What is Energy Democracy?
Connecting social science energy research and political theory.

Abstract
In recent years the term ‘energy democracy’ has become increasingly popular, especially in the context of aspirations for a low-carbon transition that include wider socio-economic and political transformation. The emergence of ‘energy democracy’ is thus part of a broader trend in research and practice which has sought to foreground the ‘stuff’ of politics. Yet, unlike the more academically developed concepts of energy justice and energy citizenship, energy democracy is a concept that emerged largely from social movements. This has resulted in a body of literature with little connection to established academic debates and theories. The growing popularity of the concept calls for a critical evaluation of the term and how it is used. By reviewing existing energy democracy publications and bringing these in conversations with more theoretical literature, we are seeking to address five questions; what is the nature of democracy in energy democracy, the proposed material focus for energy democracy, the rationale for pursuing energy democracy, the people and stakeholders involved and excluded, and the geographical focus for energy democracy. In the subsequent discussion we draw connections between energy democracy, the growing body of social science energy research and political theory, and identify avenues for further research.

Key words
Energy, transition, materiality, community, associative democracy, politics

1. Introduction
The term ‘energy democracy’ (ED) has gained significant popularity in recent years. The trouble is, when applied, ‘democracy’ often becomes a slippery term (Smith and Stirling 2016). It is evident from the energy democracy literature that use of the term is often vague and uncritical (McHarg 2016). The aim of this review paper is therefore to analyse the ED literature to date, and connect this with key conceptual debates in political theory in order to contribute to development of a critical, conceptual understanding of how this term is understood and mobilised; is it mainly a tool for political change or does it represent a particular, coherent vision of future society? What kind of restructuring of current energy systems does it imply? And what form(s) of democracy does it promote? Deeper academic engagement with energy democracy as a movement and a concept is important to understand not only how the passing of the fossil fuel era can open up the possibility of a more
democratic future (Mitchell 2009), but also to better understand what type of democratic future is being sought.

In relation to existing research, we identify three areas with a scope for further development. Academics have started to take up the term energy democracy, but there is an identified need to consider its use in practice in more critical detail (see also Szulecki 2018). Secondly, the seemingly adjacent concepts of ‘energy citizenship’ (Devine-Wright 2007) and ‘energy justice’ (Sovacool and Dworkin 2015, Jenkins et al. 2016, 2017) are now the focus of extensive academic enquiry. There is thus a need to examine if ED merits similar attention as a stand-alone concept, and how it relates to (the literature on) energy citizenship and energy justice. And finally there is the need to engage with political theory literature as well as comparing notes with other ‘adjective democracy’ (Collier and Levitsky 1997) debates related to resources and technologies, such as environmental democracy (Mason 1999), innovation democracy (Stirling 2015, Smith and Stirling 2016), water democracy (Shiva 2006, Bakker 2008) and food democracy (Levko 2006, Hassanein 2008, Johnston et al. 2009) in order to understand the type(s) of democracy that the energy democracy literature alludes to.

The paper is structured as follows. First, we chart the origin of the term energy democracy and provide an overview of the academic and grey literature published to date. Subsequent sections of the paper analyse the literature through the following four questions; Why is ED promoted? Who is (supposed to be) involved in ED? What is the material (and energy) focus of ED? And finally; where is ED pursued? These findings are then brought into conversation with extant literature on the various forms and aspects of democracy, enabling us to synthesise what type of democracy tends to be implied by ED. Finally, we draw the findings together in a discussion about the academic questions surrounding energy democracy as a concept and as a social movement, and establish an agenda for further research.

2. The Energy Democracy literature

A search for the term ‘energy democracy’¹ on Google Scholar and Scopus yielded no mentions from pre-2010, while a wider Google search only yielded a small number of mentions (e.g. Kassulke 2003, Muttitt, 2006). Table 1 lists all publications we found that made more than single reference to ED². Any publications found through this search were read, with references followed up to identify the origin of the concept. While we could not find a unique single origin for the term, it appears that in its early stages ED was primarily used by non-governmental groups and researchers in the US (see Kassulke 2003, Sovacool 2011, Giancatarino 2012,

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¹ A limitation of this approach is that by searching for the English term, we have limited ourselves to sources from the English-speaking world, and/or sources that were referenced by English language literature.
² The literature review was completed in July of 2017.
Sweeney 2013), before gaining ground in Europe, i.e. the UK, Poland, and especially Germany (Weis et al. 2015).

What was noticeable through this search is that early mentions of energy democracy primarily appeared in the ‘grey’ literature, e.g. reports or articles published by non-governmental organisations, think tanks and policy groups. This early dominance of grey literature is especially notable as we used academic search engines during our search. While there are mentions of ED in the academic literature prior to 2015, the most substantive contributions were made by organisations outside academia.

It is only in the most recent years that (peer-reviewed) academic papers have made substantive contributions on this topic. In particular, we wish to acknowledge a number of notable recent contributions that have been published while this paper was under review. In particular, Burke and Stephens (2017) and Van Veelen (2018) both expand the evidence base for how ED is realised in practice, albeit at different ‘levels’ of governance. Whereas Burke and Stephens (2017) show which policy instruments could help to achieve greater energy democracy, Van Veelen (2018) shows the challenges encountered by community and cooperative energy groups in practicing democratic governance within their projects. Recent conceptual reviews by Burke and Stephens (2018) and Szulecki (2018) show that there is a need to strengthen the conceptual foundations of energy democracy democracy. Here, we build on this work by explicitly asking the question ‘what kind of democracy is energy democracy?’, a question we investigate by analysing energy democracy in the context of three conceptualisations of democracy: associative, deliberative and material.

Table 1: Overview of the energy democracy literature reviewed

2a. Why energy democracy?

The energy democracy literature primarily frames ED as a response to the current energy regime experienced in many Western countries (e.g. McHarg 2016, Morris and Jungjohann 2016, Demokracja Energetyczna 2017). This is notable as these countries are generally regarded as democratic, and have (near) universal access to energy. As such, the drivers for ED should not be understood in terms of access to energy, but as a response to both the limitations of public ownership, with its highly attenuated (representative) democratic control over arm’s-length and centralised public corporations, and privatisation, with its illusory promise of individual empowerment through shareholder democracy and consumer sovereignty. (McHarg 2016, p.314).

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Beyond this, however, there is a lack of clarity about the aims in the energy democracy literature: is ED the outcome or the process? Is it ‘a future utopia to be won’ or ‘an ongoing series of multiple struggles over who owns and controls energy and how, where and for whom energy is produced and consumed’ (Angel 2016b, p.4)? A number of reports on ED appear to ascribe to the first view: in both the US (Farrell 2014) and Europe (Vansintjant 2015) energy democracy has been framed as an end-state to move towards, as ‘the answer’ (Farrell 2014, p.43). Framed this way, energy democracy represents a blueprint for an ideal world where energy systems are more decentralised and socially controlled (Chavez 2015, Pearl-Martinez and Stephens 2016), access is equitable and benefits dispersed (Farrell 2014), and energy consumption and production harms neither people or environment (Klimacamp Lausitzcamp 2012, Weinrub and Giancatarino 2015).

These examples show that, while framing energy democracy as an ideal end-state, they combine a procedural and outcome dimension, where decentralised forms of energy governance contribute to more equitable outcomes. This combination of process and outcome is also evident in other literature on resource democracies. For example, Shiva (2006) conceptualises water democracy as a process of both a deepening of democracy and a defense of genuinely democratic structures, in order to achieve a more equitable distribution of resources. Thus, participation in democratic governance of resources is seen as a means of placing power in the hands of ordinary citizens, enabling them to break down entrenched inequalities (also see Walker et al. 2015, p.7).

Such a framing, however, raises the question what distinguishes ED from energy justice. Theories of democracy and justice have a long history, but have often been approached from different directions: where theories of justice have historically been the remit of philosophers, theories of democracy have been more rooted in political science. Barry’s definition of democracy as ‘the procedure for capturing the views of citizens and translating them into outcomes’ (cited in Dowling, Goodin, & Patemen, 2004, p.5), illustrates that the use of the term democracy often implies a focus on the procedures and mechanisms associated with decision-making. Viewed this way, democracy is primarily considered to play an important instrumental role in discovering and implementing demands for justice (Young 1990, 2000).

For some, such as Angel (2016b, p.4), this means a series of struggles, over ‘who owns and controls energy and how, where and for whom energy is produced and consumed’. Here, for democracy to have any practical progressive meaning it should enable ‘access by the least powerful people and communities to the capacities for challenging the directions of the innovations that affect them’ (Smith and Stirling 2016, p.9). Thinking about democracy this way means it must thus be viewed as a process of reshaping social relations, rather than achieving particular categories of outcomes (Smith and Stirling 2016).
For many others, however, achieving just outcomes are a natural outcome of democratic procedures. What shines through in some accounts of ED is the vision that democratic participation is thought to promote solidarity by enabling those who participate to recognise, and act for, the collective good (Walker et al. 2015). This notion that participation benefits the collective or public is one that is central to ED. For example for both Cumbers et al. (2013) and Angel (2016a) energy democracy is based on having a participatory energy system that works in the public interest, while Powell (2016) argues for the need to restore public purpose. In order to ensure an energy system that provides more equitable outcomes Cumbers et al. (2013) have argued that a more co-operative and consensual approach to the development of energy strategies is required.

However, this presumed relationship between democratic procedures and just outcomes has been contested in the wider justice and democracy literatures (e.g. Young 1990, Dowding et al. 2004, Walker et al. 2015). In particular, it raises a number of additional questions, such as who can or should participate; what form does/should this participation take; and at what scales? It is to these questions, and how they are addressed in the ED literature, that we turn next, before discussing these findings in light of the wider political philosophy theory in Section 4.

2b. Energy Democracy by and for who?

A key focus of the ED literature is on the participatory dimensions of democratic governance, with many arguing for a need to reform how decisions around energy are made. For example, Kunze and Becker (2014) argue that ‘the greatest number of people directly affected by a project should hold as large a power of initiative and decision-making as possible’. What is noticeable from the literature is that there is a strong focus on direct participation, and that it highlights the multiple ways in which people can participate. One example that shows these multiple roles is Vansintjan (2015, p. 61) who argues that energy democracy means that the shareholder is also the user of the service being invested in’ and can participate in democratic decision-making ‘according to the one person, one vote principle’. It thus suggests a vision in which ‘the people’ are active and involved, as financiers (Carrilho da Graça and Gomes 2016) and as ‘producers, distributors, owners, sharers and collective users of energy’ (Platform London 2014 in McHarg 2016, p.16; see also Baker 2016, Pearl-Martinez and Stephens 2016).

Energy democracy casts people as energy citizens, even if only implicitly. Drawing on research from the field of environmental citizenship, Devine-Wright (2007, p.71) sees energy citizens as active participants rather than passive stakeholders in the energy system, who ‘... can feel positive and excited about new energy technologies rather than apathetic and disinterested [...]’. This is a citizenship that is to be enacted through active participation rather than a citizenship conferred by a set of legal obligations and entitlements ‘from above’ (Mohan and Hickey 2004, Biesta 2009).
While much of the energy democracy literature seems to advocate for an active form of energy citizenship, some academics have offered a more critical perspective. For example, feminist writers have warned against notions of citizenship that can only be fulfilled by subsets of the population (Young 1990, Mohan and Hickey 2004). This is highly relevant to energy, as it has been documented that participation in ‘desirable’ energy activities is influenced by social and economic factors, including gender (Fraune 2015), economic status (Walker 2008, Bauwens and Eyre 2017) and home ownership (Rogers et al. 2008). The promotion of an individualised notion of energy citizenship, through for example ownership of domestic renewable energy technologies (e.g. Institute of Solar Power Democracy, undated), risks that the ‘haves’ may more easily disregard the needs of the ‘have nots’ (Faber and McCarthy 2003).

What sets much of the ED literature apart from the concept of energy citizenship, is its focus on collective participation in, and control of, energy resources. It considers ‘community organizing’ (Farrell 2014, p.41); ‘the possibility for communities to participate in the control of their energy resources’ (Weinrub 2014, p. 5.); and ‘the expansion of local initiatives, such as small-scale cooperatives’ (Chavez 2015, para.4) to be at the heart of energy democracy. Or, as Duda (2015, page 9) writes: ‘community power needs to be built on community power’ (see also Klimacamp 2012, Farrell 2014, Chavez 2015, Strachan et al. 2015, Angel 2017). We found few sources who focused explicitly on marginalised or disadvantaged communities, with a notable exception of CSI (2013) and Weinrub and Giancatarino (2015).

Whether focused on control or ownership, the promotion of collective participatory approaches shows a desire not only to create active citizens within the current political and energy system, but to transform these systems. For example, Becker and Kunze (2014) note that greater citizen participation and local community control are interlinked with the possibility to achieve wider political aspirations. Similarly, Carrilho de Graca and Gomes (2016, p.3) argue that cooperatives are the ‘ideal organizational entities’ to implement energy and economic democracy, and as such to involve citizens in creating a more environmentally, social and economically sustainable future.

The focus of the energy democracy literature largely remains on the role of community-led organisations. A lack of attention for the (historic) role of the state in contributing to ED is notable as key aspects of the electricity system, especially national grids, were typically developed and/or owned by the state in many of the countries from which the ED literature has emerged. There, ‘the grid’ became analogous to a vision of the state as centralised and techno-centric, but also distributive (van der Horst, 2017). There is now also a recognition among (some) practitioners that the state continues to have a role to play in achieving greater ED (Angel 2017). For example, Chavez (2015) has argued that energy democracy is also about renationalisation and remunicipilisation, as long as it is accompanied by greater public participation. This thus invokes notions of institutional democracy, where the energy system is owned by the state, are effectively advocating for
institutional democracy (Lijphart, 2011), but where citizens hold power and have a direct say over state institutions, including its electricity system.

2c. (Energy) Democracy of what?

Thus far, this paper has primarily focused on the social-political aspects of democracy: its aims and the ways of organizing society to achieve this. Also of relevance, however, is the question of what the materiality of energy can bring to conceptualisations of democracy: i.e. what kind of engagement generates a democratic public (Marres and Lezaun 2011)?

Some within the ED movement focus on ‘traditional’ forms of participation in decision-making, such as debating, deliberating and voting. For example, Vansintjan (2015) argues that democratic decision-making according to the ‘one person, one vote’ principle is at the heart of energy democracy. Others also focus on participation in decision-making as a key component of energy democracy (e.g. Farrell 2014, Weinrub and Giancatarino 2015, Kunze & Becker 2014). To facilitate this, Weinrub and Giancatarino (2015, p.16) argue that all relevant information concerning a proposed energy project should be available to the public in ‘useable’ and ‘multi-lingual formats’ in order to facilitate community engagement in policy decisions. This is a common way in which energy publics are framed: as ‘deliberative citizens’ who can voice their opinions in discursive fora (Chilvers and Longhurst 2016).

Struggles around the social, economic and political relations embedded in energy do not, however, solely take place in discursive fora. A number of publications in recent years have sought to theorise how the socio-material conditions of public participation can challenge or complement visions of public action grounded in deliberative processes (for example Marres and Lezaun 2011, Chilvers and Longhurst 2016, Smith and Stirling 2016).

This has, in part, been taken up by the ED literature. This body of literature is built on the idea that the material features of renewable energy technologies (i.e. their decentralised nature) can open up different forms of participation. In particular the literature has envisaged these non-deliberative forms of participation to take place through investment in, or control/ownership of, energy generating resources (Weinrub 2014, Weinrub and Giancatarino 2015). For some, collective, community-based ownership is key to ensuring that greater democratisation is achieved (Kunze and Becker 2015). Others have also argued that ‘new models of ownership’ (Powell 2016), ‘more distributed ownership’ (Pearl-Martinez and Stephens 2016), or ‘public ownership at the local level’ (Cumbers et al. 2013) are essential to achieving greater ED. However, others note that widening ownership does not necessarily equal to more shared control, and thus prefer to focus on broadening control rather than ownership (e.g. Weinrub 2014).
It is noteworthy that the literature to date appears primarily focused on control or ownership of energy generating technologies. While not explicitly excluded, the literature to date is largely quiet on how other parts of the energy system can be democratised. For example, with a few notable exceptions (e.g. Trade Unions for Energy Democracy 2015; Pearl-Martinez and Stephens 2016), attention for the wider energy value chain and related issues including workers’ rights or gender divisions in the energy workforce remain somewhat limited in the energy democracy literature. Furthermore, although access to clean, affordable energy is seen as a key part of energy democracy, we did not find evidence in the energy democracy literature for the ways in which consumption in itself may be able to (re)construct energy systems (see Shove 2012, Chilvers and Longhurst 2016).

Finally, as Weinrub (2014) notes, this opening up of participation as a result of more distributed energy technologies is not guaranteed (see also Bulkeley et al. 2014). A more democratic energy system with more distributed opportunities for participation should therefore not be seen as inherent characteristic of the transition to renewable energy (Calvert 2015). This is well-recognised in the ED literature, with proponents arguing that the path to greater ED may involve ‘an ongoing series of multiple struggles over who owns and controls energy’ (Angel 2016b, p.4; see also Morris and Jungjohann 2016). Nonetheless, as visions for ED are built around the-rescaling of energy production, it is also worth asking: at what scale can ED be achieved?

2d. Where: at what scale can energy democracy be achieved?

In both energy research and political theory, the modern territorial state has often been deemed the appropriate unit of analysis. As the previous sections have shown, however, there is a growing recognition for the spatial frameworks of (energy) citizenship and democracy, addressing not only the ‘what’ of democracy, but also the ‘who’ and ‘where’. In light of this, there is a case for examining how claims and practices of energy democracy at different scales relate to one another.

While energy geographers have emphasised the cross-scalar nature of socio-technical energy networks (Calvert 2015), it is notable that the default location and scale of action and analysis in the early energy democracy literature is often the local, perceived as both a geographical scale and a set of social relations. For example, for Farrell (2014) ‘local’ is one key defining dimension that sets energy democracy apart from ‘normal’ energy transitions. Cumbers et al. (2013) similarly identify the need to localise ownership and decision-making as a priority for achieving greater energy democracy. These literatures often presume that localising ownership will create a fairer distribution of benefits. This also means, however, that ‘local’ and ‘community’ are often used as unproblematic categories (Hickey and Mohan 2004). Or, in geographical terms, as spaces which act as containers for particular, desirable, sets of social relations.
This neglects two important geographical considerations. First, the role of energy generation, distribution and use as an act of territorialisation: expressions of social power in geographical form (Bridge 2011). Viewed this way, the emphasis on the ‘local’ from the energy democracy movement can be seen as an act of boundary making, through which the criteria for belonging (‘energy citizens’), and thus the subjects of claims for justice (Fraser 2008) are negotiated in order to determine the allocation of resources (Calvert 2015).

In addition to the process of territorialisation, there is also a second key geographical dimension: how different spaces, at potentially different scales, relate to one another. In the energy democracy literature, there has been a growing awareness of scalar issues. This has been particularly framed as a need to move beyond the local scale, and engage with actors beyond the local in order to develop energy democracy experiments at regional, national and international scales (Angel 2016b). What is unclear is how the desired democratic processes and outcomes are altered through this process.

An interesting example is Trade Unions for Energy Democracy (2015), an international movement for greater local control of the means of energy generation and distribution. Their international approach to promoting local actions shows that claims for, and practices of, energy democracy are multi-scalar. It is, however, currently not clear how local particularity and, thus potentially competing claims for democracy at different scales, may be resolved. This possible complication over the mapping of political space adds poignancy as well as context to the question of whose interests ought to count and how do we determine which scale or map of political space can lead to more just outcomes (Fraser 2008)? There is a struggle here between two potentially different ontological positions: does energy democracy stand for a ‘moral universalism’ (Mason 1999, p.1) or for the lived experiences of diverse and different actors on the ground?

3. Synthesis: What kind of democracy is ‘energy democracy’?

Thus far we have discussed four key aspects of the energy democracy literature: its aims, the key actors identified, the material dimension, and the scale at which energy democracy is to be achieved. Here, we synthesise these findings and analyse them in light of different forms of democracy identified by political theorists in order to answer the question: what kind of democracy is ‘energy democracy’?

Before exploring different forms of democracy, it is perhaps worth starting with a brief, but widely accepted definition of democracy: a political system in which the opportunity to participate in decisions is widely shared among all adult citizens (Dahl 1991). The more comprehensive and significant these opportunities are, the more democratic a political system is deemed to be (Mason 1999).
The previous sections have shown that energy democracy proponents envisage ED not as much to be an institutional form of democracy, but rather a more participatory form of democracy, involving widespread participation by all citizens in order to influence the decisions that affect them. While this can be through voting (e.g. the co-operative movement’s ‘1 member 1 vote’ principle (see also Vansintjian 2015), it can also include participation in deliberations, or, more activist or adversarial forms of participation (Mutz 2006). While, arguably, participatory democracy is distinctly different from deliberative or associative forms of democracy (e.g. Mutz 2006), others would consider these latter forms to be subsets of participatory democracy (e.g. Nederveen Pieterse 2001). Here, we adopt the latter view, and discuss what we consider to be three sub forms of participatory democracy in order to better understand the type of democracy that energy democracy proponents are proposing.

**Associative democracy**

The most clearly identifiable form of democracy that is apparent in the energy democracy literature is associative democracy. Popular democratic criteria like representation, deliberation and participation are not unimportant to energy democracy activists. Nonetheless, their preference for energy resources to be owned or controlled at a local level (e.g. Farrell 2014, Weinrub and Giancatarino 2015), through civil society organisations (e.g. Carrilho da Graça and Gomes 2016, Morris and Jungjohann 2016) most closely echoes Hirst’s (2013, p.15) description of Associationalism in the 19th century, which sees voluntary associations; *as an alternative to both liberal individualism and socialist collectivism, and as a criticism of state centralization and the growth of bureaucracy*. In recent decades the idea of associationalism has been transformed into contemporary designs for associative democracy, particularly as a result of Hirst’s (1994) seminal work (Perczynski 2000). In its most basic form associative democracy is ‘deceptively simple’: it argues that ‘individual liberty and human welfare are both best served when as many of the affairs of society as possible are managed by voluntary and democratically self-governing associations’ (Hirst 1994, p.19). Thus, Hirst, as well as proponents of energy democracy (as analysed in section 2b), seek to turn state-civil society relations on its head: they see self-governing voluntary bodies as the primary means of both democratic governance and the organization of social life.

Furthermore, both associative democracy and energy democracy proponents extend the notion of participation by focusing on how social life is organized. The associative view advocated by many of those arguing for greater energy democracy thus focuses particularly on recasting the relationship between the state, the market, and civil society through a reorganisation of how and where energy resources are *controlled*. This matters, as energy resources as seen as one of the foundation stones of building just and equitable societies’ (Transnational Institute 2016, 2:20). As shown in the preceding paragraph, it seeks to promote control at the very local level, where it seems relevant to people (also see Dinham 2005). For Hirst (1994), as well as the literature we discussed in section 2a, these associative forms of democratic governance are a means to link procedural and substantive
dimensions of democracy, where the management of social affairs by voluntary and self-governing associations is deemed to ensure that both citizen choice and public welfare are best served.

**Deliberative democracy**

In addition to associative forms of democracy, the energy democracy literature also shows hints of other forms of democracy, particularly deliberative forms. Such a deliberative democracy, grounded in argues that processes of public debate lead to higher quality, and more legitimate, decisions (e.g. Dryzek 2000). It thus envisages civil society as the site where such a form of democracy is enacted; where deliberators share their views and have them challenged through persuasion rather than coercion, manipulation or deception (Dryzek 2000). Some energy democracy proponents have taken this further, to argue that if all those affected by the decisions have been able to participate in the free expression of all needs and points of view, more substantively just outcomes can be achieved (e.g. Kunze & Becker 2014).

There are, however, two concerns around the implementation of deliberative democracy. First, the implementation of direct democracy in large-scale modern societies (e.g. Held 2006). For Hirst (1996) and a small number of ED proponents one solution is to conceptualise democracy as not solely concerned with deliberation within civil society, but as a process of effective two-way communication between the state and organised social groups. ‘Conventional’ energy governance has been criticised for making decisions to allocate, use and consume energy in particular ways for particular purposes out of the public eye (e.g. Newell and Mulvaney 2013). Some ED proponents (Weinrub 2014, Chavez 2015) argue that the integration of procedural dimensions of deliberative democracy, such as greater transparency, accountability and deliberation in decision-making, with forms of institutional democracy in order to achieve ‘negotiated solutions’.

The second concern, which we discussed earlier, is around whether a deliberative form of democracy necessarily benefits the common good. In particular, Young (1990, 1996) argues that most theories of deliberative democracy offer too narrow a view of the democratic process because they privilege an ideal of a common good in which each participant is supposed to leave behind their different interests and experiences. This is relevant to energy democracy, as while the concept of energy democracy offers a common term for diverse groups to rally around, there are also differences in focus; e.g. specific emphases on the rights of workers in energy systems (Trade Unions for Energy Democracy 2015) or the rights of people of colour in accessing clean energy (CSI 2013, Weinrub 2014). While different actors thus share certain interests, it is not necessarily guaranteed that their ultimate aims or approaches to achieve them are aligned. Particularly, it has been questioned whether inequality of resources, organisation and power may enable some interests to dominate in the definition of a ‘common good’ (Young 1990, Walker et al. 2015).
These potentially divergent visions of how to achieve the ‘future utopia’ are currently not very well acknowledged in the energy democracy literature. For example, by arguing that energy democracy is about creating informed communities who understand the ‘right relationship of people to natural resources’ (Weinrub and Giancatarino 2015), a normative dimension is introduced which presupposes agreement on what this ‘right relationship’ is. Such a presumed, shared, normative stance has the potential to obscure questions of justice (Walker et al. 2015).

Material democracy
Deliberative democracy focus primarily on discursive participation. Associative democracy expands this by also including other forms of engagement as the basis of reshaping social life, but the role of matter and objects play in this process is generally not made explicit. The concept of material democracy is therefore highly relevant to energy democracy as it brings issue of access to, and engagement with, material resources further to the fore. Energy democracy proponents demand a certain level of autonomous engagement with matter; they propose that people and communities should be able to decide the future of the energy they generate and use. Their focus has been primarily on energy generation rather than energy consumption, as the generation and distribution of energy are considered to underpin the way the economy and society are organised (Transnational Institute 2016). Viewed this way (as we discussed in section 2a), energy democracy appears closely connected with views of material democracy not only as more equitable access to socio-economic resources, but also as a foundation to challenge power imbalances in society.

For some, however, materiality also plays a different role. They see material engagement as an opportunity for the wider reconstitution of relationships and institutions in society beyond the energy sphere (Angel 2017). As such, these authors show hints of the type of material democracy that Marres (2012) discusses, which is not only concerned with access to, or control over, material resources, but where matter plays an active role in reshaping society more broadly (see also Feenberg 1999). We established in the previous section that particular material features (e.g. decentralised energy generating potential) do not necessarily reflect one particular vision. The question that thus arises who controls the process through which participatory objects are put to ‘work’ (Smith and Stirling 2016). Much depends on which assumptions are inscribed into the sociotechnical process and how roles are delegated to groups and technologies that put the overall sociotechnical configuration to work (Latour 2005 in Smith and Stirling 2016). The question of how participatory democracy is enacted through work in and on material objects (Marres and Lezaun 2011) appears, however, not to have received much attention in the ED literature to date.

Finally, adopting perspectives from Science and Technology Studies, authors such as Marres (2012), Chilvers and Longhurst (2016), and Smith and Stirling (2016) have argued that a materiality perspective can also open up access and participation, where (democratic) energy publics are not seen as pre-conceived, but as emergent
and co-produced. Again, the ED literature shows a hint of this perspective by considering non-discursive forms of participation, but how this affects notions of a ‘democratic energy public’ and who is in/excluded has, to date, not been made explicit in the ED literature.

In summary, the type of democracy that is most clearly promoted by energy democracy proponents is associative democracy, through its promotion of local, civil society organisations as key actors to foster engagement (e.g. participation in decision-making and direct ownership) of renewable energy resources. As we discussed, the literature also draws on other democratic theories, most notably deliberative and material forms of democracy. To date, the connections made between energy democracy and these other democratic theories is, however, often partial and non-explicit. In the next, and final section, we therefore set out the issues raised in, and lessons learned from these democratic theories, and identify future research directions to develop a more robust theory of energy democracy.

Table 2: Key forms of democracy

4. Discussion

4.1. Energy democracy as (another) material democracy

At its heart, the emergence of energy democracy can be seen as part of a broader trend in both research and practice which has sought to foreground the ‘stuff’ of politics (Braun and Whatmore 2010) based on an understanding that ‘objects… bind all of us in ways that map out public space profoundly’ (Latour and Weibel 2005, p.15). In other words, it raises the question: how do material objects, and our relations with them, constitute particular forms of social and political life? While matter and politics have long been connected, this connection has increasingly become a centre of focus of both social movements and academic research. This raises an important question for energy democracy researchers and activists: is energy different from other forms of material democracy / what can it learn from research and movements on other material democracies?

Links between matter and politics is found in the (old) idea of the ‘property-owning democracy’, with roots in both rightwing conservatism and leftwing egalitarianism (Jackson 2012), but which has more recently been used to advance the ideals of a society characterised by commodification and individualisation (Rossi 2013). Elsewhere, ‘adjective’ material democracies have been proposed to study or advocate for a variety of socio-material relations, such as representative environmental democracy (Ball 2006), participatory food democracy (Hassanein 2008) and deliberative water (Susskind 2013) and innovation democracy (Smith and Stirling 2016). These different contributions thus reflect diverse ways in which authors have conceptualised the connection between matter and politics.
Nonetheless, there are a few commonalities identified in much of the recent critical literature that links matter and politics. One such commonality is the effort to counter (what is perceived to be) an increasingly commodified, individualised and consumption-based society proposed by contemporary ‘property-owning democracy’ advocates. Instead, it considers democracy as both the means and outcome of resource decommodification (Bakker 2007), with collective, decentralised control seen as central to reshaping socio-material relations. As such, many of the third sector organisations as well as activist scholars writing on these new arenas for democracy, frame them as a response to the ongoing process of neoliberalisation which has been central to shaping these sociomaterial relations in recent decades. The desire to (re)claim the rights to particular materials in order to reshape societal relations has thus much in common with other social movements such as Reclaim the Streets or Right to the City, which seek to exercise collective power to reshape processes of (neoliberal) urbanisation (Harvey 2008).

However, it can be argued that energy democracy also has several characteristics that set it aside from other material democracies. It is useful to recognise that the electricity system is the by far the largest machine found on national territory. Energy is also the biggest globally traded commodity and the meta-resource that drives all other commodity chains and the provision of most essential goods and services. Other characteristics include the relative strength of the low carbon energy transition narrative in state policy, public opinion, and the academic and NGO communities in most countries of the global north; advocates of transforming our water or food regimes could only dream of having such a strong transition narrative to work with. Secondly the energy democracy movement is characterised by its focus on fugitive renewable resources that are widely perceived as being public rather than private goods (Van der Horst and Vermeylen 2010). Last but not least, the energy democracy movement has emerged in countries that for generations have had a national grid; a state/regulated monopoly that was both spatially inclusive and economically distributive (Van der Horst 2017). National grid history and alternatives to it (e.g. rural electricity cooperatives in the US) will invariably be shaping specific expectations of the energy democracy movement, which more accurately could have been called ‘renewable electricity democracy’.

To strengthen the energy democracy concept, future research may thus want to consider the specificity of renewable energy’s qualities in reshaping democracy, i.e. how renewable energy as a spatially unevenly dispersed and fugitive resource, captured and transmitted instantaneously through an international web of copper wires, affects territorial theorisations of democracy? Also, how does this affect what lessons can be learned from looking at historic initiatives to foster democratic engagement with energy, either through participation in state- or cooperatively- owned utilities? Furthermore, the inclusion of matter in democratic theory, challenges many of the requirements that democratic theory places on participation, such as that actions are independent, self-determined and unbiased (Marres 2012). Future conceptualisations of energy democracy may thus explore the implications of assigning capacities to non-human actors.
4.2. National variations and questions of scale

As can be expected from a term that has become a social movement imaginary (cf Angel, 2016), the actual aims and focuses of energy democracy vary between different publications and advocates. Generic differences of political vision can be obscured by different national, political and material (energy system) contexts that activists seek to transform. Within the limited space of this paper we can only provide a few speculative examples: Those writing in a German context where the ‘Energie Wende’ is pursued by the federal government – may be more likely to see energy democracy as a transition pathway that is already in (some) progress (Rommel et al. 2016). Some US organisations (e.g. Institute of Solar Power Democracy, undated) embrace the notion of free enterprise at the individual level while pushing back against any notion that resources belong to the state (note also the particularly American debate about the role of property in notions of citizenship; Hockett 2005, Singer 2006). As a third example, the Scottish context for community energy is linked to the devolution of central (UK) state power, enabling the newly established Scottish Parliament to seek land reform by helping rural communities to buy up the (feudal) estates they live on (Bryden and Geisler 2007, Braunholtz-Speight 2015, van Veelen 2017). Furthermore, it has been argued that the concept has limited traction in the Global South, where concepts of energy sovereignty, justice, and colonialism may have greater resonance (Angel 2016b).

These national variations raise important questions around how claims for energy democracy in one place relate to similar claims in other places, and at different scales. Thinking about (energy) democracy as a pre-designed set of principles and structures, to be replicated from place-to-place is not necessarily the way forward: local particularity means what works in one place is not guaranteed to work somewhere else (Angel 2016b). While Angel (2016b) thus recognises the plurality of visions and experiences within the energy democracy movement, this debate is expected to have another dimension as different spaces and scales for energy democracy interact. Historically, democratic theorists have focused on the scale of the nation-state, but the energy democracy movement operates at both a sub-national and supra-national level (e.g. Trade Unions for Energy Democracy). As use of the concept spreads, claims for greater energy democracy are likely to run up against counter claims in different places or at different scales, whose ontological assumptions about the meanings of democracy they do not necessarily share.

It thus raises two important questions that future research may want to address: Can normative and universalist claims or interpretations of ‘energy democracy’ be aligned with interpretations which consider it as an emergent and co-constructed (local and contextual) phenomenon? And how are claims for democracy constituted by, and potentially re-constitute, social-spatial relations in the process? There is also clear scope for broadening out the question of energy democracy to the Global South and to other sections of the energy system, and connect this with debates about ‘resource decentralization’ (Meinzen-Dick et al. 2001, Ribot 2003) and the
emergence of commercial mini grids (Ultsrud et al. 2011) in countries where the
state has struggled to extend the provision of grid Electricity.

4.3. Energy democracy as an associative democracy
At its heart, the energy democracy movement has sought to change the socio-
economic relations embedded in the energy systems by encouraging greater public
involvement and control. The movement primarily advocates for this to be achieved
through community control of the means of electricity generation and distribution.
As such, the movement draws heavily on associational forms of democracy, where
civil society groups are seen as a ‘third way’, a push back against current, dominant,
privatised energy systems in the countries that the literature discussed here has
emerged from, but also preferable to centralised and top-down state ownership.

Nonetheless, some are seeking to bring the state back into energy democracy
practice and theory. For example, Chavez (2015) and suggest that where there are
concrete possibilities, privately owned utilities should be renationalised or
remunicipalised, as long as this is accompanied by greater and more genuine
participation in state-owned utilities (Weinrub 2014). Thus, the emphasise for these
authors is on community participation and control, rather than full ownership.
Conceptually, others also disagree with the non-state conceptualisation of the co-
operative social movements (e.g. Angel 2017). They have warned that the
decentralisation favoured by social movements plays into the hand of
neoliberalisation, where active citizens are assigned responsibility for previously
collectively-provided services (DeFilippis et al. 2006, Biesta 2009). Through an
analysis of how the energy democracy movement in Berlin has worked ‘In-Against-
and-Beyond the State’, Angel’s (2016c) recent article has been a particularly useful
contribution to theorising the role of the state. Further work, however, may wish to
build on this to better understand the different roles the state can play in different
national/material contexts.

Additionally, what is evident from the associative characteristics found in the
energy democracy literature is that democracy is not just seen as a type of political
system, or a way to aggregate people’s preferences, but as a type of society we wish
to live in. This, however assumes a connection between associative forms of
democracy, participation, and just outcomes. The literature on participatory
development in particular has highlighted that local control does not necessarily
equal greater participation (e.g. Agrawal and Gibson 1999, Lane and Corbett 2005,
Edwards 2009). Furthermore, when individuals or groups have conflicting interests
and differ in power, we are to remember that greater participation can also result in
unjust and oppressive outcomes (Young 1990, Walker et al. 2015). At the moment,
potentially divergent visions of energy democracy are currently not very well
acknowledged in the literature.

The energy democracy literature currently considers (associative forms of)
democracy a means to achieve more just outcomes. However, the relationship
between process and outcome is insufficiently developed and under-theorised. The construction of a ‘future utopia’ (Angel 2016a) is not power neutral and future research should question whose definition of the ‘common good’ is accepted.

4.4. Materiality, citizenship and justice

This study has also revealed that the materiality of energy is a recurring theme that adds an extra dimension to political theory debates around democratic governance. Both energy citizenship and energy democracy seek to theorise public participation through material engagement. The questions of citizenship is particularly important for democracy, as the legitimacy of democratic governance depends on the extent to which democratic structures and practices are recognised and supported by citizens (Biesta 2009). Drawing explicitly on a materiality perspective, Marres (Marres and Lezaun 2011, Marres 2012) has offered a valuable contribution that deepens the theoretical foundations of energy citizenship. Of particular relevance is Marres’ (2012) argument that public participation through material engagement can help revive democracy by including new actors and practices of engagement. It thus focuses on the material dimensions of participation, drawing on phenomenological philosophical traditions to define citizenship not in abstract terms, or in terms of communicative action, but as an embodied activity that takes place in a particular location, using specific technologies or objects (Marres 2012).

Concepts of energy citizenship and democracy thus open up the possibility of conceiving participation not solely in deliberative forms, but also raises questions around the impact of material forms of participation on the changing boundaries between the public and private sphere. This has a number of consequences in terms of how boundaries of participation (by citizens) and justice are marked; who ‘belongs’ and who should benefit? Energy democracy thus implies a particular form of energy citizenship that is expressed through the leveraging of personal finance, material assets (e.g. roof of your house) and time (committing manual and organisational labour). The justice implications may relate directly to questions of inclusivity (e.g. who can participate, who can benefit) and more indirectly to potential scalar effects over time (e.g. risk of poorer energy service or higher bills for those who are excluded in areas of high participation). We would thus encourage future energy democracy research to consider in more detail different forms of participation that a material perspective opens up; but also the consequences of this in terms of claims of citizenship and justice.

Furthermore, it is important to remember that theories of democracy are not only concerned with participation, but more broadly with the procedures and institutions required for capturing the views of citizens and translating them into outcomes (Dowding et al. 2004). As such, while it is closely connected to both procedural and recognition dimensions of justice, a focus on democracy also invites a greater focus on the ‘nuts and bolts’ of governing, including issues of accountability, transparency and dispute resolution. An interesting question would
be how a material perspective could address some of these important democratic themes, and could help the concept of ED to complement research on related concepts of energy citizenship, and justice.

Finally, theorizing about energy democracy and materiality cannot be limited to electricity systems. The academic literature on ED is yet to fully engage with existing global debates on energy and democracy, which have grown for example around the 'resource curse', the occurrence of corruption and violence in oil producing states and the intimate relationships between industry (e.g. 'big oil', car manufacturers, defence) and national governments (in economics, political economy and political science see Ross (1999), Goldberg et al. (2008); in geography see Watts (2004); in history and politics, see Yergin (2012) and especially Mitchell's (2009)'carbon democracy'). The desired transition to a more electrified, low carbon energy system may in theory imply a push-back against the incumbents of fossil fuel regimes and associated problematic practices, but this is a topic for further scrutiny, rather than a foregone conclusion.

5. Conclusion

In this paper we have reviewed the energy democracy literature according to four key dimensions; its aims ('why'), actors ('who'), material dimensions ('what'); and places & scales where it operates ('where'). From this review it is evident that the ED literature reflects a decentralised terrain. While definitions vary, there are two key dimensions present in the literature. First, the electricity system (the focus of ED), as well as our economy and society should become more inclusive, equitable and low carbon. Secondly, political power and decision making should be more devolved to the local level. With regards to the first dimension, the literature focuses on two aspects; Access to the electricity grid should be widened, especially for new and small renewable electricity producers (typically as a push back against state/privatized monopoly power of the fossil fuel era); secondly, the ownership base for various aspects of our electricity system should be broadened (typically a push back against the dominance of big, corporate utilities). Finally, the literature is clear that greater citizen involvement and ownership should be achieved through voluntary means; cooperation and local self-organisation are important. ED as a social movement is thus most closely linked to the idea(l) of associative democracy, seeking to apply some of the ideas of what was a 19th century idea of bottom-up, community self-help approach, to low carbon electricity systems in the 21st century.

We have noted the various limitations of the ED literature to date and in the discussion we identified several avenues for future research. Technological change is inherently political and the transition to a low carbon society is arguably the largest technological project ever faced by humanity. Clearly we are not alone in making the argument that a deeper academic engagement with energy democracy as a movement and a concept is important precisely because the possibility of more democratic futures [...] depends on the political tools with which we address the passing of the era of fossil fuel (Mitchell 2009, p. 423).
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