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M. Lacey-Barnacle

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Residents Against Dirty Energy: using energy justice to understand the role of local activism in shaping low-carbon transitions

M. Lacey-Barnacle

Science Policy Research Unit, University of Sussex, Brighton, UK

ABSTRACT
“Residents Against Dirty Energy” (RADE) are a community-led energy activist group in Bristol city, UK. Since their inception, they have effectively lobbied the city council for the deployment of battery storage units in place of diesel generators in Lockleaze, north Bristol. As a result, Lockleaze now hosts battery storage facilities with 15MW of storage capacity able to store excess energy from the grid. Drawing on a focus group (n = 8) with local energy actors in Bristol and in-depth interviews (n = 2) with RADE, alongside document analysis of key secondary data sources, the paper uses three tenets of energy justice (distributional, recognition and procedural justice) to shed light on the role of local energy activism in shaping low-carbon energy infrastructures. The qualitative data reveals RADE’s efforts to ensure that local communities are closely involved in energy decision-making, to ensure that the siting of new energy technologies does not burden marginalised communities. However, questions around distributional-economic benefits and ownership are secondary to RADE; their primary concern is with the improvement of local air quality and reducing harm to the local population and environment. These issues connect strongly to Bristol’s divided landscape, underpinned by an unequal geography of socio-economic division and racial inequality. As such, the paper sees the further integration of “spatial justice” as a core tenet of energy justice as necessary to enhancing its explanatory power, concluding with a call for scholars and policymakers to further consider the visions and efforts of local and civil society energy activists in shaping just transitions.

1. Introduction

As part of global efforts to reduce carbon emissions and tackle anthropogenic climate change, the UK became the first country in the world in 2019 to pass legislation committing the economy to net zero emissions by 2050. Accompanying this bold decarbonisation agenda is a radical transformation of the UK’s energy technologies and infrastructures, where new technological forms of low-carbon energy and transport, alongside myriad forms of energy storage, will continue to emerge more quickly than envisioned by the transition pathways generated by the UK’s Climate Change Act 2008 (Foxon 2013; Dixon, Bell, and Brush 2022). This rapid rate of technology deployment poses key social justice questions, not least concerning how the hastening of the UK’s energy transition will impact upon society and vulnerable groups.
To address some of these key societal questions, energy justice has emerged in recent years to shed light on the impacts of energy systems on people, communities and the societies in which they live (Bickerstaff, Walker, and Bulkeley 2013; Finley-Brook and Holloman 2016; Jenkins et al. 2016). Importantly, there is also a strong current of energy justice research that focuses explicitly on the impacts of low-carbon transitions on society (Bickerstaff, Walker, and Bulkeley 2013; McCauley et al. 2019; Carley and Konisky 2020) and the potential injustices stemming from the need to transition to new low-carbon energy systems (Sovacool et al. 2019). Over the past decade, energy justice has rapidly grown to become a research field in its own right, with a plethora of studies focusing on a broad diversity of contexts demonstrating its now global reach (e.g. Salter, Gonzalez, and Warner 2018; Siciliano et al. 2018; McCauley et al. 2019; Bombaerts et al. 2020; Lacey-Barnacle 2020; Jenkins et al. 2021).

Theoretically, energy justice is largely underpinned by a commitment to two dominant frameworks; the “three tenets” of energy justice – procedural, distributional and recognition justice (McCauley et al. 2013) and the “eight principles” for decision-making and policy: availability; affordability; due process; transparency and accountability; sustainability; intra-generational equity; inter-generational equity; and responsibility (Sovacool and Dworkin 2015). The three tenets can be summed up as follows, (1) Procedural justice – relates to the participation of people in energy-related decision-making processes; (2) Distributional justice – concerns the sharing and distribution of energy system benefits and burdens; (3) Recognition justice – seeks to ensure the acknowledgement of marginalised and/or disadvantaged groups in relation to energy systems.

Interestingly, while revisions of these core frameworks have emerged, such as the suggestion of a fourth tenet of “cosmopolitan justice” to be added as a new tenet (Sovacool et al. 2016) and the emergence of a revised 10-principle framework (Sovacool et al. 2017), both the tenets-based and principle-oriented approaches remain the most prevalent. Furthermore, the three tenets are largely accepted by many energy justice scholars to be the most widely used and applied conceptual framework in energy justice research (Lacey-Barnacle 2020; Carley and Konisky 2020; Jenkins et al. 2021). In addition to being a more comprehensive analytical framework than the 8 or 10-principle oriented approach, the three tenets also strongly connect and relate to one another both conceptually and empirically. As noted by Gillard, Snell, and Bevan (2017), for example, facilitating recognition and procedural justice can give rise to the realisation of distributional justice. This interrelatedness between the three tenets strengthens their use in energy (justice) research, unearthing divergent yet interconnected aspects of issues of social justice, equity and inequality in low-carbon transitions. Taken together, these three tenets form the core theoretical framework used in this paper and are applied to the case study material presented through the medium of both primary and secondary data sources. Recognising a lack of empirical energy justice contributions centred on the role of activism in shaping low-carbon transitions, this paper attempts to contribute to this empirical gap in energy justice research, looking closely at the activities of a local energy activist organisation in Bristol (UK) known as “Residents Against Dirty Energy” (RADE) during the years 2015–2017.

Using the “three tenets” of energy justice as analytical and thematic guides, the paper unravels RADE’s efforts to work with a local low-carbon energy organisation and the city council to bring about energy justice in Bristol, in opposition to project proposals for the deployment of diesel and gas generators across the city by distant companies in the West Midlands and London. Through analysis of a focus group conducted in 2016 with a variety of local energy actors and follow-up in-depth interviews with RADE, this paper uses the three tenets of energy justice to shed light on the little understood role of energy activism in shaping low-carbon energy infrastructures. The paper outlines attempts by RADE to act as both an energy activist organisation and intermediary in Bristol’s local energy sector, working with other emerging actors within Bristol’s local low-carbon energy landscape. Before detailing RADE’s activities and efforts, it is important to outline the theoretical gap in energy justice scholarship around the role and potential of energy activism in low-carbon transitions (Figure 1).
Figure 1. Location of Plutus’s proposed diesel generation plants in Bristol mapped onto the map of deprivation in the Bristol Deprivation Report 2015.
2. Energy activism, energy justice and low-carbon transitions: addressing the research gap

While energy justice research has expanded into new contexts, as well as exhibiting the ability to take on new conceptual frontiers, such as an explicit reframing around “space” and spatial justice (Bouzarovski and Simcock 2017), it has lacked an explicit empirical focus on the role of activism and activist-led movements in shaping energy systems and transitions, with a few notable contributions emerging in recent years (e.g. Fuller and McCauley 2016; Bedi 2018; Sayan 2019; Martinez 2020). To date, however, there has been very little published in the energy justice field that directly addresses the role of local activism in shaping low-carbon transition pathways. This section briefly explores the relevant publications that have emerged on energy justice and activism. It finds that a significant research gap exists for the energy justice field more widely, with a broad swathe of conceptual space left open for understanding how energy justice can be realised through activism in low-carbon transitions, particularly at the local level.

Much like the field of energy justice itself, research that initially combined both activism and justice-oriented analyses in relation to energy deployment emerged out of the environmental justice field (Bullard & Johnson 2000; Cole & Foster 2001). In addition, a lot of this research focuses more heavily on case studies and empirics drawn from the United States (Bullard 1993; Cole & Foster 2001; Walker 2012), in a late twentieth century era in which low-carbon transitions received less policy attention and where low-carbon technologies were less widespread. However, environmental justice research has certainly engaged closely with the potential social impacts of energy transitions (e.g. Ottinger 2013), whilst scholars have also looked at the role of activism in influencing the trajectory of local low-carbon transitions. For example, when looking at environmental justice in relation to the extraction of shale gas in the U.K., Cotton, Rattle, and Van Alstine et al (2014) analyse different discourses that underpin the legitimisation of shale gas exploitation, noting the important role that both activist organisations and local oppositional activism has played in challenging the presence of shale gas in the U.K’s energy mix and as a critical part of the low-carbon energy transition. In addition, Avila (2018) draws upon an environmental justice lens to show that local opposition to large-scale wind farms can trigger wider debates around how low-carbon transitions can be conducted differently, rather than activists simply blocking the deployment of low-carbon technologies. This environmental justice research highlights the distributional justice impacts and geographical issues concerning the siting of both shale gas extraction sites and large-scale wind farms close to local communities and the impacts of local oppositional activity. While environmental justice research arguably has a rich and varied history of engaging with diverse forms of activism (e.g. Kurtz 2005), only recently have energy justice scholars begun to systematically interrogate and survey local opposition to or support for energy infrastructure transitions (Sovacool et al. 2022).

When thinking more specifically about the engagement of energy justice scholars in the role and form of activism, few studies have attempted to draw strong links between the two. For example, Fuller and McCauley (2016) draw upon case studies from activist organisations in Philadelphia, Paris and Berlin, to frame energy justice in relation to perspectives from activism and advocacy. In their conclusion, they note an explicit “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” (Fuller and McCauley 2016, 7). Interestingly, they also point to the need for researchers to pay attention to all scales of activism, with greater analysis of the temporal and spatial dimensions of energy activism in practice (Fuller and McCauley 2016).

Building on the links between energy justice and activism in “Empowering Energy Justice”, Finley-Brook and Holloman (2016) call for greater alignment between advocacy, activism and academics when thinking about how to make energy transitions more “just”. Of particular relevance here is their call for more empirical evidence of activism:

“We need empirical and long-term research to record noteworthy energy justice successes as well as to document and publicize on-going problems and conflicts. Where toxic pollution and maldistribution persists […] research created
with meaningful local engagement can help inform litigation, policy, advocacy, and activism to encourage energy justice transformations. (Finley-Brook and Holloman 2016, 16)

Despite this clear need for further empirics and long-term engagements with energy justice activism, some energy justice scholars argue that by distancing itself from more activist oriented frameworks, such as environmental justice, the “non-activist” roots of energy justice make it more accessible to policymakers, with Jenkins (2018) asserting that:

This lack of an anti-establishment past opens the door for significant contributions to mainstream policy-making [...] This “top-down” methodology offers the potential for a refined “practice” framework rather than disparate grassroots calls. (120)

However, other energy justice and low-carbon transition scholars strongly disagree with this sentiment, with particular reference to activism’s impact on low-carbon transitions. For example, in a classic text on energy transitions and governance (Verbong and loorbach 2012), a key chapter on the role of civil society in energy transitions notes that “activism is likely to have a continued interest over the form and consequences of low carbon technological development into the future” (Smith 2012, 181), building on a substantial empirical case study that demonstrates the potential for grassroots activism to shape local low-carbon activity.

In contrast to oppositional forms of local activism, as outlined earlier, Williams and Sovacool (2020) outline a proactive form of energy activism, in which local residents in Sussex, England, work together to establish an alternative energy future in response to proposed fossil fuel activity in the local area:

The residents of the Sussex village of Balcombe – the site of high-profile protests […] started an energy co-operative with the aim to produce 100% of the village’s electricity requirements […] This […] emerged from a typical coalition of local residents and environmental activists opposing an oil exploration site through conventional activities such as protest, legal challenge and opposition through the planning system. (Williams and Sovacool 2020)

Additionally, recent empirical contributions focussed explicitly on energy justice and activism have begun to demonstrate the value of new empirical contributions centred on the role of energy activists (Bedi 2018; Sayan 2019; Martinez 2020). While Sayan (2019) notes that, in the context of activist-led movements, “more empirical research is required to cement the relationship between place-based approaches and energy justice” (Sayan 2019, 15), Bedi (2018) is more explicit about the nature and potential of local activism:

Activists push for a new form of energy justice, moving beyond the dominant government officials and international corporations. Their framing proposes an ideal for a self-governing energy structure, which would be affordable and appropriate for local conditions. (Bedi 2018, 18)

Activism is conceptualised here as facilitating civil society engagement in shaping local energy justice, rather than state or market-led attempts at framing energy justice which may be construed as “top-down”. Building on Smith’s (2012) work on civil society engagement in energy transitions, activism can also be understood here as “challenging the orthodox views of energy policy and business elites” through drawing upon “awareness raising, social pressure and alternative visions” to bring about civil society and bottom-up change in energy systems (Smith 2012). Thus, building on this understanding of activism, this papers contribution is rooted in the expansion of local and bottom-up perspectives on energy justice, using key tenets of energy justice to demonstrate how activism can also shape local low-carbon transition pathways. Therefore, the paper highlights the extent to which energy activism has not been sufficiently explored within local, civil society perspectives on energy justice and low-carbon transitions, through a detailed exploration of local activity in Bristol, UK.

Finally, the paper also demonstrates the way in which notions of “spatial justice” are so important to local energy justice, through detailing the areas where controversial proposals for diesel generators were objected to by RADE and correlating these areas to high levels of deprivation.
Given this emphasis on spatial justice, it is important to note that the concept of spatial justice was first fully articulated in the work of Soja (2009, 2013), where he argued that:

*Spatial justice [...] is not a substitute or alternative to social, economic, or other forms of justice but rather a way of looking at justice from a critical spatial perspective. There is always a relevant spatial dimension to justice while at the same time all geographies have expressions of justice and injustice built into them.* (Soja 2009, 2)

The issue of spatial justice in relation to energy justice therefore connects powerfully to the geographical siting of energy infrastructures (Bridge et al. 2013), with a more specific focus on how the siting of novel (low-carbon) energy technologies and infrastructures impacts upon deprived and marginalised communities. As such, this paper sees the further integration of “spatial justice” as a core tenet of energy justice as necessary to enhancing its explanatory power, drawing in particular on Bouzarovski and Simcock’s (2017) critical work on “spatialising energy justice” and building on previous energy justice scholarship that highlights the importance of space and spatial hierarchies in shaping low-carbon transitions (Moore 2018; Lacey-Barnacle 2020; O’Sullivan, Golubchikov, and Mehmood 2020). The next section will turn to the methods drawn upon to support both the theoretical and empirical contributions of this paper.

3. Methods

3.1 Participatory action research: in-depth interviews & focus groups

Engaging with literature on local and community energy has shown the importance of using qualitative research methods for an analysis of Bristol’s local energy sector and activism within the local energy sector (Seyfang, Park, and Smith 2013; Zoellner, Schweizer-Ries, and Wemheuer 2008). Combining previously used methodologies in local energy research with the need for more local perspectives on energy justice led to the adoption of two of the techniques within the qualitative methodological field of Participatory Action Research (PAR); in-depth interviews and focus groups. At the core of PAR, lies a commitment to promoting researcher collaboration, involvement and participation with actors who are engaged in community activity on the ground (McIntyre 2007). PAR is “underpinned by a strong social justice ethos” (Franklin and Blyton 2013, 57) with advocates and researchers seeking to advance social justice through involvement in organisations and institutions at the forefront of community engagement. As energy justice – through the three core tenets – is used as an approach to assess and improve the functioning of energy systems and transitions, so PAR is used as an immersive research method in which researchers strive to improve a social situation or seek social change through research processes. Both share similar goals in that they seek to advance the pursuit of social justice, however, one is action oriented and the other largely theoretically driven. By bringing together both energy justice theory and PAR’s methodological practice, a greater understanding of the role of activism to pursue energy justice issues in the local energy sector is sought.

Both in-depth interviews and a focus group were used to gather qualitative data on RADE’s activities, to ensure a depth of insight was generated that is unrivalled by quantitative research techniques. After conducting a focus group in 2016, primary data revealed that RADE are a community-led energy activist group seeking to shape low-carbon transition pathways in Bristol city. As a relatively new actor within the local energy sector, most notably, an “energy activist” organisation, RADE are largely informally operated. Having no formal legal structure and comprised of mostly volunteers, they have achieved notable successes in fighting for their vision of energy justice in Bristol. Seeing that this was a vital part of the local energy economy and essential for understanding community-led movements for greater energy justice in Bristol, a follow up in-depth interview was arranged in early 2017 with two of the founding members of RADE.

This paper therefore draws on two primary sources of data; the focus group (n = 8) with local energy actors in Bristol including RADE, conducted in 2016, and an in-depth interview (n = 2) with
RADE conducted in 2017. In the focus group and in-depth interviews, room was given for research participant involvement in contributing understandings of local energy justice. While the focus group was used to facilitate group discussion around local energy justice issues in Bristol, the in-depth interviews facilitated a much deeper conversation with RADE to explore the complexity of their organisational experience and their relationships with different organisations. In the in-depth interviews, the RADE participants expressed a shared interest in energy justice and saw the applicability of the theory in practice, offering their own interpretation of energy justice and describing how tenets such as recognition and procedural justice apply to RADE. The data collected was (inductively) analysed and coded according to its relevance to the three tenets, with specific consideration given to the ways in which the participant’s rich insights and experiences connected to the tenets. This collaborative approach to research contributes to expanding on local and bottom-up perspectives on energy justice, whilst also connecting to Jenkins et al’s (2020) call for more impactful energy justice research, where they call on scholars “to engage more directly with a range of stakeholders – including activists and communities – in order to enable […] co-production of knowledge and impact” (Jenkins et al. 2020, 5).

The paper also draws on multiple secondary sources to expand its limited data sources, including document analysis of key outputs from RADE and local media organisations, and analysis of documents and outputs associated with other core actors and organisations involved in relevant activities. This document analysis was limited to the activities that occurred between 2015 and 2017 around diesel, biodiesel and battery storage technologies, to hone in the focus of the case study. Of the range of actors involved in the case study, the most notable are; Aura Power, UK Power Reserve (UKPR), Plutus PowerGen (Plutus) and Bristol City Council (BCC).

### 3.2 Data sources & core actors

Both tables below detail the primary and secondary sources of data within this case study, with Table 1 providing anonymised identifiers for the focus group and in-depth interviews with RADE, whilst Table 2 identifies the organisations and associated links and sources for the document analysis of critical secondary data.

Building on the introduction and the data sources presented above, it’s important to identify the core actors in this paper and their primary motivations, namely; RADE, Aura Power, UKPR and Plutus.

The city council, as a key intermediary in Bristol’s local energy sector, acts as a facilitator for planning permission and project proposals by Plutus, UKPR and Aura Power. As is evidenced below, tensions arise almost immediately between the ambitions of RADE and Aura Power and the interests of Plutus and UKPR, given the stark contrasts between the descriptions of their organisational interest and purpose. Looking first at RADE, they describe themselves as:

* A central rallying point for residents, action groups and organisations concerned about the placement of Short Term Operating Reserve ‘STOR’ sites in residential areas and communities without proper regard to the health of Bristol residents and the environment. *(RADE website – Table 2)*

This description points to their origins as an organisation as one rooted in opposition to the proposed deployment of diesel and gas generators – as proposed by Plutus.

| Position / Occupation | Organisation | Identifier |
|-----------------------|--------------|------------|
| Founding member       | Residents Against Dirty Energy (RADE) | R1/FG3 |
| Founding member       | Residents Against Dirty Energy (RADE) | R2/FG4 |
| Participants 1-7*     | Bristol Energy Network (BEN) – Focus Group Easton Energy Group *RADE (FG3 & FG4), Community Energy Investor, Green party councillorBEN employee | FG1-7* |

(*Individual participants anonymised, organisations identified)
| Organisation | Years active and description | Source |
|--------------|----------------------------|--------|
| Residents Against Dirty Energy (RADE) | 2015 – Present | “Clean Energy, Clean Air. R.A.D.E. is a central rallying point for residents, action groups and organisations concerned about Dirty Energy, and air pollution” [RADE](https://radebristol.com/) [Twitter](https://twitter.com/RADEBristol) [Baggator](https://baggator.org/) [Bristol Somali Forum](https://bristolsomaliforum.org/) [Easton Energy Group](http://www.eastonenergygroup.org/) [RADE Bristol](https://radebristol.com/links/) |
| Bristol Energy Network (BEN) | 2010 – Present | “Bristol Energy Network is an umbrella organisation for individuals and community groups with an interest in energy in Bristol and the surrounding area […] Our vision is a city where clean, green, affordable energy is delivered to the community by the community” [Bristol Energy Network](https://bristolenergynetwork.org/wp-content/uploads/2021/03/BEN-Directors-report-2020.docx.pdf) |
| Bristol City Council (BCC) | 1973 – Present | Local government authority, with executive controlled by directly elected mayor. The local authority has 35 wards with 70 elected councillors. [Accepted battery storage application](http://planningonline.bristol.gov.uk/online-applications/applicationDetails.do?activeTab=details&keyVal=OM7629DJL00) [Rejected diesel generator application](http://planningonline.bristol.gov.uk/online-applications/applicationDetails.do?activeTab=summary&keyVal=NO0ZY1DMJK00) |
| Aura Power | 2013 – Present | “Aura Power is a global developer of renewable energy projects. Founded in 2013, we are headquartered in the UK with regional presence in The Republic of Ireland, Europe, and North America” [Aura Power](https://www.aurapower.com/) |
| Lockleaze Neighbourhood Trust | 1997 – Present | “A resident-led organisation that exists to support residents to achieve positive change for themselves and their community” [Lockleaze Hub](https://www.lockleazehub.org.uk/projects/) |
| Plutus PowerGen | 2012 – Present | “Plutus PowerGen is an AIM listed Cash Shell focused on making an acquisition/acquisitions” [Plutus PowerGen](http://plutuspowergenplc.com/home/) |
| Bristol Cable | 2014 – Present | “The Bristol Cable is an independent media company in Bristol, UK, founded in 2014. It provides local news through independent investigative journalism, in a quarterly print publication and website, both free. The Bristol Cable is a cooperative, owned by its members, who pay a monthly fee” [The Bristol Cable](https://thebristolcable.org/tag/rade/) [Bristol Cable](https://thebristolcable.org/2015/11/inner-city-power-plants/) [Bristol Cable](https://thebristolcable.org/2017/03/plutus-energy-return-diesel-plant-plans/) [Bristol Cable](https://thebristolcable.org/2017/07/plutus-energy-lose-appeal-build-lawrence-hill-power-station/) [Bristol Cable](https://www.bristolpost.co.uk/news/bristol-news/green-power-storage-site-built-51468) |
| Bristol Post | 1932 – Present | “A city/regional five-day-a-week newspaper covering news in the city of Bristol, including stories from the whole of Greater Bristol, North Somerset and South Gloucestershire” [Bristol Post](https://www.bristol247.com/news-and-features/features/say-no-to-polluting-power-farms-in-our-city/) (Emanuel 2015a) [Bristol Post](https://www.bristol247.com/news-and-features/news/fossil-fuel-power-plants-set-to-be-refused/) (Emanuel 2015b) |
| Bristol 24/7 | 2009 – Present | Bristol24/7 is an independent media outlet and community interest company. [Bristol 24/7](https://www.bristol247.com/news-and-features/features/say-no-to-polluting-power-farms-in-our-city/) (Emanuel 2015a) [Bristol 24/7](https://www.bristol247.com/news-and-features/news/fossil-fuel-power-plants-set-to-be-refused/) (Emanuel 2015b) |
and UKPR. Importantly, alongside having core members, RADE are also comprised of different Bristol-based groups.

RADE’s constituent groups consist of; the Bristol Somali Forum; Easton Energy Group; BS2 Greenspace and Baggator. As detailed within the links to secondary sources referenced above, Bristol Somali Forum is an “umbrella organisation that promotes the unified voice and interest of Somali-led organisations and their community in Bristol”. Easton Energy Group are “A community group to help individuals reduce energy use in the home organised by a group of Easton residents who are working in the energy and sustainability field”. BS2 Greenspace are a “community action group fighting against the planning application for a Power Station on the land at the end of Saxon Road/Warminster Road in St. Werburghs, Bristol” and Baggator are a “Young People’s Project working in some of the most socially disadvantaged areas of Bristol to provide programmes of informal education, skills training and leisure activities for young people up to 19 years of age”. This diversity in group membership shows that RADE’s membership goes beyond notions of “privileged movement groups” (Mayer 2013) to encompass a broad range of members from diverse backgrounds, with a coalition of different actor groups united around a common purpose.

Interestingly, Plutus describe themselves in relation to framing renewable power as unreliable, and providing a needed – albeit ambiguous – source of power generation to feed into the UK’s energy grid:

> Since the introduction of intermittent, renewable power to the UK’s power generation mix, the National Grid is facing increasing instability and risk of brownouts and blackouts. Therefore, a reliable source of power is required during periods of peak electricity demand and Plutus PowerGen’s projects can be turned on rapidly and remotely to address this requirement. (Plutus PowerGen website – Table 2)

UKPR, in a similar vein, also situate their organisational function as one couched within the language of “energy security”, referring to themselves as a:

> Leading provider of reliable, flexible and low carbon power services to the UK electricity market. With a portfolio of over 1GW of small-scale, local thermal power generation and battery storage assets, we help keep the country’s electricity system balanced and resilient. (UKPR website – Table 2)

Finally, Aura Power, a local renewable energy development company based in Bristol, simply summarise their core ambitions in relation to contributing to the further deployment of renewables:

> Our primary focus is on working with other developers to acquire sites or invest in joint ventures where we can deploy our expertise to deliver high-quality renewable energy projects. (Aura Power website – Table 2)

These four descriptions of the core actors at the heart of this paper shed light on immediately apparent tensions within the context of local low-carbon transitions, particularly between RADE and Plutus.
While RADE’s creation is rooted in a reaction to the ambitions of Plutus and UKPR to deploy STOR systems across Bristol, the core aims of Aura power are to deploy more renewables – which Plutus frame as responsible for the “increasing instability and risk of brownouts and blackouts” in the UK energy system. This sharp contrast in technological options and preferences cannot be resolved through technical questions alone, but rather, the deployment of these divergent technologies in different spaces and places points to profoundly social questions that, as will be seen, strongly relates to the core tenets of energy justice.

3.3 Limitations of the study

It is important to acknowledge that this article, while contributing a novel case study to energy justice scholarship on low-carbon transitions and local activism, drew upon a small amount of primary data to support its findings, alongside a select few secondary sources. As such, the insights generated by the article are specific to Bristol and are also specific to the role of local activism in shaping low-carbon transition pathways in the UK. In addition, the primary data referenced is limited to the data collected within the PhD thesis this case study is drawn from (Lacey-Barnacle 2019). As such, the author recognises the specificity and limitations of the theoretical contributions offered in this paper, whilst also understanding that the empirical contributions are restricted to a small amount of primary data collected.

4. Findings: using energy justice tenets to understand local activism

4.1 Overview of the case study: a brief chronology

In 2015, Plutus proposed the deployment of diesel generators in Bristol as STOR backup power to feed into the city’s energy grid in two deprived locations across the city, Lockleaze and Lawrence Hill, while UKPR proposed gas-turbine generators in St Werburgh’s, a relatively affluent suburb of Bristol. Plutus’s applications in Lockleaze consisted of siting 64 diesel generators in a residential area, while in Lawrence Hill they applied for 48 diesel generators to be sited close to homes and a nursery school (Emanuel 2015a).

UKPR proposed the installation of 14 gas generators with 41ft chimneys in St Werburgh’s, which would also be sited close to residential areas (Air Quality News 2015). Both organisations sought planning permission from the city council, however, according to local media co-operative The Bristol Cable, “neither Plutus nor UKPR sought public consultation for their Bristol plans” (Stephenson 2015).

According to another local media source Bristol 24/7, UKPR received 684 objections to their proposed gas-turbine generators from St Werburgh’s residents, while much smaller numbers of objections were registered from residents in Lockleaze (52) and Lawrence Hill (130) respectively (Emanuel 2015b). This disregard for both spatial and procedural concerns only served to negatively impact both organisations reputations, and lowered their chances of commercial success in the growing STOR market. It also alerted RADE to the relative capacity of certain communities to reject planning proposals, seeing stark differences in local communities engaging in the planning process. In addition, after the complaints from residents in St Werburgh’s emerged amidst potential pollutants being emitted from gas turbine emissions, UKPR’s gas turbine generators were rejected by the city council’s planning committee (Air Quality News 2015).

Of specific interest to energy justice scholars are the locations which Plutus in particular proposed; both are situated in areas of high deprivation as attested to by the “Deprivation in Bristol report” (BBC 2015). The proposed sites in Lawrence Hill and Lockleaze have been located on a map of deprivation below, demonstrating the extent to which the proposals are disproportionately sited in some of the most deprived parts of Bristol City Council’s territory (Figure 1):

As the red arrows demonstrate, the proposed sites are suggested for areas in Bristol that are in the most deprived 10% in England (Lawrence Hill) and the most deprived 10–20% in England
Interestingly, none of Plutus’s proposals were sited in affluent areas of Bristol, pointing to a uniquely spatial aspect to Plutus’s activities that provides a connection to Bouzaroski & Simcock’s (2017) idea of energy injustices revealing “spaces of misrecognition” in energy infrastructure, whilst also highlighting how the distinctly spatial nature of distributed energy infrastructure siting overlaps with the social realities of area-based inequalities and intra-city divisions (Lacey-Barnacle 2020).

As alluded to previously, RADE opposed both the Lockleaze and Lawrence Hill proposals on multiple grounds. They suggested that these diesel generators would breach air quality standards and would contravene the European Union’s Air Quality Directive of 2008. Through the further addition of polluting particulates via the diesel generators inevitable emissions, RADE argued the cities already poor air quality would be worsened (Air Quality News 2015). In an attempt to “greenwash” the 2015 Lawrence Hill proposal after it had been rejected by the city council’s planning committee on environmental grounds (See Table 2 source “Rejected diesel generator application”), Plutus “withdrew the application – only to return in February 2016 with a revised plan that changed the proposed fuel from diesel to biodiesel”.

Both the city council and RADE’s reaction to Plutus’s re-application was captured in a heated exchange in the 2016 focus group between a founder of RADE and a Green Party councillor:

FG1: Yesterday’s planning development [...] committee [...] is minded to pass it because they have just said you know - biodiesel imported from Finland - clean as a whistle. Now we can all discuss the ins and outs of that, but that’s a change in material application in the way they’ve completely moved across.

FG2: Sorry it’s a reduction in emissions. They are still adding pollution to an already polluted area where the limits have already been exceeded.

FG1: Well they’re going to argue – and this is part of the issue isn’t it– they’re going to argue that it will be minimal. I’ve not seen the figures I have to say and I’m not in that planning committee.

FG2: It will be interesting to see who has produced those figures!

Seeing that biodiesel would result in some form of increased emissions within the locality, RADE therefore sought to identify a low-carbon option that would “do no harm” (R2) to the local community or the local environment. As will be explored further, in 2017, RADE supported Aura Power in consulting the Lockleaze community on the viability of battery storage technology instead of a proposed diesel generator, and continued to fight the biodiesel generator application in Lawrence Hill. As a result, Lockleaze hosts one of the UK’s largest clean battery storage facilities, with 15MW of storage capacity able to store excess energy from the grid.

In addition, the city council rejected Plutus’s application for a biodiesel generator in Lawrence Hill on environmental grounds (see planning document in Table 2), and after an 18-month campaign fighting Plutus, the local community and associated organisations rejoiced in having fought off Plutus’s continued attempts to deploy a biodiesel generator and it’s following appeals to the city council planning committee.

The following section will address each of the three tenets of energy justice in relation to RADE’s activities to fight both for a more benign low-carbon solution in Lockleaze and against the greenwashing of Plutus’s activities in Lawrence Hill, exploring further the lack of consultation with local communities and residents. The following section demonstrates a strong connection between the tenets of energy justice and local energy activism on the ground.

Through analysis of the discussion that took place during the focus group, the three tenets of energy justice were introduced into the conversation as a way of establishing a framework for understanding both justice and injustice in Bristol’s local energy sector. Towards the end of the discussion concerning Plutus’s biodiesel and diesel generator proposals, the focus group was united in their objection to the companies’ ambitions, and a sense of procedural injustice was present amongst all participants:

Interviewer: So under the framework I’ve just put forward, this would be considered an energy injustice […] local people aren’t benefitting from this in any way economically?
FG1: No

FG3: No

Interviewer: Procedurally, the community feel like they haven’t been consulted properly on the siting of this as well?

FG1-7: *Resounding* Yes!

In response to this perceived procedural injustice, the focus group therefore established a clear sense that RADE had the support of some low-carbon civic energy actors in Bristol, such as Easton Energy Group, a local Green Party councillor present and the members of Bristol Energy Network, in their ongoing efforts to oppose Plutus. With early signs that RADE had the support of an emerging local energy network within Bristol in 2016, the in-depth interview in 2017 facilitated deeper questioning of RADE’s follow-up activities. In the in-depth interview, the three tenets were also introduced to RADE as thematic guides and to add structure to the discussion.

4.2 Procedural justice: planning for engagement

Exploring how RADE engaged in processes of procedural justice, they made clear that one of their primary motivations was to represent local residents and communities in Bristol, particularly in cases where communities lacked the necessary capacity and social capital to object to potentially harmful projects in their local area. This is expressed by one of the founders of RADE through adherence to an idea of “justice” in their representation of local communities:

“The […] common justice angle amongst everybody that’s involved in RADE is an explicit or implicit belief that, we’re not here to do what we want, we’re here to try and get what the people want. So if 10 people out of the 15 involved want this, that’s the way we’re going to go. (R2)

This point is reiterated when addressing the specific case of the battery storage project in Lockleaze. When critically questioned on whether they were simply representing the commercial interests of Aura Power, one of the founders of RADE stated:

“We acted as independent and impartial mediators. We were clearly on the side of the residents and that was our priority area […] we were working with Aura Power to make sure that they conceded to the resident’s requirements. (R1)

In addition, RADE felt that they were not just representing different localities interests, but acting to enhance the capacity of local communities to engage in the planning process to object to Plutus’s applications. They did this through the production of leaflets that gave advice to residents on how to engage in the planning process, alongside information on the potentially harmful effects of diesel generators in the locality.

RADE produced a leaflet and it was basically, what web address to go to, which boxes to tick, where to put your comment and by the way, these are the things you want to comment about. A bullet point list for why this is good and an alternative would be bad. (R1)

This was accompanied by further ambitions to enhance the capacity of affected communities in Bristol to object to future planning applications local communities may see as unjust:

Hopefully it will percolate through so the next time some sort of planning application goes out maybe 10% of the people involved this time around will remember. Then you’ll start to get into the position where slowly more and more people in Lockleaze and in the Feeder road area (Lawrence Hill) understand how to object and that means they can start to use a system which is actually freely available to everybody. (R2)

In attempting to facilitate a bottom-up and community oriented form of procedural justice, RADE therefore established a twofold role as an intermediary and energy activist organisation; one positioned as a mediator between Aura power and the local community in Lockleaze during the
process of applying for planning permission for the battery storage project, the other as a barrier between Plutus and BCC, whereby they sought to both object to and prevent Plutus’s attainment of planning permission from BCC for areas such as Lawrence Hill. The process of enacting procedural justice in the case of Lockleaze, therefore, revolved around seeking to “open up” decision-making procedures to the local community – something that RADE credit Aura Power for attempting to realise when they sought to push forward with the battery storage project:

To be fair to Aura power, as soon as we explained why that was a good idea, they were all over it, they did a hell of a lot of legwork, they leafleted all the local houses, they talked to all of the key community groups, they booked the library and they basically sat there for hours with very few people there. (R1)

This is particularly revealing when contrasted with Plutus, with RADE stating “there has been no communication from Plutus” (R2) after attempts to reach out to them and discuss the details of their applications. RADE’s mediating role between the Lockleaze community and Aura Power led to a notable success in community engagement, leading to local support in the planning process:

We ended up with the bizarre situation where 31 people commented on that planning application through the formal process – every single one in support – not even a half and half – it was all straight total support (R2)

Interviewer: That’s fantastic.

It’s unheard of! (R1)

It’s unprecedented! (R2)

This points to an interesting role for energy activism pressuring companies to pursue procedural justice; opening up processes of consultation to local involvement may lead to enhanced local support for certain low-carbon technological options, particularly if the actors involved are present themselves and have a stake in the locality. As has been shown, this support was best expressed through engagement in the planning system. Indeed, as demonstrated by Forman (2017, 2020) and Lacey-Barnacle (2020) in their contributions to bottom-up energy justice perspectives, wider engagement in the planning system and with local planning authorities is a fundamental aspect of procedural justice at the local level. However, where intermediaries or energy activists may be lacking, many low-income communities may also lack exposure to opportunities to engage in the planning system.

This points to a larger role for intermediaries more generally, seeing as Aura Power are located in Bristol and Plutus located in London, Aura Power had a logistical advantage when exploiting their proximity to Lockleaze and wider connections to Bristol’s local energy network and other vested interests, such as local residents. The importance of this proximity is further highlighted by a statement from the Director of Aura Power:

We are delighted that the Lockleaze project has been delivered to market in such a short period of time. This project is of particular importance to us, being located close to our head office in Bristol, and it received strong support from the local community. We look forward to delivering many more storage projects through our UK pipeline. (Hazel Capital web – Table 2)

Thus, as RADE pointed out, engaging community groups, leafleting local resident’s homes and holding a consultation at a local library in Bristol displays a transparency and openness that facilitated greater procedural justice in Aura power’s commercial activities. Indeed, RADE noted that rarely are planning proposals met with overwhelming statements of support – most feedback encountered is from statements of disagreement or rejection. Therefore, such an approach is something that other energy companies can learn from, particularly if they can also prove that their technologies respect legitimate social and environmental concerns that are frequently encountered in local planning procedures (Bouzarovski, Pasqualetti, and Broto 2017).
4.3 Recognition justice: combating environmental inequalities

A core aspect of recognition justice, as understood within the energy justice framework, is the acknowledgement of marginalised, vulnerable and deprived communities in relation to energy systems, in order to ensure against discrimination or injustice, particularly when such communities lack the capacity, knowledge or ability to act against processes of recognition injustice. RADE, therefore, prove that through recognition of injustice against residents in Lockleaze, processes of procedural justice may become realisable. In the case of Lawrence Hill, where Plutus attempted to “greenwash” their previous diesel application and re-apply for biodiesel generators, RADE felt it was necessary to sustain further objections, preventing distributional injustice.

Therefore, in the case of recognition (in)justice in relation to RADE, this tenet of energy justice takes on two interrelated dimensions; the first is a recognition of spatial injustice within Bristol based on Plutus’s targeting of relatively deprived areas, while the second relates to the organisations primary purpose, as described by the organisation themselves.

RADE is more about the by-product of energy rather than energy itself. We’re trying to protect the environment, the air, the social circumstances in which people depend on energy. We’re not so much about distributing energy […] If you actually look at the core people within RADE, our outside daytime jobs have us dealing with and looking after and working with those small sections of the community that have been left behind. (R2)

This points to RADE occupying a twofold role similar to their dual role as facilitators of procedural justice; in addition to working with and for marginalised communities, they also acknowledge the unequal and uneven geographies of Bristol as reflective of the inequalities within the city, whereby sharp contrasts exist between highly affluent areas and areas high in multiple levels of deprivation (BCC 2015). Building further on this divide, Bristol also has relatively high levels of racial inequality (Elahi, Finney, and Lymperopoulou 2017). Participants in the Focus Group and the founders of RADE were sensitive to this and conscious of how this may be reflected within Bristol’s local energy system.

Remarking upon instances of “environmental racism” when thinking about the consequences of Plutus’s actions, which connects to discussions of racism in environmental justice research (Kurtz 2005), one focus group participant from Easton Energy Group saw inherent links between Plutus’s activities and the potential for racial discrimination:

I think that energy and social justice are intrinsically linked […] RADE were talking about the Plutus application over on Feeder road. It does seem like a bit of environmental racism; you look at an area that is one of the most deprived in Britain and this is where they want to put a horrible diesel power plant. (FG3)

In the in-depth interview, RADE went further and contrasted the capacity of Lawrence Hill and Lockleaze residents to object to Plutus’s application with the objections of St Werburgh’s residents to UKPR’s proposal:

When they realised that St Werburgh’s has the highest concentration of doctorates in any area in Bristol, they realised that they were on a no-win […] Lockleaze and St Phillips (Lawrence Hill), you’re getting into the realms of environmental racism. Because they’re minority groups with low levels of education in most cases, next to zero surplus funds and therefore next to zero surplus time to actually get the energy to object, and that’s where we come in. (R2)

RADE therefore demonstrate actions and indeed motives that correspond strongly to preventing recognition injustice, sharing the Easton Energy Group participant’s sentiment that a degree of environmental racism was at play, whereby a deprived community that is known for having a higher concentration of Somali residents than other parts of Bristol, faces the prospect of worsening air quality and pollutants.

This also demonstrates the uniquely spatial aspects to injustice within energy systems, as RADE demonstrate an interesting role for energy activists to potentially combat new forms of spatial injustice. Furthermore, the views espoused by RADE in the in-depth interviews connect directly to issues
of justice in energy geography literatures (Calvert 2016; Bouzarovski, Pasqualetti, and Broto 2017). In particular, they connect strongly to Bouzarovski, Pasqualetti, and Broto (2017) on the numerous social complexities of “Siting dynamics in energy transitions”, in which the “tendency of environmentally risky activities to concentrate over time in less affluent areas, occupied by more socially marginalised groups that often have less capacity to assess or challenge projects successfully” (Bouzarovski, Pasqualetti, and Broto 2017, 171) is a key justice issue that can create distributional injustice and entrench spatial inequalities further. This connection to spatial justice that RADE expose through their various activities also connects to Bouzarovski and Simcock (2017), where they urge energy justice researchers to explore the deeper forces producing spatial injustice and inequality:

> From a spatial justice perspective [...] ‘responsibility’ for inequality – how it is produced, and by whom – matters when evaluating (in)justice [...] there is thus a need to consider the underlying structural mechanisms that produce spatial inequality. (Bouzarovski and Simcock 2017, 645)

Consideration of these “underlying structural mechanisms” prompts immediate links to the corporate and profiteering nature of both Plutus and UKPR’s activities. Looking closely at the primary data, Plutus are defined purely by their commercial interests in STOR, rather than a conventional energy company, in the in-depth interviews:

> It’s wrong to consider Plutus an energy company. They are a financial institution whose only goal is to reap as many of the subsidies that have been built into the STOR system as possible. They are wholly owned by an investment company. It’s just a sub-branch of an investment company. If you look at their website all they are doing is selling shares in STOR. (R1)

In addition, the underlying mechanisms creating the perceived injustices are found in the neglect of the core tenets of energy justice. This demonstrates the extent to which both UKPR and Plutus were incapable of successfully “navigating the multiple social, economic and environmental relations bound up with candidate sites and the landscapes in which they are enmeshed” (Bouzarovski, Pasqualetti, and Broto 2017, 170–171) in Bristol. Demonstrating severe procedural and recognition justice inadequacies, both companies seemingly had no interest in the local economy, local environment or the concerns of local residents. Even with Plutus’s attempt to “greenwash” their diesel generator proposal, RADE were able to facilitate a “zero emissions” technological option with the help of Aura Power, in response to this proposal.

When thinking about the distributional justice implications of RADE’s associated activities, particularly concerning the economic implications of the new battery storage project, it seems that RADE’s concern for the environment and the involvement of local residents in decision-making took priority over considerations of economic ownership and economic gain. This is explored further in the final subsection concerning distributional justice.

4.4. Distributional justice: environmental impacts over ownership?

As evidenced above, the spatial aspects of distributional justice are addressed through RADE’s appeal to the tenet of recognition justice, where they tied the proposed siting of Plutus’s applications to “environmental racism” in some of the most deprived parts of Bristol. Distributional justice was primarily framed in economic terms, looking more explicitly at who owns local energy infrastructures, in what organisational form, and who benefits financially from the economic impacts of energy transitions.

Thinking further about Fuller and McCauley’s (2016) call for paying greater attention to the temporal dimensions of energy activism, over time, aspects of distributional justice, in particular the economic gains and ownership models surrounding the battery storage project in Lockleaze, shifted between different private companies. However, since RADE did not specifically engage in the purchasing of any energy technologies, this subsection relates more explicitly to Aura Power’s battery storage project that was supported by RADE, than RADE itself.
Since the deployment of the 15MW battery storage unit by Aura Power in 2017, the site was purchased by a company called Hazel Capital, which was then subsequently purchased by investment management firm Gresham House (Hazel Capital web). This paper has shown, via both the collaborative and individual efforts of RADE, that some degree of procedural justice was realised in the deployment of new battery storage technology in Lockleaze, and that through the rejection of the planning proposals by Plutus in Lawrence Hill, some degree of recognition justice was achieved. However, the question of distributional justice appears to be more conflicted.

For example, when addressing the economic interests behind who benefits from the battery storage technology, the focus group was critically questioned on the source of investment and notions of ownership structures around the new storage technology:

Interviewer: Would you be happy with a hedge fund or some financiers within the City of London to be funding a different technology?

FG1: Yes!

FG2: Yes!

FG3: Yep.

FG4: Of course.

Interviewer: So the ownership structure, and the social aspects as well, aren’t particularly considered within that discussion.

FG4: We’re faced with 48 diesel generators banging away at the end of our garden in effect, you’re asking me do I care who funds a clean alternative? The answer has to be no!

This response from the focus group and from RADE (FG4), suggests that, the impact on the environment and on the local population took precedence over the economic ownership aspects of the storage technology.

Despite ownership over the battery storage technology shifting between various private company structures, RADE were convinced that significant protections were in place against a possible change in technological infrastructure, as the planning permission granted for the Lockleaze area was for battery storage technologies only:

The planning permission is specific to battery storage, that piece of ground, realistically has no other use […] so it just made sense to do it. It also means that we now have got, in Bristol, the exact alternative to bunging in 48 diesel generators, for when the lights fail. (R2)

In addition, RADE also felt that this technology was assisting the wider deployment of renewables and contributing a small part to the technological development of a local low-carbon energy system:

This is neutral - it will take power from any source when there is a surplus, but in reality surpluses are far more likely to be created by renewables like solar, like wind – because you can’t effectively turn those off! (R2)

Interestingly, when questioned further on aspects of ownership in the in-depth interviews, despite the overall environmental impact trumping considerations of local ownership, RADE expressed a preference for a more local company to take control of new emerging infrastructures:

To be honest, if Plutus, with the exact same infrastructure came up with an investment plan […] that was neutral to the environment and provided services to the local people – personally I would support it. I would rather it was done by a local company! But if they are the only ones doing it, and its right for the environment and right for the community, I don’t see a reason to oppose it! (R2)

In addition, a company such as UKPR state that they are active in the battery storage market (UKPR web), like many other new market actors in this growing sector. There is, therefore, a clearer empirical preference for a local company by RADE, given their range of potential options.
Thinking critically about the future economic gains granted from the stored power that is sold back to the grid, it is clear that the economic gain from the storage project did not go back to the community or locality. However, the project was purchased from Aura Power, which benefits the capacity of a new actor within Bristol’s local energy sector and the employees and owners of Aura Power. Ownership therefore isn’t explicitly rooted in the community, nor returns on the investment benefitting the wider locality; these issues pose complex and timely questions for the local energy sector and its future relationship to battery storage technologies. The question of ownership over emerging storage technologies may be easily directed towards private sector solutions, as models for community-owned or council owned energy storage are very novel within energy markets (Koirala et al. 2016; Pimm et al. 2020).

In addition, seeking to develop a viable model for this type of arrangement may have cost both RADE and Aura Power valuable time whilst competing for the Lockleaze site with other energy companies seeking to deploy STOR for commercial gain. How future storage projects may sufficiently address issues of distributional justice is certainly an area for future research and concern, given the forecast for the widespread deployment of energy storage technologies to aid the UK’s low-carbon transition (Lyons et al. 2015). While community renewables projects and supply-side ownership models have dominated the local energy sector so far, more research is needed on how the local energy sector can not only more effectively capture the value of storage technologies for the benefit of the wider community, but in particular, how they can embed and root them in the communities in which they are located and force storage schemes to consider the potential distributional-economic benefits they may be able to offer to local communities in the future.

5. Conclusion

5.1 Empirical contributions to energy justice & low-carbon transitions research

This paper demonstrates that the three tenets of energy justice provide a powerful lens through which to view the activities of RADE, UKPR, Aura Power and Plutus in Bristol. Through the application of the three core tenets, the findings show that the degree to which low-carbon organisations and activity appeals to these tenets is key to their justice impacts. Indeed, through their oppositional activity to Plutus, documented extensively by local media organisations such as the Bristol Cable and the Bristol Post, and through mediating interactions between local community members and Aura Power, RADE have been proactive – not merely reactive – in their activism against certain energy technologies whilst pushing for “zero emissions” storage options. This paper demonstrates that this is key to their success in energy activism, and the three tenets also expand upon the nature of how energy activism can be understood to serve more “just” outcomes in local low-carbon transitions.

Thinking further about how this paper contributes towards the call for greater evidence of energy activism fostering local energy justice, it is clear that RADE have themselves become a facilitator and intermediary in Bristol’s local energy sector, seeking to realise a more “just” local energy system in ways that strongly correspond to the three core tenets, with an emphasis on the tenets of procedural and recognition justice. However, thinking more critically about RADE’s activities, this was somewhat at the expense of distributional justice, demonstrating a slight trade-off between the tenets as procedural and recognition justice were prioritised. In keeping with the earlier definition of activism, many of the “alternative visions” proposed by local and civil society activist groups often call for greater control and ownership of energy technologies by local organisations and actors (Smith 2012). In this case study, ownership over storage technologies by an international commercial entity (Aura Power) was given clear preference over ownership by a community energy or municipal energy organisation. Given that neither a community nor municipal project may have been a viable option, this also demonstrates the limits of a proactive form of civil society activism that may not have the financial and organisational capital to offer realistic alternative solutions. If an energy
activism rooted in civil society organisations is to succeed in promoting proactive solutions and viable alternative visions, then the civil society sphere needs to be dramatically empowered – particularly in the face of both market and state dominance of low-carbon transitions and emerging technologies.

Importantly, this case study also contributes spatial aspects of energy activism to the energy justice literature, using the three tenets to tease out both the intermediary and activist role RADE adopt to oppose spatial injustices in the local energy sector. This explicit attention to the spatial aspects of energy activism also connects to Fuller and McCauley’s (2016) and Sayan’s (2019) calls for more empirics to emerge within this area of energy justice research, whilst directly highlighting “spaces of misrecognition” in energy contestations within Bristol (Bouzarovski and Simcock 2017). Connecting back to the references to earlier spatial justice literature (Soja 2009), as well as its appearance within energy justice literature focused on low-carbon transitions (Moore 2018; O’Sullivan, Golubchikov, and Mehmood 2020), it’s important to note the uniquely spatial aspects to the case study presented.

Thus, in addition to the way in which the three tenets relate to one another, spatial justice offers an interesting layer of conceptual complementarity and interrelatedness to the three tenets, neatly connecting to each of the three tenets in ways which reveal fundamentally spatial characteristics of procedural, distributional and recognition justice. That is to say, understanding the spaces and places in which injustice takes place, can then give rise to recognition and procedural justice, which can then assist the realisation of distributional justice. Building on Soja’s (2009) claim that spatial justice is not a “substitute” for other forms of justice, but rather, a critical spatial perspective on injustice; this is a valuable approach that energy justice scholars should see as enhancing the explanatory scope of a tenets-based approach, where space and place intimately intertwine with the three tenets in ways that enrich and mutually reinforce their analytical power. For the many energy justice scholars that apply the three tenets in their own work, it is hard to ignore the spatial aspects of procedural, distributional and recognition justice respectively. Spatial justice also holds clear and practical relevance for an intensifying low-carbon energy transition which is ramping up the geographical distribution and locational spread of novel low-carbon technologies, as a more decentralised energy system infrastructure places a renewed focus on the particularities of localised social and economic inequalities (Lacey-Barnacle 2020; O’Sullivan, Golubchikov, and Mehmood 2020).

Thinking about how RADE’s activities can connect to bottom-up approaches and theories of energy justice, RADE are certainly an unanticipated and little recognised actor within the ever growing and dynamically changing local energy sector, particularly with regard to contesting new energy technologies. Thus, understandings of the local energy sector need to expand, where possible, to include those local energy activist organisations fighting for certain technologies, and for those proposals to be appropriately scrutinised by relevant local energy network actors for their technical and economic viability, alongside the ownership and governance arrangements surrounding such technologies. As explored within the section on distributional justice, novel solutions that can facilitate local government and community ownership over storage technologies are beginning to emerge (Pimm et al. 2020), leaving the primary beneficiaries of the energy storage technology boom within the private sector, given the reigning governance logics of the UK energy market. Future distributional justice research around energy storage may, for example, further consider who economically benefits from the deployment of storage technologies and who is negatively impacted by the increasingly rapid rate of energy storage deployment to aid low-carbon transitions.

Furthermore, while RADE sought to enhance the capacity of relatively deprived local communities to engage in the planning process more thoroughly in the future, it is hard to envision this kind of sustained engagement continuing without the consistent support of an effective intermediary body. This paper therefore demonstrates strong and consistent findings with the data presented in Lacey-Barnacle and Bird (2018) on the role of intermediary organisations in facilitating energy justice. In addition, the papers findings echo some of the findings presented in Lacey-Barnacle (2020).
concerning the spatial “proximities of energy justice”. Therefore, it is clear that critical research focused on the unequal geographies of low-carbon transitions would further benefit from employing suitable energy justice frameworks.

Finally, the empirical findings above feed into building stronger and more widely applicable energy justice theory, as energy justice would also benefit from deeper and more explicit integrations of spatial justice concerns. One potential way of achieving this would be to expand the triumvirate of tenets to include “spatial justice” as a fourth tenet, placing emphasis on the distinctly spatial elements of justice considerations as articulated and expanded upon above. This theoretical evolution would also enhance the ability for energy justice theory to continue to offer novel local perspectives on energy justice, which are becoming increasingly relevant as energy systems decentralise, low-carbon technologies become cheaper and more technologies are beginning to be scaled to the local, community and domestic levels. Given these trends, the continued shape and form of local energy activism will be critical in years to come and will be worthy of energy justice scholars sustained attention – for research, policy and practice.

5.2 Directions for future research

There is plenty of scope to focus future research on the role of activism in shaping low-carbon transition pathways, with specific reference to what this means for energy justice. This could, for example, focus on the variety of new technologies being introduced as part of the transition to a low-carbon energy system, such as new forms of energy storage in both urban and rural settings, alongside the mass rollout of charging infrastructure to support the rise of electric vehicles and the rise of digital technologies and platforms in the provision of low-carbon goods and services. As new technologies emerge and reconfigure the landscapes and communities around them, we can expect new forms of activism to emerge in tandem. This will present new insights and challenges for energy justice scholars, as affected communities will critically question the extent to which new technologies emerging from low-carbon transitions can equitably benefit the people living in the very societies they are seeking to transform.

Note

1. The definition of deprived communities is sourced from the “English Indices of Deprivation 2019 technical report” which looks at deprivation across seven core areas; income, employment, education, health, crime, access to housing and services, and living environment. These “multiple indices” are a widely used framework for understanding deprivation in England and the UK (McLennan et al. 2019).

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