



Energy citizens – Conveyors of changing democratic institutions?

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ARTICLE INFO

Keywords:

Energy citizen
Participation
Institutional innovation
Democracy

ABSTRACT

A transition towards a low-carbon energy system poses new challenges to democratic participation. The transition to clean energy requires a better understanding of crosscutting sociocultural and sociopolitical issues, such as democratic institutions, to devise effective ways of involving citizens and better understand how energy-related views and attitudes are embedded in democratic practice. This paper discusses how the emergence of energy citizenship complies with and holds the possibility for institutional innovation regarding citizen participation. The research question considers how the conceptual innovation of energy citizenship, that is associated with new forms of citizen engagement in fossil fuel reduction policy, positions itself in the debate on participation as an institutionalised value of democracy. Four archetypes of energy citizenship are compared with different forms of democratic citizen participation, and their innovative potential is discussed. This paper is based on the theory of institutions, innovation, and citizen participation.

1. Introduction

The climate crisis raises questions not only connected to new, green energy solutions and adequate policy for their implementation. The overarching importance of rapid change in the use of natural resources and demanded societal changes have also raised concerns about the ability of democratic institutions to address the situation. Are contemporary democratic institutions and practices equipped to handle the challenges we face, particularly the conflicts that accompany them? The challenges can be harder, the conflicts more significant, and democratic institutions are scrutinised for their capacity to integrate conflicting questions and answers into current input, throughput, and output arrangements.

In this situation, existing democratic institutions are challenged from different angles. One aspect is the well-known confrontation between participative, action-oriented initiatives and the institutions of the representative democracy. Many have observed, and possibly taken part in, the Fridays for Future demonstrations and Scream for Climate Change. Fischer (2017) identified a further line of initiatives as techno-environmentalism or techno-managerial environmentalism. The label covers different approaches to the role of science and technocracy as governing devices that challenge or substitute established democratic institutions. In a world where several democratically elected leaders and decision-making bodies are lagging in the transition to renewable energy sources, and in some cases also denying the scientific advice regarding the urgency of doing so, the demand for a more expert-based

governing structure is understandable. However, such a development could have severe implications for democracy in the way that essential democratic values such as representativeness and accountability could be set aside.

Fischer's (2017) analysis proposes *eco-localism* as an alternative to the *eco-authoritarianism* that could develop otherwise. This solution is based partly on participative and partly on a deliberative understanding of how democracy works. Furthermore, it aims to bring technical expertise and democracy into a dialogue that fosters new and sustainable solutions. This proposal is very much in line with the ideas behind many of the developments and innovations in democratic participation over the past two decades (Smith, 2009; Geissel, 2013; Fung, 2015). The emphasis on dialogue and collaboration from the strand of theory emerging in public sector innovation research is also recognisable (Bason, 2007; De Vries et al., 2015; Hartley et al., 2013). These developments have also ignited debate concerning their impact on existing democratic institutions. Participation is an essential element in the New Public Governance (NPG) steering paradigm (Torfing & Triantafillou, 2016) and rests firmly on the idea of collaboration to produce public services. Research and policy action appears drawn to the potential that collaborative solutions offer, and the ambitions fall into categories such as co-production, co-creation and co-innovation (Osborne et al., 2016). This development is characterised by increasing participation in creating and producing public services by actors outside the public sector.

The concept of citizenship is closely connected to democratic

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<https://doi.org/10.1016/j.cities.2022.103678>

Received 27 October 2020; Received in revised form 15 March 2022; Accepted 17 March 2022

Available online 7 April 2022

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participation and deliberation. Citizens participate and deliberate in policy-making. Therefore, how citizenship is defined and practised is an essential aspect of how democratic institutions are conceptualised. The discourse on democracy in times of climate saving and the renewable energy imperative has brought the concepts of environmental or ecological citizenship (Dobson, 2003) and energy citizenship (Devine Wright, 2007) to the agenda. Traditionally, the scholarly debate has emphasised the distinction between citizens and users, among others, involved in the conflict between the New Public Management (NPM) and New Public Governance (NPG) steering paradigms. The concept of energy citizenship derives features from both paradigms and therefore challenges some notions of democratic participation. In terms of innovation, energy citizenship can be defined as a conceptual innovation (Lidskog & Waterton, 2016). A conceptual innovation often develops when established concepts are contested on a theoretical or an empirical basis. One example is the *user* and *customer* terminology introduced by the NPM paradigm to address public services receivers. Conceptual innovation aims to draw attention to new phenomena and instigate new ways of thinking, and the concept of energy citizenship has probably been developed to do both.

This paper contributes to understanding how the conceptual innovation of energy citizenship that accompanies new forms of citizen engagement in fossil fuel reduction policy positions itself in the debate on participation as an institutionalised value of democracy. I address this aim by first exploring how the various types of energy citizenship comply with an institutionalised understanding of democratic participation. Secondly, I consider what type of conceptual innovation is energy citizen.

I begin by presenting two approaches to institutional innovation, the *strategic* and the *bricolage* approaches. I proceed by clarifying citizenship as a concept and its role in supporting and understanding democratic institutions, particularly concerning different forms of participation. In innovation processes, different types of innovation are often connected. Above, I have characterised energy citizenship as a conceptual innovation. In the final part of the paper, I discuss the main research question: does energy citizenship carry the potential for innovating democratic participation?

2. Institutional innovation: strategy, disruption, and bricolage

Friedland and Alford (1991) define institutions as “supraorganizational patterns of human activity by which individuals and organisations produce and reproduce their material subsistence and organise time and space. They are also symbolic systems, ways of ordering reality and thereby rendering experience of time and space meaningful”. Institutions define and govern social practices and appear as more or less formalised rules, supported by values and norms (Scott, 1995; Douglas, 1986; Peters, 2011; Scott, 2008). They contribute to stabilising and providing predictability in a social entity but are nevertheless subject to change over time.

Scott (1995) identifies three *pillars of institutions*: regulative, normative, and cognitive structures and activities. In a revised version, Scott (2019) relabelled the cognitive pillar as cultural-cognitive. The regulative pillar is defined as rule setting, monitoring, and sanctioning activities and is based on an instrumental logic. The normative pillar represents the values and norms that can be summed up as expectations for appropriate behaviour. The cultural-cognitive pillar embodies the shared conceptions that constitute a frame of meaning. Scott argues that symbols, words, and gestures and an actor's subjective interpretation of these through interaction could constitute a common frame of meaning (Scott, 1995). Scott (1995, 2001, 2008) identifies *carriers* for each pillar in the form of formalised or informal rules, values, systems, culture, symbols, relations, and artefacts. These carriers interact with each other in day-to-day practices. Thus, institutions are not easy to pin down empirically, since they are embedded in combinations of carriers.

Institutions are in general durable, robust and resilient, which is

precisely the reason why they become institutions. They are, however, not inalterable. Nevertheless, institutional change can be detected as interacting changes among the carriers. Sometimes there are rapid changes, sometimes slow. New values, norms, and actions challenge existing institutions. The changes can be significant and disruptive or diverge slightly from the established institutional order. Some elements survive the challenge, some do not, and others are changed to a lesser or greater degree (Thornton et al., 2012).

The changes can be innovative; new ideas put into action. In accordance with the contextualised definition of innovation that Schumpeter provided us with (Schumpeter, 1934/1987), an innovation it is when the change is new to the context, and not necessarily new to the world as such. An idea can be borrowed from one context and applied to another, with or without alteration or translation, yet be considered an innovation. Moreover, many innovations carried out in one context are not transferable to another without friction. The friction is likely caused by the institutional environment in which the idea is introduced (Holmen & Ringholm, 2019).

Organisations and other social systems have many ways of implementing innovations, varying from planned and overarching changes to those that take place as a stepwise and particular change. The innovation imperative for the public sector has been increasingly emphasised in recent years. Consequently, public authorities at local, regional, and central levels have been engaged in developing *innovation strategies*. Such strategies have a holistic perspective. They are based on knowledge of what drives and hampers innovation in given societal, primarily organisational, contexts and aim to strengthen the drivers to overcome barriers. This overall ambition can be labelled organisational innovation and, most likely, policy innovation (Windrum, 2008). Innovation strategies typically emphasise that for an organisation to become more innovative, it must implement changes in its structure and routines, as well as changing the thoughts, priorities, and ways of acting. In other words, innovation strategies are typically based on expressed ambitions of institutional innovation.

Conversely, innovation can occur as minor, stepwise changes in everyday practices. In contrast to the strategic way of implementing innovation, these changes are not initially based on overall assessments of the need for change. Fuglsang (2008) uses the term *bricolage* to describe these forms of innovation, defining an activity where innovators apply the remedies and tools available to do things in new ways. There are many reasons for such innovative methods: time pressure, lack of resources, and the absence of guiding principles for innovation within an organisation. However, the sum of bricolages can ultimately lead to substantial changes and disruptive institutional innovations. It is also possible to view the two innovation types at opposite ends of a continuum, where strategic innovation illustrates top-down innovation and bricolage describes bottom-up innovation. In the middle ground, there is likely to be a range of innovations comprising features of both.

In their work on institutional logic, Thornton et al. (2012) examined the interaction that contributes to stability and change within institutions. They identified three complementary mechanisms directly involved in maintaining and changing institutions: decision-making, sense making, and mobilisation (op. cit. pp. 95–98). Based on this knowledge, the authors presented a typology of changes in institutional logic. The typology has two main categories: transformative change and developmental change. Transformative change occurs when the current institutional logic is replaced by logic from another field, creating new praxes, frames, and narratives. Developmental change occurs when the core elements of the institutional logic are intact but affected by other logic to some degree. Of the two, transformative change initially has most in common with the disruptive innovation described in innovation literature.

Thornton, Ocasio, and Lounsbury present two main categories of institutional change that are not congruent with the strategic and bricolage approaches to innovation, even though they appear to have

similarities on initial inspection. While the strategy-bricolage dimension captures the techniques applied to carry out innovation, the change dimension deriving from the institutional logic perspective is developed to identify the mechanisms operating in institutional change. Transformational change can occur due to an overall strategic process and several minor changes that accumulate or, at a particular stage, reach a tipping point that activates other dynamics that work in the same direction. When tracing institutional changes and innovation, the changes are often impossible to detect and determine until they have been in place for some time. Even so, there is likely to be disagreement about the degree of change.

The innovation concept is frequently associated with several benefits: improvements, increased public value, efficiency, and effectiveness. If this were typically the case, there would be no risk connected to innovation. Quite the opposite, innovation is usually contested. Some individuals have values and benefits associated with maintaining the current order; others desire the implementation of a competing innovation. Moreover, innovation can ultimately fail and cause embarrassment and even the loss of positions for those involved. Hence, an element of risk is inevitable in innovation practice (Osborne & Brown, 2013). This risk of losing benefits or values being discarded is also inherent in institutional innovation, as some actors will benefit and others will lose when institutions change, even if the changes are not disruptive. One example is the practice of transparency as part of maintaining accountability standards in democracy (Beetham, 1994). Opening meetings previously held behind closed doors to the public is an innovation that is likely to have restricted certain uses of power, thus changing institutionalised power relationships between the actors involved.

Citizenship is an institutionalised practice shaped by regulative, normative, and cognitive structures. The following section demonstrates that this institution has undergone innovation over time. Though closely connected to participation, citizenship practices adhere to different forms and understandings of participation. How are experiences of energy citizenship placed in this framework of changes?

3. Participation as a democratic institution

Citizen participation and collaborative forms of policy development are generally perceived to widen democracy. These ideas are emphasised in the research fields of participatory democracy (Pateman, 1970), communicative theory (Habermas, 1984), planning (Healey, 1997), and new forms of communicative planning (Innes & Booher, 2010). New and innovative democratic practices are emphasised regarding participation (Geissel, 2013; Smith, 2009). In Norway, as in several other countries, participation is supported in the Planning and Building Act (section 5.1). In Scott's (2019) terminology, this is an example of a regulative pillar of participation, as are other formalised arrangements.

Participation can be studied from a process or a policy angle, or according to Easton (1965), from input, throughput, and output perspectives. In research into participation and policy and innovation for improved participation, the emphasis is placed on policy process input (Ringholm et al., 2018; Smith, 2009). The reasons for this emphasis are multi-faceted (Scharpf, 1999). First, in a democracy, everyone should have a voice regarding policy decisions that affect them. This builds long-term trust in democratic institutions and, as such, is a deeply rooted normative pillar of participation. The other aspect of this pillar is the performance or output of participation. The expectation is that citizens contribute to the process with knowledge that is useful and necessary to make sound decisions. However, citizens' contributions to the output are expected to be made, through knowledge, viewpoints, and suggestions, before decisions are made and implemented. They are not, or to a lesser degree, expected to participate directly in deciding upon the solution or its implementation. Decisions and subsequent policy implementation are the responsibility of elected representatives – the politicians and the bureaucrats. Such is the division of responsibility between the

institutions of representative and participative democracy.

The knowledge aspect could be some of the reasons why the scholarly debate on participation has essentially concentrated on inputs when investigating democratic aspects of participation, such as how participants experience participation and how different aspects of participation could be innovated (Pateman, 1970; Barber 1984, Geissel, 2013). The output perspective, which examines the impact of participation on policy and the decisions connected to it (Arnstein, 1969; Hillier, 2002; Nyseth et al., 2010), is investigated to a lesser extent.

In other words, participation research has been occupied with the questions of power in participation, forms of participation, and, not least, those regarded as participants. Fung (2006) identifies these questions as three dimensions creating variation in participation: 1) who participates, 2) how communication and decision-making take place, and 3) the degree of authority and power. The distinction in who participates is illustrated on a continuum ranging from expert administrators to open and self-selected participants.

Fung argues that different forms of participation, communication and decision modes, authority, and power operate in different situations. The inclusion of new categories and methods of communication could thus alter the way democracy is perceived: "Citizens can be the shock troops of democracy" (Fung, 2006:74). While the discussion concerning energy citizenship and communication and decision methods is critical and relevant, I focus on forms of participation in this paper.

The cube offers a relatively broad and inclusive framing of democratic participation, and there are those willing to extend it. In their book, *Can Toqueville Karaoke*, Clark and coauthors (2014) argue that a New Political Culture (NPC) is developing, challenging traditional cultures and thus demanding a more contextualised perspective of democracy. The increasing importance of cultural participation and consumption and new patterns of participation facilitated by social media are at the foundation of this argument. In particular, the authors argue that young people's participatory mode breaks with previous categories as they communicate more through video games, smartphones, and the internet and less by joining groups and voting. They use the words *scene* and *buzz* as metaphors to describe the nature of the new engagement. The scene is more than neighbourhoods, physical structures, and group features. It includes these elements but emphasises their combination and the particular activities that link them (Clark & da Silva, 2014:160). The scene metaphor challenges the traditional concept of participation, which tends to be organised along territorial lines, organisations, and distinguishable citizen groups. The buzz is the communication that occurs at the scene, and it engages people outside political parties and traditional hierarchical institutions without excluding those that belong within them.

The scene and buzz approach, viewed through the lens of the democracy cube, emphasises participants on the outskirts of the cube and beyond without excluding those closer to the axis. The approach offers less in terms of defining the mode of communication and the power exercised through the buzz at the scene.

Creative experimentation (Hillier, 2007, 2008) relates to the perspective of how participation extends beyond the institutionalised patterns shaped by the regulative, normative, and cultural-cognitive pillars (Scott, 2009). Experiments are performative practices without a clear idea of where they end, and the idea behind them is to exploit the creativity, openness, and fluidity of the situation (Nyseth, 2011). The emphasis is placed upon "good encounters, or ... constructing assemblages (social, political, artistic) in which powers of acting and the action effects that follow from them, are increased" (Hillier, 2008: 230).

The differences in the approaches offered by Clark and coauthors (2014) and Hillier (2008) can be described as those between *invited* and *invented* spaces for participation (Mirafteb, 2009). Invited spaces are participation arenas defined and established by policy-making authorities or actors who work on their behalf or are otherwise involved in implementing government policy. The counterpart to invited spaces is

invented spaces, which refer to collective actions that challenge the status quo by confronting the authorities. To a large extent, the invented spaces place themselves at the outskirts of or outside the participation included in Fung's cube (Fig. 1). While Clark et al. focus on invented spaces, Hillier's concept of creative experimentation places itself more in the realm of invited spaces. What they have in common, however, is that citizens are regarded as co-producers or co-creators of knowledge and policy solutions to a greater extent than in the regulative and normative pillars of participation, which lean more heavily on participation input. These approaches highlight the need for (Hillier, 2008) and the occurrence of (Clark & coauthors, 2014) a shift in the cultural-cognitive pillar of participation, the notion of participation embedded in political culture. If such a shift occurred, it would qualify for the label of institutional innovation. Do energy citizens contribute to such an innovation?

4. Citizenship and energy: four archetypes

In this section, I present various forms of energy citizenship. First, I briefly discuss how the concept of citizenship has become institutionalised. In ancient Greek city-states, being a citizen would mean membership in a specific political community from which others were excluded. Citizenship entailed the right and obligation to participate in the state's public life and thus adopt a collective responsibility for the wellbeing and interests of the whole community (Eriksen & Weigård, 2000; Nauta, 1992). Hence, citizenship was originally a collectively oriented right and obligation. Later, it also came to be described as a set of individually based rights, such as the right to protection for private property and protection from public intervention in private matters. Eriksen and Weigård (2000) demonstrated that this development is connected to the social structures of medieval cities, characterised by greater individual freedom and class differentiation than their rural surroundings. From this historic anchoring, several authors have highlighted the two faces of citizenship: the collective and the individual. In the scholarly debate of this millennium, the two sides have been strongly connected to two competing paradigms of public governance: NPM and NPG (Osborne, 2010).

In the NPM discourse, citizens are most often positioned as either consumers or customers (Powell et al., 2010). These labels underline the individual's right to receive particular public services, such as education,

housing, transport, or health-related assistance. As consumers, they have a relatively passive and limited role, confined to demanding, consuming, and evaluating public services. Reactions to these limitations have brought new life to the citizenship debate, which has several branches and partitions. The different contributions were brought together and termed New Public Governance (NPG).

The citizen discourse associated with the NPG paradigm emphasises values such as inclusivity, equal power relationships, and transparency (Skelcher et al., 2005). As the thrust of this perspective is collaboration, the citizen as a collaborator is highlighted with the view that traditional roles are in transition, working within a horizontal relationship with the government (Meijer, 2016; Pestoff, 2006). Citizens possess resources, skills, and knowledge that make valuable contributions. Nevertheless, NPG's strong emphasis on collaboration does not imply that it is omitted altogether from the NPM discourse. Instead, the co-producing role is closely connected to compensating for market failures or reducing costs (Fotaki, 2011), arguably in contrast to adopting ancient Greece's traditional collective citizen perspective.

With this development, another strand of participation literature has emerged, based on climate change consciousness, green energy technologies, and the interest that different groups show in making use of them. Among other significant contributions, this debate has produced energy citizenship, a concept that signals a shift in the way energy users are conceptualised, from users to citizens (Devine Wright, 2007). Several authors have observed new ways individuals engage in energy use and production, indicating a shift from the traditional role as an energy receiver from a centralised system. One example is engagement in public policy processes for new energy solutions and fossil fuel reduction through well-known channels and actions, such as providing input to public planning and decision-making processes, protesting and petitioning against public authorities and private developers, and inventing new, expressive forms and devices for doing so. The Fridays for Future demonstrations and Scream for Climate Change, mentioned in the introduction, are two examples, and many more exist. Another way of institutionalising normative, cognitive, and possibly regulative pillars of energy citizenship is on a more individual or local, collective basis to become *prosumers*, those who produce energy as well as consume it (Campos & Marin-Gonzalez, 2020; Lennon et al., 2020; Ryghaug et al., 2018). Energy citizenship, hence, expresses itself in a multitude of

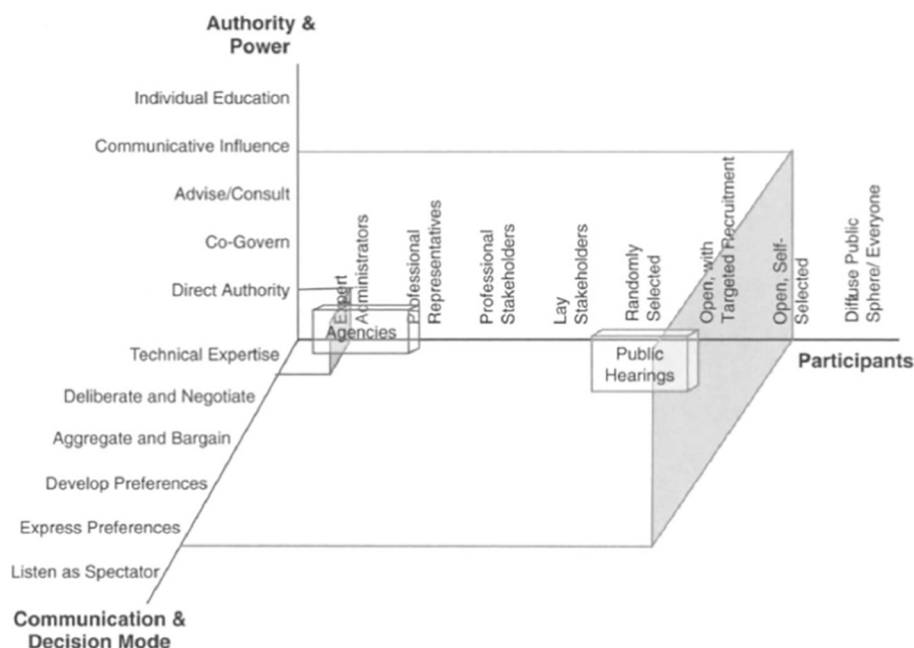


Fig. 1. Democracy cube (Source: Fung, 2006: 72).

forms, and new forms and expressions are probably invented as we write. The unique mix of producing, consuming, and taking collective responsibility for the community undoubtedly challenges the divide between the classic citizen perspective and user-customer perspectives.

Creating energy citizenship is likely to remain a practice in the making. Therefore, allocating categories based on empirical observations is an exercise in hitting a moving target. Nevertheless, [Chilvers and Longhurst \(2016: 592–593\)](#) identify and analyse four archetypes of public engagement in low carbon transition by presenting four cases selected to reflect the diversity of such engagement. The typology elaborates upon sociomaterial expressions of participatory collectives and four different approaches to understanding public engagement in energy transition. In their model, the authors emphasise the interconnectedness of participation, who participates, and the participation objective.

Archetype 1 is a *government-led deliberative consultation* and is connected to deliberative public participation. This archetype is found in many public planning and policy development processes, such as workshops, focus groups, and café-dialogues. Government representatives establish the arenas for participation, emphasising sound and open dialogue, with a twofold aim: to highlight the issue in question by bringing the available knowledge, experiences, and opinions to the forum and agree upon a solution or recommendation.

Archetype 2 is a *technological trial linked to domestic energy practices* and is connected to practice theory. Such trials can take the form of experiments, in which the aim is to identify additional energy and fossil-saving practices. They typically emphasise technical devices that make people more aware of their energy consumption or agreements with the participants to implement changes in their energy consumption over time. Changes could include reducing consumption, switching from fossil fuels to renewable energy sources, and avoiding energy use during peak consumption periods, to reduce the need to increase energy plants and installations. Trial participants also provide energy companies and the public authorities that decide upon their regulatory framework with knowledge of how different practices are received and reflected upon.

Archetype 3 is an *environmental social movement*, theoretically connected to social movement theory. Such movements, including Fridays for Future demonstrations and Scream for Climate Change, are discussed in the introduction and can take many forms, such as digital and on-site rallies, camps, meetings, dialogues, and petitions.

Archetype 4 is a *local grassroots innovation* connected to the theory of innovation at the grassroots level. Such grassroots innovations consist of “civil society groups that are actively building new forms of institution, organisation, and commitment rather than just articulating political claims or objection to the status quo ... innovating to meet specific social and environmental goals” ([Chilver & Longhurst, 2016: 589](#)). Examples of grassroots innovations are local collaborations for alternative, renewable energy sources, such as solar energy or micro-hydropower plants. At the community level, individuals could save energy by choosing to take turns driving to work or leisure activities or pooling tools and devices instead of buying one each. It can also be argued that establishing local cooperatives to produce fruit and vegetables, based on ecological principles, is an expression of energy citizenship, as the decision may be based on the desire to reduce transportation energy as well as the consumption and production of fertilisers.

Archetypes 1 and 2 are typically initiated by public authorities, energy delivery companies, or both, possibly in collaboration with civil society or industrial actors. Archetypes 3 and 4 are largely initiated from the bottom up by local communities and groups with common interests and challenges or by mobilising “firing spirits” ([Elster, 1989](#)). They are manifestations of new, dialogue-based participatory solutions recommended by [Fischer \(2017\)](#) to avoid development into techno-environmentalism. Although the element of dialogue is an empirical question, to be decided in individual cases, all four archetypes display a degree of discussion.

All the archetypes, however, are based on participation in some

form. [Devine Wright \(2007\)](#) argues that energy citizenship is closely linked to participatory democracy, while consumers are closely connected to representative democracy. This observation may be a simplification. Other research has found that individuals who more or less consciously choose renewable energy solutions also tend to develop greater energy consciousness over time (see, for example, [Ryghaug et al., 2018](#)), which could lead to changes in political party preferences and voting behaviour. The more significant point is that the role of the prosumer, who is both a producer and consumer of energy, is a potential manifestation of Archetype 4, grassroots innovation. As such, it appears to transcend the traditional consumer role, placing it more firmly in the participatory tradition than allowed for by Devine-Wright. A review by [van Veelen and van der Horst \(2018\)](#) is another recent contribution to this discussion. In their investigation into energy democracy, the authors observed that energy citizenship could also have an individual meaning since individuals own domestic renewable technologies ([van Veelen & van der Horst, 2018: 21](#)). Nevertheless, the tendency among authors is to emphasise the participative, cooperative, and community aspects of energy democracy, implying that it is a collectively based enterprise.

5. Energy citizenship and participation typologies.

Many participatory solutions may be new to the field of energy policy, given that this is a policy area that for decades, (even centuries) has been subject to central government steering devices, and where people, in general, have been in the role of the user. However, they are largely well known in the research area of democratic participation and occur in forms such as panels, consultations, social movements, and workshops connected to planning or societal development processes ([Chilver & Longhurst, 2016; Radtke, 2014](#)).

Of the four archetypes, a new connection between the traditional user and the traditional citizen is most clearly pronounced in Archetypes 2, technological trial and 4, local grassroots innovation. Domestic energy practices are based on agreements and collaboration between households, energy companies, public authorities, and possibly actors in the business sector to either reduce energy use, use less fossil energy, exploit available energy sources more efficiently, or a combination of all or some of these purposes. Local grassroots innovations are sometimes individual and sometimes collaborative. On the one hand, this places the energy citizenship concept closer to the traditional citizen role, taking collective responsibility for societal practices and development. On the other hand, these practices also include the production and consumption of energy or goods that affect energy consumption and production, notably expressed by Archetype 4, local grassroots innovation. If energy citizenship Archetype 4 is a form of participation, it is difficult to match it with the participant types listed in [Fig. 1](#). However, it most likely fit the open, self-selected participant category, which is on the outskirts of democratic participation. The invited participation in Archetype 2 is easier to place since it matches several forms of participation included in [Fig. 1](#).

The practices connected to Archetypes 3, environmental social movement and 4, local grassroots innovation appear to correspond with the notion of invented spaces, while those of Archetypes 1, government-led deliberative consultation and 2, technological trial are based on invited spaces. In the latter case, participants are invited by local or central authorities, energy producers, or other actors with the means and authority to shape their relationship with energy sources, to collaborate, deliberate, and experiment to find sound and functional energy solutions. The invited actors ultimately decide the choice of solution or solution options. Concerning Archetype 3, numerous actions are organised to confront the authorities and energy producers on their policy and priorities regarding fossil fuel reduction. Greta Thunberg invented a space for this when she started her Fridays for Future campaign. Archetype 4 is another form of invented space, as the picture that evolves is one of several single or small clusters of energy production or energy-saving units. Establishing local micro-hydropower or

solar energy plants, organising collaborative transport solutions, or other collectively organised ways of contributing to the green transition are ways of participating in energy policy formation through material practices (Ryghaug et al., 2018) located in areas where citizens live and work. Interestingly, a strong element of protesting and confronting current and traditional energy policies and their conveyors exists in this form of participation. However, more interestingly, this participation also consists of the simultaneous production of solutions. Implementing such a new energy policy is part of and the manifestation of protest. Practices may be insurgent against public policy. However, given the spirit of the times of working towards fossil fuel reduction, practical energy solutions can often be activities that work alongside those decided, or at least desired, by political bodies.

6. Energy citizenship and institutional innovation.

The conceptual innovation energy citizen derives from actual practices of fossil fuel reduction, and several practices comply with and challenge established forms of democratic participation. However, assessing the force or disruptive potential of this innovation is challenging. Such assessment requires more in-depth knowledge of the degree to which the concept is embedded in each institutional pillar and how they interplay in practice. There is undoubtedly potential for disruption, particularly connected to Archetypes 2, technological trial and 4, local grassroots innovation, which connect the participation and implementation aspects of the policy process and thus activate the concept of material democracy (van Veelen & van der Horst, 2018). Material democracy is an intriguing new element that combines the roles of private service user and, the role as citizen, in a classic collective responsibility sense, and potentially the producer role. In their paper, van Veelen and van der Horst argue that “energy democracy appears closely connected with views on material democracy not only as more equitable access to socio-economic resources but also as a foundation to challenge power imbalance in society” (van Veelen & van der Horst, 2018: 24). At the outset, Archetype 4, in particular, holds this potential since it is an invented space and not embraced by the forms of participation displayed in Fig. 1. This is not to say that Archetypes 1, government-led deliberative consultation and 3, environmental social movement have no such potential. Nevertheless, since the participation connected with them appears to adopt forms that are known from other contexts, the democracy innovation potential lies in the newness and particularities of these forms. It is also embedded in the interaction between the different energy citizenship archetypes.

On the background to this discussion, the potential for energy citizenship to convey institutional innovation to democracy rests on two crucial factors. Firstly, it is a question of what degree the innovative practices, particularly those connected to Archetype 4, are of a nature that make practitioners necessary partners for public authorities and energy-producing businesses. Secondly, it is a question of whether the innovative practices gain sufficient weight to reach a critical mass. Regarding Archetype 4, local grassroots innovation, a critical mass could be measured by the numbers, quality, innovativeness, or other dimensions of concrete grassroots innovations that cannot be overlooked by authorities and energy producers. This illustrates the time dimension of the strategic and bricolage innovation outlined earlier in this paper. Considering the energy system at large, grassroots innovations thus far correspond with the bricolage perspective of innovation: several minor changes in different locations, using available technology and/or organisational development. However, because they resonate well with the spirit of the times and potentially with policy decisions in public and private organisations, they could eventually be converted into strategic innovations directed at larger areas or units. This situation implies the development of regulatory devices: the regulative pillar of institutionalised participation. For example, would central or local authorities adopt measures to include different forms of energy citizenship in regulating what actors and activities should be included in planning and

other policy processes and implementation? For the regulatory pillars to stand in a democratic system, the normative and cultural-cognitive pillars must also be aligned, for example, in the form of political support for disruptive solutions, support that could be rooted in a general sense of urgency regarding the need for fossil fuel reduction.

What is likely to happen when this “new kid in town” meets democratic institutions in the form of established systems of participation? Predicting the emergence of potential institutional democratic innovations is hazardous. It demands detailed knowledge of the different forms of grassroots innovation and responses by public authorities, established energy producers, and local communities. The combinations of the factors mentioned above are likely to occur in different alloys, depending on the circumstances. Consequently, the alloy is likely to change over time. Reflecting on this question, it is crucial to consider that the archetypes are not citizens, they are models. Hence, actual energy citizens, when mapped, are part of the buzz on the energy scene to use Clark et al.’s (2014) terminology. This scene could include politicians, administrators, business actors, planners, and others who are engaged, interested, or simply want to be where the buzz is. The scene is not a single type of arena; it can be orchestrated, formalised, and orderly or spontaneous, informal, and disorderly (Ringholm et al., 2018). Moreover, transforming and monitoring the transformation, of the “carriers” of the institutional pillars – the formalised or informal rules, values, systems, culture, symbols, relations, and artefacts that are activated on these arenas, new ideas, practices, collaborations, norms and regulations can derive.

Declaration of competing interest

No conflicts of interest have been declared by the authors.

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