ASSEMBLING COMMUNITY ENERGY DEMOCRACIES

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Abstract

Calls for greater 'energy democracy' foresee a greater role for voluntary sector activity – including through community groups' ownership of energy projects – to help produce more open, participatory and just energy systems.

This article offers a novel conceptualisation of democracy through viewing community energy projects as assemblages of heterogeneous elements, and traces their enlacement with a wide range of social and political relations. This enables us to explore how a position of distributed agency affects the possibilities, challenges and realities of enacting new forms of democracy.

Drawing on empirical research in England and Scotland, we trace the relations that community groups form in the process of setting up energy projects. In doing so, we go beyond the binary view that sees such groups as inherently democratic responses to undemocratic systems or as co-opted actors in governmental programmes, instead exploring the multiple ways these new socio-material configurations 'become-democratic'. Through furthering an understanding of energy democracy that emphasises democracy-as-process, we demonstrate its inherent emergent, contingent and uncertain qualities.

Introduction

Western energy systems require rapid transformation in order to achieve goals for affordable, secure, low carbon energy. Yet achieving transformative change is proving difficult for a wide range of reasons, including institutional, technological/technical and political barriers. One underpinning challenge is that people have become alienated from energy as an abstracted entity (Hirsch and Jones, 2014). The notion of energy democracy ostensibly offers an opportunity to regain control and reconnect people with energy systems (Van Veelen and Van der Horst, 2018). Energy democracy as a concept is seen by some as offering an alternative to technical and technocratic routes to a low carbon society, instead emphasising the need for a low carbon transition that is also democratic and just. Community and voluntary groups are often seen as central to this vision, in two ways. First, as potential owners of decentralised energy supply projects, in the UK commonly referred to as 'community energy' (Becker and Kunze, 2014). Second, supporting community ownership also requires an active role by established third sector organisations, primarily as intermediaries; entities who can support community groups to establish energy projects, and help translate and network between communities and public and/or private sector actors. A more established literature focuses on energy *justice*, with broader considerations around distributional inequalities and lack of recognition for certain people or population groups within decision-making as well as procedural matters. This is an important literature but here we choose to focus more specifically on democracy, emphasising the means through which citizens' views are captured and translated into outcomes, and how these processes are negotiated. It is grounded in the understanding that while democracy can be instrumental in achieving justice, it is not intrinsically just.

While focus on greater energy democracy is normatively appealing, conceptual understanding of the nature and implications of bringing 'democracy' and 'energy' together remain limited. This article adds to a small but growing number of papers (Becker and Naumann, 2017; Becker et al., 2019; Chilvers and Pallett, 2018; Szuleki, 2017; Van Veelen and Van der Horst, 2018) seeking to add theoretical depth to understandings of energy democracy. It brings new critical insights to the concept through engagement with actor-relational perspectives on democracy; especially the writings of Deleuze and Guattari (1980) and those who have expanded on the democratic implications of their work. This distinctive conceptual lens views democracy not as an end state, but as a process of reflexive practice, negotiation and making connections, set within understanding of agency as distributed and multiplicitous.

This approach also makes an original contribution to voluntary sector literature more widely, a domain that has yet to thoroughly explore actor-relational perspectives. In doing so it adds to existing interrogation of democracy in or through practice within the voluntary sector (Eikenberry, 2009; Grey and Sedgwick, 2013; Langmead, 2017), using the concept of assemblage (Deleuze and Guattari, 1980) to illuminate the wide and heterogeneous processes of enrolling and being enrolled by others that voluntary sector projects undergo to achieve their goals. This helps reconsider ideas of democracy through voluntary sector

action as relational and emergent (Chilvers and Pallett, 2018; Langmead, 2017a; Langmead, 2017b; Varman and Chakrabarti, 2004).

The paper is organised as follows. In the next section we outline existing literature on the role of voluntary and community sector (VCS) actors in energy governance, which we categorise according to whether VCS actors 'claim' or are 'invited' to act. We then outline how an assemblage perspective helps overcome this dualism through emphasising the critical role of intermediation processes in understanding how assemblages are assembled, and maintained, with implications for understanding the nature of democracy within an assemblage. Having outlined key conceptual points for the paper we then use two empirical case studies of community energy projects in the UK to illustrate how intermediation processes impact on democracy in practice.

Voluntary and community actors in energy governance

Energy governance has evolved in recent years to enable greater community control of energy resources. This can be viewed within a broader governance shift where citizens are increasingly expected to play a role in tackling societal and environmental challenges (Middlemss, 2014; Newman and Tonkens, 2011; Taylor Aiken et al., 2017). Emphasis on 'community' as a site for enabling low-carbon transitions appeals to different actors, combining activists' desires for bottom-up change with ideological beliefs in a smaller state (Middlemiss, 2014). Proponents of energy democracy – seeking to move towards more democratically organised and controlled energy systems – have generally perceived growth of community energy as a means to democratise control of energy systems, and to enact broader processes of societal democratisation (Van Veelen and Van der Horst, 2018). Community energy can be broadly defined as energy generation, purchase and/or conservation initiatives owned or operated by, and benefitting, communities of place or of interest (Walker and Devine-Wright, 2008; Seyfang et al, 2013).

However, more critical voices have highlighted the need to understand emerging governance arrangements within a broadly neoliberal political-economic order (Emejulu and MacLeod, 2015; Featherstone et al., 2012; Swyngedouw, 2005). This literature has often framed the language of community, civil society and decentralisation within a neoliberal discourse encouraging 'self-help' solutions: community groups become cheap, flexible service providers (DeFilippis et al. 2006).

In this context, community development research has distinguished between 'popular'/'claimed' and 'invited'/'provided' spaces of intervention (Hickey and Mohan, 2004; Kesby, 2007; McAreavey, 2009). These distinctions focus on how these spaces are created, by whom, and for what purpose (Kesby, 2007). Invited spaces refer to events where both the setting and terms of participation are framed and defined by outsiders (Cornwall, 2004). Conversely, popular spaces emerge more organically; 'chosen, fashioned and claimed by those at the margins' (ibid. p.78), based on common concerns (Kesby, 2007). Thus, for community as a space of intervention to be democratic, individuals and communities should not only have the right to participate, but also the right to define and shape a given space.

These two distinct views are highly visible in literature on energy democracy and community energy. Energy democracy proponents tend to view community energy as an opportunity for establishing truly popular or progressive forms of energy governance (Van Veelen and Van der Horst 2018). However, other community energy researchers (e.g. Catney et al., 2014; Ison, 2009; Middlemiss and Parrish, 2010) are more sceptical. These authors have argued that promotion of community energy is a hallmark of what they see as neoliberal localism: devolving responsibility for services, without providing the resources to deliver these services adequately.

Thus, where the latter see communities as potentially co-opted sites through which neoliberal logics can be articulated locally, the former see them as sites to be claimed for the articulation of progressive and more democratic alternatives to the neoliberal political-economic order. Here we seek to transcend the confines of this rather binary view of community by bringing an assemblage perspective to the study of community energy. The next section sets out what such a lens can add.

From 'claimed' and 'invited' to becoming-democratic

Over the last two decades relational approaches to understanding 'social' phenomena have proliferated across the social sciences (Jones, 2009). This relational turn emphasises the importance of understanding phenomena as produced and knowable only by their relation to other phenomena. Thinking relationally promotes a non-essentialist world-view: everything is emergent and contingent (to varying degrees). In this context, the concept of assemblage has been important for understanding the relational organisation of phenomena (Marcus and Saka, 2006). Initially coined by Deleuze and Guattari (1980) as *agencement* (commonly translated to 'assemblage') the concept has been popular in (for instance) urban studies, geography and planning to understand the complexity of how phenomena 'emerge' and how action takes place (Brenner et al, 2011). Assemblage theory emphasises how multiple heterogeneous material and non-material connections are made and remade in the process of acting (DeLanda, 2016). This approach can be used to explore action from the smallest to largest phenomena.

Despite its popularity, limited attention has been given to the implications of assemblage thinking for conceptualising democracy. However, Boelens (2010) does briefly offer some thoughts, arguing that an actor-relational approach (rather than specifically an assemblage perspective) implies a primary focus "beyond the confines of government", concluding that "we have to put extra focus on the specific embeddedness of actor-relational actions by and through stakeholders in both business and civic society" (*ibid*). Such an approach is "*associative* through and through" (original emphasis). Boelens focuses on building associations around specific themes or issues, but argues that this chimes with influential literature in voluntary sector research on associative democracy (cf. Hirst, 1994). According to this view, echoed by many energy democracy activists (Van Veelen and Van Der Horst, 2018), self-governing voluntary bodies are the primary means of democratic governance and organising social life (Hirst 1994).

There is of course a rich vein of literature within voluntary sector research on democracy in organisations and economies more broadly – for instance the extensive writings of Rothschild (2000; 2009; Rothschild and Whitt, 1989) on the role of worker cooperatives and collectives in achieving economic democracy (conceived as a corollary to political democracy – that is participation in political institutions and decision-making), including that which implies – although is not explicit about - a relational perspective on understanding democracy within organisations (see for example Sarchetti and Tortia, 2015; Varman and Chakrabarti, 2004). Important conceptual insights are made by Varman and Chakrabarti who highlight the importance of understanding "democracy as evolving reality" (ibid. p202), or evolving process "amid the pushes and pulls in a set of contradictions" (ibid. p204). For Varman and Chakrabati (ibid.) dialectical forces are at play within organisations seeking to become more democratic: external pressures and internal tendencies towards hierarchisation are (necessarily) continually counterbalanced by an enduring commitment and vision towards democratic action within collectively-focused organisations. Langmead (2017b) takes this further in her in-depth study of worker democracy in practice, arguing that democratic praxis is "an emergent, transgressive and prefigurative act through which cooperatives engage in ongoing 'contradiction work'" (p24).

However, an assemblage perspective on democracy is more radical in its emphasis on self-governance and democracy as fundamentally relational, achieved through relentless search for new connections (Purcell, 2013); its focus on material as well as social elements; and implication that connectivity between actors and organisations is unavoidable. This potentially pluralises existing democratic institutions, opens up private interests to greater scrutiny; and removes or reduces hierarchies by focusing on bottom-up self-governance.

One critique of this approach is that imbalances in resources or the exercise of power are underplayed and it is important to remain alive to this (McFarlane, 2011). However, focusing on the different associations produced and embedded within different elements of a particular place or project can conversely seek to illuminate how actors are subject to exercise of power from a range of sources. It can therefore potentially produce a more complete understanding of how actors negotiate their way through the process of achieving particular goals:

> … *because* agencements *create differentiated agents and positions … it is possible to trace relationships of domination as they are dynamically established (*Caliskan and Callon, 2010: 8-9 in Farias, 2011)

Assemblage-democracy (here used as shorthand for 'democracy from an assemblage perspective) is used in this paper to further ideas about how becoming-democratic (the unfolding process of seeking to achieve the impossible state of perfect democracy; Deleuze and Guatarri, 1980) can be understood within 'a network of lines that enlace' (Calvino, 1979). Assemblage-democracy takes us beyond 'claimed' and 'invited' spaces into a less defined, more emergent understanding of voluntary sector action and democracy. Such a perspective inherently requires consideration of what elements and actions are important to

understanding assemblage-democracy. A critical aspect of this is the role of intermediaries and processes of intermediation.

Intermediaries

Understanding an assemblage requires focusing on the connections made to produce it. By emphasising the multitudinous, heterogeneous connections necessary for action to happen thinking from an assemblage perspective draws attention to how connections are formed, the relations of connections, and how their formation in turn influences/determines the nature of the assemblage. From this perspective, intermediaries do not simply transport or connect elements, but in doing so, transform and modify the elements they are supposed to carry (Latour, 2005).

The study of intermediaries has become popular in studies of energy transformation (Bush et al., 2017; Geels and Deuten, 2006; Hargreaves et al., 2013), including recently in studies of community energy (Bird and Barnes, 2014; Lacey-Barnacle and Bird, 2018; Van Veelen, 2019). However, these studies tend to focus on intermediaries in a relatively narrow sense, as a specific type of *organisation* shaping the ability of other organisations to achieve particular objectives. For instance, research on intermediary organisations in energy studies is dominated by analysis of intermediary organisations' role in nurturing novel activities, which in turn might influence or replace established practices and institutions (Hargreaves et al., 2013). Much of this literature is influenced by Geels and Deuten (2006), who identify three roles for intermediaries: aggregating knowledge, creating institutional infrastructure, and reversing the relationship and knowledge-flows between local projects and wider structures. In the voluntary sector literature, emphasis on particular types of organisation as intermediaries between voluntary organisations and the state and/or other societal actors has also been important: for instance Harris (Cairns and Harris, 2011; Harris et al 2004; Harris and Shlappa, 2008) has written about the role of cross-sector partnerships and the role of regional intermediary organisations in shaping voluntary sector action.

However, emphasis on specific functions performed by intermediary organisations provides an incomplete insight into how assemblages are shaped. First, conceptualisation of intermediary relations as one-directional functions discounts how these actors themselves are (co-)produced through their relations with others (Van Veelen, 2019). Second, it discounts the role of elements other than organisations that co-produce the assemblage. Deploying an assemblage perspective opens up the concept of intermediary by emphasising the role of a wide range of material and non-material intermediaries in assembling phenomena. In this way, intermediaries can be understood to include (for example, in the case of community energy) the material elements required to assemble generating capacity (for instance, a wind turbine or solar PV panel), local 'publics', investors, financial mechanisms, language / linguistic norms, and so on.

Considering relations between community projects and the range of intermediating elements they engage with helps further understand the ways democracy is shaped and enacted. Using the lens of assemblage-democracy helps emphasise political ambiguities of

participation, conveying its situated nature, the boundedness and permeability of arenas, and the domains from which new institutions and opportunities emerge. Such thinking allows us to capture:

> *"indeterminacy, emergence, becoming, processuality, turbulence and the sociomateriality of phenomena … Rather than focusing on [places or organisations] as resultant formations, assemblage thinking is interested in emergence and process, and in multiple temporalities and possibilities"* (McFarlane, 2011 p206).

In the following sections we focus on emergence and intermediation between different elements that shape how projects are produced and in turn have implications for becoming-democratic. We use two case studies of community energy projects in the UK to do this.

Becoming-democratic in two UK community energy projects

This article draws on original in-depth empirical material gathered in England and Scotland, focusing on the activities of community energy projects. Community energy has grown substantially across Europe and North America over the last decade, including in the UK where there has also been increased policy interest at national and devolved levels of government. A range of incentives for community energy development have been implemented by the UK government, perhaps most notably through the introduction of 'feed-in tariffs' (FITs) for small-scale electricity generation, guaranteeing a subsidy per unit of electricity produced by small-scale electricity generators. Although initially generous these subsidies have been dramatically reduced and most were abolished completely from April 2019. In Scotland additional support for community has been available through numerous initiatives, the most important ones including provision of grants and loans to community groups, and provision of support officers to assist them. However, many community energy projects in both nations have stalled as the legislative climate for community energy has become more straitened, including reduced eligibility for tax incentives and changing rules on the charitable status of community energy organisations.

The empirical material comes from two research projects, focusing on community energy governance in England and Scotland respectively. Combined these projects involved 87 in-depth qualitative interviews with practitioners, wider stakeholders and policy-makers, as well as focus groups. Both projects were also informed by participant observation at community energy events and workshops. This paper draws specifically on two case studies from these projects, but employs this wider body of evidence for contextual information and verification/triangulation of points made by participants during data collection for the individual case studies. Further detail on methods is outlined in Table 1. Names of places and organisations have been changed to aid anonymisation of projects and research participants.

The two cases were chosen from the wider research projects purposively as projects that provided contrasting but complementary insights into processes of intermediation that shape efforts to become democratic, including differing material, technical, political and

geographic contexts. The purpose was to provide ranging insights that aided conceptualisation and theorisation of intermediation, assemblage-democracy and becoming-democratic.

Interviews and focus groups were audio-recorded and subsequently transcribed; data from observations were recorded as notes, then written-up as a formal record by the researchers. Data was initially coded and analysed separately for the two projects, albeit sharing commonalities in the coding framework, for instance around understanding democratic processes and the roles of different intermediaries. This data was recoded and reanalysed for this article around a more precise framework focused on the specific aims of the article. Reanalysis of the data focused on exploring more concretely the range of connections involved in assembling community energy projects, the nature of relational ties involved in these connections and their implications for becoming-democratic. The assemblages are made up of human and non-human elements, including individuals, organisations, technologies, norms, finance and so on. While organisations and other collectives also consist of human and non-human elements, we have only disaggregated these collectives if essential for understanding the work the assemblage does. The findings are presented below in two parts: first by outlining the elements involved in the projects and the relations between elements, and then to discuss the democratic implications of the assemblage. Organisations and places have been anonymised in line with ethical approvals for the research projects.

Table 1: Data collection techniques and respondents for the two case studies

Case Study	Method	Respondent group	Number
Amperton Renewables	In-depth qualitative interviews	Community Energy project board members, volunteers and staff	5 interviews
		Wider stakeholders (e.g. local authority, electricity network operator, project partners)	5 interviews
	Focus group	Community energy practitioners and stakeholders	8 attendees
	Participant observation	Community energy practitioners and stakeholders	2 events (one workshop led by a Local Enterprise Partnership; one event hosted by the Distribution Network Operator)
Balnaglas community hydro	In-depth qualitative interviews	Community Energy project board and staff	3 interviews
		Wider stakeholders (e.g, development agencies, Scottish Government, support organisations)	9 Interviews
	Participant observation	Community energy practitioners and stakeholders	2 events (one community energy conference; one workshop led by other community energy researchers)

Assembling community energy democracies

Assembling the assemblage

Prior to discussing how community energy democracies are assembled, we need to introduce the basic components of the assemblages. In doing so we outline the human and 'more-than-human' elements that constitute the assemblage. Although we present the human and non-human elements separately here it is important to understand the two as interwoven, not categorically distinct, in practice. Our initial description of the two projects shows how both human and non-human elements generate points of intermediation which shape how the assemblage is constructed in a range of different ways. Our two cases concern a community hydroelectricity project in the Scottish Highlands (Balnaglas Community Hydro) and four solar photovoltaic (PV) projects in the northern English city of Amperton. The two organisations central to our community energy assemblages – Balnaglas Community Company[1] (BCC) and Amperton Renewables – were formed around the same time: 2008 and 2007 respectively. To develop its energy-project, BCC established a subsidiary – Balnaglas Community Hydro in 2014.

The historic and geographic context in which the two projects are situated are, however, very different, shaping the organisations' respective aims, activities, and organisational forms. BCC represents the people of Balnaglas and surrounding settlements. It is a sparsely populated area, with fewer than 1,000 residents living in an area covering approximately 27,000 hectares. BCC's activities sit within a longer and broader trajectory of asset-based community development in the Scottish Highlands, where voluntary groups are expected to develop initiatives to further sustainable development of the local area. As such, the development of the hydro scheme should be seen in this context of local self-help (with part of the income generated by the scheme to be used for local development projects), rather than environmental activism. In contrast, Amperton is a medium-sized city with around 500,000 inhabitants characterised by large areas of deprivation as well as some of the wealthiest electoral wards in the UK. There is not a particularly strong history of environmental action in the city, and in broad terms high profile collective action historically came via industrial trades unions and municipalities rather than voluntary sector action. Yet over the last decade there has been a growth in green politics within the city and local social movements for environmental change. Amperton Renewables (AR) emerged from this rising concern on climate change and the desire to undertake practical action.

In both cases, the projects' 'central knot' (Latour 1999) consisted of a variety of human actors. The difference between the two, is the extent to which these actors can be deemed part of the geographic community. For BCC this central knot consisted of locally-based voluntary board members and one temporary paid staff member. Through the process of developing the hydro project, other actors, including engineering consultants, funders and support organisations were drawn into the assemblage to provide additional expertise. Especially important were public and third sector organisations. For example, design and

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[1] Despite use of the word 'company', it is important to emphasise that this is a non-profit community group

feasibility studies for potential energy projects were funded through grants from the Scottish Government and delivered through the intermediary organisation Community Energy Scotland. The latter was critical in the project's development. As one interviewee recalled:

> *It was very straightforward, they said 'this is the next stage', and you said 'okay, how do we do that?', and they said 'well this is what you do and here is the grant to pay for it'. (BCC employee)*

In Amperton, the elements that made up this central knot were project volunteers, temporary paid staff, board members, investors and 'partners' (owners of sites where solar panels had been installed). There were nine board members, with shared decision-making responsibilities. Six board members also volunteered with the project, carrying out tasks including liaison with partners and contractors, awareness-raising activities, administration and wider stakeholder engagement. Partners consisted of a wholefoods wholesales cooperative, a school, a community development trust and a local police force, each hosting solar panels on their buildings. Partners agreed for AR to supply electricity at a 20% lower rate than their existing tariff, over 20 years, rising annually with inflation. Electricity unused by partners was sold into the electricity grid. [2] In contrast, in Balnaglas all electricity was sold into the grid. These arrangements meant both organisations were also subject to intermediation through government energy policy, which determined FIT rates and eligibility. In addition, Amperton was also subject to intermediation through the electricity market.

While Community Energy Scotland was deemed essential by BCC for connecting the group with distant nodes of funders and policy makers, the English equivalent (Community Energy England (CEE)) provided a different function for AR: connecting the group to other community energy organisations around the country from whom they could learn. In both cases the assemblage thus began to extend outwards from the 'central knot', but the types of nodes, as well as the relations between them, were already beginning to diverge.

A more-than-human assemblage

Through the development process, the two community groups thus enrolled extralocal elements (partners, government funding, external advice) into the assemblage, but equally important is the enrolment of material elements (e.g. technologies and natural resources).

For BCC, the materiality of the national grid proved to be a particularly important actant in shaping the assemblage. With limited capacity to absorb additional electricity, BCC could only connect a hydro project of a maximum of 100kW[3] to the grid. In return for supplying energy to the grid, BCC would receive approximately £100,000/year through FITs. Later, BCC found that even a 100kW grid connection may not be possible: for the foreseeable future it would only able to connect up to 50kW. In response, BCC investigated an alternative material configuration: a private wire (a system that could provide electricity directly to homes in the area). This would also reduce electricity bills, in an area where

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[2] through FITs a payment was received for energy sold into the grid as well as for all electricity generated
[3] A 100kW hydro scheme can power approximately 120 houses (source: project documentation).

nearly 50% of people live in fuel poverty. At this point, the Scottish Government's support mechanisms for community energy had changed, and BCC's application to the newly-established Local Energy Challenge Fund was unsuccessful, forcing the group to return to plans for a grid-connected scheme.

In Amperton, solar PV panels were the central material technology. In 2018 AR had four operational projects, with a combined capacity of 175 KW. Unlike Balnaglas, grid connection did not prove problematic. Instead the material and legal features of potential sites proved to be key intermediaries in the assemblage. To find sites for solar installations AR aimed to partner with organisations with similar values to their own, which in practice meant targeting voluntary and public sector organisations. However, this had proved limiting. Having secured funding, AR advertised for civil society organisations to become partners and host solar installations, receiving 100 expressions of interest. Yet, following initial feasibility assessment (for instance for roofspace, building orientation and location) this reduced to six potential sites. Even when sites appeared suitable further intermediating factors often intervened, as in the following example:

> " *We came across a GP … and to be honest we thought we were going to do well there but their structures are so complex, most of them don't own their own properties, a lot of them were done under PFI [Private Finance Initiative] and have got mortgages on" (AR volunteer / board member)*

In this context, an on-going frustration was the inability and/or unwillingness of Amperton City Council and the city's other large public institutions (university, hospital, housing associations) to offer their estates as potential sites.

In addition to the materialities of the energy installation, the assemblage was also shaped by the legal form and associated financial relations of both organisations. In both cases the group/subsidiary running the energy project has the legal form of a Community Benefit Society. Such organisations can issue community shares, which cannot be traded. Typically an organisation will pay interest to shareholders and return the capital investment over time, based on money made from (for example) selling electricity. In Balnaglas, the decision to structure Balnaglas Community Hydro this way was driven by internal considerations – to ensure that the energy assets would remain for the benefit of the community in perpetuity – and external considerations, particularly new rules for energy co-operatives introduced by the UK Financial Conduct Authority (FCA) in 2014 which limited groups' ability to structure themselves as *bona fide* cooperatives. Balnaglas Community Hydro subsequently issued a share offer, open to all UK residents, which funded project construction costs (approximately £800,000). Amperton adopted a similar approach, although small grants from Amperton City Council (ACC) and central government were used to supplement the cost of the projects.

At time of writing, BCC's scheme is operational, albeit running at half capacity due to grid connection restrictions. Surplus income is divided between members and the local community. The level of interest paid to members is suggested by the Board of Directors, and referred to members for approval at the AGM. Returns to investors are capped at 5%,

leaving approximately £10,000/year for the local community. In Amperton, investors received the majority of income. AR gave most of their small surplus income (£3,000 in 2017) to a local community development organisation, which was then used to fund energy support for fuel poor residents in Amperton. A small donation was also made to an international development charity.

Assemblage-democracy involves both self-governance and on-going pursuit of new connections (Purcell, 2013). In this section we have shown how these connections have shaped the emergent assemblages. In Balnaglas, various non-human elements, including geography of the area, materiality of the electricity grid, and government funding acted as important intermediating processes that co-shaped the assemblage, while in Amperton the assemblage was constrained by the intermediating processes of markets, government policy, and a practical inability to find suitable sites. In the next section we will discuss the democratic implications of these emergent assemblages.

Democratic implications of intermediation

Emergent assemblages are not static. Rather, they are a snapshot, a particular set of relations that come together at a particular point in time. While some elements might be more stable than others, the ways they relate to one another remains open to change. As such, the democratic qualities produced through this relational process are not static either. Instead they are part of a continuous process of becoming-democratic. Nonetheless, intermediating processes had a critical bearing on how democracy was enacted in Balnaglas and Amperton, and how this shaped these projects' ability to produce a more democratic energy system. To identify how democracy was produced, we focus on three components – publics, governance, and wider connections - while remaining aware of their interconnectivity.

Democratic publics

The configuration of the assemblage and relations between its elements are key in shaping the 'democratic public': those considered part of the emerging assemblage-democracy. In both cases, relations between different elements – particularly technology, natural resource availability, finance, support organisations – produced several democratic publics. Here we give two examples relating to the intermediating effects of (1) historic organisational configurations and ways of working; and (2) material elements.

An important influence on the construction of a new democratic public is existing historic configurations, such as existing communities of place or practice operating within the same geographic area as the new assemblage. For instance, in the case of Balnaglas, the democratic public was initially shaped by historic and contemporary norms, favouring the idea of *place-based* community development in the Highlands. As a result, the public BCC represented consisted primarily of local residents, with the area's residents able to join BCC. However, the public of Balnaglas Community Hydro was constituted by different elements. As a Community Benefit Society shareholders rather than local residents were responsible for project decision-making. As the Board of Directors consisted of members, control was not necessarily in local hands. The development of a grid-connected, rather than local grid

project thus ensured that 'the public' was not a public of local energy users, but of technology funders. The democratic public shifted from a public defined by shared geography to one defined by shared interest. Nonetheless, a second public, the local community, was also formed. With approximately £10,000/annum from the scheme distributed to BCC, local people had a say in how this money is used. There is thus an interactive, ongoing relation between the two publics, but the possibility of tensions arising from conflicting interests between the two publics was as yet untested.

Critically, the development of energy publics can also be heavily shaped by material intermediaries. For example, in Amperton, AR faced changes to who they wanted to be part of 'their' public, as a result of the lack of available sites and the challenges of constituting a public around material technologies. The lack of sites limited AR's ability to associate with different potential publics. This lack of sites was exacerbated by a distant intermediary in the form of Grenfell Tower[4]: it was found that the tower blocks that AR had earmarked for solar PV installation had the same cladding as Grenfell, requiring immediate removal. This took precedence over the PV project, which was aborted.

The desire to find more sites created potential for AR's ethos to shift in response to pragmatic delivery imperatives:

> *"I guess we've always had a lively debate among ourselves about the ethics and the ethos about who we work with, though probably [because of difficulties finding sites] our morals are slipping a bit these days" (AR volunteer / board member).*

Working with private sector partners increased the range of AR's potential associations but shifted the nature of these associations, with implications for the normative dimensions of who should be considered part of a democratic public.

However, the alternative – not forming such collaborations – also has consequences for democratic governance. The lack of suitable sites left AR with unspent funds from their share offer, prompting board members to consider 'mothballing' the organisation, retaining only an administrative function to administer payments to shareholders. This obligation to shareholders regardless of AR's future highlights their paramount status among the different groups creating the central knot of AR. AR had to balance the need to generate investment, then provide a return and voice to shareholders against wider goals, including local community engagement.

In both cases normative ideals of democratic participation were also challenged by the material/technological and relatively invisible nature of energy generation. Not only did this determine *who* is part of a democratic public, but also *how.* In both cases, while participation was encouraged in the development of renewable projects, once the technology is up and running *"there's no ongoing need to have a face to face dialogue"* (AR volunteer / Board Member AR), and interest in the technologies quickly waned.

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[4] Grenfell Tower was a residential tower block in North Kensington, London. It was destroyed by a fire in June 2017, which killed 72 people. One of the causes attributed to its rapid spread throughout the building was the use of combustible insulation cladding on the building's external walls. The same cladding was subsequently found in a number of other tower blocks across the UK – estimates reaching as high as 600 tower blocks.

Through the two cases we can therefore see how democratic publics are shaped through a range of intermediating factors: in this case we highlight historic norms and ways of doing within local areas as well as material complexities.

Democratic governance

We now consider the effects of intermediation on governance processes in the two organisations, focusing in particular on formal contractual ties with geographically near and distant intermediaries; and the intermediating effects of embeddedness within a particular local community (linking again to norms and established ways of doing).

Our Amperton case study shows how formalised contractual relations with intermediaries near *and* far also had a powerful effect on democratic governance processes. In Amperton, board members met monthly and also regularly made decisions collectively via email. Board members were elected at AGMs, usually proposed to shareholders by the board on the basis of having volunteered with AR for a period of time. The overall principle was for deliberative, consensus-based decision-making between board members. In practice this was a largely informal arrangement: *"it's kind of ad hoc as we go along at the moment cos that's the only way we can do it"* (AR volunteer / board member).

Yet behind this 'ad hoc' process, decision-making was bound by numerous formal contractual relations; for instance between AR and its partners, its investors, electricity network and supply organisations and the UK legal system (as an incorporated Community Benefit Society). These arrangements codified relations between elements of the assemblage but this was pragmatically necessary for project development. This is problematic for assemblage-democracy: democratic spaces are 'smooth', with low levels of coding (Deleuze and Guattari, 1980; 1987). However codification is not necessarily antithetical to becoming-democratic even from a normative orientation towards autonomous self-governance. For instance incorporation as a Community Benefit Society ensured AR met certain charitable principles and protected it from risks of private interests taking excess material gain from project assets and operations. Contractual relations determined other connections, which, combined with the 'silent' and 'hidden' nature of solar PV, affected the nature of relationships, as one volunteer/board member explained:

> *We've got a transactional relationship in that we invoice them for electricity every couple of months, maybe yearly site visits … mainly once we've had the installation it takes care of itself (AR volunteer / board member)*

While formal and contractual ties might be expected to shape how organisations function, this final point also hints at how projects are embedded (or not) within participants' lives and more broadly embeddedness geographically also has an important role in shaping the nature of democratic communities. Turning now to the Balnaglas example, historic and contemporary norms (which favour developments by 'local' communities through availability of funding streams) and particularities of the local area (a large, sparsely populated area) created specific challenges for democratic governance. First, the idea of locally-led development is desired both by many communities and the Scottish Government.

However, the latter has been criticised for not understanding the challenges accompanying this. Some of those involved in BCC mentioned being approached by local residents in the local shop, the local pub, while walking or driving down the street… While being embedded in the public you are representing is often seen as a strength of local governance, here, inability to 'escape' was also identified by interviewees as a challenge.

> *"But I'm absolutely knackered, and I don't sleep well. […]. I'm just completely wound up. So, it's not… and I don't think it should be so painful." (BCC employee)*

Following the establishment of the Community Hydro subsidiary, governance of the hydro scheme and associated issues was in the hands of the subsidiary's Board of Directors, drawn from shareholders, rather than local residents. Only 10% of investors were Balnaglas residents, thus it was likely that many of the Directors would not be local residents. Here, geography, particularly the distance between Balnaglas and many of its investors shaped the way democratic governance was enacted. During its first AGM there was no quorum as a result of the limited number of shareholders attending. This limited the potential to make key decisions. Going forward, a key challenge was to balance the interests of two different publics, as the Board of Directors would have to decide how to distribute income from the hydro scheme between (primarily extra-local) shareholders and BCC to be spent on local activities.

Thus, in both cases, despite the ideals of democratic governance and becoming-democratic, only a small proportion of what we considered as the 'democratic public' are actively involved in governing the two projects, shaped in different ways by both 'looser' interpersonal and geographic ties as well as a range of formalised contractual ties.

Multiplying democratic connections?

While there are potentials and challenges to enacting democracy locally through energy governance, what potential is there for this assemblage to enact democracy beyond its geographic and material core? While development of an energy project enabled the Balnaglas community to generate income, its ability to spend this on further community development activities is limited, in particular due to the challenge imposed by local landownership arrangements. Like elsewhere in the Highlands, a Private Trust owned the land in and around Balnaglas. Despite Scottish Land Reform legislation, there was little prospect of change in the near future. This remained a constraint on BCC's ability to take ownership of other resources and develop additional projects.

Like in Balnaglas, AR also experienced barriers in multiplying its democratic connections. Working with the local authority would have in some respects opened up greater democratic potential, both through generating a new and wider range of connections, including an indirect – albeit weak – democratic link to the public of Amperton as a whole but this had been a key constraining factor for the project.

> *I think we see community energy groups that have really succeeded, they've had strong relationships with public bodies or institutions from quite early on and that might be through political support or just having the right contacts, a lot of the time we feel it's not what you*

> *know it's who you know sometimes to get these projects pushed forward (AR board member / volunteer)*

However, links to formal institutions such as energy markets and public sector bodies also come with democratic risks, as noted in other community energy research (Taylor Aiken, 2015; Creamer, 2015; Van Veelen, 2018). The UK energy system is particularly problematic in this sense and points to a paradox for community energy projects such as AR. Like many projects a motivation for AR was the undemocratic nature of the existing centralised and privatised energy system: community energy is seen as one means of producing a more democratic energy system. Yet, organisation of energy grids, markets and subsidies for renewable energy generation locks community energy projects into the same energy system. The highly coded and territorialised nature of energy markets means that there is little room for AR to directly influence the operation of energy systems, and being tied into fundamentally non-democratic systems in turn influences the democratic nature of the community energy project by nature of association. AR board members were conscious of this and the announcement in 2018 of the FIT scheme's closure was also seen as an opportunity to find new approaches to generating and supplying energy directly to energy users that did not rely on the energy grid: an opportunity to 'take flight' (Deleuze and Guattari, 1980) from existing undemocratic structures.

The scope to exert influence beyond the local arena thus appears limited in both cases. As the Amperton case showed, while community energy is seen as one route to a more democratic energy system, the organisation of energy grids, markets and subsidies for renewable energy locks community energy projects into the same energy system. In Scotland, Scottish Government funding has tended to prioritise place-based community energy groups (although this is slowly changing), and funding decisions tend to be made in Edinburgh or London, often focused on strategic energy considerations. While Balnaglas sought to free itself from these wider structures by developing a private grid, its inability to do so is indicative of wider relational ties that limit the emergence of assemblage-democracy.

Discussion and Conclusion

In this article we have shown how an assemblage perspective on community action has promise for understanding key issues for voluntary sector research, in particular around ideas of governance, democracy and intermediation. This holds for energy studies too. Our empirical studies show how distinctions between claimed and invited spaces can be overcome when considering actually-existing relations and negotiations involved in producing projects-as-assemblages. We show how relations are proactively as well as reactively produced, how these relations can be simultaneously empowering and limiting, and are bi-directional: there is interplay between different elements. At the same time intermediation is intrinsic to project development and we show the impossibility of viewing projects as coherent wholes in themselves if the aim is to provide a convincing explanation for their emergence and operation. This view on voluntary sector and community energy action challenges how we consider democracy within and beyond individual projects: for

instance, in terms of imposing particular understandings of democracy on any set of actors, who are in turn constantly negotiating with different competing and overlapping intermediating processes. This emphasises the importance of the concept of becoming-democratic: democracy as a reflexive process of becoming rather than an outcome (see also Langmead, 2018a). So assemblage-democracy creates potential to reconceptualise democracy and the ability to achieve democratic goals. In this article we have focused on one aspect of this, emphasising intermediation, multiplicity and distributed agency in processes of democracy in and through practice.

By highlighting intermediaries and intermediating processes within community energy projects we provide a lens to more thoroughly excavate tensions and interplay between different actors in the process of becoming (more or less) democratic. This approach implies a broadly flat ontology of social organisation and relations. However, it is important to hold onto the fact that relational ties between different elements differ qualitatively, in particular through resource imbalances and exercise of different forms of power. In the language of assemblage, coding (the extent that assemblages are defined by particular set, regularised ways of acting and being) and territorialisation (the extent that assemblages are bounded and delineated, including spatially) are particularly important terms. We can begin to see through these case studies how different intermediating elements introduced or increased levels of coding and/or territorialisation, while others created openings for experimentation and loosening of existing delineations. Returning to the theme of claimed versus provided spaces, our assemblage-inspired approach to civil society action provides an account of on-going back-and-forth processes of claiming and provision, empowerment and disempowerment. Moves towards lower levels of coding and territorialisation form the basis for becoming-democratic but our study also highlights the impossibility of escaping ties that actively or indirectly code and territorialise activity: instead we look to what Deleuze and Guattari (1980) term 'pragmatics'; on-going activities that tinker with and operate on the edges of existing structures to create more, but never perfectly, democratic assemblages.

This approach also shows the limitations of thinking through democracy from 'within' an organisation, or by focusing solely on democracy as an either/or of (for example) participatory, associative, deliberative, representational (and so on). Rather we should instead focus on processes of becoming (more or less) democratic – and the reflexive negotiation involved in generating connections to ever increasing numbers of intermediaries.

These ideas foreground fruitful areas for future research. First more in-depth analytical focus on the processes of (de-)codification and (de-)territorialisation involved in democratic projects will help to further draw out the tensions involved for understanding assemblage-democracy, and how assemblages engage in on-going negotiation between elements that tend towards or against codification and territorialisation. Second, building on the analysis of intermediation here, conceptualisation and analysis of the specific forms of power being exercised in the creation of ties between elements has potential to take further existing understanding of intermediation, codification/territorialisation and assemblage-democracy.

Clearly there are limitations to this study, in that it focused only on two projects among many (estimated at anything between 200 and 5000 in the UK alone; Braunholtz-Speight et al., 2019), capturing only a snapshot in time. However the dataset does provide a useful case for providing analytical and theoretical insights: theoretically generative rather than empirically generalisable. Furthermore the dataset was embedded within two larger projects which generated wider contextual insights to community energy across England and Scotland, allowing the researchers to understand how these cases fitted with the broader landscape of community energy action.

REFERENCES

Becker, S., and Kunze, C. (2014) Transcending community energy: collective and politically motivated projects in renewable energy (CPE) across Europe. *People, Place and Policy*, 8 (3), 180–191.

Becker, S. and Naumann, M. (2017) Energy democracy: Mapping the debate on energy alternatives. *Geography Compass* 11(8).

Becker, S., Angel, J., and Naumann, M. (2019) Energy democracy as the right to the city: Urban energy struggles in Berlin and London. *Environment and Planning A: Economy and Space.* https://doi.org/10.1177/0308518X19881164

Bird, J. and Barnes, C. (2014) Scaling up community activism: the role of intermediaries in collective approaches to community energy. *People, Place and Policy* 8, 3, 208-221.

Boelens, L. (2010) Theorizing practice and practising theory: Outlines for an actor-relational-approach in planning. *Planning Theory* 9 (1) 28-62.

Braunholtz-Speight, T., Mander, S, Hannon, M, Hardy, J, McLachlan, C, Manderson, E, Sharmina, M (2019) The evolution of community energy in the UK. London, UKERC.

Brenner, N., Madden, D. J. and Wachsmuth, D (2011) Assemblage urbanism and the challenges of critical urban theory. *City 15 (*2), 225-240.

Bush, R.E., Bale, C.S.E., Powell, M., Gouldson, A., Taylor, P.G., and Gale, W.F. (2017) The role of intermediaries in low carbon transitions — empowering innovations to unlock district heating in the UK. *Journal of Cleaner Production*, 148, 137-147.

Cairns, B. and Harris, M. (2011) Local Cross-Sector Partnerships: Tackling the Challenges Collaboratively. *Nonprofit management & leadership* 21 (3) 311-324.

Calvino, I. (1979) *If on a winter's night a traveler*. London: Vintage Classics.

Catney, P., MacGregor, S., Dobson, A., Hall, S.M., Royston, S., Robinson, Z., Ormerod, M., and Ross, S., (2014) Big society, little justice? Community renewable energy and the politics of localism. *Local Environment*, 19 (7), 715-730.

Chilvers, J. and Pallett, H. (2018) Energy democracies and publics in the making: a relational agenda for research and practice. *Frontiers in Communication* 14 (3).

Cornwall, A. (2004) Spaces for transformation? Reflections on issues of power and difference in participation and development. *In:* S. Hickey and G. Mohan, eds. *Participation: from tyranny to transformation?* London: Zed Books, 75–91.

Creamer, E., 2015. The double-edged sword of grant funding: a study of community-led climate change initiatives in remote rural Scotland. *Local Environment*, 20 (9), 981–999.

DECC (2014) *Community Energy - Detailed guidance* [online]. Gov.uk. Available from: https://www.gov.uk/community-energy [Accessed 17 April 2014].

DeFilippis, J., Fisher, R., and Shragge, E. (2006) Neither romance nor regulation: Re-evaluating community. *International Journal of Urban and Regional Research*, 30 (3), 673–689.

DeLanda, M (2016) *Assemblage Theory*. Edinburgh University Press, Edinburgh.

Deleuze and Guattari (1980) *A Thousand Plateaus*. London: Bloomsbury

Eikenberry, A. M. (2009) Refusing the market: a democratic discourse for voluntary and nonprofit organizations. *Nonprofit and Voluntary Sector Quarterly 38*, 4 pp.582-596

Emejulu, A. and MacLeod, M.A. (2015) *Community Development in Contradictory Times: Looking Beyond Asset-Based Community Development in Scotland?* Edinburgh: Scottish Community Development Centre and Community Development Alliance Scotland.

Farias, I. (2011) The politics of urban assemblages. *City* 15(3-4), 365-374

Featherstone, D., Ince, A., Mackinnon, D., Strauss, K., and Cumbers, A. (2012) Progressive localism and the construction of political alternatives. *Transactions of the Institute of British Geographers*, 37 (2), 177–182.

Foley, M. W. and Edwards, B (1996) The paradox of civil society. *Journal of Democracy 7*, 3 pp.38-52

Geels, F. and Deuten, J. (2006) Aggregation Activities: Local and global dynamics in technological development: a socio-cognitive perspective on knowledge flows and lessons from reinforced concrete. *Science and Public Policy*, 33 (4), 265–275.

Grey, S and Sedgwick, C (2013) *Fears, constraints and contracts: the democratic reality for New Zealand's community and voluntary sector*. Report to the Community and Voluntary Sector Forum, Victoria University of Willington, March 2013. https://www.victoria.ac.nz/sacs/pdf-files/Fears-constraints-and-contracts-Grey-and-Sedgwick-2014.pdf

Grin, J., Rotman, J and Schot, J (2010) *Transitions to sustainable development*. London: Routledge.

Hargreaves, T., Hielscher, S., Seyfang, G., and Smith, A. (2013) Grassroots innovations in community energy: The role of intermediaries in niche development. *Global Environmental Change*, 23 (5), 868–880.

Harris, M., Cairns, B. and Hutchinson, R (2004) "So Many Tiers, So Many Agendas, So Many Pots of Money": The Challenge of English Regionalization for Voluntary and Community Organizations. *Socal Policy and Administration* 38 (5), 525-540.

Harris, M. and Schlappa, H (2008) 'Hoovering up the Money'? Delivering Government-Funded Capacity-Building Programmes to Voluntary and Community Organisations. *Social Policy and Society* 7 (2), 135-146.

Hickey, S. and Mohan, G. (2004) Towards participation as transformation: critical themes and challenges. *In:* S. Hickey and G. Mohan, eds. Participation: from tyranny to transformation? *Exploring new approaches to participation in development.* London: Zed Books.

Hirsch, R. F. and Jones, C. F. (2014) History's contributions to energy research and policy. *Energy Research and Social Science 1* pp. 106-111

Hirst, P. (1994) *Associative Democracy*. Cambridge: Polity Press.

Ison, N. (2009) *From command and control to local democracy: the governance of community energy projects* [online]. Available from: http://www.mrsgonline.org.au/wp-content/uploads/2011/07/Ison-From_command_and_control_to_local_democracy1.pdf [Accessed 29 October 2013].

Jones, M (2009) Phase space: geography, relational thinking, and beyond. *Progress in Human Geography 33*, 4 pp. 487-506.

Kesby, M. (2007) Spatialising participatory approaches: The contribution of geography to a mature debate. *Environment and Planning A, 39* (12), 2813–2831.

Lacey-Barnacle, M and Bird, C (2018) Intermediating energy justice? The role of intermediaries in the civic energy sector in a time of austerity. *Applied Energy* 226, 71-81.

Langmead, K (2017a) Challenging the degeneration thesis: the role of democracy in worker cooperatives? *Journal of entrepreneurial and organizational diversity 5*, 1 pp.79-98

Langmead, K (2017b) Exploring the performance of democracy and economic diversity in worker cooperatives. *Sheffield: Sheffield Hallam University*

Latour, B (1999) *Pandora's Hope: Essays on the Reality of Science Studies*. Cambridge (USA): Harvard University Press.

Latour, B (2005) Reassembling the social: an introduction to actor-network theory. Oxford: Oxford University Press.

Marcus, G. E. and Saka, E. (2006) Assemblage. *Theory, Culture and Society 23*, 2-3.

Markantoni, M. and Woolvin, M. (2015) The role of rural communities in the transition to a low-carbon Scotland: a review. *Local Environment*, 20 (2), 202–219.

McAreavey, R. (2009) Community Regeneration: An Elite or a 'Real' Community Space? *International Planning Studies*, 14 (3), 311–327.

McFarlane, C (2011) Assemblage and critical urbanism. *City* 15(2), 204-224.

Middlemiss, L. (2014) Individualised or participatory? Exploring late-modern identity and sustainable development. *Environmental Politics*, 23 (6), 929–946.

Middlemiss, L. and Parrish, B.D. (2010) Building capacity for low-carbon communities: The role of grassroots initiatives. *Energy Policy*, 38 (12), 7559–7566.

Newman, J. and Tonkens, E. eds. (2011). *Participation, Responsibility and Choice: Summoning the Active Citizen in Western European Welfare States*. Amsterdam: Amsterdam University Press.

Purcell, M (2013) *The Down-deep delight of democracy*. Chichester, Wiley.

Rothschild J (2000) Creating a just and democratic workplace: more engagement, less hierarchy. *Contemporary Sociology*, 29 (1), 195-211.

Rothschild, J (2009) Workers' cooperatives and social enterprise: a forgotten route to social equity and democracy, American Behavioral Scientist, 52(7): 1023-1041

Rothschild, J and Whitt, W (1989) *The cooperative workplace: Potentials and dilemmas of organisational democracy and participation*. Cambridge, Cambridge University Press.

Sacchetti, S. and Tortia, E. (2016) The extended governance of cooperative firms: inter-firm coordination and consistency of values. *Annals of Public and Cooperative Economics* 87 (1), 93-116.

Swyngedouw, E. (2005) Governance Innovation and the Citizen: The Janus Face of Governance-beyond-the-State. *Urban Studies*, 42 (11), 1991–2006.

Taylor Aiken, G. (2016) Prosaic state governance of community low carbon transitions. *Political Geography*, 55, 20–29.

Taylor Aiken, G., Middlemiss, L., Sallu, S., and Hauxwell-Baldwin, R. (2017) Researching climate change and community in neoliberal contexts: an emerging critical approach. *Wiley Interdisciplinary Reviews: Climate Change*. DOI: 10.1002/wcc.463

Van Veelen, B. (2018) Negotiating energy democracy in practice: governance processes in community energy groups. *Environmental Politics*, 27 (4), 644-665.

Van Veelen, B., and Van der Horst, D. (2018) What is energy democracy? Connecting social science energy research and political theory. *Energy Research & Social Science*, 46, 19-28.

Van Veelen, B. (2019) Caught in the middle? Creating and contesting intermediary spaces in low-carbon transitions. *Environment and Planning C: Politics and Space.* https://doi.org/10.1177/2399654419856020

Walker, G. (2011) The role for 'community' in carbon governance. *Wiley Interdisciplinary Reviews: Climate Change*, 2, 777–782.