some overall conclusions and developing an agenda for future research.

2. Framing energy justice

We seek here to connect the rise of justice research on energy issues and framing as a political process, in order to develop an analytical framework for exploring the framing of energy justice issues by activist and advocacy organisations.

2.1. Dimensions of energy justice

Within an emerging body of literature seeking to embed questions of justice and equity within energy systems (e.g. [7,35,36,38]), we see that principles of justice in relation to energy have largely been developed and articulated in relation to two key arenas, summarised as follows and set out in more detail below:

1. **Production and consumption:** Notwithstanding ongoing debates into the nature and implications of 'whole systems energy systems' [1,22] questions of justice have primarily been directed towards either energy production (for example, different forms of technology) or energy consumption.
2. **Distribution and procedure:** In common with environmental justice research and policy, a distinction is often made between the distribution of costs and benefits, often termed distributive justice, and an interest in making sure that the processes of decision-making are fair, or procedural justice [36].

In distributional terms, questions of justice often relate to the politics of energy production, particularly in relation to the siting of existing energy facilities and the development of new energy infrastructures. Over the past 20 years, environmental justice research in the United States has drawn attention to the uneven distribution of energy production facilities, such as nuclear energy or petrochemical plants, in ethnic minority communities [18]. Moving beyond production, the notion of distributional justice in relation to energy consumption is most frequently framed in terms of access to affordable energy. Fuel or energy poverty, where households cannot afford to adequately heat or cool the home, has increasingly entered both policy and academic discourse. With a large body of evidence from the UK [9,10], the concept is rising in prominence across Europe [11] as well as in North America [21]. Such debates are largely premised on identifying the social and spatial patterns of energy poverty [8].

Increasingly, procedural dimensions have become more prominent with regard to both energy production and consumption. In relation to community renewables in the UK, for example, questions have been raised about how and by who such community projects are developed [48] as well as the justice implications of the provision of financial and material benefits that might arise from such schemes [14]. Similarly with regard to energy consumption, recent work has started to articulate the significance of justice in terms of procedure and recognition alongside questions of distribution in shaping fuel poverty [47] or in terms of identifying the

connections between energy justice and ethical consumption [20]. These arguments highlight the significance of not only ensuring forms of representation or involvement in decision-making processes but also the cultural and political recognition of vulnerable and marginalised social groups.

It is apparent therefore that the relationship between energy and justice is multifaceted, comprising distributional and procedural elements in relation to both production and consumption, drawing out inequalities not only on the basis of social and spatial patterns but also wider characteristics of vulnerability. We next build on this to consider the practice of framing as a political process.

2.2. Framing as a political process

The notion of framing emerged with the realisation that grievances are essentially the product of complex interpretive processes [49]. It is rooted in the symbolic interactionist principle whereby meanings do not automatically attach themselves to the object, events or experiences that we encounter [19]. The framing perspective considers movements or movement actors (organizations and activists) as signifying agents engaged in the production and maintenance of meaning for protagonists, antagonists and bystanders.

In essence, frames are 'cognitive schemata' used to make sense of situations, to attribute blame, identify solutions, and motivate participation. NGOs, interest groups, pressure groups, environmental groups etc. all develop organisationally specific (and often overlapping) frames problems and solutions. That is, "they frame, or assign meaning to and interpret relevant events and conditions in ways that are intended to mobilize potential adherents and constituents, to garner bystander support, and to demobilize antagonists" ([34]: 198).

Frames are important signifiers of social mobilization beyond short-term protest or issue cycles. For example Baud [4], reveals how organisations and movements can use one frame on a particular campaign, discard and then re-call it. As such, the adoption of a particular frame is crucial to the future direction of social mobilization in terms of helping researchers to identify what forms of social mobilization could develop over time. Furthermore, it can vary dramatically in terms of restrictiveness or exclusion in relation to other competing frames. In the context of this paper we interrogate frames through the use of two related analytical perspectives: boundary framing, in terms of what is effectively 'inside' and 'outside' a given frame and normative claims on how problems should be approached and solutions developed.

Boundary framing is a diagnostic process used to demarcate the problem in question with significant implications for prognosis and motivational framing [23,45]. Individual organisations strategically define the contextual boundary in their interpretation of a specific issue, a process which varies across type of actor [25]. Organisations define the boundaries in so far as what is effectively 'inside' and 'outside' the frame of a given campaign [19]. Markowitz et al. [28] remind us that the insider/outsider dichotomy is highly contested on any given mobilization issue, critical to the short and long-term survival of an organization or a movement. Boundary framing involves, therefore, the assessment of how an organization or movement demarcates the problem experienced. In this way, the frame acts as an articulation mechanism whereby various elements of the object in question are tied together purposively in order to achieve the conveyance of one set of meanings or 'story' over another.

With concerns for justice, this process of boundary framing is fundamentally intertwined with that of normative claims. Normative claims have long been a part of justice scholarship and activism. For example, environmental justice emerged as a frame for making

normative claims about the relationship between environment and social difference [46] and the climate justice movement is based on normative principles of social justice, democratic accountability and participation and ecological sustainability [32]. As such, normative claims involve both the elaboration of solutions to perceived injustices as well as a motivational 'call to arms'.

Such normative claims both take account of and are framed by spatial difference. For example, Walker [46] examines the globalisation of the environmental justice frame, tracing horizontal diffusion and vertical extension. This is evident in the UK (especially among NGOs), where one frame has been termed as "just sustainability" [2], referring to a frame that links together issues of sustainability, social inclusion and procedural equity [6]. Similarly, Dawson [16] demonstrates how the environmental movement in Eastern Europe has explicitly linked the 'environmental justice' and 'eco-nationalism' frames in order to expand environmental based mobilization. This indicates that while the emergence of energy justice activism and advocacy may be geographically nuanced, there may nonetheless be scope for identifying broader themes that contribute overall to an energy justice frame. We now turn to connect these perspectives in order to develop a framework for analysis.

2.3. An energy justice analytical framework

In this paper, we explicitly seek to understand the emergence of energy justice activism and advocacy through the lens of framing. This is achieved through the framework comprising the elements set out in Fig. 1.

As discussed above, we identify two key analytical elements: contextual boundaries, in terms of what is effectively 'inside' and 'outside' a given frame and normative claims on how problems should be approached and solutions developed. In this context, the analytical framework delimits the study in two key ways: first, that the concept of justice can be associated with energy in both distributional and procedural terms and secondly, that a distinction can be identified between energy in relation to both consumption and production. Ultimately, with a specific focus on energy rather than broader environmental or climate issues, we seek to analyse the construction and utility of an energy justice frame from the perspective of activist and advocacy organisations.

3. Methodology and case studies

The overall aim of this paper is to use the analytical tools of contextual boundaries and normative frames to consider how activist and advocacy organisations are framing energy justice. Below, we set out the methodology for the research as well as the key characteristics of the three case study cities.
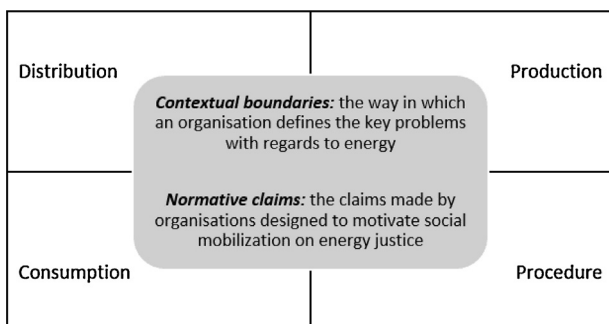
Fig. 1. An energy justice analytical framework.

Table 1
Activist and Advocacy organisations.

	Activist organisations	Advocacy organisations
Berlin	• Greenpeace Berlin • Bund-Friends of Earth • Attac Berlin	• Powershift • BBK-Burgern-Begehren Klimaschutz
Paris	• Attac France • Greenpeace Paris	• L'Agence Parisienne du Climat • RAPPEL • La Fondation Nicolas Hulot
Philadelphia	• Greenpeace Philadelphia • Sierra Club	• Philadelphia Solar Energy Association • PennFuture • Energy Co-operative

3.1. Methodology

This study was designed as an early research phase of a larger project on energy-based activism in the US and Europe. As such, the focus was limited to exploring the emergence of energy justice frames in activist and advocacy organisations in three specific cities: Berlin, Paris and Philadelphia. These cities were selected for two key reasons. First, an existing knowledge of the political and activist landscape in each city, which was critical for an exploratory and small scale study of this nature, where it was essential to gain access to relevant organisations in a short timeframe. Secondly, an initial scoping exercise in each city revealed the existence of campaigns around energy consumption and production, alongside evidence of activism around justice issues suggesting that an analysis of this energy and justice intersection would yield results that would enable interrogation of energy justice frames. Thus, while the cities are not intended to be representative of the situation in the US and Europe, they do nonetheless serve as a productive starting point for analysis. We also recognise that empirical research of this nature only captures a 'snapshot' in time; given the deeply political nature of activism and advocacy around energy issues, it might be expected that issues and priorities could change rapidly.

For each city, a desktop mapping exercise was carried out to identify relevant organisations and campaigns in the energy justice arena. This mapping allowed an initial insight into activities within a particular city, as well as generating contextual information about the potential political, social, economic and environmental challenges within each city. Based on this mapping, we selected five activist and advocacy organisations in each city based on the existence of an energy dimension to their policy and campaign work (see Table 1). In this context, we define activist and advocacy organisations in the following way. While both seek to create social and political change, we consider advocacy organisations as those that provide active support to a particular issue, often through mechanisms such as engagement in policy making. Activist organisations on the other hand seek to create change through direct action, such as protests.

In order to explore and understand the perspectives of the activist and advocacy organisations in each city, fieldwork primarily comprised semi-structured interviews with representatives from the organisations detailed in Table 1. The interviews focused on understanding if and how energy justice was articulated within each city and questions covered the various production and consumption-oriented energy campaigns of each organisation, the contextual boundaries in terms of how and why issues were included or excluded from these campaigns as well as the normative justice claims present within these campaigns. We also

gathered supporting documentation, such as city strategies, energy statistics and campaign literature. Data analysis involved the preparation of full transcripts from interviews and manual analysis of these transcripts and supporting documents using established qualitative techniques of coding and organising data thematically. On the contextual boundary issue, interviews and supporting policy documents were thematically analysed in terms of production and consumption. For the normative claims, the analysis was centred on the justice themes of distribution and procedure. Key similarities and differences emerging from each city were identified to consider the overall emergence of an energy justice frame.

3.2. Case studies: Berlin, Paris and Philadelphia

Berlin, Paris and Philadelphia are all net importers of energy (particularly oil and gas)—i.e. they rely upon oil and gas nationally or more so internationally. They have, in comparison to the energy consumed, negligible production industries in the city—with a clear reliance on oil and gas plants. Solar/PV is the most evident renewable energy source in the cities. This picture does change somewhat when we look at the surrounding region. All three cities and surrounding areas have experienced different trajectories with regards to production. Coal continues to be the undisputed primary source of energy for Philadelphia. The renewables market here only amounts to around 10%, with above all coal and partly nuclear accounting for 90%. In Berlin-Brandenburg, renewable energy sources have gradually increased their share (now around 25%) over the traditional coal power stations. In the 1960s, coal production reached as high as 73%—with the 2013 percentage at 44%. There is, moreover, a substantial (and increasing) mining industry in Berlin-Brandenburg. Berlin is set within a national context defined most recently by the nuclear phase out. The Paris-Ile de France context is devoid of any coal derived energy generation. In its place, oil and gas and surrounding hydro schemes dominate. There is, controversially, significant potential in untapped geothermal energy in Paris-Ile de France. The national electricity generation context is largely dependent upon nuclear energy.

The three cities are, therefore, proportionally net consumers of energy. Efforts in this area are centred on reducing the carbon footprint of the cities. Heating and electricity sources of consumption are difficult to quantify on a city level as they draw from a national grid. Oil and gas remain the two biggest sources in consumption estimates. More notably, the highest consuming sectors in the three cities are residential and transport, followed by industry and agriculture when the city region is taken into account. This variable (i.e. sector rather than energy source) has largely defined each city's approach to reducing consumption. In each of the cities, their respective energy strategies prioritise energy efficiency and retrofitting schemes in the residential sector, as well as 'greening' transport in a wide variety of ways. For example, in Philadelphia in 2009, the Mayor's Office of Sustainability released a comprehensive city sustainability plan, Greenworks with 15 targets grouped into five major themes: energy, environment, equity, economy, and engagement [13,40] where the energy targets include: lowering city government energy use, reducing citywide building energy consumption, housing retrofits and increased use of alternative energy sources.

It is also important to consider the landscape of environmental inequalities, which suggests that justice is an issue for political activism. Philadelphia is the poorest of the biggest cities in the United States, with the lowest median income and highest percentage of its population in poverty [40]. Furthermore, research in Philadelphia indicates an unequal distribution of environmental hazards where extensively burdened communities "tended to be located along the Delaware River and had more vacant housing units, more residents who were black and Hispanic, and more residents who lacked a high school diploma" ([33]: 768). While the discourse of environmental justice has been less prevalent in Europe, there is still evidence of inequalities according to socioeconomic status and citizenship. For example, one study that considers patterns of environmental injustice in France highlights that "towns with higher proportions of immigrants are more likely to have a variety of hazardous sites and to host greater numbers of sites" ([27]: 73). The Ile de France region has officially the highest immigrant population in both total numbers (1.5 million in 2011) and percentage (12.7% in 2011) than any other French region [24]. Similar patterns emerge in the region of Berlin-Brandenburg (with Berlin as a city joint top with Hamburg) which also has the largest (according to 2013 figures) immigrant population in Germany [39]. As Raddatz and Mennis [30] note, the limited body of similar research on environmental justice in Germany suggests that groups with lower socioeconomic status and foreign citizenship are disproportionately exposed to environmental risk.

We now turn to set out the findings from the research. First we consider the construction of energy justice frames through an analysis of contextual boundaries and normative claims before a broader reflection on the existence of and potential implications arising from this framing of energy justice.

4. Findings: unpacking energy justice frames

In order to consider the emergence of energy justice frames, we sought to explore the various production and consumption-oriented energy campaigns of each organisation, the contextual boundaries in terms of how and why issues were included or excluded from these campaigns, and the normative justice claims present within these campaigns. These are presented below in turn.

4.1. Contextual boundaries

We reveal below the key issues identified by our interviewees on the basis of production and consumption based injustices, in order to ascertain what issues are *inside* or *outside* the energy justice frame. We begin with an assessment of which production and consumption issues are raised *inside* the energy justice problem frame in all three cases.

We find evidence of frames around promoting 'good' energy technology, which relates, in all three cities, to policy constraints and enablers around renewable energy such as solar PV or microgeneration. The central focus for energy activism in each city is, however, around the suppression of 'bad' energy. In Philadelphia, 'bad' technology is framed around negative impacts, particularly in relation to health. One activist commented, "*Pennsylvania is a coal state... (with) the second worst air quality in the country as a state because of our coal and oil burning facilities*" (*Activist organisation, Philadelphia*). In Berlin and Paris, there is a link made between the suppression of renewables and the promotion of 'bad' technologies. As one NGO proclaimed, "*energy issues in France are defined by the nuclear issue*" (*Activist organisation, Paris*), decrying the lack of progress on renewable energy. For Berlin, the move away from nuclear was leading to the "*greening of coal*" (*Advocacy organisation, Berlin*) rather than any new uptake in renewables.

The consumption frame includes the promotion of energy cost savings for households and the energy efficiency of buildings. Advocacy organisations in Philadelphia are particularly active on the former within the context of ongoing electricity market deregulation reforms and action is centred on securing further deregulation in order to provide greater choice for consumers. On energy savings, Parisian organisations focus on promoting education rather than further market deregulation—"*we need to be more proactive in telling people of the deals out there*" (*Advocacy organisation, Paris*).

Infrastructural efficiency activism is evident in all three cases, but most prominently in Berlin. Their efforts concentrate on innovative projects in reaching above baseline efficiency targets through "*think*(*ing*) *creatively about what the city offers*. . .(*such as our*) *fantastic district heating system*" (*Advocacy organisation, Paris*).

We now turn our attention to the differences in problem framing in each city, in order to reveal which issues are *outside* the problem frame in some cases. The empirical research reveals, firstly, variation in the breadth of justice concerns in the activist problem frames in each city. The problem frame is significantly larger in the Berlin case. In terms of production, a wide range of concerns on 'good' and 'bad' energy technologies falls within inside their energy justice action, including coal, nuclear, oil, gas, biomass and district heating systems. Parisian activities focus almost uniquely on nuclear, and its impact on renewable energy, where Philadelphia organisations target coal and to an extent fracking and renewables. From a consumption perspective, it appears there is less variation in the breadth of justice concerns. All organisations frame the problem around the duality of achieving energy cost savings for households—including for example new household micro-production schemes in Berlin – and the energy efficiency of buildings such as the promotion of a wide range of retrofit schemes in Paris and Philadelphia.

However, the interviews reveal further notable differences in prioritization across the production and consumption spectrum. The balance between production and consumption is, indeed, different for each city. Energy production (and the location of polluting facilities) remains the key issue in Philadelphia and outweighs concerns about energy consumption. A long history with the coal industry continues to dominate the activists' frame. New initiatives designed to reduce consumption are viewed with much scepticism. Such an agenda threatens to take the focus away from all powerful coal lobbies:

"*We are not running campaigns to encourage people to cut down on their energy consumption...corporations have succeeded really well in switching the discussion. . .on to the individual and making people feel guilty. . . but they can go on and frack the hell out of land and burn all the coal they want unregulated* " (*Activist organisation, Philadelphia*)

Within our European cases, there is more of a balance between activism and advocacy around energy production and consumption. While the nuclear issue dominates the energy frame in Paris, all organisations connected the production, waste and electricity consumption processes. One interviewee underlined that the abundance of cheap 'nuclear' electricity in Paris hindered low carbon behavioural changes among households. In Berlin, the main problem was seen to comprise achieving community awareness of production to change consumption patterns:

"*The consumer must become* (*more*) *aware of where their energy comes from. . . we believe greater municipal ownership would bring energy into the community mind-set. . .just look at the success of Bethel Hospital. . .they actually make money from energy production!* " (*Advocacy organisation, Berlin*)

There are, therefore, notable differences in what is *inside* and *outside* the activist problem frames in each city, with regards to both the breadth of justice concerns and the level of concentration on production or consumption issues. The decision on what to include in a problem frame significantly influences the solutions put forward [23,45]. We investigate this link further through an assessment of the resulting normative claims of organisations in each city.

4.2. Normative claims

In considering the normative claims that are being advanced we explore both how advocacy and activist organisations are articulating problems alongside their approaches to developing solutions.

The discussion considers three key areas: the temporal and spatial nature of normative claims; the articulation of vulnerability; and multi-scalar frames, all of which cut across the distributive and procedural dimensions of energy justice.

The first issue in relation to normative claims is their temporal and spatial nature. The empirical work highlighted that energy justice activism was temporally specific, and predominantly focused on outcomes with a higher priority placed on issues of distributional, rather than procedural, justice. In this context, there were two specific points and sites of intervention. First, in relation to energy production, activism was largely based on the location of particular energy infrastructures. In Philadelphia, for example, NGOs predominantly focused on the location of fracking activities and coal plants. This was also the case for Berlin in relation to communities near power plants and the nuclear phase out, which was motivated in light of Fukushima. Secondly, in relation to energy consumption, such interventions were largely focused on residential energy users, and the patterns and politics of consumption at the household level. It is important to note however that while such normative energy justice claims do encompass both production and consumption elements, the research indicated that this is temporally specific in that organisations were intervening at particular points of the energy system, rather than challenging it in its entirety.

The second theme emerging in relation to normative claims is the articulation of vulnerability. This is significant because, as noted above, the existence of a perceived injustice and any resulting intervention—either activism or advocacy—is largely based either on the identification of a particular group as vulnerable or the set of characteristics which are seen to contribute to the existence of vulnerability. In this study, we found that the focus was on relatively 'visible' groups, identified from characteristics such as income, race or class. In relation to coal production in Philadelphia, for example, respondents talked of the siting of coal plants in areas that were low income with minority groups: "*You get coal plants dumped in neighbourhoods that are underprivileged and lower class and often minority and the coal plants don't actually benefit them*" (*Activist organisation, Philadelphia*) while in Paris vulnerable populations were framed as "*poor North African immigrants*"(*Activist organisation, Paris*).

In relation to consumption, vulnerability was defined largely in terms of income, in common with many academic and policy debates about fuel poverty [10]. For example, in Berlin there was clear targeting of low income areas of city, areas of sub-standard housing and areas of high immigrant population. In Philadelphia, there was also evidence of targeting low income residents in relation to energy consumption via the means of an energy cooperative, as one advocacy group commented: "*The people who arguably most need the services of electricity deregulation, the ability to save money is at that small residential level so you know the elderly, the low income*" (*Advocacy organisation, Philadelphia*). As such, claims for distributional justice were made on the basis of targeting specific groups that were perceived to display characteristics of vulnerability.

In contrast, claims and interventions for procedural justice were based on identifying groups for the purposes of engagement, and hence were based more on a set of aspirational characteristics. For example, in Paris, one organisation noted the importance of engaging with young people: "*Our main activity will always remain education focused. It is important as a new organisation to really engage with people, especially young people*" (*Advocacy organisation, Paris*). For one group in Philadelphia that worked in the arena of both activism and advocacy, procedural justice revolved around the interface between engagement and long term policy change: "*We really try to take people's interests, people's needs, issues that need to be addressed and turn those into actual physical policy. It is fair to say that we were less of an education and awareness spreading group and more of a, we know there is an issue and we want to try to*

Table 2
Summary of findings.

	Contextual boundaries		Normative claims	
	Production	Consumption	Distribution	Procedure
Berlin	• Oppose coal/CCS • Nuclear (stopping new build) • Updating current oil, gas and biomass power plants • Promote renewables • A 'Renewable-only' District Heating network	• Achieve high levels of energy efficiency • New ways of using household waste for energy • A more efficient district heating system	• Location of nuclear power facilities • Vulnerable population: low income, immigrant groups	• Mobilise grassroots actors • Engagement with policy actors
Paris	• Reveal the consequences of nuclear transportation of waste (rather than new build) • Promote renewables rather than nuclear	• Promote and educate on energy efficiency and retrofit • Achieve reduction of energy tariffs, especially on heating/gas	• Scalar tensions with France bearing burden for European nuclear production • Vulnerable population: immigrant groups	• Education focused • Engagement with young people
Philadelphia	• Oppose coal • Oppose fracking • Promote renewables	• Secure greater energy efficiencies and retrofit • Achieve energy cost savings through the promotion of deregulation	• Location of coal plants, fracking activities • Tensions between corporations and individuals • Vulnerable population: low income, minority groups, elderly	• Interface between engagement and policy change • Facilitating bottom up leadership

work with people to actually change the rules around that" (*Advocacy organisation, Philadelphia*). As such, vulnerability was presented as an issue that could be at least partially addressed by collaborative working in order to enact policy change.

The final theme in terms of normative claims is that of multi-scalar frames. The issue of scale came through in a variety of ways predominantly in relation to distributional outcomes. For example, in Paris, the claims for distributional equity were made on the basis of France bearing the burden for the production of nuclear energy in Europe. One NGO articulated this as follows: "*France is the nuclear heart of Europe. . .(when) Germany pulls out of nuclear it is like cutting off a foot or a hand. . .the blood still flows in and out of France*" (*Activist organisation, Paris*). This multi-scalar sense of energy frames was also present in the positioning of the role of individuals versus the power of large energy providers or corporations. As one interviewee in Philadelphia noted: "*We were really trying to refocus to on-the-ground, grassroots, local initiatives... to put the power back in people's hands*" (*Activist organisation, Philadelphia*). Thus, while action was emerging from the city level, the scales of normative claims were varied and diverse. We now turn to summarise the overall findings and reflect on the existence and emergence of an energy justice frame.

5. Discussion: emergent energy justice frames

The first key finding is that the research indicates that there is no single energy justice frame; rather we find the existence of multiple and diverse mobilisations around energy justice. This is highlighted through both the contextual boundaries and the normative claims emerging in each of the cities (Table 2).

In relation to contextual boundaries, we find clear differences between the three cities in terms of which energy issues were prioritised. Similarly in relation to normative claims, we find a multiplicity of groups being identified as 'vulnerable' within the normative claims that were being proposed.

However, while these multiple dimensions of energy justice were present, the findings reveal that in the majority of cases, there was little explicit evidence of an energy justice discourse. This was surprising given the wide diversity of normative claims that fundamentally underpinned the mobilisations by both activist and advocacy organisations. Instead we find that notions of justice in relation to energy systems were more implicit than explicit, as summarised here by one organisation in Philadelphia:

"*As an organisation we have not spoken... about energy justice but I think there is a lot of intersection there... on a personal level both at the staff level and at the board level those are issues that are very important to us but in our official communications you will not see things like that come out very often*" (*Advocacy organisation, Philadelphia*)

A number of reasons were suggested for this. One suggestion was that organisations were not being proactive in this respect: '*As far as the energy, as far as the justice question, I think we were being more reactive right now, so it is not as it should be*" (*Activist organisation, Philadelphia*). This was partly because there was seen to be a need to avoid perceived political controversy, as noted here:

"*We have never had a deliberate discussion about why we do not do that. . . what the organisation has always done well is not say things or do things that are controversial so those things are politically charged in some ways and so we do not do that*" (*Advocacy organisation, Philadelphia*).

Another suggested reason, particularly in the contexts of Paris and Berlin, was the different national and linguistic histories of justice-framed movements and the dominance of other mobilization frames. In the former case, "*counter-globalization is just more emotive for French people. . . (it is) more comprehensive and means something*" (*Activist organisation, Paris*). In the latter case, the complexity of each energy system made one united call for energy justice problematic. Here, emphasis was placed on a nationally specific historical trend towards "*specialisation of the NGO community. . . (where). . .mobilization on energy matters tends to stay focus on one energy system*" (*Advocacy organisation, Berlin*). In

relation to the existence of an energy justice frame therefore, an important observation is that while issues of distributional and procedural justice were being mobilised in relation to energy, these were not explicitly framed as 'energy justice'. This supports previous research in the field of environmental justice that highlights instances where discourses of environmental justice may not be publicly articulated [15,3].

In this respect, it was apparent that the connections between energy justice and other forms of justice activism was multifaceted. The research indicates that energy justice frames interspersed with, and borrowed from other agendas and campaigns, in common with an increasing body of geographical work that seeks to trace such connections [32]). For example, the findings indicate that energy activism is related to climate change as part of the 'bigger picture', although across all case studies, the justice dimensions emerge at a more micro scale, in relation to particular sites or procedural issues.

The study finds that energy campaigns in the United States are influenced by social and environmental justice discourses. As noted by one organisation:

As a specific city Philly's actually really well positioned to make the right decisions but we were going to have to tie in a lot of other things including the social justice aspect because Philly's also a very poor city relative to other North American cities (*Advocacy organisation, Philadelphia*)

This connection with environmental justice is less evident in Europe, supporting previous studies about the geographical dispersion of the environmental justice frame [31,46]. As such, we argue that culturally embedded national movement trajectories are key to the possibility of one common energy justice frame emerging. We call on research to engage more in non-Anglo-American studies of activist framing to investigate further. As Reed and George ([31]: 840) comment, "if scholars from the margins—be they in developing countries or in industrial countries—view and express environmental justice differently from those who adopt western principles and theories. . .we need to develop new ways of understanding and listening".

We should, therefore, attempt to better understand if such invocations of justice in relation to energy systems may be distinctive. Future work should aim to fill this gap. After all, Baud [4] reminds us that organisations regularly adopt or disregard master frames in response to the dominant *problematique* in society. A more explicit delineation between environmental, climate and energy justice frames would be illuminating with regards to understanding the social movement campaign trajectories of the past as well as the future. Given these findings, we now turn turns to provide some conclusions in terms of the potential of an energy justice frame and the contribution of further research in this arena.

6. Framing energy justice: Future possibilities

In this paper, we have sought to develop an analytical framework for assessing the emergence of energy justice in the activist and advocacy arena. We have argued that an energy justice frame encompasses issues of both energy production and consumption, alongside issues of distribution and procedure. We find in the empirical work that there is evidence of justice activism—both implicit and explicit—around these axes, but little that draws them together. For example, we can see that activism around energy production is strongly driven by concerns for environmental justice, whereas activism and advocacy around consumption is more closely related to concerns for income equality and low carbon transitions. Understanding and tracing the potential interconnections between production and consumption alongside distribution and procedure is fundamental to developing and articulating an energy justice frame. This is a significant task for future research.

One opportunity for an energy justice frame is the ability to overlay specific normative claims of justice with questions about energy in a whole systems approach, often a limitation of existing discourses of environmental justice. Further, while in the study set out above we noted that normative claims relied heavily on identifying vulnerable groups in a static and visible way (through characteristics such as age, income etc.), there is scope for a more dynamic representation of injustice in relation to the wide proliferation of energy issues. An energy justice frame may allow some of these issues to come to the forefront. Thus, any further interrogation of NGO activism should more clearly investigate the construction of vulnerability in this context.

Such a finding also brings spatial and temporal dimensions to the forefront. In relation to space, it draws attention to the multiple ways in which space is implicated in energy justice activism and advocacy—both across and between space. It further highlights a temporal dimension to energy justice activism. On the one hand, decisions to engage in activism around energy production and/or consumption, as illustrated in the empirical work, consist of the recognition of a specific point in time whereby it is beneficial to act- a clear parallel to the literature on political opportunity structures. However, going beyond this, the empirical work demonstrated that activism in this sphere consists of temporal interventions in the energy system- often at the site of production or the site of consumption, rather than considering the energy system as a whole. This supports previous observations [7], and indicates that this question of time may be significant in further understanding the motivations and impacts of energy justice activism in the future.

In conclusion, this study has sought to examine activism and advocacy within the emerging field of energy justice. Given the increasing attention paid to energy at all scales, from individual and household consumption to energy systems in their entirety, there is a need for further research to understand how energy justice is emerging as both an activist and advocacy frame, the claims being made and with what effects. Research of this nature—drawing together geography and political science—is critical to broaden a social science research agenda on energy and society, and will allow deeper interrogation of how issues of justice and equity are mobilised in relation to energy.

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References

[1] C. Adams, et al., Equity across borders: a whole systems approach to micro-generation, in: K. Bickerstaff, G. Walker, H. Bulkeley (Eds.), Energy Justice in a Changing Climate, Zed Books, London, 2013, pp. 116–138.

[2] J. Agyeman, B. Evans, 'Just sustainability': the emerging discourse of environmental justice in Britain, Geog. J. 170 (2) (2004) 155–164.

[3] A.H. Alkon, et al., What is in a name? Language, framing and environmental justice activism in California's central valley, Local Environ. 18 (10) (2013) 1167–1183.

[4] M. Baud, Popular Intellectuals and Social Movements: Framing Protest in Asia, Africa and Latin America, Cambridge University Press, Cambridge, 2005.

[5] R. Benford, D. Snow, Framing Processes and social movements: an overview and assessment, Annu. Rev. Sociol. 26 (2000) 611–639.

[6] K. Bickerstaff, J. Agyeman, Assembling justice spaces: the scalar politics of environmental justice in North-east England, Antipode 41 (4) (2009) 781–806.

[7] Energy Justice in a Changing Climate, in: K. Bickerstaff, et al. (Eds.), Zed Books, London, 2013.

[8] K. Bickerstaff, et al., Introduction: making sense of energy justice, in: K. Bickerstaff, G. Walker, H. Bulkeley (Eds.), Energy Justice in a Changing Climate, Zed Books, London, 2013, pp. 1–13.

[9] B. Boardman, From Cold Homes to Affordable Warmth, Belhaven Press, London, 1991.

[10] B. Boardman, Fixing Fuel Poverty: Challenges and Solutions, Earthscan, London, 2010.

[11] S. Bouzarovski, Energy Poverty in the European Union: Landscapes of Vulnerability, 3, Wiley Interdisciplinary Reviews: Energy and Environment, 2014, pp. 276–289.

[12] J. Boykoff, E. Laschever, The tea party movement, framing and the us media, Social Mov. Stud. 10 (4) (2011) 341–366.

[13] City of Philadelphia, Greenworks Philadelphia. City of Philadelphia Mayor's Office of Sustainability. (2009).

[14] R. Cowell, et al., Acceptance, acceptability and environmental justice: the role of community benefits in wind energy development, J. Environ. Plann. Manage. 54 (4) (2011) 539–557.

[15] A.R. Davies, Environmental justice as subtext or omission: examining discourses of anti-incineration campaigning in Ireland, Geoforum 37 (5) (2006) 708–724.

[16] J.I. Dawson, The two faces of environmental justice: lessons from the econationalist phenomenon, Environ. Politics 9 (2) (2000) 22–60.

[17] D. della Porta, L. Parks, Framing Processes in the Climate Movement: from Climate Change to Climate Justice, in: M. Dietz, H. Garrelts (Eds.), Routledge Handbook of the Climate Change Movement, Routledge, Abingdon, 2014, pp. 19–30.

[18] D. Endres, From wasteland to waste site: the role of discourse in nuclear power's environmental injustices, Local Environ. 14 (10) (2009) 917–937.

[19] E. Goffman, Frame Analysis, Harper Colphon, New York, 1974.

[20] S.M. Hall, Energy justice and ethical consumption: comparison, synthesis and lesson drawing, Local Environ. 18 (4) (2013) 422–437.

[21] C. Harrison, J. Popke, Because you got to have heat: the networked assemblage of energy poverty in Eastern North Carolina, Annals Assoc. Am. Geographers 101 (4) (2011) 949–961.

[22] R.J. Heffron, D. McCauley, Achieving sustainable supply chains through energy justice, Appl. Energ. 123 (2014) 435–437.

[23] P.L. Hipsher, Heretical social movement organizations and their framing strategies, Sociological Inq. 77 (2) (2007) 241–263.

[24] INSEE, Etrangers en 2011: comparaisons regionals. Paris Institut national de la statistique et des etudes economiques. (2011).

[25] H. Klüver, et al., Framing in context: how interest groups employ framing to lobby the European Commission, J. Eur. Public Policy 22 (4) (2015) 481–498.

[26] H.E. Kurtz, Scale frames and counter-scale frames: constructing the problem of environmental injustice, Political Geogr. 22 (2003) 887–916.

[27] L. Laurian, Environmental injustice in France, J. Environ. Plann. Manage. 51 (1) (2008) 55–79.

[28] L. Markowitz, et al., Framing ambiguity: insider/ousiders and the successful legitimation project of the socially responsible mutual fund industry, Organization 19 (3) (2012) 3–23.

[29] R. Powell, Frames and narratives as tools for recruiting and sustaining group members, Sociological Inq. 81 (4) (2011) 454–476.

[30] L. Raddatz, J. Mennis, Environmental justice in Hamburg, Germany, Prof. Geogr. 65 (3) (2013) 495–511.

[31] M. Reed, C. George, Where in the world is environmental justice? Prog. Hum. Geogr. 36 (6) (2011) 835–842.

[32] Schlosberg D., L.B. Collins (2014). From environmental to climate justice: climate change and the discourse of environmental justice. Wiley Interdisciplinary Reviews: Climate Change 5 (3): 359-374.

[33] D. Sicotte, Some more polluted than others: unequal cumulative industrial hazard burdens in the Philadelphia MSA, USA Local Environ. 15 (8) (2010) 761–774.

[34] D. Snow, R. Benford, Ideology, frame resonance, and participant mobilization, Int. Social Mov. Res. 1 (1998) 197–217.

[35] B. Sovacool, Energy & Ethics: Justice and the Global Energy Challenge, Palgrave Macmillan, Basingstoke, 2013.

[36] B. Sovacool, M. Dworkin, Global Energy Justice: Problems, Principles and Practices, Cambridge University Press, Cambridge, 2014.

[37] B.K. Sovacool, What are we analyzing fifteen years of energy scholarship and proposing a social science research agenda, Energy Res. Social Sci. 1 (2014) 1–29.

[38] B.K. Sovacool, M.H. Dworkin, Energy justice: conceptual insights and practical applications, Appl. Energ. 142 (2015) 435–444.

[39] Statische Amter, Gebiet und Bevolkerung—Auslandische Bevolkerung. Wiesbaden statische amter des bundes und der lander. (2014).

[40] R. Stokes, et al., Community-based organisations in city environmental policy regimes: lessons from Philadelphia, Local Environ. 19 (4) (2014) 402–416.

[41] J. Sze, et al., Defining environmental justice: socio-natures and the politics of scale in the delta, Antipode 41 (4) (2009) 807–843.

[42] J. Sze, J.K. London, Environmental justice at the crossroads, Sociol. Compass 2 (4) (2008) 1331–1354.

[43] D.E. Taylor, The Rise of the environmental justice paradigm, Am. Behav. Sci. 43 (2000) 508–580.

[44] G. Towers, Applying the political geography of scale: grassroots strategies and environmental justice, Prof. Geogr. 52 (1) (2000) 23–36.

[45] T. Van Dijk, et al., Frames to the planning game, Int. J. Urban Reg. Res. 35 (5) (2011) 969–987.

[46] G. Walker, Globalizing environmental justice: the geography and politics of frame contextualization and evolution, Global Social Policy 9 (3) (2009) 355–382.

[47] G. Walker, R. Day, Fuel poverty as injustice: Integrating distribution, recognition and procedure in the struggle for affordable warmth, Energy Policy 49 (2012) 69–75.

[48] G. Walker, P. Devine-Wright, Community renewable energy: what should it mean? Energy Policy 36 (2008) 497–500.

[49] M. Zald, Ideologically structured action: an enlarged agenda for social movement research, Mobilization Int. J. 5 (1) (2000) 1–16.