

Conceptualising Energy Democracy

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Abstract:

‘Energy democracy’ epitomizes hopes in energy transformation, but remains under-defined, acting as a political buzzword rather than a real concept. Here I present its activist roots, map its usage, and position ‘energy democracy’ in relation to similar normatively-derived concepts: environmental, climate, and energy justice, and environmental democracy. I then show what is democratic in energy democracy, drawing on insights from political theory and political sociology. Referring to the question of experts and democratic publics in complex technological areas, I discuss why it is desirable for energy governance to be more democratic. Finally, to show what is unique in ‘energy democracy’ beyond increased participation in energy policy, I introduce the prosumer as the ideal-typical citizen, highlighting the importance of the energy transition, the agency of material structures, and a new emergent governmentality. I conclude by conceptualising ‘energy democracy’ as an analytical and decision-making tool, defining it along three dimensions: popular sovereignty, participatory governance, and civic ownership, and operationalizing these dimensions with relevant indicators.

Keywords: energy democracy, energy justice, participation, prosumer, renewable energy, governmentality

Introduction: why energy democracy?

Energy governance is at a crossroads, facing inevitable change, perhaps even a ‘third industrial revolution’ (Bradshaw 2014, Shum 2015, Stirling 2014, Glasnovic *et al.* 2016). Several coinciding elements constrain energy choices. Ageing infrastructure, limited energy resources (even if still abundant – unequally distributed geographically, with fundamental political implications) and different energy production externalities, such as climate change, public health, water quality etc. are all cited as major challenges facing global and national energy governance. The picture is, however, not entirely pessimistic, since energy challenges also open up certain opportunities for change: the gist of energy transformation is moving away from a system that brought about these complex problems in the first place.

At the heart of this innovative transformation is the decarbonization of the energy system and the increased deployment of renewable energy sources (RES). Due to their scalability and distributed character, such sources of energy as solar photovoltaics (PV), biogas plants or onshore wind can be deployed in different areas and by different categories of investors than large scale, conventional sources like coal and gas (Szulecki 2015). They allow individuals, cooperatives, small companies, or local communities to invest and benefit from RES development. As a result, over the last two decades these newcomers gained new roles, evolving from passive consumers to active *prosumers* of energy – most often not yet self-sufficient, but simultaneously *producers* and *consumers* of energy. The move from a centralized, mostly fossil fuel-based power sector, towards a distributed energy system that includes a significant number of small and medium power producers visibly affects the energy

sector. That process of transition is observable not only in RES champion countries like Denmark and Germany, but globally, from the industrial areas of the United States to the least developed communities in Africa or South Asia, where distributed energy generation might help these societies leap-frog from energy poverty to sustainability. The increasing role of societal actors, such as prosumers, energy cooperatives, or not-for-profit organizations, has led to the coining of the term ‘energy democracy’.

What is energy democracy? Is it a mere buzzword, positive and vague enough to gain political currency, or perhaps an early sign of some new political phenomenon gaining ground? To answer this I begin by mapping its current use, before delimiting it from other, similar concepts operating on the frontiers of environmental sustainability and political theory: environmental justice, climate justice, and energy justice, as well as environmental democracy. I then try to establish *what is democratic* about energy democracy, drawing on the classics of political theory, as well as the contemporary literature on deliberative and participatory democracy within comparative politics and political sociology. I argue *why we might want the energy sector to be more democratic* in the first place, drawing on some long-lasting debates on the relationship between experts and democratic publics in complex technological areas. I then address the remaining question: what is truly unique about energy democracy, beyond merely meaning increased public participation in energy policy? Here, I introduce the prosumer as an ideal typical citizen of energy democracy and an emerging political subject, highlighting the importance of a new emergent technology of government and the agency of material structures, which the ongoing energy transition brings about. I then present a definition of ‘energy democracy’ and, emulating Sovacool and Dworkin’s (2015) treatment of energy justice, suggest how this analytical concept can then form the base of a decision-making tool, by operationalizing it with relevant indicators.

Mapping the usage of ‘energy democracy’

In recent years, the notion of ‘energy democracy’ has proliferated in the European context especially, used in reference to on-going energy transitions and their directions. It has two meanings: it either denotes the *normative goal* of decarbonization and energy transformation or describes already existing *examples* of decentralized and mostly bottom-up civic energy initiatives.

Antal (2015) links ‘energy democracy’ to earlier debates on ‘environmental democracy’ and ‘climate justice’. He traces its emergence in social movements and radical intellectual circles in Europe. Indeed, the earliest exposition and definition of ‘energy

democracy’ appeared in a report of the German left-wing Rosa Luxemburg Foundation, which in turn linked it further back to the Berlin-based radical advocacy group *Gegenstrom*. In this perspective, ‘energy democracy’ is a conceptual frame for political action, ‘capable of integrating energy and climate struggles [...] grounded on the basic understanding that “the decisions that shape our lives should be established jointly and without regard to the principle of profit”’ (Kunze and Becker, 2014, p. 8). Surveying some activist articulations of the idea of ‘energy democracy’, Kunze and Becker (2014) emphasize four fundamental dimensions: *democratization*; *property*; *surplus value production* and *employment*; and finally, *ecology* and *sufficiency*. The authors operate with a combination of two implicit measures: the share of renewable energy and the number of ‘emancipatory projects’ as a means to compare energy democracy in Europe.

In parallel, Szwed and Maciejewska of Warsaw’s Green Institute issued a manifesto of ‘Energy Democracy’, but with different emphasis. Playing on words, they summarized the idea as ‘power to the people’, building on the technological possibilities of creating a ‘civic energy sector’ and ‘gaining societal control over energy sources’ (2014, p. 3). Drawing on Poland’s pre-1989 dissident tradition, they merge energy issues with civil society empowerment, understood not only as participation in decision making but ownership. However, the concept of ‘energy democracy’ remains suggested rather than defined – as a *process* in which the ownership and control of energy production and governance moves from a centralized to a dispersed mode.

Very similar ideas (though again without an explicit definition) resonate in a co-authored report of the U.S.-based Trade Unions for Energy Democracy initiative. Focusing mostly on ownership and environmental impact, the report importantly notes that ‘democracy’ in ‘energy democracy’ means a strong public component influencing *legitimacy*: ‘Energy democracy is about workers’ and communities’ ability to decide who owns and operates our energy systems, how energy is produced, and for what purpose’ (Sweeney *et al.* 2015, p. 23). Participation in decision making is also key for Antal, who writes that energy democracy can be understood as ‘the prevailing of the Aarhus [Convention] pillars in the field of energy policy’ and that this in turn has great impact on environmental democracy (Antal 2015, p. 25). In a purely academic paper, Sovacool and Blyth (2015) analyse energy and environmental attitudes in Denmark, and suggest that they have implications for ‘energy democracy’; yet the concept is left undefined, and does not appear anywhere but the paper’s title.

An explicit definition of energy democracy is so far lacking, obscuring a considered understanding of the concept. Morris and Jungjohan (2016), in their discussion of Germany’s

energy transition to renewables, address the first of these concerns: indeed, from the first page, the authors offer a series of definitions, somewhat ironically presented like dictionary entries. The first describes the political economy of energy democratization, where ‘citizens and communities can make their own energy, even if it hurts energy corporations financially’; the second refers to energy democracy as media buzzword, as ‘something currently mainly pursued in Denmark and Germany’, with the power to spread globally; the third, most enigmatically, focuses on the positive side effects of ‘the [...] overlooked benefit of distributed renewables in the fight against climate change’, The final definition casts energy democracy as a somewhat utopian socio-political and communitarian goal: ‘something to fight for as the path to a better quality of life with stronger communities and better personal relationships’ (Morris and Jungjohan, 2016, p. vii). What follows, however, is a detailed and passionate history of the German *Energiewende*, without any references to the idea of energy democracy – other than the general assumption that what is happening in Germany is precisely the transformation towards a more democratic energy system. This is politically and institutionally enabled, the authors suggest in Chapter 10, by the nature and quality of German democracy as a whole.

Similar tunes can be heard in a practitioners’ account by Thompson and Bazilian (2014), trying to build a bridge between energy transformation and democratization understood in the more conventional, political science sense – as constructing legitimate institutions of (good) governance in the name of and for broader society. However, the authors’ long experience in energy policy allows them to put their finger on the crucial feedback loop: good governance and strong institutions provide a framework for energy sector reform in a more pro-social direction, while energy transformation itself demonstrates the values of public participation and can (further) enhance the development of strong and good institutions.

What we can distil from these practice-inspired publications is that ‘energy democracy’ is practically associated with the increase in the role of individual prosumers, energy cooperatives, or municipal control of certain functions earlier fulfilled by energy companies. The emphasis in existing conceptualizations is on the redistributive aspects of energy production and consumption, empowerment, participation and some notion of fairness and legitimacy, as well as environmental sustainability. The underlying theoretical proposal is that technological change in the energy sector and the socio-political and economic context of institutions and practices that surround it are not discrete, but rather intertwined. Energy transformation affects society, and political processes in the social sphere can (and should)

shape the form and direction of energy transition. This relates to a broader research agenda on the energy/society nexus sketched by Stirling (2014), who suggests that a ‘progressive’ energy transformation, based on renewables, can challenge existing entrenched regime interests and potentially open a new mode of socio-technical Modernity. In the same vein, Miller and colleagues analyse the implications of energy transitions for ‘socio-energy systems’, noting that the social outcomes of energy transitions are difficult to predict (Miller *et al.* 2015, p. 32).

Normative considerations meet sustainability transitions: Environmental, energy, climate justice and democracy

While the aforementioned studies are interested in *what socio-energy systems we get through* the on-going energy transition with renewables, Fuller and McCauley (2016) ask *what socio-energy systems we want?* Developing the concept of ‘energy justice’, they point out important normative implications for different energy choices and futures.

Are ‘energy justice’ and ‘democracy’ synonyms? As already noted, ‘energy democracy’ is not a concept coined in a vacuum: several concepts with varying origins and foci already populate the landscape where ethical/normative and political considerations overlap with problems of environmental protection, sustainability, and energy transformation. The closest is that of energy justice, advanced most importantly by Sovacool and colleagues (Sovacool 2013; Sovacool *et al.* 2013; Sovacool and Dworkin 2014; 2015; Sovacool *et al.* 2016). This literature has quite broad ambitions – designing a *just* and ethically informed energy policy, as apparently energy is all too often (or nearly always) discussed “in a moral vacuum” (Sovacool and Dworkin 2015). The idea of making energy more just emerges from studies of energy policies in developing countries, and the primary concern addressed (though more have been added as the concept has evolved) is energy poverty. Building on that initial notion, Sovacool (2013, p. 220-23) mixes issues of input and output legitimacy. On the one hand we have elements like *due process* and *information* (replaced by *good governance* in Sovacool and Dworkin 2015); on the other, *availability*, *affordability*, *inter-* and *intra-generational equity*, as well as ethical principles, that is *responsibility* and prudence (replaced by *sustainability*, *Ibid*). From the justice theory side there is a visible focus on rights and entitlements (see especially: Jones *et al.* 2015), while the procedural side leans on politics. It is here that energy justice and energy democracy potentially meet. Where energy justice concentrates on ‘the moral implications of our collective energy decisions’ (Sovacool and Dworkin 2015, p. 435), energy democracy is focused on political implications. Interestingly,

however, when a wide set of energy stakeholders was asked to rank the importance of different elements of a just energy policy, the procedural elements (i.e. “due process” and “good governance”) are ranked at the very bottom (Sovacool et al. cited in Sovacool 2013, p. 223-5).

While many of the ethical considerations of energy externalities, across space and time, are shared with the closely related idea of *climate justice* (e.g. Harris and Symons 2010; Posner and Weisbach 2010; Schuppert 2011; Posner and Weisbach 2010; Bickerstaff *et al.* 2013), the insistence on procedural elements is borrowed from the neighbouring concept of *environmental justice* (on which energy justice builds, according to Sovacool and Dworkin (2015)). This concept too has emerged in a rather specific socio-political context, despite its seeming universal appeal: local legal battles in the U.S. It has been observed that poor and minority neighbourhoods are increasingly often locations for polluting plants, hazardous waste storage, and other types of infrastructure which is usually socially controversial and subject to NIMBY (Not in My Back Yard) rallying. Environmental justice in its original meaning was therefore challenging its manifest reverse notion – ‘environmental racism’, and other forms of exclusion (Banzhaf 2012; for outside the U.S., see Newton 2009).

Environmental justice's emphasis on procedural fairness is the legacy of court cases and protests, and reflected in its definition: ‘fair treatment and meaningful involvement of all people [...] in the development, implementation, and enforcement of environmental laws’ (Bowen and Wells 2002). In this, environmental justice has an implicit political claim bringing it close to the idea of energy democracy, with which it also shares the heritage of radical political and activist practice preceding academic theorization (Ibid, p. 690).

A similar trajectory can be observed in case of the final relevant concept, perhaps energy democracy’s closest of kin: ‘environmental democracy’ (Mason 1999; Claeys and Jacqué 2012). This literature, drawing heavily on grassroots activist experiences, explores the ‘intrinsic connections between environmental and democratic reform’ (Claeys and Jacqué 2012, p.9), seeing the need to tackle environmental problems as a window of opportunity for improving democratic governance. The direction of change and means of improvement are often radical and informed by green and left-wing activism, emphasizing participatory, deliberative and communitarian aspects of democratic politics with an environmental appendix (Barns 1995), but can also be a call for internal reform within liberal democracy (Hysing 2013).

The ‘Environmental Democracy Index’, developed by the World Resources Institute, combines participation with transparency (access to information, also a procedural issue) and

access to justice, in a resonant attempt to design a comparative device for ranking national environmental legal regimes along a ‘democratic’ spectrum. From a more clearly legalistic perspective, Bándi (2014) defines energy democracy more narrowly, seeing its essence as public participation in environmental decision-making. While it is certain that participation and procedural issues are fundamental for making sustainability governance, in energy and beyond, more *just* (compare: Holland 2017), fair and ultimately *democratic*, it is a mistake to limit democracy to public participation alone.

What is democratic in energy democracy?

The current mainstream liberal-constitutionalist model of representative democracy is under fire from all directions, but what is relevant for our purpose is that much of that critique is launched under the banner of more, or purer, democracy. The roots of the recurring disillusionment with mainstream political practice lie in its perceived evolution away from the imagination of ‘immediate democracy’, which has remained intact. After all: democracy is ‘the rule of the people’, imagined at the micro-level as direct influence over decision-making. Aspirations for bridging this gap, and demands for a more robust democracy, are dismissed as dangerous by the established political elites (Rosanvallon 2011, p. 127), fuelling further critique of prevailing modes of decision-making.

The idea of ‘energy democracy’ needs to be seen within this framework, in terms of the demand for the increased accountability and democratization of a sector that was previously not seen as requiring public involvement, and was (is) most often depoliticized. While radical critics of liberal democracy often raise accusations of its oligarchic nature, the energy sector is visibly technocratic. This detachment and distance of a *raison d'état* approach, characterized by secrecy and arcane technical knowledge, is contrasted to what Rosanvallon calls ‘democracy of proximity’ (2011, p. 171).

The activist usage of ‘energy democracy’ draws on a particular vision of democratic politics, often opposed to the liberal, constitutionalist, and representative practice of most modern democratic polities (Blee 2012). Graeber points out that democracy rests on a very basic ‘belief that humans are fundamentally equal and ought to be allowed to manage their collective affairs in an egalitarian fashion using whatever means appear most conducive’ (Graeber 2013, p. 183-4). We instantly recognize the participatory element present in the earlier discussion of environmental democracy, but the equality of humans as *political subjects* is equally significant. This idea builds on a classical debate within democratic theory, between Schumpeter’s view of “democracy as a method” – representative, focused on

elections – and Dahl’s critique, which also underlines the procedural aspect, but distances itself from Schumpeter’s elitism, replaced by a popular democratic vision based on *political equality* (discussed in Munck 2009). Democracy ‘is a way of making binding, collective decisions that connects those decisions to the interests and judgements of those whose conduct is regulated by the decisions’ (Cohen 2007). This means that equality extends from decision making to agenda setting as well as preference formation. Equality of political subjects, their agency, and empowerment are two components of political theory that the literatures discussed in the earlier section pay little or no attention to – while they are central to the idea of energy democracy.

Political participation and an inclusive decision making process are treated as an obvious and non-negotiable baseline (Gautney 2009), but what the radical democratic theorists and critics of liberal democracy also propose is an emphasis on the process of deliberation as a means of achieving if not consensus, then at least a workable agreement on the most important matters. As Blee also notes (2012, p. 4), democracy in this sense is less a noun than a verb: it denotes the active processual involvement and engagement of citizens in deliberation, as subjects and political agents. Della Porta defines this ‘deliberative participatory democracy’ as referring to ‘decisional processes in which, under conditions of equality, inclusiveness, and transparency a communicative process based on reason (the strength of a good argument) may transform individual preferences, leading to decisions oriented towards the public good’ (2009, p. 1).

All these authors emphasize deliberation as catalytic and central for of the process of decision-making, drawing most importantly on Habermas’ communicative action theory. What are the benefits of deliberative democracy? One of its most vocal proponents, Dryzek, identifies three: legitimacy (which is in short supply in technocratic decision-making); problem-solving rationality; and last but not least, making better citizens (Dryzek 2007). Deliberative democracy is also supposed to be better suited to solving environmental problems (Dryzek 2000, p. 140), although empirical evidence that (liberal) democracies perform significantly better on sustainability indicators than do non-democratic, authoritarian regimes, is not that strong (Ward 2008). Critics of deliberative democracy point out that there is no place in the real world like the jury room, where the better argument and reason wins. Furthermore, there are irreconcilable interests and ideological commitments which can obstruct agreement on important issues (Walzer 1999; Elster 1998), and economic power and issues of ownership seem to have no place in this vision. Machin’s (2013) discussion of the ‘parallax of climate change’ proposes a way out of this, by questioning deliberative

democracy's insistence on consensus and agreement. If, as critics rightly point out, there exist irreconcilable interests (and there are many such situations in energy policy), we should understand that decisions are ultimately underpinned not by consensus, but disagreement (Machin 2013, p. 89). Celebrating disagreement and a plurality of perspectives, Machin strongly argues that 'a democracy that acknowledges the inevitability of conflict is a political system that is more likely to hear alternative perspectives from voices that have been excluded or ignored' which increases rather than precludes engagement and political participation (Ibid, p. 101).

Deliberative democracy rests on the idea of informed, equal interlocutors debating their standpoints without the interference of power hierarchies. The notion that all citizens can be equally qualified to make judgements and take decisions rests on the idea of *enlightened understanding* (Dahl 2015), which in turn requires the procedural criteria of transparency and access to information (though information alone might not suffice). But what does increased participation and the ideal of deliberation in decision making really mean in energy policy, and is it truly desirable? To put this more provocatively, is the insistence on participation not simply a populist trait in energy democracy?

Should energy be democratic? Participation, technocracy and complex energy systems

The problem of governing complex technological systems has long been observed, a consequence of the accelerating pace of technological innovation since the end of the 19th century. As civil liberties and liberal democracy evolved and spread, technological complexity has also increased: indeed, in 1927, Dewey asked how a mass public could deal with the increasingly complex nature of problems (Dewey 2012). Dewey hoped that the emerging class of techno-experts would act as educators and mediators of complexity for a democratic general public. However, such hopes have proved naive, as 'instead of facilitating democracy, they have mainly given shape to a more technocratic form of decision making, far more elitist than democratic' (Fischer 2000: 7).

This appears particularly true in the energy sector, which has traditionally been presented as a techno-scientific domain reserved for experts: mostly engineers who construct the infrastructure, and scientists who design the hardware. This technocratic perspective, a particular 'democratic storyline', which Hendriks (2009) describes as espousing elite theory and technocracy, has different variants, emphasizing technology, economics, or security. All share one common feature: the role of society and social scientists should be limited to a necessary minimum. Although the goal of the techno-scientific power sector is to provide

electricity to the customers, it excludes the possibility of allowing them to decide about the structure of that sector and its future development. The economic perspective presents society merely as the source of demand without taking into consideration the possibility of co-ownership of the power generation units. Finally, when security and risk are discussed, society is presented as a passive object of a policy shaped and executed by the national government (Fischhendler and Nathan 2014; Szulecki and Kuszniir 2017), and is often state-centric. In this regard, such issues as energy poverty, air pollution or climate change, all of which influence the security of individuals, are not taken into consideration. ‘Insofar as experts understand policy to be its technical core, citizen input will remain a secondary, inferior contribution’ (Fischer 2000, 42). In some contexts, democracy can be framed as problematic for policy planning and transition management (Hendriks 2009; Szulecki and Kuszniir 2017).

The idea of energy democracy is a direct challenge to this approach as it is based on a very different ‘democratic storyline’, emphasizing inclusion and seeing the public as well as experts as stakeholders interested in the common good (Hendriks 2009, 354). The basic notion that decisions that influence people’s lives should be taken with their involvement, along with the principle of political equality, provide normative justification for this position; while enlightened understanding provides an ideal anchoring. But why would we want non-experts to take part in often complex decision making in energy policy? Political theorists suggest that it not only increases legitimacy, but also the *quality* of decisions – by broadening the stakeholder group and thus increasing the chance that policies indeed are for the *common* good.

Studying the role of experts in public policy and environmental governance, Fischer (2000) noted that there are also other pragmatic, and not only normative, reasons for citizen participation. Apart from legitimacy and giving ‘meaning to democracy’, participation and professional inquiry bring in local knowledge and a level of nuance that can be missed in centralized, technocratic governance. This is also because, as Fischer observes, by virtue of the professional’s/expert’s middle level position in the societal hierarchy, (s)he ‘typically tends to adopt the systems own definitions of problems’ (Ibid, 31), and so, becomes insulated from feedback crucial for democratic governance. Through the power to define problems, experts can ‘impose definitions and meaning that speak at least as much to the system’s imperatives’ as to the needs of the principal actor, society.

There is also an important mechanism of self-enforcing democracy in play. Insistence on popular reason and the ability of an (informed) public to recognize the better argument can

already be found in Machiavelli's *Discourses* (McCormick 2011, p.77). Why is this mechanism desirable and potentially effective? Through the desire of the people not to be dominated by a tyrant or an oligarchic structure, such as an oligopoly. This means that participation increases the *quality* of governance.

Good governance is a catch-all term (Norris 2012, p.9), encompassing democratic accountability along with bureaucratic state capacity. Accountability is fundamental for democratic practice, perhaps more so in representative democracy as well as policy areas involving expert knowledge, like energy. Accountability means the public's control over experts, the right to question their decisions and policy choices (Mulgan 2003). But it can mean very different things in practice: the *responsibility* of experts and elected officials, and as a consequence their sense of obligation towards the public, without direct oversight; the *control* exercised by the public over experts; and finally the *responsiveness* of experts to the public's demands and preferences. It is clear that the idea of energy democracy insists on the responsiveness of experts and policymakers, even if some areas of governance need to be continuously dominated by expert knowledge. Democratic accountability places moral authority with the account holder (Mulgan, 2003, p. 11); in other words, the public. The arguments for democratizing energy are thus both normative (increasing legitimacy and democratic meaning) and pragmatic (accountability leads to efficiency, better decisions closer to the optimal solution acceptable to a wider range of stakeholders, and a combination of expert and local knowledge). There is additionally a mechanism of self-enforcing democracy, which counters mono/oligopolistic tendencies and policy capture.

Prosumer: the citizen and subject of energy democracy

Participation should make for better governance, as well as better citizens. In the Anglo-Saxon tradition of democratic theory, deliberation is a means of protecting autonomous actors from external interference; in the continental tradition, it creates their very capacity for autonomy. Those two views propose slightly different visions of civic participation.

Energy democracy is a particular democratic imaginary, which guides not just citizens' attitudes but envisages new roles and modes of citizenship. Existing visions of energy democracy display a tension between a more individualistic (e.g. Szwed and Maciejewska, 2014) and a more communitarian approach (e.g. Yildiz et al. 2015; Morris and Jungjohan, 2016). This might seem to be a contradiction. In fact, it is reminiscent of Schmitt's

thesis that liberal democracy is non-viable, since its two cornerstones - those of individual freedoms, and of political community which is integral to democracy - are mutually exclusive.

In other words, the tension between a liberal prosumer and the insistence on collective forms of production and radical participatory governance could suggest that energy democracy has the same problems as democracy *tout court*. However, whether that really constitutes a problem is itself debatable. For Mouffe (2000), the paradox identified by Schmitt is actually the strength of liberal democracy: the dual orientation of the liberal insistence on rights and the continued challenge to inclusive/exclusive policies is what keeps democratic contestation alive.

Theorizing a “soft energy path” based on renewables, both Lovins and Toffler emphasise the potential of prosumers to generate and produce their own energy in the form and at the scale most appropriate to their needs, be it individual, local, or regional (Lovins, 1979, p. 38-39; Toffler, 1980, p. 205). But in the 1970s and 80s, the necessary technology was still lacking and few options existed to produce power at a cost comparable with subsidized fossil fuels and nuclear plants. The significant cost decrease of RES over the last three decades has made the utopia of locally produced and consumed energy real. By bringing demand and supply closer, renewables harbour the potential of not only completely changing the way the energy sector has been organized, but also of creating the foundations for a democratic power system.¹

Technological innovation and energy transition towards smaller scale, distributed and renewable² energy sources enables the imagination of a new figure, the *prosumer*. In the emergent era of omnipresent energy, the prosumer becomes an idealized citizen of energy democracy. This is part of a new governmentality emerging around energy transition, which constitutes new political subjectivities in the form of prosumerism (here understood also as participation in cooperative and communal energy projects) (Rose et al., 2006, p. 90).

This new prosumer-citizen is characterized by a set of virtues reminiscent of the Tocquevillian citizen in the 19th century. They are informed and conscious both of the way the energy system functions, the impacts it has, and their own role in it. They are involved, in the way the participatory democratic imagination envisages, translating their action into political engagement, both direct (political action in prosumer associations and political parties) and indirect (by becoming part of the energy system). The prosumer gains their political power through ownership of means of production (of energy). This element is strongly emphasized in

¹ I purposefully narrow the analysis to electricity (power) generation and consumption, because this is currently at the heart of on-going energy transitions (even if it does not fulfill the ‘100% renewable’ ideal as a result).

² This last element is indispensable: diesel generators can also appear an element of a “dispersed” energy system, but while they generate electricity on-site, we have to see them as the last link of a chain which is neither democratic nor particularly empowering for the citizens.

all activist accounts of energy democracy, and not simply because it has a Marxist ring to it. Like coal miners in Mitchell's account (2011), increasing numbers of prosumers are not only independent from the energy oligopolies which would create a libertarian, atomized system; rather, in a dispersed but interconnected and interdependent system, prosumers become a vital component without which the system cannot work. The share of energy produced by individual households and cooperatives or communal associations is thus an important measure of the degree of an energy system's democratization.

But new technologies, dispersed generation, and demand side responses through devices such as smart meters imply a deeper change in the socio-political order. Prosumers are not merely a new category of economic actors; they are political agents in a changing environment. In this new socio-technical landscape, governing of and through technology reaches unprecedented levels of innovation. That also means that energy democracy implies new and unique technologies of government.

What is unique in energy democracy? An emerging governmentality

The crisis of representative democracy is recurrent and we are now witnessing another wave. However, the claim for 'more democracy' is as old as modern democracy itself (Maravall 2016). What is indeed novel, and this is where the idea of energy democracy gains its foothold, is that these claims are now made in the context of technological change and new kinds of environmental/ethical concerns.

Here the uniqueness of energy democracy becomes apparent: it is not merely about the increasing participation of publics in energy policy making. Looking at Denmark, one of the European energy transformation champions, Hvelplund suggests a causal link between technological change and the political sphere, between the growing empowerment of otherwise economically less privileged groups and their growing influence in policymaking, which he calls the 'innovative democracy process' (2013). Yildiz *et al.* (2015) in turn look at the other European energy transition pioneer – Germany – and analyse the organization of cooperatives, seen as the most important institutional innovation coming out of the energy transition.

All this points to the role of technological change and material (infra)structures more generally in influencing socio-political change (Latour 2005; Rose 2006, 93). The argument for the co-constitution of energy transitions and political change is powerfully advanced by Mitchell, who coins the term 'carbon democracy' to describe how a modern industrial economy based on carbon energy and modern democracy are 'tied intricately together', and

socio-political relations can be understood as the ‘outcome of particular ways of engineering political relations out of flows of energy’ (2011, p. 5). Modern mass politics, argues Mitchell, was made possible by ‘the development of ways of living that used energy on a new scale’, making energy transition the condition for a political transition already in the age of steam (Ibidem, p. 10). The way Mitchell grasps these relations is most importantly through connections and alliances, visible changes in the political economy, that appear around the transformation of energy into different forms. The emergence of coal miners as a very specific interest group with a new awareness, culture, and crucial role at the beginning of the production chain, allowing them to use energy and supply disruptions politically is the best example of that mechanism (Mitchell 2011). New forms of energy, new infrastructures, create new political actors as well as new forms of governing, and new institutions (compare Finon 2009 on the co-evolution of French nuclear industry and institutions). For Mitchell, democracy means both the making of effective claims for a more just world (akin to the energy justice perspective), and a mode of governing characterized by struggles over the distribution of issues between the public and the private, nature and politics, or market and regulated economy. The idea here is that ‘democracy is an engineering project concerned with the manufacture of new political subjects and with subjecting people to new ways of being governed’ (Ibidem, p. 3). If prosumers are a new type of citizenry, what are the new ways of governing that energy democracy entails?

To ask that question is to enquire about the *governmentality* of energy democratization. Foucault’s concept, operationalized for empirical research, is understood as ‘techniques and procedures for directing human behaviour’, an ‘art of government’ (cited in Rose et al. 2006, p. 83). Different arts techniques of government embody answers to questions like: Who/what is to be governed? How, to what ends? How are the subjects imagined? Who governs what? What are the logics of that relationship? What are its techniques? (Ibidem, p. 84-85). Energy democratization – understood as the transition and search for a new governmentality with new idealized political subjects (prosumers), is expanding democratic domain over private energy choices, not just on the national but also local level. This freedom of choice enables the evolution of what Rose and colleagues call ‘advanced liberal government’ in the area of energy. Through technological innovation, such as smart grids and smart meters and distributed generation which requires coordination, there are also new areas and inlets of control over individuals. Renewable energy support instruments, like feed-in tariffs and premiums, can too be seen as technologies of government, connecting the state and the individual (cf. Kern and Howlett 2009). Seen this way, energy democracy as an ideal and

the on-going energy democratization as a process of emergence of new political subjects and technologies of government reaches far beyond increased public involvement in energy production or growing shares of renewable generation.

Defining energy democracy: towards an analytical and practical tool

Democratic ideals provide a yardstick for evaluating how societies are governed. Elements of the democratic vision (as listed by March and Olsen 1995) include aspects of personal liberty and responsibility, which form a blueprint for the political subject ideal, the engaged and aware citizen. They include popular sovereignty and political equality, foundations of the political *demos*. Furthermore they contain faith in the role of individual and collective human reason, the rational ideal for distinguishing paths towards the common good. Procedural reliability and stability provide and safeguard the rules of the game.

The elements of energy democracy that existing definitions identify, are increased citizen participation in decision making (Szwed and Maciejewska 2014; Antal 2015; Sweeney et al. 2015); increased civic, community and/or public ownership of the means of energy production (Kunze & Becker 2014; Szwed and Maciejewska 2014; Morris and Jungjohan 2016) which also means breaking up existing economic and power structures; and finally different positive co-effects: employment, sustainability, sufficiency, quality of life, and better personal relationships.

I propose to understand energy democracy as an ideal political goal, in which the citizens are the recipients, stakeholders (as consumers/producers), and accountholders of the entire energy sector policy. Governance in energy democracy should be characterized by wide participation of informed, aware, and responsible political subjects, in an inclusive and transparent decision-making process relating to energy choices, with the public good as its goal. To create and safeguard civic empowerment and autonomy, high levels of ownership of energy generation and transmission infrastructure through private, cooperative, or communal/public means are necessary.

Following Sovacool and Dworkin's (2015) effort to forge 'energy justice' as a conceptual, analytical and finally decision-making tool, the three levels of the proposed definition: democratic popular sovereignty; participatory governance; and civic ownership, can be operationalized with specific indicators to allow for comparisons and designing policy change leading towards the energy democracy ideal (Table 1).

[Table 1 here]

While energy democracy, as a policy goal and a certain ideal type of socio-technical arrangement, is a quasi-utopian idealization, energy democratization – the political process altering the industry and influencing socio-political institutions – is already taking place. The criteria and indicators I propose for analyzing and designing policy compatible with energy democracy can be used to assess the situation in different national and regional contexts. Importantly, energy democracy is a multi-scale concept, which connects the national polity with the individual citizen, and is playing out at all governance levels. That is why although cases of local level cooperative establishment or prosumer organization are important elements of democratization, the national political context is still important, and so the framework allows for comparison between states rather than within them. Existing studies of prosumerism illustrate this: Inderberg and colleagues provide a very thorough analysis of Germany, Norway and the United Kingdom, looking at PV prosumer inclusion numbers in the electricity system (part of Civic Ownership in my conceptualization) as the dependent variable, and looking at elements of all three of our main dimensions, like energy legislation, support schemes, information, transparency and administrative practice as causal factors (Inderberg *et al.* 2016). Szulecki *et al.* (2015) look at Poland and Germany, putting more emphasis on popular sovereignty issues (energy policy for whom?) and the political economy of energy transformation (to what extent are citizens able to break existing oligopolies?).

Conclusions

Existing definitions of energy democracy contain different important elements, but lack coherence and a more explicit rooting in the rich tradition of political theory as well as normative discussions of energy and sustainability. That is why I began this piece by positioning energy democracy in the already densely populated conceptual landscape, showing overlaps and differences with similar but distinct ideas, most importantly energy justice and environmental democracy. I then discussed what it could mean that energy is ‘democratic’ and why that is desirable – from a more practical as well as ethical point of view. Sketching the depth and importance of the on-going process of energy transformation towards a low-carbon, renewable based system, I emphasized the unique traits of energy/democracy nexus, and discussed the emergence of a new energy democratic governmentality as well as a new kind of political subject: the prosumer-citizen. Finally, I brought these ideas together, proposing an analytical conceptualization of energy democracy and an operationalization using measurable indicators, which can be used for comparative as

well as policy-relevant purposes. These are, however, beyond the scope of these conceptual notes and constitute a promising avenue for future research.

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References

- Antal, A., 2015. The impact of U.S.A. and E.U. on environmental and energy democracy in Hungary. *On-line Journal Modelling the New Europe*, 17, 13–27.
- Bándi, G., 2014. Introduction into the Concept of 'Environmental Democracy'. In: G. Bándi, ed. *Environmental democracy and law. Public participation in Europe*. Groningen, Amsterdam: Europa Law Publishing, 3–22.
- Banzhaf, H.S., 2012. *The political economy of environmental justice*. Stanford: Stanford University Press.
- Bickerstaff, K., Walker, G.P., and Bulkeley, H., eds., 2013. *Energy justice in a changing climate. Social equity and low-carbon energy*. London, New York: Zed Books.
- Blee, K.M., 2012. *Democracy in the making. How activist groups form / Kathleen M. Blee*. New York, Oxford: Oxford University Press.
- Bowen, W.M., and Wells, M.V., 2002. The Politics and Reality of Environmental Justice. A History and Considerations for Public Administrators and Policy Makers. *Public Administration Review*, 62 (6), 688–698.
- Bradshaw, M.J., 2014. *Global energy dilemmas. Energy security, globalization, and climate change*.
- Claeys, C., and Jacqué, M., 2012. *Environmental democracy facing uncertainty*. Bruxelles: P.I.E. Peter Lang.

- Cohen, J., 2007. Deliberative Democracy. In: S.W. Rosenberg, ed. *Deliberation, participation and democracy. Can the people govern?* Basingstoke: Palgrave Macmillan, 219–236.
- Dahl, R.A., 2015. *On democracy*. New Haven: Yale University Press.
- Della Porta, D., 2009. *Democracy in social movements*. Basingstoke: Palgrave Macmillan.
- Dewey, J., 2012. *The public and its problems. An essay in political inquiry*. University Park Pa.: Pennsylvania State University Press.
- Dryzek, J., 2000. *Deliberative democracy and beyond. Liberals, critics, contestations*. Oxford: Oxford University Press.
- Dryzek, J., 2007. Theory, Evidence, and the Tasks of Deliberation. In: S.W. Rosenberg, ed. *Deliberation, participation and democracy. Can the people govern?* Basingstoke: Palgrave Macmillan, 237–250.
- Elster, J., 1998. *Deliberative democracy*. Cambridge: Cambridge University Press.
- Finon, D., 2009. Force et inertie de la politique nucléaire française. Une co-évolution de la technologie et des institutions. In: A. Beltran, et al., eds. *État et énergie, XIXe-XXe siècle. Séminaire 2002-2006*. Paris: Comité pour l'histoire économique et financière de la France, 183–215.
- Fischer, F., 2000. *Citizens, experts, and the environment. The politics of local knowledge / Frank Fischer*. Durham, NC: Duke University Press.
- Fischhendler, I., and Nathan, D., 2014. In the name of energy security: the struggle over the exportation of Israeli natural gas. *Energy Policy*, 70, 152–162.
- Fuller, S., and McCauley, D., 2016. Framing energy justice: perspectives from activism and advocacy. *Energy Research & Social Science*, 11, 1–8.
- Gautney, H., 2009. *Democracy, states, and the struggle for global justice*. London: Routledge.
- Glasnovic, Z., Margeta, K., and Premec, K., 2016. Could Key Engine, as a new open-source for RES technology development, start the third industrial revolution? *Renewable and Sustainable Energy Reviews*, 57, 1194–1209.
- Graeber, D., 2013. *The democracy project. A history, a crisis, a movement / David Graeber*. London: Allen Lane.
- Harris, P.G., and Symons, J., 2010. Justice in adaptation to climate change: cosmopolitan implications for international institutions. *Environmental Politics*, 19 (4), 617–636.
- Hendriks, C.M., 2009. Policy design without democracy? Making democratic sense of transition management. *Policy Sciences*, 42, 341–368.
- Hisschemöller, M., and Sioziou, I., 2013. Boundary organisations for resource mobilisation: enhancing citizens' involvement in the Dutch energy transition. *Environmental Politics*, 22 (5), 792–810.
- Holland, B., 2017. Procedural justice in local climate adaptation. Political capabilities and transformational change. *Environmental Politics*, 1–22.
- Hvelplund, F., 2013. Innovative Democracy, Political Economy, and the Transition to Renewable Energy. A full-Scale Experiment in Denmark 1976-2013. *Environmental Research, Engineering and Management*, 4 (66), 5–21.
- Inderberg, T.H.J., Tews, K., and Turner, B., 2016. *Power from the People? Prosuming conditions for Germany, the UK and Norway*. Lysaker: Fridtjof Nansens Institutt.

- Jones, B.R., Sovacool, B.K., and Sidortsov, R.V., 2015. Making the Ethical and Philosophical Case for "Energy Justice". *Environmental Ethics*, 37 (2), 145–168.
- Kern, F., and Howlett, M., 2009. Implementing transition management as policy reforms. A case study of the Dutch energy sector. *Policy Sciences*, 42 (4), 391–408.
- Kunze, C., and Becker, D., 2014. *Energy democracy in Europe. A survey and outlook*. Brussels: Rosa-Luxemburg-Stiftung.
- Kuzemko, C., Keating, M.F., and Goldthau, A., 2015. *The global energy challenge. Environment, development and security*: Palgrave.
- Latour, B., 2005. *Reassembling the Social. An Introduction to Actor-Network-Theory*. Oxford: Oxford University Press.
- Lovins, A.B., 1979. *Soft energy paths. Toward a durable peace*. New York: Harper Colophon Books.
- Machin, A., 2013. *Negotiating climate change. Radical democracy and the illusion of consensus*. London: Zed Books.
- Maravall, J.M., 2016. *Demands on democracy*. Oxford: Oxford University Press.
- March, J.G., and Olsen, J.P., 1995. *Democratic governance*. New York, London: Free Press.
- Mason, M., 1999. *Environmental democracy*. London: Earthscan.
- McCormick, J.P., 2011. *Machiavellian democracy*. Cambridge: Cambridge University Press.
- Miller, C.A., Richter, J., and O'Leary, J., 2015. Socio-energy systems design: A policy framework for energy transitions. *Energy Research & Social Science*, 6, 29–40.
- Mitchell, T., 2011. *Carbon democracy. Political power in the age of oil / Timothy Mitchell*. London: Verso.
- Morris, C., and Jungjohann, A., 2016. *Energy Democracy. Germanys Energiewende to Renewables*. Basingstoke: Palgrave Macmillan.
- Mouffe, C., 2000. *The democratic paradox*. London: Verso.
- Mulgan, R., 2003. *Holding power to account. Accountability in modern democracies / Richard Mulgan*. Basingstoke, New York: Palgrave Macmillan.
- Munck, G.L., ed., 2009. *Measuring democracy. A bridge between scholarship and politics*. Baltimore, MD.: Johns Hopkins University Press.
- Newton, D.E., 2009. *Environmental justice. A reference handbook*. 2nd ed. Santa Barbara: ABC-CLIO.
- Norris, P., 2012. *Making democratic governance work. How regimes shape prosperity, welfare, and peace*. Cambridge: Cambridge University Press.
- Posner, E.A., and Weisbach, D.A., 2010. *Climate change justice*. Princeton, N.J., Woodstock: Princeton University Press.
- Rosanvallon, P., 2011. *Democratic legitimacy. Impartiality, reflexivity, proximity*. Princeton: Princeton University Press.
- Rose, N., O'Malley, P., and Valverde, M., 2006. Governmentality. *Annual Reviews of Law and Social Science*, 2, 83–104.
- Schuppert, F., 2011. Climate change mitigation and intergenerational justice. *Environmental Politics*, 20 (3), 303–321.

- Shum, R.Y., 2015. Where constructivism meets resource constraints: the politics of oil, renewables, and a US energy transition. *Environmental Politics*, 24 (3), 382–400.
- Sovacool, B.K., 2013. *Energy & ethics. Justice and the global energy challenge*. Basingstoke: Palgrave Macmillan.
- Sovacool, B.K., *et al.*, 2016. Energy decisions reframed as justice and ethical concerns. *Nature Energy*, 1 (5), 16024.
- Sovacool, B.K., and Blyth, P.L., 2015. Energy and environmental attitudes in the green state of Denmark: Implications for energy democracy, low carbon transitions, and energy literacy. *Environmental Science & Policy*, 54, 304–315.
- Sovacool, B.K., and Dworkin, M.H., 2014. *Global energy justice. Problems, principles, and practices*. Cambridge: Cambridge University Press.
- Sovacool, B.K., and Dworkin, M.H., 2015. Energy justice: Conceptual insights ad practical applications. *Applied Energy*, 142, 435–444.
- Sovacool, B.K., Sidortsov, R.V., and Jones, B.R., 2013. *Energy security, equality, and justice*. London: Routledge.
- Stirling, A., 2014. Transforming power: Social science and the politics of energy choices. *Energy Research and Social Science*, 1, 83–95.
- Sweeney, S., Benton-Connell, K., and Skinner, L., 2015. *Power to the People. Toward Democratic Control of Electricity Generation*.
- Szulecki, K., 2015. Renewable energy. In: P. Pattberg and F. Zelli, eds. *Encyclopedia of Global Environmental Governance and Politics*. Cheltenham: Edward Elgar, 416–422.
- Szulecki, K., Ancygier, A., and Szwed, D., 2015. Energy Democratization? Societal Aspects of De-Carbonization in the German and Polish Energy Sectors. *ESPRi Working Paper No 5. March 2015*
- Szulecki, K., and Kuszniir, J., 2017. Energy security and energy transition – securitisation in the electricity sector. In: K. Szulecki, ed. *Energy Security in Europe: Divergent Perceptions and Policy Challenges*. Basingstoke: Palgrave Macmillan.
- Szwed, D., and Maciejewska, B., 2014. *Demokracja energetyczna*. Warsaw: Green Institute.
- Thompson, G., and Bazilian, M., 2014. Democratization, Energy Poverty, and the Pursuit of Symmetry. *Global Policy*, 5 (1), 127–131.
- Toffler, A., 1980. *The third wave*. New York: Bantam Books.
- Walzer, M., 1999. Deliberation and what else? In: S. Macedo, ed. *Deliberative politics. Essays on "Democracy and disagreement"*. Oxford: Oxford University Press.
- Ward, H., 2008. Liberal democracy and sustainability. *Environmental Politics*, 17 (3), 386–409.
- Yildiz, Ö., *et al.*, 2015. Renewable energy cooperatives as gatekeepers or facilitators? Recent developments in Germany and a multidisciplinary research agenda. *Energy Research & Social Science*, 6, 59–73.

Main dimensions	Components	Indicators
Popular sovereignty	Citizens as recipients of energy policy	Welfare and energy access as key benchmarks Consumer prices and quality of service

	<p>Citizens as stakeholders (producers and consumers)</p> <p>Citizens as accountholders</p>	<p>Prosumer legislation and grid access</p> <p>Prosumer support schemes</p> <p>Public accountability of energy decision makers</p>
Participatory governance	<p>Inclusiveness</p> <p>Transparency</p> <p>Access to information</p> <p>Energy education and awareness raising</p>	<p>Incorporation of public consultations at all levels</p> <p>Citizen interest/opinion on par with expert agenda</p> <p>Due process and clear procedures</p> <p>Regulated lobbying</p> <p>Reporting on legislation and deliberation</p> <p>Independent research possible and available</p> <p>Existence of dedicated educational programs</p>
Civic ownership	<p>Civic ownership of power generation</p> <p>Civic ownership of transmission/distribution infrastructure</p>	<p>Renewable energy deployment, dispersed energy capacity</p> <p>Share of energy from private, cooperative & communal sources</p> <p>Ownership structure and power in the political economy of energy</p> <p>Share of grid infrastructure co-owned by municipalities/communal</p>

Table 1 – Energy democracy from conceptual to analytical/decision-making tool