Low carbon communities and social justice

A shift from an emphasis on individual action to community responses has been portrayed as one that will enable a more *just* response to climate change. Policy and actions will be more inclusive, responsibilities for action may be shared, and the risks and benefits of the low carbon transition more evenly distributed, so the argument goes. But are justice principles really becoming embedded within low carbon communities and can such community-based approaches to climate change live up to expectations?

Key points

- Debates about climate change at the international level have focused on climate change mitigation – reducing greenhouse gas emissions – and have been concerned with how *responsibilities* for taking action and *rights* to protection should be distributed.

- This *Viewpoint* suggests there is a need to incorporate a further dimension of justice – *recognition* – and to acknowledge that issues of procedural justice, where the processes of decision-making are fair, may be as significant as those of distributive justice at the community level.

- Research on low carbon communities suggests that climate justice is constructed in relation to local circumstances, such as population, levels of deprivation and housing stock, amongst others.

- The case studies in this *Viewpoint* suggest that even where there is clear commitment to support capacity building on the ground, responsibility for cutting carbon emissions lies with the delivery agency rather than the communities themselves.

- Engaging with 'hard-to-reach' groups is a key aim for government-led programmes but has proved challenging in practice, while those programmes initiated by private or civil society actors may adopt more specifically open processes of decision-making.

- In contrast with government-led programmes, those initiated by private or civil society actors less often consider the distributional impacts of their programmes.

- Government-led low carbon community initiatives seek to target benefits at fuel-poor sections of the community, while civil society and grassroots schemes place a greater emphasis on building community resilience to climate change.

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Introduction

Across a range of government, private and civil society actors the need to develop low carbon communities has gained increasing attention within the UK. While policy-makers and a range of non-state actors have long championed the need for individual responses to climate change through shifts in attitudes and behaviour, the past five years have witnessed an increasing emphasis on (area-based) communities as the means through which a low carbon transition should be achieved.

More or less implicitly, this shift from an emphasis on individual action to community responses has been framed as one that will enable a more just response to climate change. By engaging communities, it seems, policy and actions will be more inclusive, responsibilities for action may be shared, and the risks and benefits of the low carbon transition more evenly distributed. However, the extent to which such community-based approaches to climate change mitigation can live up to these expectations has yet to be fully explored. This *Viewpoint* therefore examines the extent to which justice principles are becoming embedded within low carbon communities and how approaches to climate mitigation within low carbon communities may have both positive and negative impacts on justice.

The *Viewpoint* first considers how the concept of justice might be understood in the context of climate mitigation and low carbon communities. Next it sets out the methodology and outlines the approach taken. It then sets out the findings from a review of UK low carbon community programmes and two case studies. Finally it offers some conclusions and policy recommendations about justice within the low carbon transition.

Understanding justice in the context of low carbon communities

More or less explicitly, issues of justice have been central to the politics of climate change. Within such debates, a broad distinction emerges between concerns about how the costs and benefits of addressing climate change should be shared, often termed *distributive justice*, and an interest in making sure that the processes of decision making are fair, or *procedural justice*. With this distinction in mind, this *Viewpoint* draws together different bodies of literature to develop a framework for understanding *climate justice* in the context of a low carbon transition. We have focused on the issue of climate change mitigation – the reduction of greenhouse gases in the atmosphere – as this has been the main focus of attention in the UK to date.

Commonly, debates about climate change at the international level have also focused on mitigation, and have been concerned with how *responsibilities* for taking action and *rights* to protection should be distributed. Here, we suggest that there is a need to incorporate a further dimension of justice – that of *recognition* – and to acknowledge that issues of procedural justice may be as significant as those of distributive justice, perhaps particularly at the community level. This broad distributive-procedural distinction across three dimensions (responsibility, rights and recognition) together forms the basis of our account of climate justice (Table 1).

This is a significant simplification of a complex field, but provides a useful framework through which to analyse how issues of justice are being addressed in policy and practice. In the remainder of this section, we elaborate this framework in relation to climate mitigation before considering its specific applicability to low carbon communities.

Thinking through justice and climate change

Distributive justice
Where they are explicitly discussed, considerations of distributive justice and climate change primarily focus on the issue of mitigation and on responsibilities and rights in the international arena. The issue of responsibility is primarily expressed in terms of the role of nation-states for reducing emissions of greenhouse gases. Allocating this responsibility requires both a consideration of what it might entail and of how this should be allocated (Caney, 2010), often based on the 'polluter-pays' principle. However 'the polluter' is often defined as a nation-state, neglecting the wide variety of actors, such as individuals and economic corporations, who could also be recognised as 'polluters' with associated responsibilities. Once such actors are taken into account, the picture of the distributional justice aspects of the climate change problem becomes much more complex (Caney, 2005; Harris, 2010).

In relation to *rights*, debates have usually focused on how the burdens of climate change – either in terms of its impacts or in terms of the costs associated with taking action – can be fairly distributed (Caney, 2005). The right to emit greenhouse gases has been fiercely defended within international negotiations by developing countries, who argue that they have contributed little to the problem so far and stand to lose significantly from the costs of addressing climate change. While largely played out in these international terms, questions of 'rights' also permeate domestic climate change politics, with different groups seeking to ensure that they are not unfairly burdened by climate change policies (Adger, 2001; Büchs *et al.*, 2011). These debates take on different political shades, ranging from the fossil-fuel industries in the United States and Australia, to those concerned with how the costs of addressing climate change may be borne by fuel-poor people in the UK.

Such discussions over responsibilities and rights are usually undertaken in the climate change arena without explicit *recognition* of the structural inequalities that underpin these issues. Work on environmental justice issues in cities, for example, has shown how 'urban and environmental processes negatively affect some social groups while benefiting

Table 1: The multiple facets of climate justice

	Responsibility	*Rights*	*Recognition*
Distributive	Allocation of duties to mitigate	Share of the benefits and costs of the impacts of climate change and of mitigating its effects	The structural conditions that create vulnerability and produce uneven landscapes of greenhouse gas emissions
Procedural	Imperatives for participation in climate decision-making	Provision of access to decision-making to relevant groups and individuals	The basis upon which exclusion and inclusion from decision-making is currently structured

others' (Swyngedouw and Heynen, 2003). The distributive focus of the rights/responsibilities framing of climate justice is one possible reason for a lack of engagement with these issues in this particular arena, since, as Iris Marion Young argues, the distributive paradigm 'obscures other issues of institutional organization at the same time that it often assumes particular institutions and practices as given' (Young, 1990). In seeking to address this deficit, Fraser's work on the need to include *recognition* of cultural, social and economic basis of inequalities is useful (Fraser, 1997). This principle of recognition suggests that any just climate mitigation policy must take into account marginalised and vulnerable groups. In addition, such a perspective suggests that approaches that seek to address climate change while leaving other issues of social injustice – including forms of exclusion and discrimination, for example – untouched, could not be considered a 'just' response to the climate change challenge.

Procedural justice

Alongside distributive justice, concerns for procedural justice – in terms of how, by and for whom, decisions are made – have also been central to debates on climate change.

At the international level, long-standing concerns have been raised about the access of different interests to the decision-making process. Within such processes, there is a need therefore to consider the *responsibility* of involvement alongside rights to be involved within policy processes, which in practice may take many forms (Aylett, 2010). The assumption that every citizen has an equal right to participate, as principles of democracy imply, is contentious in an arena known for the complex and often expert-driven nature of the policy process (Aylett, 2010). Furthermore, even if there are principles for providing rights to participate, the existence of obstacles, such as lack of capacity, may prevent equal participation between and across levels of decision-making (Paavola and Adger, 2006). Furthermore, the subject matter of such participatory processes is significant. There may be a balance between creating the rights for participation and ensuring a just set of outcomes from such processes. Although less often discussed, this means that the responsibility of participation also needs to be taken into account – whether that is in terms of the duty on particular kinds of actors to participate in making decisions (e.g., those that contribute significantly to the climate change problem) or in terms of ensuring that those who do participate do so in a responsible manner. Therefore involving stakeholders in climate mitigation decisions is a complex task, and barriers to equal participation may exist at all levels.

Furthermore, the ability to participate may be underpinned by a particular set of institutional conditions which inhibit or prevent people from participating in such processes (Young, 1990). As discussed above, the principle of recognition suggests that there is a need to correct the unjust structures and procedures of dominance (Fraser, 1997; Shrader-Frechette, 2002) and 'identify the strategies through which a more equitable distribution of social power and a more inclusive mode of environmental production can be achieved' (Swyngedouw and Heynen, 2003).

The case of low carbon communities

Whilst attention often focuses on the international sphere, the community level is an important consideration for justice, as the effects of climate change are ultimately felt at the local level (Paavola and Adger, 2006). Seen as the means through which the transition to a low carbon economy and society should be achieved, community-based approaches place emphasis on: (a) the community as a site at which appropriate forms of technology may be developed and deployed; and (b) a means through which transitions in social practices and behaviours to produce less carbon intensive lifestyles can be achieved (Heiskanen *et al.*, 2010; Middlemiss and Parrish, 2010; Moloney *et al.*, 2010). Examining how the principles of climate justice discussed above might be applied at the community level can provide some insight into the challenges that these approaches face in practice.

Distributive justice

It is often suggested that community level initiatives hold the potential to visibly connect climate change policy to the everyday practicalities of energy use (Peters *et al.*, 2010). The growing emphasis on communities as a site for the generation and ownership of renewable energy projects, particularly in rural areas (Walker *et al.*, 2007) has paved the way for the emergence of other community-based approaches to energy generation and reducing energy use. This focus on community-based initiatives raises issues of distributive justice in terms of the duties which are seen to lie with communities, ways in which risks and benefits of low carbon community programmes are allocated, and whether such programmes can recognise and address more fundamental issues of inequality.

As climate change is related to the behaviour of individuals, households and communities (Harris, 2010; Larsen *et al.*, 2011) it could be argued that communities, alongside households, nations and regions, have a duty to mitigate this effect. However, how this responsibility is distributed both within and among communities is critical. For example, Middlemiss and Parrish (2010) suggest that responsibility for the community's ecological footprint is held by the community as a collective, and by individuals who constitute that community. This raises questions about how responsibilities within such a community should be allocated. As discussed above, at the international level, this is usually achieved through some variety of the 'polluter pays' principle (those who pollute the most have most responsibility). However, determining this at the individual or even household level is fraught with technical challenges.

Furthermore, as has also been discussed in the international arena, all emissions are not equal – those required for meeting 'basic' needs could be considered to be more necessary than those emitted from 'luxury' pursuits. We currently lack any robust criteria for making such judgements. Furthermore, principles of climate justice suggest that a duty to act should also be related to the ability to take action – again illustrating that significant differences may occur within one community. Achieving a just distribution of responsibility at the community level would require that such issues are taken into account in the design and operation of any initiative.

In providing an opportunity to develop a resilient low carbon pathway for economic growth and social development (O'Brien and Hope, 2010), low carbon community programmes may result in reduced carbon emissions, economic gain, improved housing conditions and alternative forms of provision, amongst other benefits (Mulugetta et al., 2010). On the other hand, significant risks associated with the emergence of low carbon communities, such as the implications for energy security and affordability still exist. How rights to these costs and benefits are distributed within the community is therefore critical for any account of climate justice.

Furthermore, considering structural or institutional conditions that may serve the interests of some at the expense of others, some consider that 'locally conceived projects are more likely to address effectively the social, cultural, and economic barriers, which may prevent individuals from recognizing their own contribution to encouraging more sustainable energy use' (Peters et al., 2010). In other words, community-based initiatives may enable the principle of recognition to be put into practice. However, this may be dependent on the scope of activities undertaken within such communities and whether attempts are made to address existing injustices by targeting the needs of the most vulnerable. For example, energy efficiency improvements that are accessible to all represent a more effective long-term solution than those that focus on behavioural change in targeting fuel poverty (FPEEG and PRASEG, 2011) whilst distributed generation has potential to improve access to affordable energy for low-income households, but this is dependent on the model of development employed (Walker, 2008). How and why the principle of recognition is deployed at the community level is therefore critical in shaping the extent to which it can address underlying issues of inequality.

Procedural justice

Whilst community involvement is often seen as a legitimate and democratic means through which decisions about energy futures should be made (Walker et al., 2007), questions arise about the responsibility of, and rights to, participation within such communities and how recognition for marginalised groups is achieved within low carbon communities.

This expectation underpinning community-based responses to climate change places responsibility on communities to work co-operatively to make decisions about energy generation and use, and for individuals to take on the role of citizens rather than consumers (Heiskanen et al., 2010; Wolf et al., 2009). However, this expectation may place a burden on communities if they lack control or expertise (Hinshelwood, 2001) and give rise to challenges such as the need for particular skills, characteristics or resources (Seyfang, 2010). It may also serve to negate the responsibility of others – including government and industry – who may have more ability to participate in and act on the decisions being reached.

Furthermore, whilst participatory processes of the nature anticipated within low carbon community programmes are based on the hope that issues of social, political, and economic inequality may be addressed and that rights to participate will be extended and widely taken up, in isolation such initiatives are likely to be insufficient to overcome existing barriers to participation (Aylett, 2010). Underlying structural factors may thus restrict the ability of communities to participate or work collaboratively at community level to implement a low carbon transition, and may 'serve to prevent citizens from engaging more fully in the wider political debate on sustainable living' (Peters et al., 2010).

The primary focus within this Viewpoint, following policy activity in this field, is on area-based communities, i.e., those with a place-based identity, shared history, shared infrastructure, and political and administrative power (Heiskanen et al., 2010). This, however, does not immediately imply the ready existence of a 'community' and, as suggested above, recognising who is and is not part of a community has significant implications for the extent to which such initiatives can address climate justice. Sustaining participation in community initiatives is often challenging (Hoffman and High-Pippert, 2010), especially given that such communities are built on the expectation of significant commitments to new forms of energy systems and/or to changes in behaviour which may be difficult to achieve and whose effects can be minimal without broader changes in social and technical systems (Larsen et al., 2011). How and for whom communities are defined is likely to have implications for how individuals within these communities are able to work collaboratively and participate within decision-making processes, and therefore for the outcomes in terms of climate justice.

Methodology

In considering these multiple dimensions of justice, a key analytical issue which emerges is how they are articulated differently across different sorts of low carbon community. Before discussing the findings, this section briefly sets out the methodology.

The work undertaken for this *Viewpoint* was in two key phases:

- **Review of low carbon community programmes** The initial phase of work consisted of a review of the social justice aspects and implications of current policies and programmes aimed at supporting low carbon communities in the UK. This incorporated programmes conducted by government, private and civil society organisations and was undertaken via a review and analysis of relevant policy literature.

- **Low carbon communities in practice** Based on the review of low carbon community programmes, two communities were selected for further investigation: Brixton (South London) and Berwick-upon-Tweed (Northumberland). For each case study, a short period of field research was undertaken, consisting of interviews with project leaders, local government and community actors; attendance at meetings and events; and documentary analysis of promotional material and websites.

Table 2: Low carbon community programmes

Programme	Lead organisation	Key objective
Low Carbon Communities Challenge	Department for Energy and Climate Change (DECC)	Financial and advisory support to test-bed communities in order to test different delivery packages and capture learning.
Climate Challenge Fund	Scottish Government	Supports communities to tackle climate change by reducing their carbon emissions and increasing their capacity to take action.
London Low Carbon Zones	Mayor and Greater London Authority	Community-based approach to cutting CO_2 emissions.
Transition Network	Community self organisation	To inspire, encourage, connect, support and train communities as they self-organise around the transition model, creating initiatives that rebuild resilience and reduce CO_2 emissions.
Low Carbon Communities Network	Community self organisation	To create a network of sustainable communities that offers mutual support, materials and infrastructure to make them effective and efficient in collective action and lobbying for a low carbon future.
Green Streets	British Gas	Investment to fund micro-generation and energy efficiency measures to help communities around the UK to save and generate energy.
Big Green Challenge	NESTA	Prize designed to stimulate and support community-led responses to climate change.
Green Communities	Energy Savings Trust	To help communities deliver effective carbon savings and sustainable energy projects and support them in moving towards a low carbon future.
Ashden Awards	Ashden Awards	To encourage the greater use of local sustainable energy to address climate change, alleviate poverty and improve quality of life.

The remainder of the *Viewpoint* sets out the findings from these phases, before drawing out some lessons for policy and practice.

Review of low carbon community programmes

Nine different UK low carbon community programmes were reviewed, representing a range of different approaches to climate mitigation at a community level. The programmes reviewed, the lead organisation and their key objectives are set out in Table 2.

Findings from the review of these programmes are presented below under the broad headings of distributive and procedural justice.

Distributive justice

Table 2 highlights the origins of the low carbon community programmes reviewed; although they originate from a variety of different actors, all of the programmes ultimately place responsibility for climate mitigation on the communities themselves. For example, the British Gas programme, the only private sector scheme, has the objective to 'help communities around the UK to save and generate energy'. Similarly, the Energy Savings Trust, a civil society programme, aims to 'help communities to deliver effective carbon savings and sustainable energy projects', whilst the Transition Town model, one of two bottom-up schemes aims to 'inspire, encourage, connect, support and train communities as they self-organise around the transition model, creating initiatives that rebuild resilience and reduce CO_2 emissions'. However, it remains to be seen how the relationship between programme funders and communities on the ground is articulated in practice.

The distribution of climate mitigation burdens in terms of rights is addressed less explicitly than other elements of climate justice. Many of the programmes highlight the positive benefits of low carbon communities, including local investment, job creation, fuel poverty and climate change (DECC Low Carbon Communities Challenge). This is broadly based on an assumption that such benefits will be evenly spread throughout the community. However, there are no schemes that explicitly consider any negative impacts that may arise or that consider how the distribution of costs and benefits may be spread across the community.

It is evident from all of the programmes that the community is recognised as a critical site for addressing climate change. However, the rationale for this approach varies across programmes. Government-led programmes often place priority on policy learning and the ability to test different models of low carbon community. For example, the London Low Carbon Zones aim to 'bring together local authorities, private sector partners and community organisations to reduce carbon emissions from a local area significantly and to develop a range of models for the delivery of carbon saving measures across and beyond London'. Similarly, the DECC Low Carbon Communities Challenge aims to 'find out what works well locally and use this knowledge to inform government policy on what we need to do, as a nation, to enable the UK to reach its carbon reduction targets'.

At the same time, such programmes also seek to address broader structural issues, For example, while the primary objective of the London Low Carbon Zones Programme is to deliver 'rapid carbon savings from buildings in the zones and the development of models that drive long-term carbon savings', the secondary objectives driving the programme are those of 'mitigation of fuel poverty, promotion of sustainable lifestyles and lower carbon footprints and regional skills development and other positive social outcomes'. Similarly, the DECC Low Carbon Communities Challenge has a clear focus on fuel poverty but also recognises that such communities 'need to be equitable and sustainable'. In as much as marginalised groups are recognised within low carbon community initiatives, therefore, they take the form of the 'fuel poor'. In contrast, the civil society and grassroots schemes take a wider approach. There is a greater emphasis on building community resilience, for example the Transition Network which aims to 'support community-led responses to peak oil and climate change, building resilience and happiness'. Recognition is couched in more general terms, for example, the Low Carbon Communities Network incorporates a 'commitment to environmental justice', whilst the Ashden Awards makes reference to social benefits, including fuel poverty. Thus structural redress is offered primarily through the lens of fuel poverty.

Procedural justice

Turning to assess responsibility for participation, many of the programmes are based on a strong foundation of community capacity building, implying that there is (an indirect) recognition of the burden of participation. For example, the DECC Low Carbon Communities Challenge aims to bring together learning, skills and resources. More explicitly, the low Carbon Communities Network aims to create a network that offers mutual support for communities, to make them more effective in collective action towards a low carbon future. Similarly, in terms of rights to participate, all of the programmes reviewed had strong criteria not only for the involvement of local communities but also in some cases for community leadership. For example, British Gas Green Streets aims to get the community involved;

Table 3: Definition of community in low carbon community programmes

Low carbon community programme	Definition of community
Low Carbon Communities Challenge	Guidance suggests 1,000–20,000 residents but would consider larger/smaller
Climate Challenge Fund	Not specified – but should be clearly defined geographical area
London Low Carbon Zones	Each zone contains no more than 1,000 buildings, both residential and commercial
Transition Network	Not specified
Low Carbon Communities Network	Not specified
British Gas Green Streets	One street
NESTA Big Green Challenge	Communities were defined by entrants
EST Green Communities	Not specified
Ashden Awards	No specification – range from 1,000–17,000 households

the Climate Challenge Fund places community at the heart of the decision-making process and the Low Carbon Communities Challenge aims to foster community leadership, involvement and partnerships.

However, how these responsibilities and rights are enacted is closely related to how 'community' is defined. One of the most evident findings is that there is no fixed definition of what a community should constitute for the purposes of climate change mitigation, as shown in Table 3.

As the table indicates, a low carbon community can be defined by geographic area (for example, British Gas Green Streets and Climate Challenge Fund); by the number of buildings (for example, London Low Carbon Zones); by the number of households or residents (for example, Low Carbon Communities Challenge or Ashden Awards); or simply by the communities themselves (for example, NESTA Big Green Challenge). For those programmes where community is defined in an arbitrary manner, there are likely to be implications for community cohesion and the ability for collective action on climate change.

Furthermore, whilst there is a rhetoric of partnership working and community involvement in all schemes, the realities of involvement are highly uneven. For example whilst the London Low Carbon Zones programme aims to engage communities, they are led by the relevant local authorities who are responsible for managing funding. Furthermore, many of the programmes are targeted at pre-existing communities and with the exception of the EST Green Communities Programme, there is little support for initial community development work. For example, the Ashden Awards are targeted at communities that have been delivering local energy savings for at least one year. This suggests that any structural constraints that may prevent communities working collaboratively are not being addressed through these programmes.

Summary
Low carbon community programmes include a range of government, civil society and private sector schemes as well as grassroots initiatives. All of the programmes captured justice to some degree, but it is manifest in different ways in different programmes.

As Table 4 shows, a varied picture emerges when considering how principles of responsibility are being pursued within low carbon communities. At one level, the distribution of responsibility to communities is clearly addressed with all programmes, although the extent to which such initiatives take account of differential responsibilities within any given community or between such communities appears to be limited. In relation to procedural justice, we find that only two-thirds of the programmes explicitly address issues regarding the responsibility of participation. Our analysis of the ways in which rights are discussed is in rather marked contrast. While we find that none of the programmes explicitly address the distribution of rights within and between communities, in procedural terms all of the programmes consider the right to participate as fundamental.

Table 4: Dimensions of justice in low carbon community programmes

	Distributive justice			Procedural justice		
	Responsibility	*Rights*	*Recognition*	*Responsibility*	*Rights*	*Recognition*
Low Carbon Communities Challenge	YES	NO	YES	YES	YES	NO
Climate Challenge Fund	YES	NO	YES	NO	YES	NO
London Low Carbon Zones	YES	NO	YES	YES	YES	NO
Transition Network	YES	NO	NO	YES	YES	YES
Low Carbon Communities Network	YES	NO	YES	YES	YES	YES
British Gas Green Streets	YES	NO	NO	NO	YES	NO
NESTA Big Green Challenge	YES	NO	NO	NO	YES	NO
EST Green Communities	YES	NO	NO	YES	YES	YES
Ashden Awards	YES	NO	NO	YES	YES	NO

While at the most fundamental level all of the programmes recognise communities as critical sites for addressing climate change, we find significant variation in terms of the extent to which fundamental inequalities that shape distributive and procedural aspects of climate justice at the community level are recognised and addressed. Government-led programmes all include recognition of the 'fuel poor' as a marginalised group whose interests need to be taken into account in the pursuit of low carbon communities. This in turn has led such programmes to seek to ensure that such groups are taken into consideration in the distribution of the costs and benefits of such programmes. However, there is limited evidence that such programmes have sought to involve such groups in decision-making. In contrast, those programmes initiated by private or civil society actors less often consider the distributional impacts of their programmes in this manner, but may adopt more specifically open processes of decision-making. This finding raises significant questions about whether either approach can realise its aims, but also offers the possibility that the principle of recognition can find a place in both distributive and procedural aspects of low carbon communities.

Low carbon communities in practice

While analysing the structure and intentions of programmes is useful, any realisation of climate justice must consider the challenges and opportunities that are encountered in practice. Based on the examination of two low carbon communities – Brixton and Berwick-upon-Tweed – this analysis is structured in broad distributive and procedural terms and considers the three dimensions of justice discussed above – responsibilities, rights and recognition.

Brixton
Part of the London Borough of Lambeth, Brixton is an inner city area of South London. Within Brixton, two major low carbon community initiatives exist: the Brixton Low Carbon Zone (LCZ), one of the ten London Low Carbon Zones which aim to bring about a 20.12 per cent reduction in carbon emissions by March 2012 in time for the Olympics; and Transition Town Brixton (TTB), a community-led initiative that seeks to raise local awareness of climate change and peak oil. The LCZ was launched in March 2010 and runs until 2012. The zone contains 721 buildings (approx. 3,500 properties) including 10 high rise and 36 low rise blocks, street properties (social and private housing) and commercial and public sector buildings and is implemented in collaboration with United Resident Housing – who have been instrumental in the implementation of retrofit programmes within the zone – and TTB. Activities within the LCZ include Green Doctors, community draughtbusters and ongoing development of a community energy project. The analysis presented here focuses on the operation of the LCZ, and its intersections with TTB.

Distributive justice

Climate mitigation within the London Low Carbon Zones, as previously noted, is based on a community-based approach to cutting greenhouse gas emissions. In Brixton, the majority of the zone is in the Coldharbour ward (over 60 per cent of which is in the 10 per cent most deprived SOAs or Super Output Areas) and where over 75 per cent of the properties are social housing. The focus has primarily been around building capacity within the local community, although the funding has also been used to lever investment for capital improvements. The population in the zone is economically deprived and unemployment is high and although traditional environmental messaging was not used because of the socio-demographic nature of the population, the initiatives within the Low Carbon Zone have focused on behaviour change:

> You can do all you can in terms of improving the building fabric and structure to make it energy efficient but then if people are not going to understand the value behind that and just continue to use high amounts of energy ... then that counters all of that

Thus climate mitigation is regarded as more than a purely technical approach and incorporates social learning as a critical part of the programme. However, the difficulties in measuring the impact of such behaviour change initiatives within a two-year funding programme are also noted.

In terms of responsibility for addressing climate change, the focus within the zone is not directly on responsibility for carbon reduction. As noted:

> The language used was very much what would resonate with the local community; the primary message was around saving energy and saving money, the message wasn't around carbon reduction or anything like that

Instead, the focus has been on developing projects that are led by residents such as local food growing and gardening, areas where there is a lot of energy and enthusiasm within Brixton, and using these channels as a way into carbon reduction and energy efficiency targets:

> There was a balance to be struck ... Would we get people who would be interested in energy-related projects, would it only be about food growing, which wouldn't really help us achieve our carbon targets? But it has organically evolved

Another example of this is the community draughtbusters scheme. As one interviewee noted:

> Draughtproofing only addresses a small percentage in terms of carbon emissions but it does definitely help ... if you address that, it's a perception that the house is warmer, you don't turn up heating, so it does address carbon emissions to a small percentage but it's more about the comfort of the person in the house and helping them manage their fuel bills better

Thus while the LCZ has a commitment to reducing carbon emissions, this is articulated without placing direct responsibility on the community in this respect and instead draws on the existing skills and expertise within the community. On the one hand, such an approach avoids the negative connotations involved with 'blaming' communities for climate change. On the other, by circumventing the issue of where and for whom responsibilities lie, there is a danger that all members of the community become regarded as equally responsible for action.

With regard to rights to equal distribution of costs and benefits within the community, there are a number of benefits arising from the LCZ, ranging from energy efficiency measures to the creation of local employment via the Future Jobs Fund and the setting up of social enterprises. One such scheme within the Future Jobs Fund is the Green Doctors scheme, which provides a mechanism for installing energy efficiency measures in homes and talking to households about energy use. As noted, this has an impact not only on energy use, but also local skills building:

> I think the project does touch a lot on skills building, but also identifying who has the skills and getting them to use the skills in the community

Therefore, there is a clear commitment to keeping the benefits of the LCZ programme within the local community. However, there is less recognition of the uneven ways in which such benefits might be experienced within the community, or of any potential costs of such a programme.

Nonetheless, there is strong recognition of the need to address existing structural conditions within Brixton. As noted, over 75 per cent of the properties in the LCZ are in the social housing sector and fuel poverty is a key element:

> it's driven a lot of the capital programmes ... and for a lot of the Green Doctors, when engaging with people, it was about, this is how you can manage your bills better, this is how you can reduce and save your money. And that's been a key element of why people even bothered listening to them

However, respondents also indicated that fuel poverty is only one part of social justice, with equal value placed on dimensions such as skills building and local employment. Furthermore it was felt that the terminology of justice may not be appropriate in this context, partly because the community is seen as vibrant and strong; thus focusing on the positive elements is seen as more productive.

Procedural justice

With regard to procedural justice, issues of responsibility are important. The LCZ is led by the local authority but is implemented in collaboration with TTB and United Resident Housing. This approach means that the burden of responsibility is distributed between the local authority and active parts of the community. In terms of the relationship, the aim of the LCZ is to build capacity and support the work of TTB:

> We're only here till 2012, as people, and as a resource and the money. But they're the ones who are going to be here longer. So the way I've constantly told them is: our legacy is to be able to support capacity building and give you as much as we can

The active nature of TTB and other local groups means that the responsibility of participation is widely distributed throughout the community, with a strong network of individuals coming together, which increasingly includes low-income groups via United Resident Housing. This is particularly true within the TTB, which is run on a 'hub and spoke' model with a number of different thematic working groups, for example food or energy. Thus responsibility for climate mitigation is shared. Whilst the LCZ work is led by the local authority, there is recognition that this is temporary and instead building capacity of the local community, including TTB, is likely to be the most effective long-term approach.

With regard to rights to participate, the LCZ and TTB are built on the premise of equal opportunities for all members of the community to become involved. Part of the LCZ funding has been used to employ a community engagement officer whose role is to facilitate community projects and to network and connect people. Furthermore, there is a strong commitment to this being an 'organic process' on the community's terms, as noted:

> I think with a lot of the way the projects are run and delivered it is mainly about meeting the needs of the community… being adaptable to each individual's needs ... 'What would you like? Have you got an idea? How can we help you?' So that has been the approach

Therefore, participation is based on meeting the needs of individuals and on their terms, rather than being orchestrated through a pre-defined framework. While this may, as indicated in our discussion above, mean that explicit climate change discourses and actions are not always to the fore, this is proving to be a successful means through which to engage a diverse set of participants with a broad low carbon agenda.

At the same time, it is evident that there is no single community in Brixton. The criteria for defining the zone were based on the number of buildings, but this does not immediately translate into a single community. Respondents indicated that, within the zone, there are a number of specific identifiable geographic communities, such as those in Brixton or Loughborough, alongside communities of interest such as TTB. As a result:

> there are heaps of communities and they are all layered on top of each other, to a large extent

However, it was acknowledged that this may not be the most progressive approach; respondents indicated that 'you can't just geographically define communities' with the implication that:

> We find it very hard to actually communicate the low carbon zone as a community brand, mainly because it's very arbitrary

Despite the principle of equal rights to participate, the difficulties of establishing who the community is that deserves recognition creates challenges for achieving procedural justice. Furthermore, the geographical basis of the initiative may mean that addressing structural issues is more challenging. The remit of the community engagement officer is community-wide, and reaching some groups is difficult:

> There is a gap, it's penetrating and reaching out to the hard-to-reach and we still haven't been able to nail it

As indicated by respondents, this is partly due to time and resource constraints which encourage engagement with 'usual suspects' and it was felt that in areas where people have fuel poverty, it is harder to 'get people going'. Thus there is awareness of structural barriers which may prevent people from participating, but addressing these barriers falls outside of the remit of the zone.

Berwick-upon-Tweed

Berwick-upon-Tweed, or Berwick, in the county of Northumberland, is the northernmost town in England. Community Renewable Energy (CoRE) and Berwick Community Development Trust formed a collaborative venture – Berwick CoRE – to develop renewable energy within the town of Berwick. This includes ongoing development of Berwick Community Wind Turbine and funding from DECC's Low Carbon Communities Challenge to install solar PV (photovoltaic) panels, which are drawn on in the analysis below.

Distributive justice

Climate change mitigation in Berwick is seen both in terms of capital investment in renewable technology but also in terms of behavioural change. For example, the DECC Low Carbon Communities Challenge funding aimed to address both of these in parallel:

> One of the things that really interested us in making our application for PV was trying to explore the link between capital installations and the impact they consequently have on behaviour... If you cover a substantial number of buildings in the town in PV, and then people have to walk past them, enter them, discuss, talk or interact with people who live in those, that will influence their behaviour. How is the million dollar question

As part of this approach, the Low Carbon Berwick project has been established, which offers home energy audits and energy advice. Thus technology in isolation is regarded as insufficient for climate mitigation; instead the approach is more socio-technical in orientation.

With regard to responsibility, climate mitigation is primarily discussed in terms of finance and money saving, rather than in terms of carbon emissions:

> Most people seem to simply turn off when they hear 'climate change'... it's a much more positive attitude if you say "you can make money from this", and they go "oh, right"

An example of this is the planned wind turbine, where the anticipated return is £5 million over 25 years, a substantial sum of money for a community of Berwick's size.

One interviewee noted that a conversation about energy saving with members of the community has three key phases: saving kilowatts, then saving money, then saving carbon. However, conversations often tend to 'get stuck' on energy efficiency measures and as a result:

> interesting conversations about how you behave are really difficult to have

Thus, as in the Brixton case, it seems that addressing carbon emissions takes place as a result of addressing issues of concern to communities, such as finances, rather than a direct focus on climate change in itself. While this remains the case, and perhaps despite the advances that such approaches may be able to make, initiating any form of discussion about the extent or limits of responsibility for acting on climate change within and amongst communities is likely not to be forthcoming. This may also serve to obscure the relative responsibilities of communities vis a vis other actors, including governments and the private sector.

Like other community-based low carbon initiatives, one of the core aspects of CoRE is its emphasis on the benefits, rather than duties, involved in addressing climate change. One of the key aims of CoRE is to provide 'real economic and social advantages for the communities it works with'. Berwick CoRE covers the town of Berwick, with CoRE as an organisation covering the whole of North East England. In doing so, as one interviewee highlighted, the ultimate aim is to:

> end up with a lot of seriously resilient communities that were feeding into a more distributed grid

In this respect, one innovative approach being supported by CoRE is that of differential energy pricing for vulnerable groups. The intention here is that if a community can produce its own energy, it 'can break the link between oil pricing and energy pricing' and promote social justice by creating access to affordable energy services.

This focus on the need to address existing energy vulnerability has emerged over time, as the needs of marginal groups have become recognised. One example of this is the DECC Low Carbon Communities Challenge, where the bid initially targeted housing association properties with PV as it was felt that 'their residents were representative of those most in need or most likely to benefit'. Although changing circumstances mean the PV panels are now being installed on schools rather than housing association properties, there is still ongoing work with local housing officers to develop this further. Furthermore, it was noted that there is some degree of fuel poverty in older sectors of the population, where:

> Quite a lot of people in Berwick are in capital terms quite wealthy, but week to week don't actually have very much money to go round and heating their great big property is a challenge

Procedural justice

Achieving procedural justice in the practice of low carbon communities is also challenging. With regard to responsibility, it is felt that there is little sense of community responsibility for reducing carbon emissions and addressing climate change in Berwick per se:

> I do recognise that in other communities the idea of a ground up, community rooted, desire to act co-operatively to respond to climate change is really effective. It isn't here. And I'm not completely sure why

There is, however, a small minority of the community who are engaged in such issues, particularly those involved in the new Transition Town group. One reason proposed for this sense of a lack of responsibility for the issue is the specific population dynamics, particularly the large number of older people in Berwick:

> We have a large number of retired people, some of whom have moved into the town to retire ... and there are real implications of that for the way they behave... They do bring some very well educated, socially active, dynamic people who are used to influencing the community but a great many others just want to walk on the beach and look at the sea and don't really care about the future

This has implications for the nature of participation where the onus is on a relatively small number of people from within the community, which is particularly evident in the DECC Communities Challenge programme. Although climate change work is developed with the approval of the Development Trust community representatives, these only number approximately 100 from a population of 12,500. This tension between participative democracy and representative democracy is one that is present in much of the work carried out in Berwick and is difficult to resolve, but has strong implications for the burden of responsibility for participation.

With regard to rights to participate, CoRE works to a model whereby it works with a community to undertake an initial feasibility study, followed by technical appraisal and planning, and the community is then signed into a contract for joint working to deliver renewable energy. Throughout this process, community engagement is critical and all members of the community have equal rights to participate. However, this right is not always taken up:

> whatever we try to do it almost feels like it falls on deaf ears. But people do turn up out of the woodwork, just from nowhere, simply because they've seen it, and we carry on

However, one of the ultimate aims is to use the idea of renewable energy to bring people together in a more cohesive way, where:

> communities really do own their own energy and people not only start understanding energy as a result but get to a point where instead of it being something that a few people are involved in, it almost becomes the glue that holds the communities together

Thus, although programmes may offer the right to participate, assessing if and how this is taken up by local community members is likely to prove critical. At the same time, as acknowledged here, establishing community-based low carbon initiatives requires expertise and time commitments that are not equally shared across communities, suggesting that at least some parts of such processes cannot be equally open to all.

These challenges are exacerbated when it is acknowledged that there is no single community in Berwick. Amongst the reasons articulated for the multiplicity of community in Berwick were: the historical context about whether people in Berwick identify with being English or Scottish; the existence of three distinct geographical communities (Tweedmouth, Spittal and Berwick) with little overlap between them; the specific demographics with a high number of migrants and older people; and finally, the existence of deprivation in a number of wards. This means that:

> in terms of talking about a Berwick community, it's quite hard

While recognition of this diversity is considered within Berwick CoRE, addressing these challenges in a practical manner has proved challenging. For example, Berwick has a large migrant population, and overcoming language barriers to engage people around climate mitigation has proved difficult.

> We had a situation where sections of the population were quite difficult to work with or disinterested, or didn't understand the information that was presented ... [for] the people who really need the help, we haven't had the success we wanted

In response to this, the key rationale for the development of CoRE has been the recognition that communities in isolation often don't have the time, money or expertise to take forward renewable energy.

> We came to the conclusion that there was a huge demand, and that when it came to the community being given a feasibility study, it just stalled altogether. And the reason it stalled was because the community hadn't got the time, or the expertise, to take it forward. So if it was just photovoltaics on the village hall, they might just get there. But if it was anything larger, like digging up the playing field next, for a ground source, or putting in a wind turbine, forget it

In taking on the responsibility for pursuing local renewable energy, the role of CoRE in mediating the development process therefore goes some way towards addressing the structural barriers associated with the participation of individuals that might otherwise dissuade communities from pursuing this path.

Conclusion

This *Viewpoint* has explored how the notion of justice might be conceptualised in the context of climate mitigation and low carbon communities, how current UK low carbon community policies and programmes address issues of justice and how two low carbon communities have encountered issues of justice in practice.

The *Viewpoint* shows that research and policy attention has thus far focused on the justice dimensions of climate mitigation at national and international levels, with little consideration given to their significance for community-based responses. In conceptualising climate justice for low carbon communities, we suggest that assessing what is 'just' requires an appreciation of both distributive and procedural aspects, across three different dimensions: responsibility, rights and recognition.

Our review of policy programmes which have specifically sought to develop low carbon communities suggests various types are emerging, reflecting the diverse drivers of government, private sector and grassroots organisations. There is no one single 'type' of low carbon community, and justice is variously constructed within different types of low carbon community. Importantly, despite the focus on area-based approaches within such programmes, we find that there is no fixed definition of a 'community', and we find a diverse range of communities are engaged in low carbon responses. Furthermore, research on two examples – in Brixton and Berwick – of low carbon communities in practice suggests that climate justice is constructed in relation to local circumstances, such as population, levels of deprivation and housing stock, amongst others. While general principles of climate justice for low carbon communities can be identified, these findings suggest that multiple, sometimes overlapping, forms of just low carbon community responses exist in practice.

Despite this diversity, some broad conclusions can be drawn about justice and low carbon communities. With regard to *responsibility* for addressing climate change, we find a complex landscape emerging amongst the low carbon community programmes and cases that we have examined:

- First, whilst the notion of low carbon communities places the responsibility for carbon reduction on communities and there is rhetoric of partnership working and community involvement in all schemes, in practice this is more complex and the realities of involvement are highly uneven. We find that many policies and programmes are targeted at pre-existing communities with little support for initial community development work. This raises the question about how those communities who have yet to articulate responsibilities around climate change issues might become engaged in this process.

- Furthermore, in practice, both case studies suggest that responsibility for cutting carbon emissions lies with the delivery agency rather than the communities themselves, although there is clear commitment to support capacity building on the ground.

- Our analysis also suggests that debates about how responsibilities for climate mitigation should be shared within or between communities have barely begun. Instead, communities are being engaged in other ways, such as around local food growing, finance or energy efficiency, and using these channels as a way into carbon reduction and energy efficiency targets. It seems that addressing carbon emissions takes place as a result of addressing issues of concern to communities rather than a direct focus on climate change in itself.

- From a procedural perspective, questions about how responsibilities to participate should be allocated – in terms, for example, of expertise, capacity, and existing burdens – are negotiated at a day-to-day level in the two projects we examined and to date, this has been largely unproblematic. However, should further responsibilities be placed on communities, and perhaps particularly in the absence of action by other critical actors, including government and the private sector, this may become more of a challenge.

- Overall, we can conclude that while these challenges to the distributional and procedural aspects of addressing responsibilities for climate change remain, any form of discussion about the extent or limits of responsibility for acting on climate change within and amongst communities is likely not to be forthcoming. This in turn may lead to some members of communities carrying undue burdens, while others remain outside the debate, while also

serving to obscure the relative responsibilities of communities vis a vis other actors, including governments and the private sector.

With regard to *rights*, we find a strong distinction between the extent to which the procedural and distributive dimensions of climate justice have been considered:

- We find that there is a distinction between government-led and other low carbon community programmes. While government-led programmes all include a recognition of 'fuel poor' people as a marginalised group whose interests need to be taken into account in the pursuit of low carbon communities, we found limited evidence that such programmes have sought to involve such groups in decision-making. In contrast, those programmes initiated by private or civil society actors may adopt more specifically open processes of decision-making.

- In practice, these non-state-based low carbon community programmes encounter challenges in realising this ideal, some of which can be overcome by the design of the initiative – for example, the collaboration between LCZ and TTB in Brixton. Furthermore, we find in the example of Berwick CoRE that rights to participate may have to be tempered by recognising the need for particular forms of expertise and by taking account of the ability of individuals to act. Thus there is awareness of the structural barriers which may prevent people from participating, but addressing these barriers often falls outside of the remit of such initiatives.

- In distributional terms, the belief that such programmes can bring benefits to a community is frequently the main motivation for individual initiatives, and often obscures the challenges of responsibility discussed above.

- We find that all government-led programmes specifically consider how benefits might be shared through specific attempts to distribute benefits to marginal groups, usually articulated in terms of bringing benefits to fuel-poor sections of the community. In contrast, those programmes initiated by private or civil society actors less often consider the distributional impacts of their programmes in such explicit terms, though we find innovative approaches being developed, for example, in Berwick, where work to secure low-cost sources of energy for the community is ongoing.

- Interestingly, we find no evidence that the costs of low carbon communities – either for those participating or for others – are considered. While there are important political reasons to focus on the benefits that such schemes can bring, a consideration of climate justice suggests that recognising and addressing the costs of community-based action should be taken into account as such schemes go forward.

Finally, we find that while the principle of recognition is fundamental to achieving climate justice through low carbon communities, this is proving challenging to achieve in practice.

- The most frequent way in which issues of recognition are addressed is through the focus of low carbon community programmes on addressing issues of fuel poverty. This focus goes some way towards addressing underlying inequalities that structure energy use and greenhouse gas emissions, as low carbon community initiatives seek to target benefits at fuel-poor sections of the community and to engage so-called 'hard-to-reach' groups.

- However, 'fuel poverty' remains a rather circumscribed concept, and wider issues of vulnerability and inequality may pass unnoticed as a result.

- We find that in contrast to government-based programmes, the civil society and grassroots schemes take a wider approach, accompanied by a greater emphasis on building community resilience, which goes beyond traditional definitions of fuel poverty to encompass other dimensions of energy vulnerability into the future.

- At the same time, while the challenges of engaging 'hard-to-reach' groups within the low carbon communities process are recognised from a participatory perspective across the programmes and cases we examined, in practice addressing these issues has proven challenging within the framework of climate change.

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