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Title	Whose transition? A review of citizen participation in the energy system
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Publication date	2022-12-01
Original Citation	Dunphy, N.P. and Lennon, B. (2022) 'Whose transition? A review of citizen participation in the energy system', in K. Araújo (ed)., Routledge Handbook of Energy Transitions, 1st edn. London: Routledge, pp. 430–444. https://doi.org/10.4324/9781003183020-30
Type of publication	Article (peer-reviewed);Book chapter
Link to publisher's version	10.4324/9781003183020-30
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Download date	2026-11-16 11:59:34
Item downloaded from	https://hdl.handle.net/10468/14806



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ROUTLEDGE HANDBOOK OF ENERGY TRANSITIONS

Edited by Kathleen M. Araújo

First published 2023

ISBN: 978-1-032-02350-2 (hbk)
ISBN: 978-1-032-02402-8 (pbk)
ISBN: 978-1-003-18302-0 (ebk)

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DOI: 10.4324/9781003183020-30

This chapter is funded through the ENCLUDE project, supported by the EU's Horizon 2020 Research and Innovation Program, under grant agreement no. 101022791



Routledge
Taylor & Francis Group
LONDON AND NEW YORK

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WHOSE TRANSITION? A REVIEW OF CITIZEN PARTICIPATION IN THE ENERGY SYSTEM

Niall P. Dunphy and Breffní Lennon

1. Introduction

Energy, and indeed the energy system, is tightly intertwined with people's everyday lives – albeit as Ambrose (2020) observes, it is perhaps often somewhat invisible. At the same time, as Axon et al. (2018) suggest, energy-related culture, practices, and behaviors can be said to "constitute a powerful human factor in the energy system". Therefore, it can be understood that the current moves to decarbonize energy systems will both necessitate and result in significant changes to the way in which people go about their daily lives. Of course, there is no one single route to decarbonizing societies, and indeed, there is no single vision as to the intended destination[1]. There are many decisions yet to be made, which will shape and influence what decarbonized energy systems will look like and how they may be achieved.

There is a growing realization that the success of the ongoing energy transition is dependent on the perceived legitimacy and social acceptability of the societal transformation required for its actualization. Consequently, citizen participation in the energy discourse is increasingly seen as an important aspect of the energy transition. Although as Mullally et al., (2018, 71) note, while there is some agreement that energy policy should "no longer be the exclusive concern of public institutions and utilities", the nature and extent of this participation remains contested.

Citizen participation in the energy domain has traditionally been thought of in terms of their role as a consumer. Increasingly, citizens are requested to be active consumers and to use their purchasing power and consumption practices to both reduce their environmental impact and to influence the market (Fox, Foulds, and Robison 2017). More recently, citizens, under certain circumstances, have also been invited to become producer-consumers (so-called prosumers) producing renewable energy (typically electricity) for their own consumption and, where allowed, for sale back to the centralized grid. While this represents somewhat of a shift in expectations of the role of the citizenry in the energy domain – these forms of participation (albeit an evolution on the traditional role of passive consumer) are still quite limited and rather limiting.

There is, however, a move toward more expansive and inclusive visions of the type of roles citizens are permitted to play within the energy system. The growing discourse on energy democracy, for example, illustrates the emergent social movement calling for changes in the sociopolitical dynamics around the energy domain (Burke and Stephens 2017) and for

DOI:10.4324/9781003183020-30
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"restructuring energy systems technologies and governance for greater democracy and inclusivity" (Burke and Stephens 2018, 90). These emergent citizen roles around energy can manifest as either individualist or collectivist, depending on circumstances and objectives. The modes of participation in emergent citizens roles differ but focus on one or more elements of the energy domain *e.g.*, consumption, production, policy and planning, regulatory enforcement, and advocacy (Lennon et al. 2020; Mullally, Dunphy, and O'Connor 2018).

Of course, the types of roles citizens wish, or are permitted, to play in the energy sphere will vary according to sociocultural norms, socioeconomic contexts, influence of the energy incumbents, and the policy and regulatory environment. The latter of which, in particular, is dependent on the economic ideological orientations of those in decision-making positions. This chapter examines how under-theorized and contested concepts like the "energy citizen" are already framing our collective experience(s) of the energy transition and asks for whom is the emerging energy system designed?

2. Understanding the Energy System as a Social System

This section posits that the energy system, long considered a technological construct is in fact a sociotechnical system and, moreover, first and foremost inherently social. The energy system has traditionally been seen through a techno-centric lens, and there has arguably been a reluctance, among some at least, to acknowledging its intrinsic social dimension. For the most part, it has been understood as corresponding with Bruckner et al.'s (2014) definition of the energy supply sector – that is, comprising the various processes that extract, convert store, and transmit and distribute energy for use. In this perspective, energy is considered a technical domain and an important one at that, which provides society with an essential product, the energy that is so vital to our lives. In this traditional view of the energy system, citizens were considered, if at all, as the fortunate recipients and beneficiaries of a key element of modern life from what was portrayed as an almost benevolent industry (Dunphy and Lennon 2020).

Of course, technology on its own does not provide the entire picture of the acquisition and supply of energy. Society's energy needs are met through the interaction of technologies and what might be termed the human factor. This human dimension is to be found both within and without the industrial structures traditionally considered to constitute the energy sector. This expanded view of the energy domain comprises what is termed a sociotechnical system[2] of interacting social and technical elements. Sociotechnical systems are described as "a cluster of aligned elements, e.g. artefacts, knowledge, user practices and markets, regulation, cultural meaning, infrastructure, maintenance networks and supply networks" (Geels 2005, 445). Geels (2004) comments that these systems do not function independently from, but rather are the results of and are dependent on, people's actions – emphasizing an important social aspect of such systems.

Walker et al. (2008) suggest that the interrelatedness of the social and technical dimensions is key to understanding the performance of (and by extension realizing change within) sociotechnical systems. They argue that the differences in their behavior means that focusing optimization attempts on just one dimension (usually technical) is likely to be detrimental to performance – this can be seen in, for example, community opposition to new energy infrastructure arising from top-down exclusionary planning and development processes (Argenti and Knight 2015) or the so-called rebound effect in energy efficiency projects, where energy savings arising from technical measures can be (at least partially) negated by increased consumption (Sorrell and Dimitropoulos 2008). All of these highlights the importance of acknowledging and appreciating the human and societal dimension in sustainable energy transitions.

While energy is a sociotechnical system, it can also be considered a human system. As described earlier, the energy system is designed, built, and used by people, but moreover, it is an integral part of the way people live their lives. But as Hunt and Ryan (2015, 274) observe, energy in and of itself is "not of intrinsic value", but rather it is the energy-related services that people desire. Nobody consciously *chooses* to use energy, but rather its use enables and supports the practices that form the basis of the way we live, including heating, lighting, cooking, cleaning, transportation, entertainment, and so on (Dunphy et al. 2017). In this way, energy consumption as a separate activity can be seen as a somewhat artificial construct. Thus, although the energy system and energy reach into all aspects of people's daily lives, it is often invisible (especially since the reduced use of solid fuels) and is usually only made present by its absence through power outage or unaffordability. Ambrose (2020) suggests that the "contemporary relationship with energy is arguably one characterised by complete dependency and almost complete ignorance".

Energy systems, as they exist today, developed in tandem with society, both responding to and actuating societal needs and demands. The configuration of such systems is a product of and closely intertwined with the societies that depend so much on them. Because of this, decarbonizing energy systems can be seen to be not just about changing energy technologies but rather entailing substantial societal transformation. Not only must the technologies change, but so too must people's relationship with the energy system and with energy – both to facilitate the new technologies and as a result of their realization. Miller et al. (2013, 135) put it quite succinctly commenting that transforming energy systems is not only about changes to technology "but also to the broader social and economic assemblages that are built around energy production and consumption". Indeed, given that much of the required technology is already available, it is plausible that the real challenge of the current energy transition (and the implicit societal transformation, which will accompany it) is actually sociopolitical.

3. Justice Within the Energy Domain

Fairness and perceptions of fairness are key to realizing the societal acceptability required for the ongoing energy transitions. There is a concern in particular that the burden of social, financial, and environmental costs of the energy system are disproportionately placed on those with less social and economically privilege, particularly on those at the margins of society, while it is those with more privilege who benefit most. In response, Sovacool and Dworkin (2015) describe energy justice as a system where both the benefits and costs of the provision of energy are fairly distributed and in which decision-making processes are representative and unbiased. McCauley et al.(2013) suggest there are three principal themes or tenets within energy justice: distributional justice (equity in the allocation of both the benefits and detriments of the energy system), recognition justice (which can perhaps be best understood as the absence of cultural domination, non-recognition, and disrespect in processes), and procedural justice (inclusive, transparent, and informed decision-making processes) (Jenkins et al. 2016).

Wenz (1988, 4) posits that the chief topics relating to environmental justice are concerned with distributional equities. *Distributional justice* is concerned with the fairness of how benefits and ills of the energy system are shared across the population. Distributional understandings of justice are not just about unfairness in impacts but also inequities in "distribution of responsibilities and the spatialities that are implicated within these" Walker (2009, 615). However, as Velasco-Herrejón and Bauwens (2020) observe, although a core element of energy justice, ideas of distributional justice need to be supplemented by other justice concepts to appreciate the causes underlying energy injustice and related maldistribution. A second key concept is that of

recognition justice, which argues for an appreciation of the diversity of stakeholders and their experiences, both individually and collectively. Lack of recognition devalues some people, cultural groups, and place identities (Walker 2009); it is demonstrated by "various forms of insults, degradation and devaluation" of both individuals and groups (Schlosberg 2004, 519). Recognition injustice of itself directly causes harm, but moreover, such disrespect is the basis for distribution injustices. The third energy justice tenet is concerned with process. *Procedural justice* calls for fair, equitable, and inclusive processes around energy-related decision-making. Walker (2009, 627) notes that procedural justice fundamentally is about the interaction of "information, access and people". Perceptions on procedural fairness in decision-making consider opportunities for all groups to participate, adequacy of engagement, quality of information disclosure, impartiality, and trust (Tyler 2000; McCauley et al. 2013).

Hazrati and Heffron (2021) note a number of later additions to the energy justice framework. Along with distribution, recognition, and procedural justice, there is *cosmopolitan justice* (which acknowledges a common humanity and a responsibility to consider global implications), and *restorative justice*, which aims to repair (and proactively prevent) harm caused by decisions and actions around the energy system. Taking a cosmopolitan justice perspective, Sovacool et al. (2016) suggest a reframing of decisions on energy in terms of ethical and justice concerns. Suggesting energy systems can be thought of as a (pseudo) polity in which competing preferences play out. Their eight principles for a more sustainable energy system are availability of energy for people's daily needs, affordability of energy, due process in energy system planning and realization, transparency and accountability in energy-related decision-making, sustainability and conservation of energy resources, intragenerational equity in benefits and burdens between peoples, intergenerational equity and rights of future generations, and responsibility (of all countries to protect the natural environment). Emerging in the context of criminal justice studies, *restorative justice* is concerned with repairing the harm done to victims. Restorative justice has been proposed as relevant to the energy domain, with the victim in this context conceived as people, society, or nature (Heffron and McCauley 2017). It is intended as a means of correcting existing and preventing new, distributional, recognition, and procedural injustices through governmental (or other) interventions (Hazrati and Heffron 2021).

The ongoing moves to decarbonize our energy systems will inherently result in winners and losers, albeit this is something that is not always fully acknowledged in the transitions discourse and related policy dialogues. Energy justice is vital to ensure the new energy system is developed and realized in a fair and just manner. However, there is an additional requirement for ensuring that the energy transition and wider decarbonization of society is done in a manner that is fair and equitable. Healy and Barry (2017) argue that building support for decarbonization requires greater recognition of (and discussion about) the potential associated socioeconomic costs. The idea of a just transition originated in the trade union movement in response to the implications transitioning away from fossil fuels has on jobs in coal and other carbon-intensive regions. This explains the emphasis on workers' rights, particularly those associated with fossil fuels in much of the discourse. However, while such labor-driven perspectives are indeed correct, there are few who would argue that this was the only valid perspective on a just transition. Heffron and McCauley (2018) argue that integrating the concepts of and ideas from related justice scholarships provide a more holistic view on what justice is and what it can be in the context of the energy transition. They suggest this offers an opportunity to develop an integrated framework for developing more understanding and promoting fairness in the transition through a fusion of the concept of energy justice (as discussed earlier) with concepts of climate justice (seen, for example, by Caney 2014 as a combination of fairness in how climate impact burdens are shared, and fairness through people seeking to avoid or limit climate-related harm, which threatens the

rights of others) and environmental justice (described, for example, by Wenz 1988 as fairness in the allocation of burdens of environmental protection between those with socioeconomic privilege and those without, fairness in the sharing of natural resources between developed and lesser developed countries, fairness between the present and future generations, and fairness between humanity and other species).

Mascarenhas-Swan (2017, 38) argues that a deep democracy "in which workers and communities have control over the decisions that affect their daily lives" is vital for realizing a just transition. She posits that any energy democracy must adhere to five central principles: diversification, democratization, decentralization, reduction in consumption, and provision of reparations to ensure that "energy systems . . . do not exacerbate or create new forms of social inequity and the consequential ecosystem erosion" (ibid., 48).

4. Democratizing Energy

Citizen participation is increasingly seen as an essential element of the transition to a decarbonized energy future, although the nature and scale of the desired participation remains contested. Some envision a decarbonized energy system to be structured much the same as today's, with centralized grids, seeing renewable energy sources replacing carbon-intensive fuels. In such a scenario, citizen participation would seem to be quite restricted. However, the ongoing energy transition enables (and some would suggest requires) a far more extensive restructuring and reimagining. Wittmayer et al. (2022) argue that greater citizen participation, and particularly collective participation in energy projects not only means new ways of realizing energy projects and organizing but also leads to a new way of thinking about the energy system. The ongoing transitions debate including support for decentralization and localization of energy systems is closely linked to concepts such as energy democracy and energy citizenship (Wahlund and Palm 2022).

Democratizing energy is often forwarded as the solution to the sociopolitical challenges associated with the energy transition (see Keahey et al., this volume, for a treatment of energy democracy). This campaign, which evolved into Germany's Energiewende (energy transition), originally had a strong democracy focus, but as Morris and Jungjohann (2016, 4) note, by the 1990s, "climate change had clearly taken center stage as the main goal". The term "energy democracy" originated in the German climate justice movement,[3] with a call for socialization, decarbonization, and democratization of the energy system, it quickly gained currency among non-governmental organizations and researchers, particularly across Europe and the USA (Angel 2016). Much of the early writings on the concept were found in so-called gray literature, and it is really only since around 2015 that the term appears in peer-reviewed literature (van Veelen and van der Horst 2018). While the idea of restructuring the energy system to be more democratic is increasingly accepted, energy democracy as a concept remains somewhat underdefined. Energy democracy may be seen as a process (challenging incumbents), an outcome (or by-product) of decarbonization, and/or a normative goal (Szulecki and Overland 2020). Burke and Stephens (2018, 90) posit that the concept "represents a contemporary expression of ongoing struggles for social and environmental justice through engagement with technological systems". Wahlund and Palm (2022) posit that there are three overarching goals of energy democracy: opposition to fossil fuels and support of decarbonization of the energy mix, socialized control of the energy system, and a restructuring of energy system technologies and governance to support more inclusive participatory democratic processes. In this way, they see energy democracy as a means of envisioning transitions to renewable energies as "pathways for democratic development" (ibid., 90). In this regard, Angel (2019) suggests that people see

energy democracy in two ways: there are those for whom it is about increasing agency within the energy sphere for those with little or none, while for others, energy democracy is a means of bringing energy system governance under the democratic control of energy users (and to an extent workers).

Szulecki and Overland (2020) observe that while originating as a term identifying a larger role for citizens in decision-making on energy (and the energy transition), energy democracy has evolved into a term more concerned with energy governance. Szulecki (2018, 21) suggests there are three key dimensions that make up energy democracy: popular sovereignty, where citizens (re)claim authority to shape their energy systems "in ways that are culturally relevant and ecologically sustainable" (Laldjebaev, Sovacool, and Kassam 2015, 98)*;* participatory governance, where there is inclusive, informed, and transparent decision-making at all levels relating to energy and the energy system; and civic ownership, where there is increased non-state and non-corporate involvement – that is, greater "citizen, community, co-operative and municipal ownership" (Hall et al. 2016, 5) of energy generation and transmission systems. However, energy democracy, like all social movements, has a wide diversity of subgroups, each with its own goals and priorities, which do not necessarily align. Examples of differing opinions on energy democracy include the role of the state (see, for example, Angel 2017 for an exploration of energy politics in, against, and beyond the state); oppositional versus alternative positionality of arguments (see, for example, Wahlund and Palm 2022); and ownership and control (level of citizen involvement) (see, for example, Van Veelen 2018). Involvement of citizens across these three dimensions may be conceived as a form of citizenship within the energy domain.

5. Energy Citizenship

The terms "energy citizenship" and "energy citizen" have increasing currency in discourse around the energy transition (albeit perhaps concentrated within academic and policy circles). Understanding energy citizenship first requires an appreciation of citizenship of which there are two main traditions: the liberal tradition, which focuses on the entitlement of citizens to fundamental rights (Schuck 2002), and the civic republican tradition, which is based on duties and responsibilities (Richard 2002). While traditional views of citizenship involved membership of a particular polity, more inclusive perspectives include ideas of cosmopolitan citizenship, which acknowledges a shared humanity and Dobson's (2003) idea of a post-cosmopolitan citizenship in his theoretical considerations on the ecological citizenship concept, which adds a perceived obligation of justice (of righting a wrong) to the idea of common humanity. Citizenship in the energy domain could seem to relate to one or more of these perspectives depending on context.

The concept of energy citizenship can be understood as a social construct; it is a sociotechnical vision[4] conceptualized by activists, academics, and increasingly, policymakers of the potential roles that citizens could, or perhaps should, play in the energy system (Pel et al. 2021). While not claiming it as a novel idea, Devine-Wright (2007) forwards the concept of energy citizenship as fundamentally about citizens becoming active stakeholders in an energy system where equity in addressing the effects of energy consumption is foregrounded. His idea of the energy citizen was positioned in stark contrast to the traditional passive role filled by consumers. Energy citizenship, however, remains a nebulous idea and one that means different things to different people – as Lennon et al. (2020, 184) observe, what it "might involve in practice remains open to interpretation".

Aronson and Stern (1984, 16) forward four representations on the nature of energy: energy as a commodity, energy as an ecological resource, energy as a social necessity, and energy as a strategic material. Each of these perspectives inherently reflects a set of values and beliefs

resulting in differing framing of the citizenry, their potential roles within the energy domain, and the level of empowerment to be afforded them (Lennon et al. 2020; Pel et al. 2021). Mullally et al. (2018) suggest citizenship within in the energy domain involves a combination of rights and responsibilities underpinned by important principles of sustainability and social justice. They posit that while there is growing acceptance that increasing citizen participation is warranted, there is a lack of consensus as to the nature and depth of the roles that citizen should be invited to (or indeed permitted to) play in the energy domain.

Lennon et al. (2020) argue that discussions on citizenship in energy transitions discourse have been skewed toward normative descriptions of how a "good citizen" can contribute to energy conservation and decarbonization by being an active consumer in the energy sphere. Energy citizenship is often framed with an emphasis of the responsibilities of citizens (particularly with regard to their consumer activities), with little if any acknowledgment of the rights accorded to them. This privatization of responsibility acts to shift the onus away from those with real power and influence (e.g., energy companies and state bodies) to individuals whose agency is far more bounded. It places the responsibility on reducing energy consumption on individuals, thereby disregarding the need for wider societal and structural changes arising from the strong influence sociotechnical contexts have on social practices (Dunphy and Lennon 2020). This focus on citizens' private consumption activities disregards the duality of the citizen who exists "simultaneously as a 'communal being' and as a private individual" (Rosenow 1992, 45). The consumerist conceptualization of energy citizenship greatly restricts the types of roles that citizens might play in the energy system and, by doing so, limits their potential contribution to the energy transition.

Substantial societal transformation will both be necessary to achieve the transition away from carbon-intensive energy sources and will, in turn, result in even more societal transformation. A successful energy transition and the associated social changes in the way we live our lives requires citizens to not just acquiesce to certain decisions but rather to wholeheartedly embrace the transition not as something foisted upon them but as something of which they are part. This requires inclusive and participatory governance forms that enable and support citizens' full participation in the energy system and provide for them with an equitable share in its benefits (Dunphy et al. 2018).

6. Citizen Participation

As we have seen, there is a growing acceptance of the need for a more inclusive energy system; this has meant that greater roles for the citizenry is increasingly to the fore in energy transition discourses. The traditional role of citizens in the energy system was that of a passive consumer, a supposedly grateful recipient of a much-needed product – this was especially the case as electricity and, to a lesser extent, as gas networks were rolled out. Energy was viewed very much in technocratic terms, with an elite of technical experts guiding, if not directing, energy policy. The citizen's relationship with the energy domain was seen very much in transactional terms and their expected – and really their only permitted – role was that of a customer and preferably one that was deferential to those who knew what was best. However, this is changing in response to a range of geopolitical (e.g., oil crises, gas blockades), economic (i.e., cost of energy), and environmental (e.g., climate impact) challenges associated with energy consumption and production. As a result, in recent decades there has been an increasing acceptance (albeit hesitant in places) of new roles for citizens in the energy domain, whatever form they may take.

Among attempts to develop categories of citizen participation, the most prominent perhaps is Arnstein's seminal work on societal power structures, where she differentiates between "the

empty ritual of participation and having the real power needed to affect the outcome of the process" (1969, 216). She forwards a typology comprising three main categories of participation. The lowest levels are classified as non-participation and involve manipulating/curing participants by "educating" and engineering them into supporting a particular position. They are not meant to enable true participation but rather designed so that those with power can orchestrate support. The second category involves informing, consulting, and placating participants. While information will be provided and views exchanged, they may not necessarily be any serious consideration of participants' contributions. In its most advanced forms, engagement can be quite inclusive, involving those not ordinarily included; however, in all cases, power is retained by the existing power holders. At the highest levels comprise different degrees of citizen power, ranging from partnership with other actors, enabling negotiation and real input in decisions, to delegated power and citizen control where the citizenry have real ability to make decisions themselves.

The energy system (in most countries) is somewhat of a public-private hybrid, with various levels of public sector oversight and control. It involves (multi-level) state authorities licensing, highly regulating, in some instances granting a monopoly franchise, and occasionally owning individual components (see, for example, Osofsky and Wiseman 2014 for a treatment of hybrid energy governance). Within the energy sector, while citizen participation was originally (principally) construed as a process for citizens to feed into decision-making processes on infrastructure projects (and more recently on energy policy), the term is now understood more expansively, and citizens have increasing social, political, and economic agency in the energy domain. The quasi-public (at least) nature of energy governance, combined with the technological changes and business opportunities arising from the energy transition, makes it an appropriate sector for citizens to potentially participate across a range of activities. When once limited to a passive consumption role, citizens individually or collectively are increasingly contributing to and participating in the energy system through a growing number of activities, involving the exercise of social, political, and economic power (Dunphy and Lennon 2020).

In a review of a consultation process on energy policy in Ireland, Mullally, Dunphy, and O'Connor (2018) identified six distinct narratives of citizens participation in the energy system. These narratives (paternalist, majoritarian, consumerist, constitutionalist, communitarian, and deliberative) provide some insights into different perspectives of how energy citizenship might (or perhaps should) be realized.

- The *paternalist* narrative sees the citizens' role as facilitating and enabling energy system developments in a way determined by a politico-technical elite. This narrative imagines the citizenry as ill-informed and requiring education and information to be persuaded to behave in the right way (however that might be portrayed).
- In the *majoritarian* narrative, the views of the politico-technical elite are supported by the so-called silent majority. The citizenry is viewed in almost a binary fashion – a vocal minority who obstruct the required changes to the energy system and a supporting majority whose views are not heard.
- The *consumerist* narrative is quite a limited perspective: it sees citizens only through their traditional role as consumers. Its focus is on their consumption and production activities, and there is little if any participation beyond that envisaged by law.
- The *constitutionalist* narrative sees everything through right-based legalistic perspective. It maintains that citizens have legally mandated rights (including consultation and contribution to consent processes) which must be upheld (e.g., in energy infrastructure projects) but does not really envisage participation outside of such official mechanisms.

- A more bottom-up perspective is given in the *communitarian* narrative, which acknowledges that citizens exist within communities and that they act collectively and individually. It holds that citizens and the communities that they form have a right to participate in and to benefit from energy projects.
- The final viewpoint identified in this paper is the *deliberative* narrative where citizens participate across all levels of governance and practice on decisions on energy and the energy system. Citizens are considered to be capable of and have the right to deliberate with other stakeholders to identify and resolve issues around energy and the energy system.

Dunphy and Lennon (2020) used this framework of narratives to characterize a number of modes of energy participation, based around consumption, market influence (and power), access to information, enforcement of rights, individual and collective production, and challenging power holders through formal and informal politics. Building on and drawing from this work and informed by other analyses of participation around energy (e.g., public participation in the UK energy system by Pallett, Chilvers, and Hargreaves 2019; emergent public engagement in societal transitions by Revez et al. 2022). The following paragraphs outline some examples of energy citizenship expression across a range of potential modes of participation. Some of these expressions of citizenship are quite passive (in keeping with the idea that not all participation has to be active), while others are inherently active. They encompass both individualistic and collective approaches.

The first category are those manifestations of energy citizenship, which are fundamentally about access to energy and energy resources. These include the *dispossessed*, indigenous peoples and other marginalized groups from whom energy resources have been unjustly taken, such as tar sands production on Canadian First Nations land (Parson and Ray 2018) and/or the extraction of which has resulted in their displacement, such as the Three Gorges Dam (Jackson and Sleigh 2000); the *excluded*, those who are prevented from connecting to energy grids due to sociopolitical and/or economic reasons, such as the electrification of rural communities in sub-Saharan Africa (Falchetta et al. 2020); the *energy-vulnerable*, those for whom affordability of energy is a key issue and who are at risk of energy poverty – that is, being unable to afford energy required for adequate heat, lighting, cooking, and appliance use (Bouzarovski 2014). Another group impacted by energy access are those who live in what might be termed energy deserts – areas with limited choice of and access to energy suppliers (analogous to the concept of food desert; see, for example, Hamidi 2020).

The second categorization of energy citizenship is consumption-orientated. It includes the traditional *passive consumer* role in which, citizens have little or no expected participation beyond being simply recipients of a product; the *active consumer* persona, so beloved of government energy efficiency programs, which uses their purchasing power to influence the market; the narrative of the *good citizen*, which involves changing energy consumption habits for environmental and other public rationales in response to the persuasion of government information campaigns; the *digital native*, those early adopters of technology and for whom the energy system is mediated through a combination of smart meters, smartphone apps, connected appliances, and a multitude of gadgets (see, for example, Strengers et al. 2022 on visions or imaginaries of future home life); the interesting narrative of the *energy champion*, who is somewhat of an evangelist for sustainable energy practices and acts as a source of knowledge and advice for her neighbors; and an emerging citizen consumption narrative, that of the *collectivist-consumer*, the energy consumer that combines with others to group purchase, manage, and/or consume energy (sometimes in the form of heat).

The third category for energy citizenship is production-orientation and encompasses the various means by which citizens become involved in and contribute to the production of

energy. Narratives of citizen energy production include the *prosumer*, a citizen that is a hybrid producer and consumer of energy. Such prosumption is a bottom-up phenomenon where the prosumer that produces, sells, trades, or stores while typically linking with an energy company to sell excess production. The *self-consumer* may be considered a variant of the prosumer – she seeks a level of individual sovereignty, to be autonomous of centralized energy systems by producing all the energy required for her own use. The *collectivist-producer* narrative is where citizens combine in community energy projects, typically in the form co-operatives or similar structures, for the purpose of generating energy for sale (or indeed for collective self-consumption see, for example, Reis et al. 2022). Another production narrative involves the citizen as a *citizen-investor* in energy projects, companies, or crowdsourcing initiatives. These citizen-investors have a varying mixture of economic and environmental (and occasionally social) motives.

The final category of energy citizenship is within the political sphere; this can take a number of different forms, all of which are concerned with decision-making: The *citizen-litigator* is concerned with procedural correctness; she argues her rights through established processes and work to ensure that laws about information provision, consultation, and permitting are strictly followed. In doing so, she contributes to better energy policy development and regulation. The *citizen-challenger* is active in political processes; she envisages the energy transition as an implementation challenge and, therefore, a sociopolitical one. In light of this, she combines with others to challenge the status quo and enact change through the political system by means of public awareness, political campaigning, lobbying, electoral politics, and the like. The citizen-challenger is typically well-informed, motivated, and organized and necessarily has sociopolitical agency. The final example type is the *citizen-activist*, who overlaps somewhat with the challenger, but she works more on the political margins. The citizen-activist also wishes to change the status quo, the difference being she does not fully trust the political system to deliver such change. She is involved in social mobilization, protest movements, and other radical action – her aim is not so much to achieve change through the system but rather to change the system itself.

Energy citizens may display one or more of these expressions of energy citizenship in the energy domain concurrently or at different times. The different expressions undoubtedly speak to different levels of socioeconomic privilege and to different life experiences. Certain sections of society are either locked in (e.g., those residing in areas with a monopoly electricity franchise) or locked out (e.g., citizens without the resources to take part in collective initiatives) of aspects of the energy system, which limits their ability to participate. Pallett, Chilvers, and Hargreaves note, "All forms of participation – whether invited or uninvited, insider or outsider – are always orchestrated and framed in powerful and highly partial ways, and are thus subject to exclusions" (2017, 607). Thus, the big questions for the realization of energy citizenship and indeed the future shape of energy systems are as follows: Where in the system will participation be permitted? Who will be allowed to participate? On what basis, and to what end? The answers to these queries will be system-specific and will be reveled over time as various ad hoc interest groups representing different narratives (what Mullally, Dunphy, and O'Connor 2018 referred to as discourse coalitions) compete/collaborate/negotiate to reach a resolution across a range of sociocultural, sociopolitical, and sociotechnical battlegrounds.

7. Conclusion

Devine-Wright's (2007) early conceptualization of energy citizenship offered a hint of an energy future in which citizens meaningfully participate in the governance of the energy system. This concept, albeit ambiguously defined, has facilitated (and continues to facilitate) visions of citizen

participation around systems of energy consumption, production, and supply. Energy citizenship can be thought of as a form of citizenship beyond the state, but a citizenship of energy ought not be thought of as a legal-political conception; it is not to be understood in terms of a political membership but rather (principally) as a democratic function focused on decision-making around energy. However, as described in the preceding section, the energy citizen is not just interested in policymaking and decision-making; one can also express citizenship through action in both public and private aspects of life. In this way, energy citizenship shares many post-cosmopolitan citizenship attributes found in ideas, such as environmental citizenship (non-territorial in nature, involved in public and private spheres, and with focus on virtues; see Dobson 2003).

Chilvers and Longhurst (2016, 601) conceive of participation in the energy transition as an emergent, relational, and co-produced phenomena, expanded beyond just deliberation to take multiple forms "including activism, grassroots innovation, and interactions with more mundane technologies in everyday life". The labels of "citizen" and "citizenship" are useful metaphors for considering such energy participation, invoking the language of citizenship helps appreciation of the responsibilities and rights involved (particularly in the context of the energy transition). In this chapter, we have discussed the multiple existing and emerging modes of participation, which embody expressions of energy citizenship. These include the excluded and dispossessed, non-engaged passive consumers, and various modes of more active individual and group consumption; production by individuals and through collectives; and a range of political and campaigning roles trying to inform and/or shape the energy system to align with their priorities.

Not all perspectives on what energy citizenship could or should be are equally supported. Governments, energy companies, and other energy stakeholders all have preferences for the type of roles they wish citizens to play in the energy system. There is (growing) support among traditional energy system power holders for certain expressions of energy citizenship. The more "acceptable" expressions are really those that do not threaten the status quo, such as active consumerism (citizens are encouraged to use their purchasing power to send signals to the market) or prosumerism (citizens both produce and consume energy). Other expressions of energy citizenship that challenge incumbents or government policy are not so welcome, and indeed, such energy citizens are often vilified and/or marginalized by the incumbent power holders (see, for example, Mullally, Dunphy, and O'Connor 2018, for a discussion of the discourse coalitions that coalesce around different conceptualizations of energy citizenship).

There has been a tendency in the discourse on citizenship around energy to focus on cases of active participation, with citizens typically construed as economic actors. However, economics is a rather exclusory basis for citizenship. In the domestic sphere, for example, energy citizens are imagined as making informed, rational decisions on energy consumption, assuming levels of resources, financial and otherwise, that many householders simply do not have. Similar assumptions of resources and agency are to be found in productivist manifestations of energy citizenship, whether individual or collective. As Lennon et al. (2020, 189) observe, such perspectives ignore "issues of unequal access to energy, limited financial resources, educational privilege and expertise, or differential levels of control over one's environment and practices". There is notably a classism inherent in many expressions of energy citizenship (which in some principled expressions overlaps with an environmental classism; see, for example, Bell 2020), which can be quite exclusory. If energy citizenship remains predominately focused on economic modes of participation, those with less economic privilege will at best be quasi-citizens in the energy future. Energy citizenship should not be just about active involvement, it ought not be something that one becomes, but rather, it should exist by virtue of our existing close relations with energy and the energy system. This conceptualization of citizenship in the energy domain is

not only more inclusive but arguably could form the basis for a comprehensive framework of people's relationship with energy, establishing rights and responsibilities for a continuum of expressions of energy citizenship.

Notes

1 This work has been carried out in the context of two research projects. ENCLUDE, funded under the EU's Horizon 2020 Research and Innovation Program, under grant agreement no. 101022791, is seeking to understand the diversity of expressions of energy citizenship; EnergyPolities, funded by the SEAI R&RD program, 18/RRD/356, is exploring social mobilization around energy.
2 It is notable that the concept of sociotechnical systems originated within the energy domain in attempts to improve the efficiency of the British coal industry in the 1950s (Pasmore et al. 2019).
3 An early example of a grassroots movement to make decisions on energy more democratic was the 1970s campaign against nuclear power plants in Breisach and Wyhl, West Germany (Kalb 2012).
4 Such visions are often referred to as sociotechnical imaginaries, described by Jasanoff and Kim (2009, 120) as "collectively imagined forms of social life and social order reflected in the design and fulfillment of nation-specific scientific and/or technological projects".

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