



Energy Citizenship and Energy Communities
for a Clean-Energy Transition

D2.1

Interdisciplinary understanding of energy citizenship

Energy Citizenship as a Viable Concept: An Interdisciplinary Understanding to Unfold the Potential of Legal, Economic, and Psychological Perspectives on the Citizenship-Based Energy Transition



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Abstract

In this deliverable, we develop a viable concept of energy citizenship, on which scientific, political and practical debates on energy citizenship and energy communities can build upon. First, we introduce an interdisciplinary definition of energy citizenship that is parsimonious, unambiguous, and translatable into scientific definitions: *Energy citizenship is people's rights to and responsibilities for a just and sustainable energy transition*. The main part of this deliverable then lays out legal, economic, and psychological perspectives of energy citizenship that are grounded in this interdisciplinary definition, current EU directives, and scientific theorising. Next, we elaborate on commonalities and differences between these approaches, thereby showing how an interdisciplinary discourse can enrich the energy citizenship concept. We conclude with a practical and transdisciplinary definition of energy citizenship that arose in the course of three co-creation workshops and discussions with EC² practice partners.

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List of Abbreviations

Art	Article
CJEU	Court of Justice of the European Union
EU	European Union
IMED	Directive on Common Rules for the Internal Market for Electricity 2019/944/EU
NAM	Norm Activation Model
para	Paragraph
RED	Renewable Energy Directive 2018/2001/EU
SME	Small and Medium-sized Enterprises
TFEU	Treaty on the Functioning of the European Union
TPB	Theory of Planned Behaviour
VBN	Value-Belief-Norm Theory
WP	Work package

1 Introduction

Global environmental crises such as climate change (IPCC, 2021; Steffen, 2015) stress the need for creative solutions and new pathways of sustainability transitions. Regarding the energy transition as a core piece of any sustainability transition, past research has largely focused on public acceptance of renewable energies, thereby largely addressing people as passive consumers in a top-down transition (Bögel et al., 2021). The assumption that people lack the knowledge, capabilities, and willingness to actively participate in the energy transition can be described as a deficit view of the public (Devine-Wright, 2007; Beauchamp & Walsh, 2021). Such a deficit view of public participation might prevent actual change from taking place, as it does not acknowledge the manifold roles that people can take in the energy transition: users, consumers, prosumers, supporters, protesters, and citizens (see Ryghaug et al., 2018). Developing a notion of (active) citizenship in which the energy transition is shaped from the bottom up might present creative solutions and new pathways to a sustainable energy system.

A citizenship approach to the energy transition was introduced some years ago (Lovins & Lehman, 2002, as cited in Devine-Wright, 2007). Citizen participation and engagement are now included in growth strategies and visions regarding a low-carbon economy of the EU (see Europe 2020 and EU-roadmap 2050, as cited in Hadjichambis et al., 2020). The importance of citizens becomes clear when considering that, in 2019, citizens' energy consumption as private households constituted 26% of the final energy consumption in the EU (Eurostat, 2021). In 2020, 21% of the total energy consumption in the EU was produced from renewable sources, thus reaching the EU target for 2020 (European Environmental Agency, 2021). Yet, the 32% renewable energy target for 2030 (Directive 2018/2001, Article 3) presumably requires new citizenship-based measures and mechanisms through which people living in the EU can actively participate in the energy transition.

Nevertheless, citizenship is still an underemphasized part of the energy transition nowadays. Researchers highlighted that a shift from passive energy consumers to active energy citizens as part of a decentralised energy system is still absent (Wirth et al., 2018; Bögel et al., 2021). In the light of great ideas but scarce implementation, it is crucial to question, discuss, and understand the role of people in the energy transition, and to investigate how a citizenship approach can unfold its potential. For this to happen, one needs to have a viable understanding of citizenship in the energy transition, hence, of energy citizenship.

1.1 Energy citizenship

The recently arising and promising concept of **energy citizenship** might be a key element of the energy transition in the years to come (Devine-Wright, 2007; Beauchamp & Walsh, 2021). In his influential chapter on psychological aspects of energy citizenship, Devine-Wright (2007) defined energy citizenship as a "view of the public that emphasises awareness of responsibility for climate change, equity and justice in relation to siting controversies as well as fuel poverty and, finally, the potential for (collective) energy actions, including acts of consumption and the setting up of community renewable energy projects such as energy co-operatives" (see Morris, 2001; Devine-Wright, 2004; Barnett et al., 2005). Throughout his article, Devine-Wright (2007) laid out many possibilities of how energy citizenship could be

conceptualised, for example, by highlighting the roles of awareness, positive feelings, and technological change. The examination of energy citizenship seems highly relevant as it could be a solution to achieving a just and sustainable energy transition through the empowerment of individuals (Coy et al., 2022). Energy citizenship further carries the promise to build more public acceptance for the energy transition in the long run (see Defila et al., 2017). What is more, fostering energy citizenship could at the same time be a lever of change. By changing values, attitudes, and behaviours, it provides a basis for even bigger transitions to citizen-based political systems with communities at its heart (see Hadjichambis et al., 2020; Foster-Fishman et al., 2013).

However, there are several conceptual gaps surrounding the concept of energy citizenship. Devine-Wright (2007) wrote about energy citizenship from a psychological perspective, as this perspective is essential to model and assess current trends of a citizenship-based energy transition on the individual level. In Devine-Wright's (2007) chapter, various ideas of the potential meaning of energy citizenship are spread throughout the text. Regarding some ideas, it is unclear whether they are part of the core concept of energy citizenship or variants of it (see Lennon et al., 2020). The question remains what exactly constitutes energy citizenship. Even greater challenges arise if one tries to approximate the concept from other scientific disciplines that involve completely different underlying research traditions and assumptions. While we find a number of studies representing a sociological perspective on energy citizenship (e.g., Ryghaug et al., 2018; Lennon et al., 2020; Bögel et al., 2021), legal and economic perspectives are scarce. Yet, they are highly relevant as barriers and facilitators of energy citizenship are closely connected to precisely these areas (see WP 3 and 4 in the EC² project). Legal frameworks provide the conditions for energy citizenship to arise (e.g., allowing the individual to produce and sell energy). An economic perspective is central to account for the fact that people's actions are embedded in market and governance structures that foster or impede the diffusion of renewable energies. Based on this, a multidisciplinary, interdisciplinary, and integrative perspective on energy citizenship is necessary in order to understand the interplay of socio-cultural, socio-technical, and individual person level factors in the energy transition (see Devine-Wright, 2007).

This deliverable is part of WP2 of the Horizon2020 project **Energy Citizenship and Energy Communities for a Clean-Energy Transition (EC²)**. WP2 creates the basis for interdisciplinary work in all future work packages by developing a common understanding of energy citizenship. Based on our reasoning above and its critical role for EC², the aims of this deliverable are threefold. First, we present an interdisciplinary definition of energy citizenship that is viable for scientists, practitioners, policy makers, lay people, and interdisciplinary debates. It was generated in regular interdisciplinary debates and finalised in an expert workshop (Task 2.2). Second, we aim to demonstrate how three scientific disciplines (law, economics, psychology) translate this interdisciplinary definition into their disciplinary contexts. Third, we bring the three perspectives together and connect them to a practical definition of energy citizenship that arose in the course of co-creation workshops (Task 2.3). As a starting point, we now describe the process of arriving at an interdisciplinary definition.

1.2 An interdisciplinary definition of energy citizenship

Our interdisciplinary definition of energy citizenship arose out of an iterative process with theoretical debates of researchers from the mentioned disciplines. The debates were held online every two weeks over a period of half a year. It resulted in an expert workshop with scientific experts from law, economics, and psychology, as well as members of energy communities (Task 2.2). Our aim was to construct a definition of energy citizenship that would be a viable basis for various scientific disciplines and practice alike. Note that we speak of constructing a definition as we assume that there is not one definition but many that fulfil different purposes in various contexts. In our case, we aimed at constructing an interdisciplinary definition that would spark fruitful interdisciplinary discussions and facilitate the interdisciplinary examination of energy citizenship. It was further meant to present a foundation for a practical definition of energy citizenship. As part of this process, a number of criteria emerged that formed a framework of our energy citizenship concept.

First, a definition of energy citizenship would have to be **translatable into disciplinary definitions**. Therein, it should leave a certain degree of interpretation open, so that researchers could find their discipline-specific understanding of energy citizenship, without having to compromise any promising content. For example, a key question in the context of energy citizenship is how active or passive energy citizenship should be defined. In some understandings, it might be useful to define energy citizenship as people's active contribution in the energy transition, especially if a researcher or practice project aims at encouraging people to become active. In other understandings, energy citizenship could be a right that is given to people, no matter how active or passive they act. In order to be translatable into diverse disciplines, we left it open, not limiting it to either passive or active.

Second, the definition should **refrain from using vocabulary that is ambiguous** between disciplines and causes contradictions. Precisely, this means avoiding vocabulary connected to strong pre-assumptions in particular disciplines. For example, we discussed including the concept of (clean) energy as a public good. Yet, from some perspectives, public good is a strong expression clarifying that nobody can be excluded from it. Thus, we focused on the concept of people's rights that could include public goods if desired. Moreover, this criterion would also imply not to use vocabulary that is still in development. For example, energy citizenship might be conceptualised around co-creation elements of political participation. However, we were confronted with diverging disciplinary understandings of the co-creation concept as a process or as a method, thus refraining from including it into the definition. Including vocabulary that is suitable to all disciplines might be accompanied by more abstract and inclusive vocabulary, allowing for the convergence and alignment of various disciplinary understandings regarding this vocabulary (e.g., "sustainability"). In our view, this kind of abstract vocabulary makes it possible to enter discussion on both interdisciplinary and discipline-specific understandings of the concept of energy citizenship.

Third, we wanted to create a definition of energy citizenship that would be based on and **connected to all of our disciplines to a relatively equal amount**. Finding an interdisciplinary definition might feel like rope pulling at some points. As researchers already have their disciplinary understanding in mind, they are likely to want to integrate it also into an interdisciplinary definition. However, if joining an interdisciplinary discussion, it is necessary

to balance the needs and ideas of various disciplines. In our case, we moved from the predominantly psychological definition of Devine-Wright (2007) that includes motivation, feelings and behaviour to a definition that centres more strongly around the concepts of rights and responsibilities. This focus enables a passive and active understanding of energy citizenship which is more suitable for law and economics. Moreover, it sparked psychological debates about the difference between the concept and the exercise of energy citizenship.

Fourth, we aimed at a **parsimonious definition** that is easily graspable, quotable and can be distributed easily and applied to many contexts. The definition by Devine-Wright (2007) and related definitions of energy and environmental citizenship by others are constituted of several sentences (see e.g., Hadjichambis et al., 2020; Lennon et al., 2020). Therein, they thoroughly set forth their ideas of energy citizenship, and inspired many researchers and practitioners to consider and investigate notions of it (Beauchampet & Walsh, 2021). As a consequence, many alternative understandings of energy citizenship arose that, on the one hand, might offer ideas about the directions in which energy citizenship could develop. On the other hand, these diverse concepts are so complex that the core of energy citizenship is not explicated. Interdisciplinary debates become difficult if one uses the same term (energy citizenship) but does have the same underlying concept. Phrased differently, for an interdisciplinary discourse, researchers need a common ground for discussion. A parsimonious interdisciplinary definition of energy citizenship could create such a discussion basis. As a result of several interdisciplinary discussions (e.g., during an expert workshop in Task 2.2) and applying the above mentioned criteria, we arrived at the following definition (see also Figure 1):

Energy citizenship is people's rights to and responsibilities for a just and sustainable energy transition.

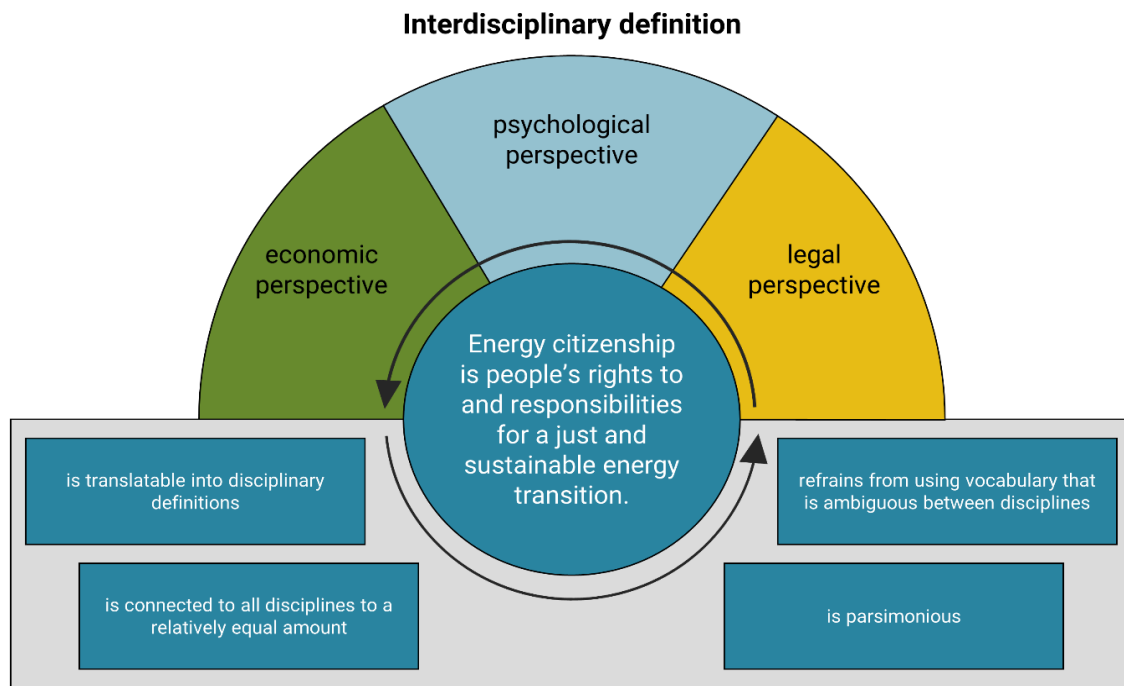


Figure 1. Process of finding a viable interdisciplinary definition with the help of specific criteria and an interdisciplinary discourse.

Such a just and sustainable energy transition aims at an equitable and regenerative energy system. The society at the core of such a system would be more resilient in the face of environmental crises (see Campos & Marín-González, 2020). In this definition, specific terms are defined broadly in order to allow disciplinary discussions, and will be featured in the respective legal, economic, and psychological sections (section 2 to 4). For guidance, we now give first impressions on the meaning of specific parts of this definition, as present in our interdisciplinary discourse: sustainable energy transition, just energy transition, rights and responsibilities, and people (as contrasted to citizens).

Affordable and clean energy is one of the aims of the United Nations Sustainable Development Goals (SDG). In the same vein, a **sustainable energy transition** can be viewed as part of sustainable development. The concept of sustainable development was created based on many years of criticism of the traditional economic model that promised unlimited economic growth despite limited resources (see Meadows et al., 1972). Instead, this model contributed to climate change and biodiversity loss (see Steffen, 2015), partly because of rising consumption of non-renewable energy sources. Simultaneously, it generated inequality (e.g., gender and social inequality), and did not solve social problems such as poverty, hunger, access to clean water, and education (Sen, 1997, Piketty 2013, Raworth 2017). In reaction to this, the concept of sustainable development aimed to reconcile economic growth with the reduction of social and environmental problems. Sustainable development can be defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations General Assembly, 1987, p. 43; for more recent definitions, see Daly, 1990; Gladwin et al., 1995; Chichilnisky, 1997). The overall goal of sustainable development is the long-term stability of the economy and environment by integrating economic, environmental, and social concerns throughout the decision-making process. Building on this, an energy transition can be viewed as sustainable if it considers environmental, social, and economic aspects of such a transition. In the economic perspective (section 3), we contrast various kinds of economic models and discuss their implication for sustainability and energy citizenship.

In our interdisciplinary definition, we explicitly highlighted justice aspects of a sustainable energy transition. A **just energy transition** accounts for and seeks to overcome structural barriers to participation, thereby ensuring a global energy system that fairly distributes both the benefits and burdens of energy services, and contributes to more representative and inclusive energy decision-making (see Sovacool, 2017; Lennon et al., 2020). The goal of such a just energy transition would be to prevent energy poverty and achieve equity in participation, particularly by considering the concerns of marginalised groups. Thus, it explicitly acknowledges procedural and distributional justice by raising the questions of who wins, who loses and who bears the costs - socially, environmentally and economically (Newell & Mulvaney, 2013; Newell et al., 2011).

By following Devine-Wright’s (2007) idea, we put **rights and responsibilities** at the centre of our energy citizenship concept, thereby moving beyond deficit views that emphasise citizens as cost-oriented and passive. We examine the rights and responsibilities concepts more closely in all disciplinary perspectives. For instance, the law section focuses on people’s rights in the context of EU law (section 2). In the psychological section, psychological perceptions

of responsibility are discussed (section 4). Finally, we refer to **people instead of citizens**, so that the definition of energy citizenship is explicitly not bound to nationality as we will lay out in the legal perspective (section 2).

In the following, we first outline a legal perspective of energy citizenship that arises from our interdisciplinary definition, and present further considerations in the context of EU law (section 2). Next, we describe an economic perspective of energy citizenship, highlighting how the dominant economic model shapes the way energy citizenship is constructed and discussed (section 3). From a psychological perspective, we then present a definition of energy citizenship that is suitable for the study of individuals, as it considers (collective) beliefs and motivations (section 4).

2 A legal perspective on energy citizenship

2.1 Preliminary remarks

2.1.1 Preliminary remark 1: There is no definition of energy citizenship from a legal point of view yet.

From a legal point of view, the concept of energy citizenship is new ground. Neither EU law nor national constitutional law worldwide explicitly uses or defines the term “energy citizenship”.¹ While literature in social sciences such as psychology has already suggested a definition of the term (see Devine-Wright, 2007, see section 4), in the legal context such a definition is missing. Therefore, in the following, we will develop a definition of energy citizenship from a legal point of view. As we are investigating energy citizenship and energy communities as phenomena of EU law, the definition of energy citizenship is developed against the background of EU law. Although this section only covers the legal concept of energy citizenship, other definitions might influence the legal definition. Therefore, the concept of rights and responsibilities, and “active rather than passive stakeholders in energy system evolution” (see Devine-Wright, 2007, p. 71, with further references) will be reflected in the legal definition.

2.1.2 Preliminary remark 2: We explain legal methodology, and we present an inductive legal method.

Legal methodology can be defined as follows: “Legal scholars collect empirical data (statutes, cases, etc), word hypotheses on their meaning and scope, which they test, using the classic canons of interpretation. In a next stage, they build theories (eg the direct binding force of European Union (EU) law), which they test and from which they derive new hypotheses (eg on the validity, meaning or scope of a domestic rule which conflicts with EU law)” (Van Hoecke, 2011, p. 11). This definition already lays down the cornerstones of the inductive method we will use for our analysis. We will focus on the EU legal system, as the legal dimension of the project consists in finding legal barriers and opportunities for energy communities and energy citizens according to EU law in different EU Member States.² Therefore, our data for the following analysis is EU law pertaining to the field of energy citizenship. This leads to the question of how to determine which legal norms of EU law are linked to energy citizenship.

In order to select the norms for our analysis, we need an abstract idea of “energy citizenship”. However, as stated above, EU and constitutional law are not explicitly using the term “energy citizenship”. Accordingly, we need to draw our own parameters and propose a working definition. This is a common step in legal analysis³, because the collection of data depends on the abstract idea of “energy citizenship”. The general basis for the following analysis is the developed interdisciplinary definition of energy citizenship elaborated in WP2: “Energy

¹ Constitutions have been checked via constituteproject.org (18.8.2021).

² The member states’ law and especially the transformation of EU law into the national legal systems will be analysed in WP 3.

³ This is common when the inductive method is applied, for example, in the context of inductive elaboration of the German federal principle (Šarčević, 2000, p. 106 f).

citizenship is people's rights to and responsibilities for a just and sustainable energy transition."

Beside this abstract interdisciplinary idea of energy citizenship, we observe a dearth of legal definitions of "energy citizenship". In the following analyses, we will therefore build on the concept of "citizenship" that is well established in law and political theory (e.g., the contributions in Shachar et al., 2017).

2.1.3 Outline of the analysis

We start our analysis with a definition of citizenship in the legal context. First, we provide a brief historical overview on citizenship (2.2). We then analyse citizenship from a legal perspective: In a first step we look into characteristics of classic citizenship (2.3). In a second step we will look into EU law. By illustrating the specific nature of EU citizenship, we merge "energy" and "citizenship" into a legal concept of "energy citizenship" (2.4 and 2.5), before defining energy communities and linking them to energy citizenship (2.6). We close with the most important findings of the analysis (2.7).

2.2 Short history of citizenship

2.2.1 Citizenship over time

According to Hirsch Ballin, citizenship first established a connection between people, which consisted of solidarity with a tribe or people (Hirsch Ballin, 2014, p. 3). Subsequently, citizenship described membership of a person in a city (Faist, 2017, p. 1; Stokes, 2004, p. 120; for an overview on the historical roots of citizenship see also Pattie et al., 2009, p. 5 ff). The connection of citizenship and certain rights was already apparent at this time. In the Greek city state, "citizenship was associated with participation in self-government" (Blok, 2019, p. 187 ff with more details; Kostakopoulou, 2008, p. 14). The city was then replaced by the state (Faist, 2017, p. 1). Until today, citizenship is often seen as the connection between a person and a state, although nowadays the link between citizens and the state is sometimes contested (Hirsch Ballin, 2014, p. 7), and has been replaced with other communities (e.g., Cabrera, 2010) such as local or regional communities, the EU, or even a global community ("global citizenship", see Dower & Williams, 2016).⁴ Sometimes transnational citizenship is discussed (see Pattie et al., 2009, p. 12 ff), especially in the context of the EU.⁵ However, (nation) states are still the strongest political community when it comes to citizenship (e.g., Shachar, 2012, p. 1004).⁶

⁴ However, Follesdal has shown that forms of dual citizenship and at least the idea of world citizenship can be traced back to the Romans (dual citizenship) and the Greek (Follesdal, n.d., p. 71).

⁵ See, e.g., how van Eijken (2015) describes EU citizenship as "a transnational concept of citizenship, in addition to the national citizenship of nationals of the Member States" (p. 5).

⁶ These developments go hand in hand with the rise of new theoretical frameworks, such as cosmopolitan constitutionalism. Somek, e.g., points out: "Remarkably, the world is – at least politically speaking – not a self-governing unit. Once one leaves the ambit of one's home country, one immediately realizes that wherever else one might move to in this world, one is destined to be a foreigner there – at least for a number of years" (Somek, 2020, p. 469 f).

2.2.2 A liberal and a republican tradition of citizenship

Citizenship depends significantly on political theory. There are two relevant strands of political thinking regarding citizenship and depending on which view one emphasizes, our understanding of citizenship may vary. These two strands are the liberal view and the republican view (Honohan, 2017, p. 83 ff). Whereas liberal citizenship “focuses more on legal status and rights” (Honohan, 2017, p. 91), the republican side of citizenship highlights what is actually done, and therefore focuses on activity (Honohan, 2017, p. 91). Moreover, republican concepts of citizenship put an emphasis on the connections between people within a certain society and their problems (Honohan, 2017, p. 101). Unsurprisingly, literature suggests that a republican concept of citizenship might be promising with regard to problems, such as climate change, which call for collective answers (Honohan, 2017, p. 102). According to a liberal point of view, citizenship therefore means that an individual has rights, which can be enforced against the state. A republican standpoint focuses more on the common responsibilities, for example, on possibilities offered by citizenship “through which citizens can enjoy common goods that individuals cannot achieve alone” (Honohan 2017, p. 88), such as freedom. Against the danger of oversimplifying, this can be illustrated by the following example: In liberal thinking, a clean environment would be guaranteed by a right to a clean environment against the state. In republican thinking, a clean environment would be a common good which has to be achieved through active participation of citizens. As is so often the case, not only one but both approaches combined will be necessary to achieve a healthy environment. Therefore, apart from the liberal side of citizenship which harbours individual rights (and eventually duties) of citizens, a republican approach underpins the collective dimension of energy citizenship. As we will see, energy citizenship relies on both the liberal and the republican concept of citizenship.

2.3 Core content of (classical) citizenship from a legal point of view

2.3.1 Citizenship as community membership, but not necessarily overlapping with nationality

From a legal point of view, “citizenship means full membership, usually in a state [...]” (Faist, 2017, p. 1), but also “a legal status of equals, associated with political empowerment and the enjoyment of rights” (Kochenov, 2017, p. 5) or an “administrative category” (Stokes, 2004, p. 120). As such, citizenship can also exclude those who are not citizens (Kochenov, 2019, p. 134). Phrased differently, citizenship ties an individual and a community together and gives rise to certain rights and duties (citizenship as a status). In the following, we outline characteristics and developments of citizenship as membership on the one hand and as status on the other hand, and argue that citizenship in the EU context cannot be equated to nationality. This is important for the elaboration of energy citizenship, since energy citizenship is neither tied to a state (thus not linked to nationality) nor consisting of classic citizens’ rights and duties (such as the right to vote).

Regarding membership, some authors have recently referred to political communities rather than states, as, for example, Irving does in her definition of citizenship: “To be a citizen is to be a member of the political community. [...] Citizenship can give rise to legal entitlements; [...] It entails, essentially, the recognition of a person’s capacity to be part of the public sphere and

to take part in the public decisions that shape the course of one's life – to be counted in the constitutional community" (Irving, 2008, p. 90). Such definitions leave it open, whether the state or another political community are the main anchor for citizenship. However, according to Shachar, "[s]ecuring full membership in the political community remains one of the few goods that even the mightiest economic conglomerate cannot offer to an international migrant" (Shachar, 2012, p. 1004). Therefore, the state remains an important point of reference for citizenship. When it comes to the core content of citizenship, key elements are "equal legal status, rights and obligations, political voice and participation, the freedom to enter and exit one's home country, and the less tangible notions of identity, belonging, and a sense of home" (Shachar, 2012, p. 1004 f; see also Kochenov, 2017).

When describing membership in a state, citizenship overlaps with nationality (that links individuals and a certain nation⁷). Sometimes citizenship and nationality are used as synonyms (e.g., Cambridge Dictionary, n.d.). Nationality historically "reflected a status dependent on allegiance, rather than a relationship conferring rights and duties" (O'Leary, 1996, p. 12). Dörr (2019) points out that "nationality is a legal concept of both domestic and international law. For the purposes of the former it is often referred to as 'citizenship', although as a matter of terminology, it would seem much more precise to denote the legal status of the individual as 'nationality' and the consequences of that status, ie the rights and duties under national law, as 'citizenship'" (para. 2). For the development of a (legal) notion of energy citizenship in the EU, only the rights and duties as a consequence of citizenship play a role, because, as we show, EU law is not relying on nationality with regard to energy citizenship. Therefore, the concept of nationality can be disregarded for the purposes of this paper.

Citizenship (sometimes referred to as nationality) has also played a role in court decisions. The following examples stress the fact that rights and duties are essential to the concept of citizenship. In the famous *Nottebohm* case of the International Court of Justice, the Court laid down that nationality⁸ "is a legal bond having as its basis a social fact of attachment, a genuine connection of existence, interests and sentiments, together with the existence of reciprocal rights and duties" (*Nottebohm (Liechtenstein v. Guatemala)*, 1955 I.C.J. 4, 23 (April 6)).⁹ Similarly, the German Constitutional Court pointed to rights and duties in a decision on voting rights in 1990, where it explained: "Citizenship is the legal prerequisite for the equal status of citizenship and the justification for the equal duties, but also and even more importantly for the rights, the exercise of which confer legitimation on the exercise of state authority in a democracy" (*Ausländerwahlrecht I*, 1990, BVerfGE 83, 37 (June 26) cited after Bumke et al., 2019, p. 322). Against the background of case law and scholarship we can break down the concept of citizenship into two questions that we discuss in the specific context of energy citizenship: "Which rights and duties arise from citizenship?" and "Who is considered a citizen?".

⁷ A nation "possesses or claims the right to political identity and autonomy as a people, together with the control of specific territory, comparable to that of biblical Israel and of other independent entities in a world thought of as one of nation-states" (see Hastings, 1997, p. 3). There are two ways a nation is commonly defined, as ethnic nation or as civic nation (see Brans et al., 2017, p. 61).

⁸ The Court did not use the term "citizenship" but "nationality".

⁹ The *Nottebohm* judgement was critically received (on the criticism see, e.g., Jones, 1956; Kunz, 1960; Macklin, 2017, p. 493).

2.3.2 Which rights and duties arise from citizenship?

The court decisions mentioned above emphasise the significance of rights and duties as a consequence of citizenship. While law and legal scholarship are not able to define which rights and duties *ideally* emanate from citizenship (this is the task of political philosophy¹⁰), the specific legal system of a certain community, such as a state or a supranational institution like the EU, lays down the rights and obligations arising from citizenship. Therefore, the concept of citizenship allows for seeing energy related rights as rights linked to some kind of citizenship.

2.3.3 Who is considered a citizen?

2.3.3.1 States decide on who is considered a citizen

The starting point in determining who can be a citizen is to look into the legal sources of citizenship. International law is silent on the question: according to public international law it is left to the states to regulate citizenship. The first sentence of Art 1 of the Convention on Certain Questions Relating to the Conflict of Nationality Laws stated: "It is for each State to determine under its own law who are its nationals" (Convention on Certain Questions Relating to the Conflict of Nationality Laws, art. 1, *opened for signature* April 12, 1930, 179 League of Nations Treaty Series, p. 89). Therefore, citizenship depends on the rules of a certain state (or a certain political community as we will illustrate with the example of the EU, showing that not only states, but also a supranational organization is using the concept of citizenship and defining who is a citizen). Usually, citizenship is acquired through the place of birth (*ius solis*) or parentage (*ius sanguinis*) (Brans et al., 2017, p. 62).

More recently, especially in the context of the EU, we can see that citizenship is not as exclusive as it once was. According to EU law, for example, certain rights are granted not only to EU citizens, but also to certain family members who do not have citizenship in a member state (e.g., the Directive 2004/38/EC of the European Parliament and of the Council of 29 April 2004, especially Art 3 para 2 in connection with Art 2 para 2). Moreover, the CJEU has interpreted EU citizenship broadly, deriving certain rights that are not explicitly mentioned in EU law for relatives (nationals of third countries) of EU citizens.

2.3.3.2 Multiple citizenship in federal systems

However, there might be more than one kind of citizenship in a certain state. In that case, one person can have multiple kinds of citizenship. In federal states, for example, the concept of regional citizenship ("Landesbürgerschaft") can exist (see Art 6 para 2 Austrian Federal Constitution Act ("B-VG"); see Pernthaler & Weber, 1983). For example, in Austria, residents of a region who have Austrian citizenship are also regional citizens (Hacksteiner & Ranacher, 2010, p. 442 f). With regard to who is a citizen in a federal system, the question arises whether for example regional citizenship leads to national citizenship or the other way round, and if one can be only a regional citizen but not a national citizen or vice versa (for multiple citizenship in a federal system, see Figure 2).

¹⁰ For the subject matter of political philosophy, see (Miller, 2016): "Political philosophy can be defined as philosophical reflection on how best to arrange our collective life - our political institutions and our social practises, such as our economic system and our pattern of family life."

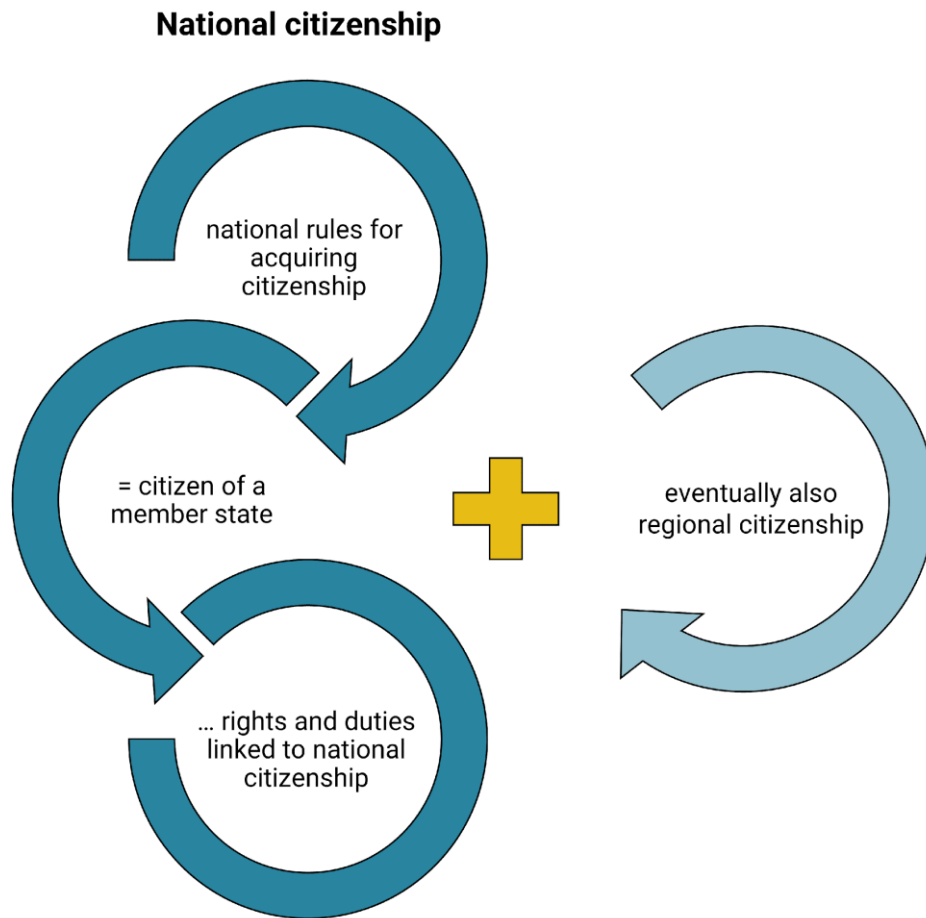


Figure 2. National citizenship as multiple citizenship.

Similar to federal systems, these questions arise for the EU (see Besson & Utzinger, 2008, p. 186), which we will study closer in the following, because compared to classic citizenship just presented, EU citizenship is of special nature. It is not only an example for multiple citizenship, grants specific rights and has a peculiar history, but we will moreover argue that EU citizenship is multi-layered and that energy citizenship is one layer of EU citizenship.

2.4 The special nature of EU citizenship

2.4.1 EU citizenship as multiple citizenship

Art 20 para 1 Treaty on the Functioning of the European Union (TFEU) is an example for a form of multiple citizenship, since it lays down: “Citizenship of the Union is hereby established. Every person holding the nationality of a Member State shall be a citizen of the Union. Citizenship of the Union shall be additional to and not replace national citizenship.” (see Figure 3).

EU citizenship as multiple citizenship

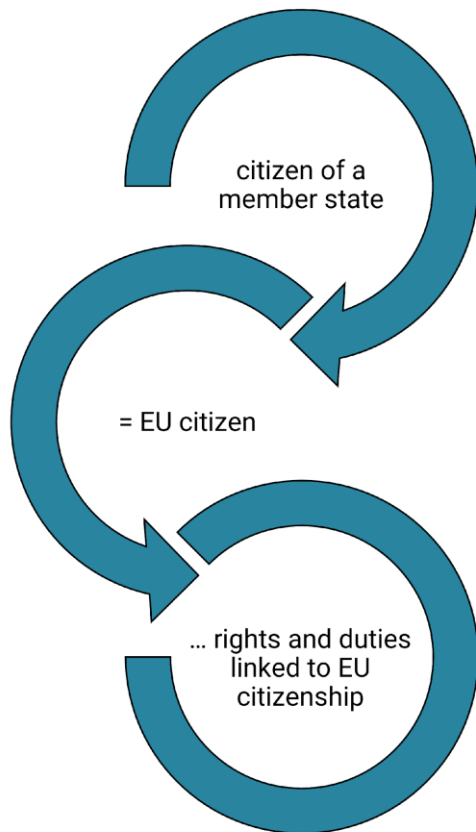


Figure 3. EU citizenship as multiple citizenship.

Union citizenship depends on holding the nationality of a Member State (von Bogdandy & Arndt, 2011, para 2), and therefore depends on national rules on citizenship. However, Union citizenship also has an impact on the national rules on citizenship, especially regarding the loss of national citizenship. In the Tjebbes case, the CJEU stated: “In the context of [...] an examination [regarding the loss of citizenship], the authorities and the courts must determine whether the loss of the nationality of the Member State concerned, when it entails the loss of citizenship of the Union and the rights attaching thereto, has due regard to the principle of proportionality so far as concerns the consequences of that loss for the situation of each person concerned and, if relevant, for that of the members of their family, from the point of view of EU law” (C-221/17, M.G. Tjebbes and Others v. Minister van Buitenlandse Zaken, ECLI:EU:C:2019:189, sec. 48). This judgement is far-reaching, as Member States must foresee a case-by-case review for the loss of national citizenship, where they examine the consequences of the loss in the light of EU citizenship and EU law, including a proportionality assessment. In an extreme case, EU law could require “renaturalization” (Weber, 2019, p. 452), so a person would be protected from losing national citizenship because of EU citizenship.

It is not surprising that the Tjebbes case was criticised in literature (for the development of EU jurisprudence until Tjebbes, see Oosterom-Staples, 2018, p. 433 ff; for criticism, e.g., Weber, 2019). This example shows that multiple and parallel forms of citizenship are nowadays

common¹¹, at least for the Member States of the EU. Although EU citizenship derives from being a national of a Member State, EU citizenship therefore has an impact on citizenship of a Member State. It moreover shows that EU citizenship has, at least in some cases, the power to override national rules in general and even national rules on citizenship in specific. As Lenaerts has summed up: “The rights attaching to the status of citizen of the Union may be relied upon, even in the absence of a cross-border element, against any national measure causing the deprivation of those rights” (Lenaerts, 2015, p. 2).

2.4.2 EU citizenship as political citizenship

As mentioned, Art 20 para 1 TFEU is the central norm for EU citizenship (see also Art 9 TEU). According to Art 20 para 1 TFEU, “[c]itizens of the Union shall enjoy the rights and be subject to the duties provided for in the Treaties. They shall have, inter alia: (a) the right to move and reside freely within the territory of the Member States; (b) the right to vote and to stand as candidates in elections to the European Parliament and in municipal elections in their Member State of residence, under the same conditions as nationals of that State; (c) the right to enjoy, in the territory of a third country in which the Member State of which they are nationals is not represented, the protection of the diplomatic and consular authorities of any Member State on the same conditions as the nationals of that State; (d) the right to petition the European Parliament, to apply to the European Ombudsman, and to address the institutions and advisory bodies of the Union in any of the Treaty languages and to obtain a reply in the same language.”

Art 20 para 1 TFEU can be seen as the political core of EU citizenship. This political core of EU citizenship shows that although the transnational component of EU citizenship cannot be denied, certain rights are no longer connected to making use of the freedom to move or to provide services in another Member State, as it was the case before. For example, the right to vote in the elections for the EU parliament or the right to rely on the EU fundamental rights charter do not depend on a cross-border element, but come into effect whenever the scope of application of EU law is given.

2.4.3 EU citizenship and the principle of non-discrimination

According to the CJEU, EU citizenship is “the fundamental status of nationals of the Member States” (Case C-184/99, *Rudy Grzelczyk v. Centre public d'aide sociale d'Ottignies-Louvain-la-Neuve*, 2001 E.C.R. I-06193, ECLI:EU:C:2001:458, para. 31). Not only did the Court develop EU citizenship itself, but it has – as Strumia puts it – “aggressively deployed [...] the principle of non-discrimination on the basis of nationality: it has found that European citizens residing in a Member State other than the one of nationality are entitled to equal treatment with nationals for purposes of a number of entitlements and benefits” (Strumia, 2017, p. 675). For Strumia, EU citizenship gives “a right to belong across borders grounded in mutual trust” (Strumia, 2017, p. 678) and “requires mutual responsibility on the part of the Member States for citizens of other Member States, and on the part of the citizens for the welfare of the migrant members of their own polities” (Strumia, 2017, p. 678).

¹¹ Moreover, an increasing number of states are accepting dual or multiple citizenship. See the contributions in Kalekin-Fishman et al. (2006).

After having explained the role of EU citizenship as adding to (and not substituting) national citizenship, but providing political rights and prohibiting discrimination, it is worth looking into the history of EU citizenship, because it helps to understand why we can see EU citizenship as multi-layered citizenship.

2.4.4 Market citizenship as predecessor of EU citizenship?

The history of EU citizenship is of interest because before 1992, when EU citizenship was introduced by the Maastricht treaty, “market citizenship” (“Marktbürger”, see Schorkopf, 2010, p. 65 ff; “market citizen”, see Besson & Utzinger, 2008, p. 200) was seen as foreshadowing EU citizenship. Market citizenship involved (legal) economy-related rights and duties of the individual, turning the individual into an economic citizen. However, enshrining political rights within the EU with the introduction of EU citizenship in the Treaties, such as the right of EU citizens to vote on the local level in other Member States, results in genuine citizenship beyond market citizenship (see Pavlidis, 2019, p. 177 ff; Shuibhne, 2010). Going beyond market citizenship also means that the rights and duties connected with EU citizenship are not linked to market activity.¹² The market bound four fundamental freedoms of the TFEU (free movement of goods, services, capital and persons within the EU) rest at the core of an Internal Market without borders and at the core of market citizenship. They constitute – in addition to the political layer – a market layer in EU citizenship.

The history of EU citizenship shows the significance of the transnational market (reflected in the right to move and reside). However, the transnational component of the former market citizenship has with the introduction of EU citizenship also moved away from a strictly market-based approach, as Union citizenship does not require the prerequisite of moving for economic reasons, but grants a right to movement detached from market activities (see Lurger & Melcher, 2020, p. 65).

2.4.5 The role of the individual in promoting EU law

Finally, the role of the individual in promoting EU law cannot be underestimated (for the connection to EU citizenship, see Sharpston & Sarmiento, 2017, 226). Although the EU was not directly founded by its citizens but rather indirectly via their national parliaments and governments, citizens themselves do have a status today in the EU legal and political system (Schorkopf, 2010, p. 65f). The fact that individuals can rely upon EU law before their national courts (due to the direct effect of EU law) made individuals a strong ally of the EU in promoting and enforcing EU law. This also means that the individual has a direct relationship to the EU and does not need its own Member State to act as an intermediary (Schorkopf, 2010, p. 66 f). When EU law grants rights to its citizens, citizens can enforce them and force their member state to obey EU law.

In the following, we explore how these different strains of the development of EU law and aspects of EU citizenship allow us to see EU citizenship as a multi-layered and multi-functional citizenship.

¹² See, Kochenov (2013, p. 200): “EU citizenship is not about the market”.
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2.4.6 EU citizenship as multi-layered citizenship

EU citizenship grants political rights and it prohibits discrimination. Its roots can be seen in market citizenship and the special role of the individual has helped to strengthen EU citizenship. Against this background, we argue that EU citizenship is multi-layered and as such also harbours an energy layer, which allows us to talk about EU energy citizenship.

2.4.6.1 Roots of multi-layered citizenship

Multi-layered citizenship is not a novelty. For example, Marshall (1950) “divided citizenship into three elements, civil, political and social” (p. 10), in order to outline the development of citizenship in England. Marshall’s civil element can be seen as reflecting the republican idea of citizenship (Kostakopoulou, 2008, p. 19 ff), where the individual is called on to become active for the sake of the community. His political element rather reflects the liberal idea of citizenship. Social citizenship is characterised by citizenship safeguarding certain rights against the rulers (Kostakopoulou, 2008, p. 21 ff). It is important to note that the edges of these three elements (or layers) of citizenship are not straight cut, but sometimes overlap. Similarly, Shachar points out that citizenship is a “multidimensional concept and institution, [and that] citizenship’s varied interpretations and dimensions are neither fixed nor closed, and potentially cut across each other” (Shachar, 2012, p. 1003).

2.4.6.2 The promise of multi-layered citizenship in the EU

Both the special role of the individual and the development from market citizenship to EU citizenship show that EU citizenship also involves the participation of citizens in a common cause beyond Member States’ interests. This common cause consists of political aims (e.g., Art 3 para 2 TEU) reflected in political rights (e.g., Art 39 ff Fundamental Rights Charter of the EU) within the EU, as well as market aims (e.g., Art 3 para 3 and 4 TEU). The development of EU citizenship shows that although it is no longer a market citizenship (see Kochenov, 2013, p. 200) connected to the exercise of a fundamental freedom, it can be characterised as having different layers (“multi-layered citizenship”). These layers lead to multi-functional citizenship in the EU (see Pavlidis, 2019, p. 177 ff), which means that citizenship can also serve economic or, as we will argue, ecological aims.

The concept of multi-layered citizenship is especially promising with regard to energy citizenship in EU law. Firstly, it allows us to perceive energy citizenship as part of EU citizenship, without restricting energy citizenship to nationality. This means that the energy layer of citizenship can – given that the law foresees it – extend to people who are not EU citizens. Secondly, multi-layered citizenship allows us to identify different functions for each layer of citizenship. Whereas the political layer of citizenship might harbour political rights and duties and human rights, and can be described as the liberal part of citizenship, other layers of citizenship, such as the energy layer, can address common concerns of the community, and represent the republican aspect of citizenship. If, as in the EU, we face multiple layers of citizenship, rights and duties might arise from each layer. Therefore, in the following, we will not focus on the classical rights and duties connected to citizenship, but on the specific energy-related rights and duties which arise from the energy layer of EU citizenship.

2.4.7 Preliminary result: EU citizenship has multiple layers, and energy citizenship could be one of them

Against this background of the different approaches to and the development of citizenship, we take O’Leary’s definition of citizenship (in the context of the EU) as “a juridical condition which describes membership of and participation in a defined community [... carrying] with it a number of rights and duties which are, in themselves, the expression of the political and legal link between the [... community¹³] and the individual” (O’Leary, 1996, p. 13) as our point of departure for the following analysis of energy citizenship. Depending on the rights and duties foreseen by the legal system of a certain country, we might identify different layers of citizenship, such as in the context of the EU. According to Raucea, for the EU this is reflected in the jurisprudence of the CJEU, which “conceives of European citizenship rights not simply as a bundle of scattered interests, but as a web of interrelated rights” (Raucea, 2016, p. 489). Following Marshall’s political dimension of citizenship as well as its historically developed bundle of political rights, we can identify the political layer as the core layer of citizenship. Within the legal framework of the EU, the core layer would therefore be Art 20 para 1 TFEU. Other layers, such as an economic layer or an energy layer, might add to this core layer.

As we will argue, energy citizenship is the result of the transformation of “energy consumers” or “energy customers” into “renewables self-consumers” (Art 21 of Directive 2018/2001), “active customers” (Art 15 of Directive 2019/944), or participants of an “energy community” (renewable energy communities according to Art 22 of Directive 2018/2001, and citizen energy communities according to Art 16 of Directive 2019/944). We therefore propose thinking of citizenship not only as political citizenship, but as a concept which can also harbour other aims, such as an open market or energy transition (see Figure 4 and Figure 5).

EU citizenship consists of different layers

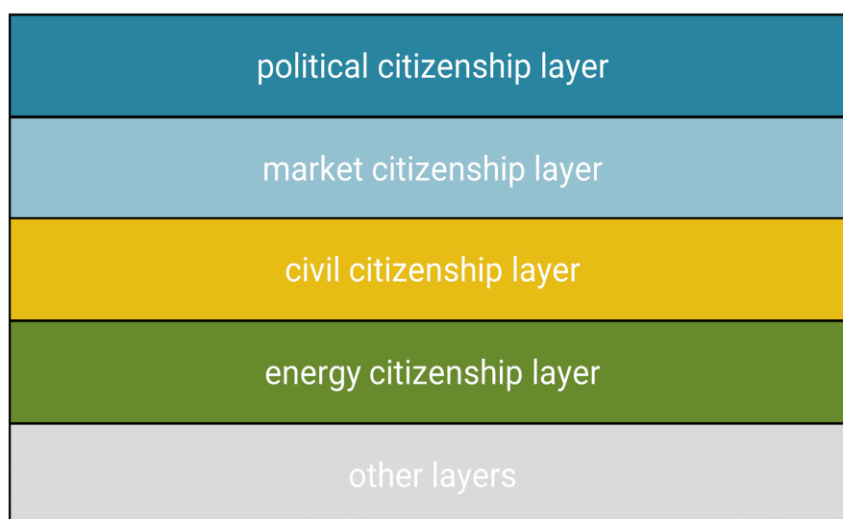


Figure 4. Examples of a multi-layered approach to citizenship.

¹³ O’Leary uses the word “state”. As we have pointed to literature arguing that citizenship is not limited to States, we prefer to use the neutral term “community”.

The layers of EU citizenship consist of liberal and republican elements

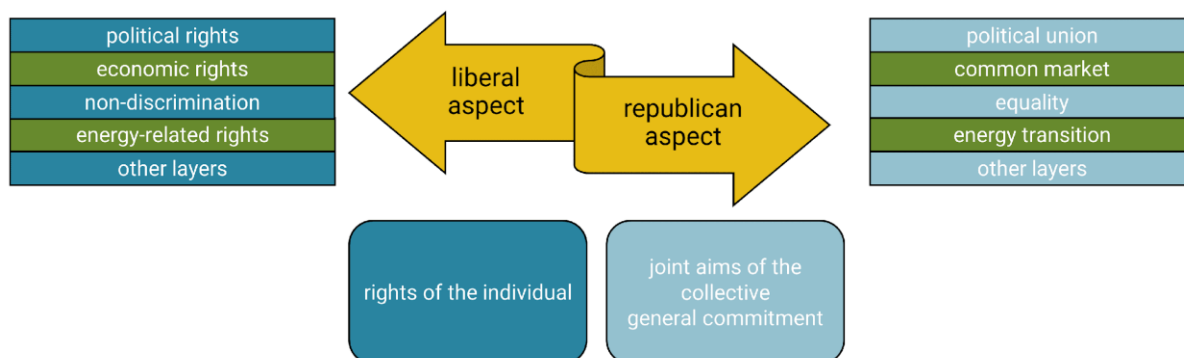


Figure 5. EU citizenship, its different layers, and the liberal and republican elements of citizenship.

2.5 Adding the energy layer to EU citizenship

In the following, we will introduce energy citizenship as a layer of EU citizenship, relying on multi-layered EU citizenship as laid down above. In applying the inductive method explained above we will show that different ideas expressed in EU law taken together allow us to talk about energy citizenship. Against the background of EU law and the general remarks on citizenship laid out above, we develop a legal concept of energy citizenship in three steps in the following. We first sum up our abstract idea of energy citizenship (step 1 “The abstract idea”). Second, we analyse EU law and identify norms (step 2 “Analysing the data”) from which we can conceptualise energy citizenship in a legal sense (step 3 “Induction of energy citizenship”).

2.5.1 Step 1 – The abstract idea: Energy citizenship is an additional layer of citizenship in the EU

As laid down above, energy citizenship does not replace other forms of citizenship. It is an additional layer that enriches the classical core aspects of citizenship. We furthermore argue that at least in EU law, energy rights (and duties) do not depend on nationality, therefore not only citizens in a political sense can be energy citizens. Yet this gives rise to two groups of energy citizens: those who are able to participate in political decision-making and those who are not. As laid down already, for the abstract idea of energy citizenship we build on our interdisciplinary definition of energy citizenship that has been constructed in the course of WP2: “Energy citizenship is people’s rights to and responsibilities for a just and sustainable energy transition.” In the next sections, we therefore not only look into the legal norms¹⁴ stipulating citizens’ rights and duties, but also for norms stating people’s general commitment to energy transition and/or sustainability.

¹⁴ Legal norms intend to guide human behaviour. Such norms are usually issued by governmental authorities. They can command or prohibit a behaviour, or authorise someone to issue legal norms. Usually, legal norms provide a sanction for non-compliance (Stolzlechner & Bezemek, 2018, p. 1 ff.).

2.5.2 Step 2 – Analysing the “data”: Identifying EU norms which form energy citizenship

Energy citizenship results from various norms of EU law. It is important to note that since we are using an inductive method, the basis for induction is not only norms that expressly refer to “energy citizenship”, but those linked to the fields of energy and individuals. Deriving energy citizenship through induction results in a web of different norms, which taken together allow energy citizenship to emerge.

2.5.2.1 Primary law

First, EU primary law mentions “energy” various times. Art 194 para 1 TFEU stipulates the following: “1. In the context of the establishment and functioning of the internal market and with regard for the need to preserve and improve the environment, Union policy on energy shall aim, in a spirit of solidarity between Member States, to: (a) ensure the functioning of the energy market; (b) ensure security of energy supply in the Union; (c) promote energy efficiency and energy saving and the development of new and renewable forms of energy; and (d) promote the interconnection of energy networks.” Although Art 194 para 1 TFEU does not address citizens directly, two features are worth looking into. The EU’s energy policy is not only taking into consideration the market, but also the environment and solidarity between Member States. Although energy efficiency, energy saving, and the development of new and renewable forms of energy also serve market purposes, they clearly allow EU policy to consider environmental aims as well. This reflects the special nature of energy: sufficient energy supply is not only a prerequisite for the functioning of all other markets, but permeates all of human existence (see, Favaro, 2020, p. 2 ff). Literature also suggests that the market, environmental protection, and solidarity do not have to be seen as hierarchical, but can be of the same value (Calliess, 2016, sec. 4). Therefore, although Art 194 para 1 TFEU does not directly address citizens or people, its wording supports the key function of energy as a prerequisite for the market, as well as its importance for the environment and as the basis of a decent life of people living in the EU.

Although Art 194 para 1 TFEU does not mention citizens, there is a link between the consideration of the environment in Art 194 para 1 TFEU and citizens, as the concern for the environment ties together energy citizens (as a “res publica” of energy citizens). The significance of environmental concerns (also for individuals) is furthermore underpinned by Art 37 Fundamental Rights Charter of the EU (and, in similar wording, Art 11 TFEU), which stipulates that “[a] high level of environmental protection and the improvement of the quality of the environment must be integrated into the policies of the Union and ensured in accordance with the principle of sustainable development”. Although Art 37 FRC is not a right, but only a principle, its inclusion in the Fundamental Rights Charter clearly shows the significance of environmental concerns for citizens. Art 37 FRC, together with Art 11 TFEU, can be therefore seen as a bridge between the regulation of energy policy in Art 194 TFEU and citizens.

Solidarity is not only invoked by Art 194 TFEU, but also by Art 122 TFEU, which lays down a procedure for “measures appropriate to the economic situation, in particular if severe difficulties arise in the supply of certain products, notably in the area of energy”. Moreover, the CJEU has recently relied on the principle of energy solidarity between the Member States and the EU (Case C-848/19 P, Federal Republic of Germany v. European Commission, 2021,

ECLI:EU:C:2021:598, recital 37 ff). Whereas Art 122 TFEU and Art 194 para 1 TFEU address solidarity between Member States, as shown below, the latest communication of the European Commission in that field has already extended solidarity between Member States to include solidarity between citizens and Member States (European Commission, 2021b, p. 4).

Art 170 TFEU foresees setting up so-called trans-European networks and stipulates that these networks shall “enable citizens of the Union, economic operators and regional and local communities to derive full benefit from the setting-up of an area without internal frontiers, [and that for that sake] the Union shall contribute to the establishment and development of trans-European networks in the areas of transport, telecommunications and energy infrastructures”. In that regard, EU law declares the full benefit of citizens to be an aim that must be taken into consideration when setting up a trans-European network.

Although primary law does not contain rights (and responsibilities) of people with regard to the energy transition, primary law allows seeing citizens as players in the energy transition. The basis for energy citizenship in EU law is therefore already present in EU primary law. In the following, we will look into secondary law and we will see that secondary law is further strengthening the idea of energy citizenship in EU law.

2.5.2.2 Secondary law

Further evidence for the development of energy citizenship in EU law can be derived from secondary law, and especially from the Renewable Energy Directive 2018/2001/EU (RED) and the Directive on Common Rules for the Internal Market for Electricity 2019/944/EU (IMED). The RED, for example, echoes the Energy Strategy of the EU: “The Energy Union strategy also recognized the role of the citizen in the energy transition, where citizens take ownership of the energy transition, benefit from new technologies to reduce their bills, and participate actively in the market” (recital 76). Along with this and further references to citizens in the recitals of the directive (e.g., recital 51, 66, 70), Art 21 and Art 22 of the directive support the assumption of an energy citizenship layer, since they construct citizens as “renewables self-consumers” or as part of an energy community. Similarly, the IMED refers to a Commission communication in recital 4: “The Commission Communication of 25 February 2015, entitled ‘A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy’, sets out a vision of an Energy Union with citizens at its core, where citizens take ownership of the energy transition, benefit from new technologies to reduce their bills and participate actively in the market, and where vulnerable consumers are protected.” Again, recital 4 as well as other recitals (43, 44, 45, 46, 47) of the directive emphasise the active role of citizens. The development of an energy citizenship layer is supported especially by Art 15 (“active customers”) and Art 16 (“citizen energy communities”) of the directive.

In addition, the directive points to another dimension of the energy transition, that is connected to the just energy transition mentioned in our interdisciplinary definition when it lays down rules on vulnerable customers (Art 28) and energy poverty (Art 29). The provision that “each Member State shall define the concept of vulnerable customers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such customers in critical times” (Art 28 para 1 of the directive) resembles the prohibition on expulsion of nationals. In the Petruhhin case, Advocate General Bot stated that “the principle

that a State does not extradite its own nationals is a traditional principle of extradition law” (Opinion of Advocate General Bot, Case C-182/15, *Aleksei Petruhhin v. Latvijas Republikas Ģenerālprokuratūra*, 2016, ECLI:EU:C:2016:330, para. 51). The idea of Art 28 on vulnerable customers is similar: instead of a prohibition on being deprived of residency in the state where one is a national, Art 28 para 1 prohibits depriving certain customers of electricity in critical times. Both expulsion from a country and deprivation of electricity are exclusionary acts, and in both cases exclusion is prohibited. This points to the idea described above that energy supply, as well as telecommunication, water supply, public transport, and a bank account, are the basis of a decent living in our society. Therefore, we have the right to energy supply and the right to be active customers.

As laid down above, secondary law is further strengthening the idea of energy citizenship in EU law. Secondary law is not only deepening the connection between the energy transition and citizens as shown already in primary law through individual rights mainly laid down in directives; secondary law moreover illustrates that the EU is heading towards a just transition, because it is taking into account vulnerable customers and energy poverty. But not only primary as well as secondary law are supporting the idea of energy citizenship in EU law. We will now examine EU policy papers and communications of the European Commission since they are openly advocating a special role of citizens in the energy transition.

2.5.2.3 EU policy papers and communications of the European Commission

The growing awareness of the significance of actively participating citizens is also reflected in EU policy papers. In its communication “A clean planet for all”, the Commission seemed to have – at least partly – an active citizen in mind. According to the communication, “[t]he future energy system will integrate electricity, gas, heating/cooling and mobility systems and markets, with smart networks placing citizens at the centre” (European Commission, 2018b, p. 6). Throughout the communication, citizens are referred to as active participants in the energy transition several times (European Commission, 2018a, pp. 15, 22–24).

In the supporting analysis to the European Commission, the new role of citizens also shines through: “An important aspect of the Energy Union is the recognition that citizens must be at the core of the transition. The Commission is thus committed to delivering a new deal for energy consumers helping them to save money and energy through better information; giving consumers a wider choice of action as regards their participation in energy markets; and, maintaining the highest level of consumer protection” (European Commission, 2018b, p. 27). Yet the active role of citizens is still in its infancy. While the above quote first states that citizens shall be at the core of the transition, the following statement does not address citizens as able and responsible for taking action in the sense of the republican definition of citizenship laid down above, but consumers. The analysis often refers to consumers, for example, in arguing that “consumer choice” has to change, “consumer awareness” shall be increased, and that civil society is important to promote a “lifestyle change” (all quotes European Commission, 2018b, p. 45).

One of the latest communications from the European Commission – the new EU strategy on adaptation to climate change – also mentions the crucial role of empowering “individual citizens, who will play a key role in the success of the adaptation strategy” (European Commission, 2021a, p. 4). Similarly, the Commission’s July 2021 communication “Fit for 55’:

delivering the EU's 2030 Climate Target on the way to climate neutrality" emphasises the role of citizens in climate transition. It explains that the Green Deal is built on a solidarity principle between citizens and states: "Reaching climate neutrality will require a shared sense of purpose, collective efforts and a recognition of different starting points and challenges. Many citizens, especially younger people, are ready to change their consumption and mobility patterns when empowered by relevant information in order to limit their carbon footprint and to live in a greener, healthier environment. However, this package also addresses the concerns of those whose employment or income are affected by the transition" (European Commission, 2021b, p. 4). A new Social Climate Fund will provide payments for individuals at risk from energy poverty (European Commission, 2021b, p. 4).

Generally, the Fit for 55 document evokes climate change as a shared challenge: "The European Union is built on the premise of developing common policies to achieve our common interests. It requires solidarity between its Member States and between its citizens to achieve these goals and enjoy its benefits, with everybody acting in line with their own capacities and competences, and respecting different national specificities and starting points in reaching the end goal. The Fit for 55 package is designed in this spirit: efforts are shared between Member States in the most cost effective way, acknowledging our differences, and support is given to those most in need, to ensure that the transition reaches everybody in a beneficial way" (European Commission, 2021b, p. 13).

Lastly, the European Green Deal (European Commission, 2019a) must be mentioned. It states not only the goal "to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use" (European Commission, 2019a, p. 2), but moreover that "[c]itizens are and should remain a driving force of the transition" (European Commission, 2019a, p. 22), and explicitly mentions energy communities: the Climate Pact "will continue to work to empower regional and local communities, including energy communities" (European Commission, 2019a, p. 23).

Although the EU policy papers and communications of the European Commission illustrate that EU energy citizenship is still in its infancy, the papers and communications laid down above recognize the increasingly growing role of citizens in the energy transition. They reflect the rights with regard to energy laid down in secondary law (liberal aspect of citizenship) as well as the general commitment towards a - sustainable and just - energy transition (republican aspect of citizenship). Lastly, international commitments of the EU, all above the Aarhus Convention, are - as we will show - supporting the idea of EU energy citizenship.

2.5.2.4 International obligations: Aarhus Convention

Finally, although focusing on environmental actions of states, the Aarhus convention is worth discussing as the EU is a signatory to the convention (see Oliver, 2013). The Aarhus Convention (Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, adopted June 25th, 1998, 2161 U.N.T.S, p. 447) provides for certain rights of participation and access to justice in environmental

matters. The EU has transposed the Aarhus Convention with two directives¹⁵ as well as a regulation¹⁶. Since energy matters can also raise environmental concerns (for the connection between environmental law and energy law, see Peeters & Schomerus, 2014), the Aarhus Convention and the expansion of renewable energy might not always go hand in hand. There might be an increasing amount of legal conflicts in the future, for example, building a new windpark might be promising with regard to clean energy, but might bring with other environmental problems and/or protests of citizens (see Peeters & Schomerus, 2014, p. 139). Yet, the Aarhus convention generally works towards more participation of individuals and organised civil society, which could also be seen as supporting a stronger position of the individual in the energy transition, at least to the extent that it is linked to environmental matters. It therefore strengthens the position of energy citizens. In the next step we connect the interdisciplinary definition with the results of the analysis of Step 2.

2.5.3 Step 3: Induction of energy citizenship

In this part we connect the abstract idea that centres around the interdisciplinary definition of energy citizenship developed in WP2 and the legal norms and statements laid down above. These norms and statements can be viewed as building the basis for the legal concept of energy citizenship in EU law. Since the interdisciplinary definition has been guiding our analysis, we will repeat it here: “Energy citizenship is people’s rights to and responsibilities for a just and sustainable energy transition.”

When examining citizenship, we have seen that citizenship in general rests on both, a liberal side (individual rights and duties), and a republican side (general commitment). This is reflected in the interdisciplinary definition of energy citizenship, because the definition not only relies on rights and responsibilities, but also on a general commitment for a just and sustainable energy transition. Yet, the interdisciplinary definition of energy citizenship is (at least from a legal point of view) innovative because it relies on people (and not on citizens), therefore clearly expressing that energy citizenship does not rely on nationality. Hence, the interdisciplinary definition of energy citizenship could possibly be a driver for the further development of the concept of citizenship in general.

In EU law we have found the following connections between the interdisciplinary definition and the law: First, energy politics and citizens are connected in EU law. Second, EU law stipulates rights and responsibilities of people (liberal side), and these rights and responsibilities indicate that the energy transition is also a general aim of the EU (republican side). Third, according to the sources presented above, justice and sustainability are important characteristics of the EU energy transition.

Regarding the first finding, we have shown that the EU does not only have the power to regulate in the field of energy politics, but also takes citizens into account when it comes to

¹⁵ Directive 2003/4/EC of the European Parliament and of the Council of 28 January 2003 on public access to environmental information and Directive 2003/35/EC of the European Parliament and of the Council of 26 May 2003 providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment.

¹⁶ Regulation (EC) N° 1367/2006 of the European Parliament and of the Council on the application of the provisions of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters to Community institutions and bodies.

the future of energy supply, for example, as self-consumers of renewables or as part of an energy community. Regarding the second finding, we have set out that already primary law is linking EU energy policy to ecological aims and that secondary law is enshrining rights and duties of the individual in the field of energy. Regarding the third finding, we have shown that the EU is manifesting its commitment to energy transition and sustainability through various other acts. The second and the third findings are closely connected. Secondary law contains several energy-related rights and duties that can be seen as an expression of the attempt to implement the energy transition, and at the same time show that the energy transition is a common concern that can only be achieved with the participation of individuals. Whereas it is clear that EU secondary law gives energy-related rights to citizens (such as, e.g., to set up an energy community), it can be questioned whether EU law imposes duties or, as laid down in the interdisciplinary definition, responsibilities on the individual. A weak duty could be seen in the fact that EU law has to be respected, and therefore, legal rules affirming the energy transition have to be respected by individuals as well. Therefore, it seems justified to identify energy-related rights and (weak) duties (or responsibilities) for individuals in EU law. Energy citizenship therefore consists of both rights and (weak) duties in the field of EU energy law on the one hand (liberal element of citizenship), and a commitment of the EU to a sustainable energy transition on the other hand.

This commitment of the EU is not only calling on the EU and its institutions to get active, but it also constitutes an aim for citizens and calls for collective action of citizens (republican element of citizenship). Although we are using the term “citizenship”, we cannot find that EU law is limiting the rights and duties to classic citizens¹⁷. Thus, energy citizenship does not go hand in hand with the political rights emanating from EU law, but must be seen as an additional layer which extends to non-citizens. This means that an individual who is a third-country national can rely on energy citizenship, but not on EU citizenship. We therefore argue that energy citizenship is a new layer of EU citizenship that – unlike EU citizenship in its classical form of Art 20 TFEU – goes beyond Member State nationality and, therefore, supplements and widens the concept of EU citizenship.

Although we have developed the concept of energy citizenship against the background of EU law, this definition is not limited to EU law. It also allows investigating other legal systems (e.g., national constitutions) to identify energy citizenship. The rights and duties mentioned can arise from different legal sources, depending on whether we talk about energy citizenship on a local, regional, national, or EU level. If a legal system contains only a few rights and duties, we can classify energy citizenship as “weak or thin energy citizenship”, while many rights and duties can be classified as “strong or thick energy citizenship”. As energy communities are a central element of the energy transition and the practice of energy citizenship, we now briefly define them and link them to the concept of energy citizenship.

¹⁷ This idea is not new, but has been elaborated already in different contexts: “There may come a moment in which not all nationals of member states enjoy the fundamental status of Union citizen, and not all non-nationals of member states may be excluded from this status. The one-to-one nexus between the nationality of a member state and Union citizenship will ultimately, I presume, be loosened up in both directions” (Jessurun d’Oliveira, 2015, p. 27).

2.6 Defining energy communities and connecting energy citizenship and energy communities

2.6.1 Definitions according to EU law

Similar to the legal understanding of energy citizenship, the understanding of energy communities also depends on the specific law in a specific country. EU law defines energy communities in the RED and the IMED. The directives do not define the term “energy community” in general, but they define the two types of energy communities that are foreseen by EU law. According to Art 2 para 16 RED, “‘renewable energy community’ means a legal entity: (a) which, in accordance with the applicable national law, is based on open and voluntary participation, is autonomous, and is effectively controlled by shareholders or members that are located in the proximity of the renewable energy projects that are owned and developed by that legal entity; (b) the shareholders or members of which are natural persons, SMEs or local authorities, including municipalities; (c) the primary purpose of which is to provide environmental, economic or social community benefits for its shareholders or members or for the local areas where it operates, rather than financial profits”. According to Art 2 para 11 IMED, “‘citizen energy community’ means a legal entity that: (a) is based on voluntary and open participation and is effectively controlled by members or shareholders that are natural persons, local authorities, including municipalities, or small enterprises; (b) has for its primary purpose to provide environmental, economic or social community benefits to its members or shareholders or to the local areas where it operates rather than to generate financial profits; and (c) may engage in generation, including from renewable sources, distribution, supply, consumption, aggregation, energy storage, energy efficiency services or charging services for electric vehicles or provide other energy services to its members or shareholders”.

Abstracting from these two definitions, we can define the term “energy community” as follows: an energy community is a legal entity generating, distributing, supplying, consuming, aggregating or storing energy or providing any other energy services to its members or shareholders, which is based upon open and voluntary participation, consists of or is controlled by members or shareholders which are natural persons, SMEs, or local authorities, including municipalities, and with the primary purpose to provide environmental, economic, or social community benefits to its members or shareholders or to the local areas where it operates rather than to generate financial profits. The term energy community in EU law is therefore rather narrow and differs from broader concepts of the term. Yet, the term energy community can also be understood more broadly from a legal point of view, as a collective action of individuals, authorities, and companies aiming at environmental, economic, or social benefits (informal energy communities). Collective actions which do not fall into the narrow definition above (e.g., because the collective action does not lead to any form of legal entity) can be classified as informal energy communities. Whereas energy communities as laid down in EU law are therefore very specific forms of collective action, informal energy communities cover a very broad range of collective action in the field of energy.

2.6.2 Linking energy citizenship and energy communities

If, as laid out above, setting up and participating in energy communities as foreseen in EU secondary law is seen as a right which – together with other laws – allows us to induce energy citizenship within the EU, participating in an energy community means that a person makes use of a right pertaining to energy citizenship. Setting up and being a member of an energy community (and also leaving an energy community) is therefore part of EU energy citizenship. Yet, participating in a formal or an informal energy community is only one form of exercising energy citizenship. There are many ways of exercising energy citizenship rights (and duties, or responsibilities), such as different methods of consumption or self-production of energy from renewable sources. However, the participation in and establishment of an energy community is a particularly sophisticated way of exercising energy citizenship because it particularly helps a sustainable transition by protecting the environment (reduces CO₂) and reducing costs. It further fosters a just energy transition by securing the affordability of energy for the vulnerable and by reducing energy poverty.

2.7 Summary of legal perspective

Against the background of EU law, the following conclusions can be drawn. They are primarily valid for energy citizenship in the EU context.

- Classical national **citizenship** is seen as a **(legal) status**, which indicates that an individual is a member of a certain political community (usually a state). It **gives rights** (such as the right to residence and to participate in the community) **and duties** (such as military service) to its holder. The **state decides** how citizenship can be obtained.
- EU citizenship must be distinguished from classical national citizenship. Only nationals of an EU Member State are EU citizens, therefore, **EU citizenship depends on an individual holding a Member States' citizenship**. Similar to national citizenship, EU citizenship is a status providing certain rights (e.g., participation in elections to the EP) and duties. It adds to national citizenship on a different level. It is transnational, which can be seen in its focus on EU citizens crossing borders. Yet, the development of EU citizenship has shown that EU citizenship goes beyond transnationality, as shown by, for example, the human rights guarantees in the Fundamental Rights Charter.
- We have argued that, in contrast to national citizenship, **EU citizenship is a multi-layered citizenship**, which consists of a political dimension (e.g., participation in elections to the EP, European Citizens' Initiative) and as the history of EU citizenship has shown, also a market dimension.
- **Energy citizenship** can be understood as a **new layer of this multi-layered EU citizenship**; a layer which is not strictly limited to EU citizens but includes all habitual residents in the EU.
- Similar to classical citizenship, we can identify a liberal and a republican element for energy citizenship: Energy citizenship consists of a **bundle of rights and duties** of the individual in the field of energy (liberal element). Moreover, it requires a **commitment** of a political community (here: the EU) **towards a sustainable energy transition** (republican element). Since in EU law we can find both energy-related rights and duties

as well as a commitment towards a sustainable energy transition, it is justified to induce an EU energy citizenship (and to not only talk about rights and duties of consumers, the EU, and the Member States).

- Generally speaking, if the law (here, EU law) provides **energy-related rights and duties** of individuals or citizens (liberal side of citizenship) and a **commitment towards a sustainable energy transition** (republican side of citizenship), we can talk about “energy citizenship” in a legal sense.
- Although we have developed the concept of energy citizenship against the background of EU law, this definition is **not limited to EU law**, but allows us to investigate other legal systems to identify energy citizenship. The rights and duties mentioned can arise **from different legal sources**, depending on whether we talk about energy citizenship on a local, regional, national, or EU level.
- If there are few rights and duties, we can classify energy citizenship as “**weak or thin energy citizenship**”, while many rights and duties can be classified as “**strong or thick energy citizenship**”.
- Energy citizenship can go hand in hand with political citizenship, where energy citizens are also political citizens with voting rights, etc. Yet, as the case of the EU with its multi-layered citizenship shows, **energy citizenship does not necessarily overlap with political citizenship**. Therefore, we might be able to distinguish between energy citizens, who have political rights, and those who are “only” energy citizens.
- From a legal point of view, **energy citizenship does not depend on whether someone makes use of their rights**. However, energy citizenship provides the individual with the ability to make use of their rights and contribute to the energy transition.
- As we have shown, energy citizenship from a legal point of view **does not encompass strong duties** (e.g., the duty to serve in the military arising in some legal systems from national citizenship). A weak duty could be seen in the fact that EU law must be respected, and, therefore, legal rules affirming the energy transition must be respected by individuals as well.
- Similar to energy citizenship, the definition of **energy communities** also depends on the law in a specific country. In the EU, two directives (RED and IMED) define two specific types of energy communities: renewable energy communities (Art 22 RED) and citizen energy communities (Art 16 IMED).
- Against the background of EU law, **energy citizenship and energy communities must be seen as connected**, as the possibility of setting up an energy community and participating in it are part of the rights that form energy citizenship. Whereas participation in a CEC or REC is a particularly promising activity of energy citizenship, the existence of energy citizenship does not depend on energy communities. Energy citizenship is not limited to CECs or RECs, but also consists of other rights and duties, and a commitment to energy transition, solidarity, basic supply, safety, and avoidance of energy poverty of the community itself (EU and Member States).

3 An economic perspective on energy citizenship

3.1 Conflicting narratives of the energy transition

The energy transition according to the European Green Deal promotes the significant role of citizens and their collaborative actions. Several directives¹⁸, the Renewable Energy Directive 2018/2001/EU (RED) and the Directive on Common Rules for the Internal Market for Electricity 2019/944/EU (IMED), announce the role of new actors: citizens and energy communities in the already existing neoliberal energy market. The Clean Energy Package (2019) combines two approaches: **the strong neoliberal energy market** and **democratic citizen participation/co-creation**. This tension influences the concept of energy citizenship from the economic perspective.

Our economic research perspective revolves around conflicting narratives present in the energy transition and implications of the tension for civic energy initiatives. The mainstream neoliberal narrative is shaped by economic and financial principles based on a market and producer-consumer concept. The alternative narrative focuses on the citizen concept, rights to clean energy, and energy democracy principles. It is based on redefined energy and energy citizenship concepts. While the idea of energy citizenship emerged from the EU energy policy (see law perspective in section 2), it has not been translated into nationally viable solutions yet (Clean energy for all Europeans, European Commission, 2019b). Rather, neo-liberal consumer-based approaches prevail. Lennon et al. (2020) say that EU new regulation creates “minimal disruption to current centralised models of energy production and distribution, a continued (re) conceptualization of energy as a commodity, and the maintenance of corporate ownership and control over individualised patterns of consumption, all of which inform the shift to renewable power and greater energy efficiency” (Lennon et al., 2020, p. 2).

The idea of energy citizenship builds on a view of people as active participants to be democratically engaged in sustainable energy transitions (Ryghaug et al., 2018). The energy citizenship concept emphasises energy consciousness and literacy as well as sustainable energy practises. However, a question arises whether the legal shape of the energy market, the powers and roles of other actors, and the method of financing investments allow for the emergence of completely new actors. **Defining energy citizenship through clean energy rights and related civic obligations seems to integrate the notion of consumer and prosumer into the broader defined energy citizenship.** In addition, the need to ensure citizens’ rights to clean energy requires the state to adjust the law and guarantee the implementation of this right. Many scholars argue that energy transition is immersed in a neoliberal market narrative and non-profit oriented entities like citizens and energy communities are included in the rules and criteria of the market game, like supply, demand, prices, efficiency, liberalisation, individual decision, competitiveness (Devine-Wright, 2007; Schot et al., 2016). The role of citizens as a consumer in the energy transition tends to reflect neoliberal discourses, ignoring **crucial questions of inequality and exclusion** (Lennon et al., 2020). As a result, the neoliberal

¹⁸ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources; Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU.

market determines the instruments for energy transition: **financial resources, funding system, participation in decision-making process, access to knowledge and information**. Lennon et al. (2020) say that people's expertise in energy fields compared with incumbent actors is unequal and limits the agency and access to resources. The market-driven paradigm of the energy system, together with the state occupying a centralised regulatory role removes any real agency from its citizens (Webb, 2012). In the following, we present economic concepts to show what is the position of a citizen as an actor in them. Currently the dominating EU economic concept is neoliberal. In this concept the role of citizens is limited. It will illustrate conflicting narratives between the market based economy with the main role of consumer and producer and citizen approach which is in theory present in collectivism.

3.2 The role of citizenship in economic concepts

In this section, we outline how the concept of citizen and citizenship is related to three existing economic approaches of political philosophy: Libertarianism, Neoliberalism, and Collectivism. The libertarian approach believes strongly in 'individual responsibility' by which the state is only intervening to protect citizens from coercion, interference and discrimination (Stankiewicz, 1998). **Citizenship has not been a core part of a classic libertarian approach.** Typically, the subject in libertarian theorising and research is the individual consumer and producer (Bailey, 2004). The law of supply and demand regulates the behaviour of market actors and a person's life chances are viewed as the result of market outcomes (Hursh & Henderson, 2011). This view discards the idea of society and sees no need for the modern welfare state (Graham, 1993). It argues that private interests should take precedence over public interests and that the state has no right to redistribute incomes and wealth in pursuit of irrelevant and unsustainable notions of social justice. In this logic, individual responsibility creates less need for state action, encourages further private sector provision, and progressively reduces the need for government intervention (Bailey, 2004).

The neoliberal approach also emphasises individual responsibility (Bailey, 2004; Pendenza & Lamattina, 2019; Biebricher & Johnson 2012; Brown & Baker 2013; Roper et al., 2010). However, in contrast to the libertarian approach, it assumes that market outcomes may be unjust because not everyone has the same opportunity to earn one's livelihood through flair, initiative and hard work. Therefore, the state's role is to ensure that everyone has the same opportunity to secure an adequate standard of living. Thus, the neoliberal approach has a conception of society, yet society is not all-embracing as the emphasis is on the primacy of the individual. In this approach, the state's role is to enable people and families to look after themselves, rather than being the first port of call, in times of need (Bailey, 2004; Hamann, 2009; Springer, 2010; Hilgers, 2012).

Finally, the collectivist approach does not embrace the concept of the autonomous individual (Stankiewicz, 1998; Dalley, 1996; Newman, 2013). It assumes that **each individual is part of a 'community' and cannot function without it**. This mutual dependence requires collective rather than individualised provision to meet 'social needs'. Put differently, the collectivist approach rejects market outcomes and perceives individuals as belonging to a civic community whose interests are safeguarded by the collective provision of services. Consequently, markets have to be directly controlled by the state, that is, collectivised, and not just modified.

The three categories (Libertarianism, Neoliberalism, Collectivism) of political philosophy outlined above clearly have fundamentally different implications for the degree to which governments should intervene in the economy and society. They hold **radically different views of the nature of citizenship, rights, responsibilities and equity** and, in particular, the constitutional relationship between the state and the individual citizen. In the next paragraph, we describe how the energy transition strategy in the EU is based on two economic ideologies: neoliberal and collectivists/ citizen oriented. Then, we define a new economic model, in which the subjective role of citizens will be taken into account, on a par with the incumbent market actors.

3.3 What picture of the energy transformation emerges from the EU directives?

With the new EU energy policy, a debate about energy communities and energy citizenship is underway. Many scientists noticed that the relation between energy issues and people's everyday lives as citizens has been under-discussed (Vihalemm & Keller, 2016). **The important question is how current priorities of the energy transition in the EU emphasising the citizens and communities as new actors** are challenging the existing neoliberal concept of economy.

People's rights to production, consumption, sale and storage of energy are clearly defined in EU legislation, namely in the Red II¹⁹ and Internal Market in Electricity Directives²⁰, the implementation of which had to be completed by the end of 2021 in the Member States. Regulations concerning the activities of civic energy communities provide an opportunity to involve citizens in active participation in the energy system. Analyses show that approximately 83% of households in the European Union could participate in various forms of collective renewable production and consumption, and approximately half have the potential to produce their own energy (Kampman et al., 2016). The remaining 17% could participate in forms of virtual prosumerism²¹. Community and cooperative initiatives are a source of wealth and jobs (generate more local income than external income) and are examples of democracy in practice (Wspólnoty energetyczne, 2020).

Analyses of the economic conditions in EU Directives from a neoliberal and a citizen perspective lead to interesting conclusions. With the adoption of Directive 2018/2001/EU on the promotion of renewable energy sources and Directive 2019/944/EU on the internal market of electricity²², the EU legislator acknowledged the potential of energy communities for participating in the energy transition. Thus, the EU introduced "renewable energy communities" and "citizen energy communities". Table 1 highlights keywords and sentences that are in line with either a neoliberal and a collectivist perspective.

¹⁹ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

²⁰ Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources; Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU.

²¹ End costumer produces renewable electricity for his or her own need with an installation located away from the location of consumption.

²² Directive (EU) 2019/944 of the European Parliament and of the Council of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU

Table 1. Key words and sentences representing a neoliberal and collectivist perspective on the energy transition based on Energy Directives 2018/2001/EU and 2019/944/EU.

	Neoliberal perspective	Collectivist perspective
Directive 2018/2001/EU on the promotion of the use of energy from renewable sources (recast)	<p>Liberal energy market; competitiveness; consumer; customers; individual, household customers; market price signals; the reduction of the cost of capital; feed-in tariffs to ensure a positive cost-benefit ratio; market-based mechanisms, such as tendering procedures; competitive markets; added value; measures to allow to compete on an equal footing with other producers; citizens take ownership of the energy transition; benefit to reduce bills; participate actively in the market; rights and obligations of the renewable energy community members as customers; relevant charges, levies and taxes, ensuring that they contribute, in an adequate, fair and balanced way</p>	<p>Renewable energy communities entitled to: produce, consume, store and sell renewable energy; share within the renewable energy community, without being subject to unjustified or discriminatory conditions or procedures, nor discriminatory treatment; accessible to all consumers, including those in low-income or vulnerable households; access to finance and information; justice</p>
Directive 2019/944/EU on common rules for the internal market for electricity	<p>A well-functioning electricity market design is the key factor; fully integrated all market players – including producers of renewable energy, new energy service providers, energy storage,</p> <p>consumers have an essential role to play; healthy competition in retail markets, by empowering consumers and providing them with the tools to participate more in the energy market; the free movement of goods; the freedom of establishment and the freedom to provide services;</p> <p>promoting fair competition; allow consumers to take full advantage of liberalised internal market for electricity, to foster competition and ensure the supply of electricity at the most competitive price;</p> <p>market prices should give the right incentives for the development of the network and for investing in new electricity generation;</p> <p>a fully liberalised, well-functioning retail electricity market</p>	<p>Citizen energy communities are considered to be a category of cooperation of citizens or local actors that should be subject to recognition and protection under Union law;</p> <p>the move away from generation in large central generating installations towards decentralised production of electricity from renewable sources and towards decarbonised market;</p> <p>distributed energy technologies and consumer empowerment have made community energy an effective and cost-efficient way to meet citizens' needs;</p> <p>community energy initiatives focus primarily on providing affordable energy, not prioritising profit-making;</p> <p>fighting energy poverty</p>

The Clean Energy Package combines two approaches: the neoliberal energy market and a collectivist democratic citizen participation. The analysis of the directives shows that the hitherto **dominant market regulations aimed at creating a liberalised internal market were supplemented with the admission of new actors: citizen energy communities and renewable energy communities**. This development raises a number of questions: Could the two approaches coexist? Have the conditions been created for coexistence of old and new actors in the area of energy transformation? Can new actors such as energy communities participate in all stages of shaping strategies, policies, legal regulations, implementation and evaluation of the process? Do citizens and energy communities have access to information and professional advice? Do they have access to financing energy investments?

The idea of energy citizenship builds on a view of people as active participants to be democratically engaged in sustainable energy transitions (Ryghaug et al., 2018). The energy citizenship concept emphasises energy consciousness and literacy as well as sustainable energy practises. However, a question arises whether the legal shape of the energy market, the powers and roles of other actors, and the method of financing investments allow for the emergence of completely new actors. **Defining energy citizenship through clean energy rights and related civic obligations seems to integrate the notion of consumer and prosumer into the broader defined energy citizenship**. In addition, the need to ensure citizens' rights to clean energy requires the state to adjust the law and guarantee the implementation of this right. As a consequence, the provision of clean energy may mean the servant role of the state towards its citizens in this matter.

Until recently, scholars have typically conceptualised the role of people in energy systems as 'energy users', who are mainly customers, passively generating energy demand (Ryghaug et al., 2018). Such strategies have been criticised, for example, for their "narrow view of the user as a consumer making conscious rational choices on the energy market from a set of pre-defined options" (Schot et al., 2016, p.1). Energy users have been interpreted as passive technology recipients at the margins of a centralised system. Devine-Wright (2007) has proposed the concept of energy citizenship, which, despite its promise as an alternative conceptualization of users or consumers, is under-theorised and remains a relatively empty signifier employed to describe a desired outcome of energy transitions.

In order to identify energy citizenship, we need a broader concept where energy is not the only commodity but a social necessity and natural resource (Stern & Aronson, 1984). Energy citizenship means having citizen agency and the power to decide, which is not presented sufficiently in the neoliberal approach.

Table 2. Neoliberal (consumer-oriented) and alternative collectivist (citizen-oriented) concept of the energy transition.

Main features	Theoretical neoliberal concept	Current model of energy transition	Collectivist concept (citizens co-creation)
Main actors and values of the energy transition	Consumer, individual freedom, autonomy	Prosumer	Citizen, right to energy, community spirit, collective
Definition of energy	Energy as commodity	Energy as commodity	Energy as a social necessity, natural resource
The position of actors	Individual freedom of consumer	Limited freedom for minority of consumers and no choice for the majority of consumers to participate in energy transition	Energy citizen
The concept of an energy scene	Market regulation, market instruments, cost-benefit, economic effectiveness	The transition scene: Coexistence of the market regulation and a new energy communities regulations	Justice, equity, inclusion, poverty, environment, cooperation, responsibility
The time perspective	Short term, profit-oriented	Long-term perspective to transform big fossil fuel energy to big green energy - green energy profits privatisation and socialisation of fossil fuel assets losses (privatisation of profits and socialisation of losses)	Long-term perspective, purpose-oriented, mission-oriented
The organisation of energy production	Centralised, big energy	Centralised, big energy and decentralised in small extent	Decentralised
The drivers of energy transition	Market ruled individual consumer responsibility for the energy transition	Partly market, partly regulator ruled individual consumer responsibility for the energy transition	Common action, co-creation, reflexive process
Funding system of energy transition	Financial subsidies for corporate players	All consumers pay in energy prices and in product, services prices for RES fee, ETS fee in order to subsidise corporate players and some prosumers	Financial subsidies for citizens

We apply two perspectives: neoliberal, market-oriented and collectivist. The first one, with the main role of individual consumer, customer, and prosumer. We claim that this approach dominates in energy transition narratives and new regulations of EU energy markets. The second focuses more on citizen agency and energy citizenship concepts. The purpose of new EU regulation is to empower the citizen position in the energy transition but the real energy transition is based on practice which is not empowering energy citizenship enough. The enlightened state and technology providers create a framework for a citizen with limited solutions.

Consequently, discussions on the role of citizens in the energy transition tend to reflect neoliberal discourses, ignoring crucial questions of inequality and exclusion. This paper argues **that current energy systems are structured in a way that provides little agency to the majority of citizens**. To raise the role of citizens we have to emphasise the rights to energy, the full access to energy for all, and the reduction of energy poverty. Sovacool et al. (2017) articulates that the incorporation of considerations of justice into energy policy making will alter how we view entire energy systems, with concerns such as equity and equality of distribution becoming more predominant, while other concerns, such as profit-maximisation, receding in importance. We need a “justice aware” energy policy. Energy justice demands that we evolve new business models and regulatory paradigms that promote inclusive and transparent planning processes, diverse resource portfolios, and energy policies that respect the future. We must appreciate that **people deserve sufficient energy resources to meet their daily needs and that the cost of energy does not become a financial burden**. Due process and **human rights must be respected** in the production and use of energy, and all people should have **access to high-quality information** about energy and the environment and **fair, transparent, and accountable forms of energy decision-making** (Sovacool et al., 2017).

In the energy transition, the citizen language is not used. Social/energy change is explicitly set out as the cumulative sum of individual actions. People are urged to manage the energy usage of their households by adopting the model of business and the individual responsibility for the transition. Citizen performance of their civic duty is conceptualised as being essentially self-interested.

From an economic perspective, fully implementing energy citizenship and placing citizens at the centre of the energy transition could imply a radical shift from the neoliberal, market-based to a collectivist, participatory economic model with energy communities and energy citizens at its centre. These new public actors could potentially exercise their power and agency in decision making processes, public energy policy creation, in order to gain control over energy production and consumption. Moreover, such a shift would also be necessary as the market economy based on the increase in production and consumption of resources and energy is accused of generating climate change and loss of biodiversity. Connected to the economic approaches are differing conceptions of individuals and their potential to drive the energy transition. The next paragraph contrasts a classical concept of the homo economicus with alternative, and newly arising concepts of citizens.

3.4 Who drives an energy transition - consumers or citizens?

3.4.1 Consumers drive the energy transition

The concept of the citizen in the mainstream economy is not visible, nor is the society, which appears only in the context of social costs related to market failure (e.g., monopolies, external costs, see Begg et al., 1984; Blaug, 1984). However, the household supplying the labour market and capital, as well as the concept of the consumer are visible. The consumer in the economy is a participant in the free market, fitting into the concept of *homo economicus*, which maximises its usefulness. According to the classical economy, thanks to consumer egoism, as well as other market participants, the common good is created (Smith, 1954). The more the consumer consumes products and services, the more they contribute to wealth creation in the economy. On the other hand, the higher the consumption of consumers, the greater the social and environmental costs to other citizens, including future generations. For example, stimulants and unhealthy food are accompanied by health costs. Excessive consumption of meat is associated with deforestation and environmental costs. In economic theory, this problem is referred to as negative externalities and the associated external costs. It was noticed by economists at the beginning of the 20th century (Pigou, 1920; Coase, 1960).

3.4.2 Citizens drive the energy transition

In response to the environmental and social problems generated by the market (market failure), heterodox trends have emerged arguing that problems require a collective and systemic approach instead of the hitherto individualistic one, for example, the common good economy, doughnut economy, collective action, degrowth, and mission economy. Such heterodox concepts nurture our understanding of what energy citizens might look like. In the following, we will give a brief overview of those concepts.

3.4.2.1 Economy of common good and doughnut economy

In these heterodox concepts, citizens are considered in the context of a community. In Christian Felber's (2010) **economy of common good**, the concept of selfish, greedy and competing market participants is rejected to build trust, cooperation and sharing with others. In the economy of common good, the key factors for the new economy are, inter alia, ethical management, transparency, reducing environmental impact, supporting the community, social and ecological creation of products and services, and minimising the payment of profits outside the community.

In the economics of Kate Raworth's (2017) **doughnut economy**, citizens are part of society, which is part of the earth system. One of the four main components of the economy is the household, which is an area of activity for people. The doughnut economy outlines two societal boundaries, social and environmental, which define the safe and just space for humanity, and all economic activities should fall within its framework (Raworth, 2017). In this concept, the energy transition is the answer to two key problems. On the one hand, crossing the planetary boundaries in terms of climate change, and on the other hand, provision and access to energy and reduction of energy poverty among households.

3.4.2.2 The collective action approach

Concept of collective actions is presented by Elinor Ostrom (1990). Ostrom shaped the concept of **Collective Action** from an economic perspective that refers to the activity of groups of people, organisations, which have a common goal that is easier to achieve for the community than for the individual (Ostrom, 1990). Her work stands in defiance of the so-called zero contribution theory claiming that individuals would not automatically act in favour of common interests. Poteete et al. (2010) argue that, in general, society does not consist of isolated individuals, but that people belong to organisations and develop social networks to varying degrees. The authors (Poteete et al., 2010) build their ideas on a wide range of conducted research indicating that people tend to cooperate more than it was expected due to earlier assumptions. Ostrom focused on the behavioural and evolutionary aspects of human nature. Next to economic reasoning, she took into account human capacity to learn and grow. Above authors emphasise that while selfish behaviours appear in the standard model of rational individual action, they are mostly found in competitive market situations characterised by conflicts of interests and a short time horizon.

Another important concept created by Ostrom (1990), that is closely related to the concept of collective action, is the idea of management of common-pool resources. In her deliberations, she broke with the idea of state control and privatisation. Instead, she suggested self-organised smaller communities to be a better option to protect resources. Her research showed that when people can democratically decide about resources they are more willing to act responsible and typically do not over-exploit them (Ostrom, 1990).

3.4.2.3 The degrowth approach

The **degrowth approach** towards energy is recently emerging as an answer to limitations of market economy. The dominant principles of open markets, like competitiveness of the producer and the consumer, establish the privileged position of market-based actors in relation to states and communities, whose role is limited. Degrowth approaches diminish the negative outcomes of this economic order by raising the role of state and communities in the control of general market excess (Mishra & Agrawal, 2021).

One of the basic assumptions of degrowth is that economic growth is strongly correlated with energy supply and oil prices (Alexander, 2012a). Abundant supply of energy results in fast growth and the rise of consumption. Conversely, expensive oil is the cause of economic problems. It is estimated that reduction of oil supply will inevitably result in the reduction of general levels of consumption and impede economic growth (Kallis et al., 2012; Alexander, 2012a). One of the propositions of the degrowth theorists is to implement a planned economic contraction to limit the energy consumption and therefore to counteract the negative outcomes of climate changes (Alexander, 2012b). At the same time, degrowth theorists maintain that the decline in economic growth will not negatively affect the well-being of developed societies which currently experience the excess of production and consumption (Kallis et al., 2018). In the degrowth approach, activities of neoliberal economic system should be shifted towards more sustainable actions such as eliminating poverty, lessening inequality, and protecting the environment - at the price of lower GDP level and through grassroots initiatives (Alexander, 2012b).

The degrowth approach outlines a specific view of energy communities which are not only sustainable energy distributors, but also social educators in order to increase the awareness regarding negative outcomes of exceeding consumption (Tsagkari et al., 2021; Lockyer, 2017; Khmara & Kronenberg 2020). Accordingly, the task of such communities would be to detect economic spheres which require changes, and to support the strategies of their transformation. Degrowth as an opposition to a market based on a growth economy undermines the neoliberal figure of passive consumer, replacing it with active prosumer - decisive in the field of open market and aware of the necessity of socio-economic transformation towards citizen oriented.

3.4.2.4 Mission economy

Mariana Mazzucato (2021) proposes a **Mission Economy** as a reaction to limits of neoliberal, capitalistic approaches. She principally criticised that a neoliberal approach has no answers to a host of problems, including disease, inequality, and the environmental crisis. In the face of grand challenges, the mission economy approach demands to radically rethink the capacities and role of government within the economy and society, and recover a sense of public purpose. Mazzucato (2021) says that we can only begin to find answers if we fundamentally restructure capitalism to make it inclusive, sustainable, and driven by innovation that tackles concrete problems. The government as a co-creator of value, has not only the skills necessary to think big but also to think about public purpose and missions.

Mazzucato's (2021) prescription is for governments, **in dialogue with citizens**, to define the grand challenges of our times and to set missions of economy to solve them in partnership with business. By focusing on the ends rather than the means in a mission economy, policymakers should create the space for creativity, experimentation and collaboration across sectors (Hochlaf et al., 2019).

Summing up, new trends in economics, such as the common good economy, doughnut economy, collective action, degrowth, and mission economy, include citizen participation or dialogue with citizens. Also they emphasise collective actions and the role of government. They are more willing to refer to communities such as the household and society, which better reflect their community approach than consumers in neoliberalism. In the next step we provide a systematic comparative understanding of the economic conditions that shape the formation of energy citizenship.

3.5 Energy citizenship

From an economic point of view, introducing the concept of energy citizenship and new actors like energy communities into the energy transition process means going beyond the neoliberal market model. Energy citizenship has become the core part of an emerging new economic model that is already partially featured in current EU directives. The mainstreaming, market economy is focused mostly on producer and consumer relations. Newer economic approaches (see section 3.4.2) do not strongly focus on (energy) citizenship but they see limits of consumer-producer concept in energy transition. The doughnut economy and the degrowth concept are much more collective oriented. There is growing awareness that a new approach has to be developed. From an economic perspective the energy citizenship concept is interconnected with the rights-responsibilities spectrum. The position of a new actor has to

be rooted in law. It also means responsibilities and actions for sustainable development. So our interdisciplinary definition - *Energy citizenship is people's rights to and responsibilities for a just and sustainable energy transition* - is aligned with the economic approach.

The idea of energy citizenship revolves around the vision of an active participant democratically committed to a sustainable energy transition. In this concept, people in energy systems are seen not only as using technology and influencing innovation trajectories, but also as being politically, financially, materially and non-materially engaged in a more comprehensive way. The concept highlights the hybrid relationship between people and energy technologies and the different roles that people can play: as users, consumers, investors, protesters, supporters and prosumers. In definition of energy citizenship, Devine-Wright (2007) emphasises both the awareness and action aspects: "awareness of the responsibility for climate change, equity and justice with respect to location, controversy as well as energy poverty and [...] the potential for (collective) action for energy, including acts of consumption and the creation of community renewable energy projects" (p. 72). Morris (2001) stresses the active side of energy citizenship and defines it as an active public participation within energy systems. Creating energy citizens is increasingly seen as a key component of the energy transition wherein "the public are conceived as active rather than passive stakeholders in energy system evolution and where the potential for action is framed by notions of equitable rights and responsibilities across society for dealing with the consequences of energy consumption, notably climate change" (Devine-Write, 2007, p. 71).

From an economic perspective, energy citizenship requires a new economic model empowering people to claim the rights and take the responsibilities to co-create (produce, consume, store, sell, share energy, co-design policies and law) the sustainable and inclusive energy transition. The concept particularly materialises in energy cooperatives, where apart from satisfying their economic needs, citizens can experience community and take part in the energy transformation processes.

3.6 Relation between energy communities and energy citizenship

Energy communities are organisations in which citizens jointly co-create: initiate, plan, finance and implement projects related to sustainable energy (i.e., production, sale, storage and distribution). These organisations aim to provide their members with the following benefits (Wspólnoty energetyczne, 2020):

1. **social** (self-sufficiency and energy security, increasing social cohesion, improving the condition of households suffering from energy poverty),
2. **environmental** (reduction of greenhouse gas emissions and improvement of air quality),
3. **economic** (economic development of the region, creation of new local jobs, or lower costs of energy produced and consumed by citizens, creating income by selling surplus energy).

The International Cooperative Alliance (n.d.) established principles for the energy cooperative that could be adopted to communities:

1. **open and voluntary participation** - anyone, be it a natural or legal person (e.g., small and medium-sized enterprises, local authorities, social organisations), may join a cooperative. The main requirements are the acceptance of membership obligations and the purchase of shares or sharing of RES assets. Due to their prosocial nature, communities are also open to people at risk of economic exclusion and enable them to use cheaper energy without the need to incur capital expenditure.
2. **democratic governance** - based on the equal right to make decisions for all.
3. **autonomy and independence** - the community can be controlled only by its own members.

Energy communities can reinforce strong social norms and support citizens' participation in the energy system. According to EU legislation, their primary purpose is to create social innovation: they engage in economic activities other than for profit making. Community energy can be considered as a type of grassroots or niche innovation that can experience learning curves within the socio-technical landscape (Geels et al., 2017).

3.7 Current stage of energy citizenship and energy cooperatives in the energy transition process

In this section, it should be noted that in most European countries, the leading organisational form of energy transformation are energy cooperatives. The concept of energy citizens is not yet implemented (see legal perspective in section 2). Research and analysis of the phenomenon of energy citizenship can be done through observation and evaluation of other forms of civic activity in the field of energy transformation. Citizens can contribute to energy transformation at a local level despite their income level – through cooperatives that are “autonomous associations of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise” (according to International Co-operative Alliance, 1995). Cooperatives promote the direct involvement of citizens in projects and soliciting public authorities, emphasising the powerful concept of economic democracy. They are important and unique actors in the energy transition (Wierling et al., 2018), and deal with a wide range of energy activities using existing technologies for the production and to balance the demand for electricity, biogas, and heat. Energy cooperatives may thus enhance citizen engagement in the dissemination of distributed energy systems (Bauwens, 2013).

In Europe, there are many forms of organisation and functioning of energy cooperatives conditioned by the local framework. They are distinguished by the fact that, in addition to economic goals, these cooperatives meet other needs - the social commitment of their members, community empowerment (Fairchild, 2017). In recent years, an upward trend has been noticeable in the number of energy cooperatives operating in Europe (Rescoop.EU, 2019).

Energy communities and cooperatives have a vast potential to scale up RES projects and simultaneously generate growing amounts of clean energy. Energy cooperatives which dominate in the market demonstrated the capacity to form resilient social structures that apply collective solutions and adapt to local conditions to catalyse the energy transition processes (Bauwens et al., 2015). Local conditions are strongly differentiated in the legal, psychological, and economic scope. The level of utilisation of renewable energy differs locally, too.

New European directives and new economic models indicate the current stage of energy transition petrifies the old regime (strong incumbent actors position). Individuals and renewable energy communities have a limited entitlement to produce, consume, store and sell renewable energy. Regulations are very important, but the timing of their introduction is crucial. Big Energy and new companies operating in the energy market occupy positions. Too late introduction of regulations on energy citizenship may mean that energy citizenship and energy communities will have a niche character and will play a marginal role in the target energy market.

3.8 Summary of economic perspective

The sustainable energy transition requires a significant role of citizens and reconceptualization of their rights and responsibilities within the energy system. The concept of energy citizenship was not fully explored in previous European regulation. The emergence of energy citizenship and energy cooperatives regulations in EU energy strategies and policies is a step forward. Yet, the agency of new actors, energy communities and energy citizens, in the current narrative of energy transformation is still uncertain. With the new EU energy policy, a debate is underway about energy communities and energy citizenship. The important issue is how energy citizens and energy cooperatives as a part of sustainability transition are challenging the existing neoliberal concept of economy and supporting a new, more sustainable one.

From an economic perspective, we share the definition of energy citizenship with psychologists and lawyers. In our interdisciplinary approach *energy citizenship is people's rights to and responsibilities for a just and sustainable energy transition*. Energy citizenship can be viewed as the core of a new economic model, where energy citizens, not only consumers, are at the centre of the economy. It means that strategies, policies, law, funding, implementation of energy transition are co-created by citizens. People have the rights provided by law: to an access to sustainable energy and clean environment regardless of the level of wealth; to produce and organise sustainable energy; to co-create (co-design strategies, policies and law, co-implementation, co-evaluation) the sustainable energy transition, to equal rights to access the energy market, and the responsibilities for the co-creation of a sustainable energy transition (social, economic, environmental, spatial, institutional-political).

In sum, energy communities and cooperatives till now, are shaped by the dominating economic model, by energy policy and regulations. There is a conflict between EU current narratives focused on energy communities and energy citizens and the way how the liberal market of energy in Europe is designed.

4 A psychological perspective on energy citizenship

The concept of energy citizenship was introduced by psychologist Devine-Wright (2007) who defined it as “a view of the public that emphasises awareness of responsibility for climate change, equity and justice in relation to siting controversies as well as fuel poverty and, finally, the potential for (collective) energy actions, including acts of consumption and the setting up of community renewable energy projects such as energy co-operatives.” (p.71). One could assume that psychological research would have built on this definition. However, while some interdisciplinary studies referred to it (Ryghaug et al., 2018; Beauchamp & Walsh, 2021), energy citizenship has not yet been systematically studied as a psychological construct. This is possibly due to Devine-Wright’s (2007) unconventional conceptualization of energy citizenship that was accompanied by a number of discipline-specific problems.

Devine-Wright (2007) built his idea of energy citizenship as a **view of the public** on Stern and Aronson’s (1984) book, in which they described the influence of different views of energy (as a commodity, ecological resource, social necessity, or strategic material, p. 16), and different views of energy users (as investors, consumers, group members, value expressors, and problem avoiders, pp. 59-65). Yet, a “view of the public” is an ambiguous term, as it remains unclear whether it signifies (1) how the public is perceived, (2) opinions about how the public should be, or (3) beliefs that the public itself has. Furthermore, it is not a typical psychological approach to constructs, as psychological theories usually centre around cognitions, emotions, and behaviours of individuals. Moreover, in his chapter, Devine-Wright (2007) touches many psychological concepts such as beliefs, affects, behaviours, and literacy, for which it is not always clear whether they are part of the energy citizenship construct, or only associated with this construct (e.g., as predictor). Another explanation for the lack of psychological studies on energy citizenship might be that **research has primarily focused on energy-related behaviours and public acceptance** of the energy transition (Steg et al., 2015). This research could be seen as driven by a deficit model of the public assuming that people lack understanding and willingness to actually contribute to the energy transition (Devine-Wright, 2007). An alternative to this deficit model might be a citizen-based approach. A citizen-based approach to the energy transition could be relevant for psychology as it alters the conception of the human being, and therefore influences psychological theorising, research, and practical recommendations (see Perlaviciute & Squintani, 2020). This approach depicts individuals as active creators of their own and society’s circumstances, and opens up new agency perspectives that situate the individual in additional proactive positions of the political process (see Bandura, 1997). Hence, a citizen-based approach is a **new and innovative step** for the psychological field that needs a viable psychological definition of energy citizenship.

In developing such a psychological definition, we drew on Devine-Wright (2007) and our parsimonious interdisciplinary definition that “energy citizenship is people’s rights to and responsibilities for a just and sustainable energy transition”, and define energy citizenship in the following way:

Energy citizenship from a psychological perspective is people's belief that they as individuals and as collectives have rights and responsibilities for a just and sustainable energy transition, and their motivation to act upon those rights and responsibilities.

Figure 6 depicts concepts that are crucial for our definition. The definition opens up the possibility to investigate how energy citizenship relates to actual energy (citizenship) behaviours such as involvement in an energy community, and other well-known psychological constructs. Regarding the overall EC² project, this section provides the basis for an energy citizenship scale (Task 2.4), and interdisciplinary as well as disciplinary discussions about barriers and facilitators of energy citizenship (WP3 and WP4). In the following paragraphs, we argue why energy citizenship from a psychological perspective should (1) be a multifaceted concept, (2) centre around the belief that people have rights and responsibility, (3) include a motivation to act, and (4) consider individual and collective aspects of human motivation. We then describe energy communities as one example in which many aspects of energy citizenship are united.

Energy citizenship from a psychological perspective

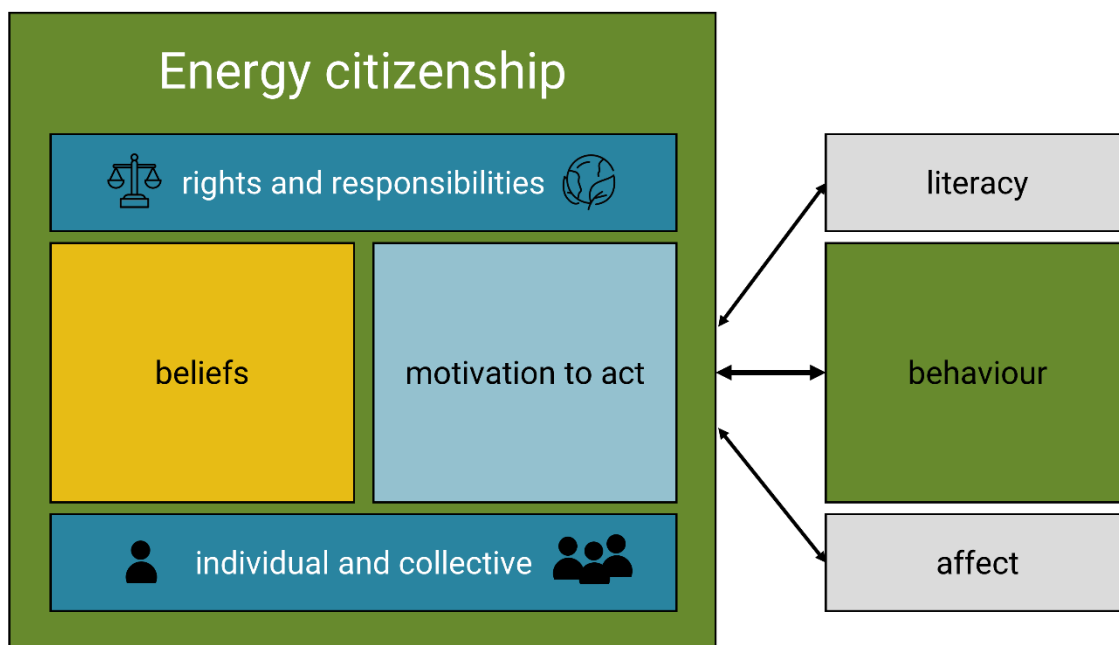


Figure 6. Components of the psychological definition of energy citizenship.

4.1 Energy citizenship should be conceptualised as a multifaceted concept

As mentioned above, legal, economic, and psychological research on energy citizenship is scarce. The previous legal and economic parts (section 2 and 3) built their discussions on *EU directives* and conceptualizations of citizenship. This psychological part combines Devine-Wright's (2007) theorising with well-established psychological theories and psychological literature on **environmental citizenship**, a term coined by Stern et al. (1999). Underlying is the assumption that psychological conceptualizations of energy citizenship and environmental citizenship should relate, and can inform each other.

Previous research on energy and environmental citizenship revealed diverse views on which facets are part of energy citizenship. While empirical psychological work on environmental citizenship centred around behaviour (e.g., Stern et al., 1999), theoretical articles on energy

citizenship included further concepts such as people's beliefs (Devine-Wright, 2007; Hadjichambis et al., 2020). We will first describe previous notions of energy and environmental citizenship in more detail, and then argue for why it is worthwhile to define energy citizenship as a multifaceted concept.

Devine-Wright (2007) described energy citizenship as a **very complex and inclusive concept** with many facets. He built his concept on an earlier definition of energy citizenship with an understanding of the public as an active (vs. passive) stakeholder with certain rights and responsibilities in the context of energy consumption (Morris, 2001; Devine-Wright, 2004). Similarly, Devine-Wright's (2007) definition referred to energy citizenship as a "view of the public", while energy citizens were described as individuals actively making use of their energy citizenship. For example, he stated that "energy citizens can feel positive and excited about new energy technologies rather than apathetic and disinterested; be aware rather than ignorant of the scale of its potential impacts on political institutions, the environment and everyday lifestyles; and be willing to engage not just as individuals but as collectives in shaping technological change at local, regional and national levels." (Devine-Wright, 2007, p.71). Thus, Devine-Wright's (2007) notion of energy citizenship seems to include many facets, among them awareness, positive feelings, and willingness to act as individuals and collectives. Studies in disciplines closely related to psychology built on this concept and sometimes extended it, for example, by clarifying that energy citizens can be users, consumers, prosumers, supporters, or protesters, or by acknowledging that energy literacy has an important role in energy citizenship (Ryghaug et al., 2018; Beauchamp & Walsh, 2021).

In their psychology-oriented book on environmental citizenship in the education sector, Hadjichambis et al. (2020) offered a definition that represents a similar, yet even broader conception of environmental citizenship than that of Devine-Wright (2007). Their definition included many facets such as awareness, knowledge/ environmental literacy, and (willingness to) responsible individual consumption and collective action as the implementation of citizens' environmental rights and duties. In line with Devine-Wright (2007), they highlighted that environmental citizenship is inevitably linked to democratic processes and social justice (Hadjichambis et al., 2020).

Next to these broader theoretical elaborations on energy and environmental citizenship, a number of **empirical studies from environmental psychology** exist that take a much **narrower perspective** on environmental citizenship. They built on Stern et al. (1999) who focused only on a behavioural facet by defining environmental citizenship as a certain type of pro-environmental behaviour that includes, for example, "writing letters to political officials, joining and contributing funds to movement organisations, and reading movement literature" (p. 82; see also Stern, 2000). Stern et al.'s (1999) concept has been applied in environmental psychology studies, particularly in the realm of research on societal visions (Bain et al., 2012, 2013; Fernando et al., 2018). Other studies used Stern et al.'s (1999) concept of environmental citizenship and extended it by individual behaviours such as recycling and purchase behaviour (Lee et al., 2014; Yeboah & Kaplowith, 2016).

We can summarise that, on the one hand, Devine-Wright (2007) and researchers building on his work depicted energy citizenship as a multifaceted **attitude construct** that entails beliefs,

affects, behavioural motivation, and behaviours all indicating energy citizenship (e.g., perceiving responsibility, feeling positive towards an energy transition, and being willing to join and actually joining an energy community, see Devine-Wright, 2007). In some ways, it resembles Schultz et al.'s (2004) three components definition of environmental attitudes that contain beliefs, affect, and behavioural intentions (see also Rosenberg & Hovland, 1960; Himmelfarb & Eagly, 1974). On the other hand, empirical studies in the tradition of Stern et al. (1999) conceptualised environmental citizenship as a **behavioural construct** that only includes behaviours (e.g., joining an energy community, see Stern et al., 1999). These opposing research strands raise the question of how multifaceted energy citizenship should be conceptualised.

In our view, a psychological concept of energy citizenship needs to go beyond behaviour. In order to become an innovative concept, it has to be distinguishable from already investigated ideas of pro-environmental behaviour, and highlight its rootedness in people's beliefs about rights and responsibilities. If someone is willing to become part of an energy community, but derives their motivation merely from financial considerations, this might be a sign of pro-environmental energy behaviour. However, their motivation does not reflect citizenship considerations of this person. Then again, if someone cannot afford joining an energy cooperative but still wants to act in accordance with their perceived right and responsibility to promote an energy transition, this could be seen as a sign of energy citizenship. We therefore suggest that only if someone takes an action out of considerations regarding one's rights and responsibilities, it reflects energy citizenship. In section 4.3, we further argue why action motivation rather than behaviour could be central to energy citizenship. Moreover, Devine-Wright (2007) and Hadjichambis et al. (2020) emphasised that a sustainable transition includes environmental as well as social (justice) aspects. A solely behavioural focus of energy citizenship would only account for environmental but not justice and equality beliefs and motivations, that can be seen as central aspects of energy citizenship. Thus, energy citizenship needs to be a multifaceted construct in order to unfold its conceptual potential.

Nevertheless, to be a viable concept, energy citizenship has to have clear facets, and explicitly distinguish its facets from its predictors. Based on all of the facets mentioned by Devine-Wright (2007) and Hadjichambis et al. (2020), we aimed to arrive at the essence of energy citizenship, that is, in our view, beliefs and action motivation with respect to people's rights and responsibilities. Energy literacy would not be such a facet as education might not be available to every person, even though they feel responsible for an energy transition. Phrased differently, in a just energy transition, not only people with energy-related education should be regarded as energy citizens. Energy literacy would rather be a predictor of energy citizenship (see Bamberg & Möser, 2007)²³. In the following paragraphs, we will more closely describe how beliefs about rights and responsibilities and action motivation can be understood.

²³ Similarly, we discussed affective states as a potential facet of energy citizenship. However, beliefs in rights and responsibilities might not be accompanied by the same affects in diverse people (e.g., outrage, enthusiasm, fear, guilt, hope, see Landmann, 2020). For example, one person might be driven by their hope for a just and sustainable energy transition. Yet, another person might not feel hopeful but outraged because of their lack of agency in the political system, thus perceiving and demanding the right to participate in an energy transition. Since it remains to be investigated how affective states and beliefs regarding one's rights and responsibilities relate, we did not include affect in our definition of

4.2 Energy citizenship should centre around beliefs about rights and responsibilities

From a psychological perspective, it seems plausible to translate “responsibility and rights” of our interdisciplinary understanding into beliefs about responsibility and rights in order to present them as psychological constructs. Hence, energy citizenship from a psychological perspective is not about people actually having the (legal) right and responsibility but about their perceptions that they have rights and that they are responsible for a just and sustainable energy transition. By taking a look at well-established psychological theories such as the norm activation model (NAM, Schwartz, 1977), the value-belief-norm theory (VBN, Stern, 2000), or the theory of planned behaviour (TPB, Ajzen, 1985), we noticed that some aspects of rights and responsibilities have already been captured in psychology, while others have not (see Appendix for a description of the three psychological models).

Psychological theories already include the idea of **perceived responsibility** to act prosocially or pro-environmentally in the concepts of personal norms (NAM, Schwartz, 1977) and ascribed responsibility (VBN, Stern, 2000). Both have been associated with energy-related behaviours in a number of studies (van der Werff & Steg, 2015; Fornara et al., 2016; Zhang et al., 2013). Therein, the values that a person has are a relevant basis for beliefs about responsibility (Schwartz, 1977). As our interdisciplinary concept of energy citizenship does not solely focus on ecological aspects but also includes social aspects such as justice and inclusivity, particular personal values might be more important than others (e.g., self-transcendence values, see Schwartz, 2012). Yet in our view, personal values are much too broad to be included into the specific concept of energy citizenship, and should be regarded as potential predictors.

The TPB (Ajzen, 1985) captures the belief that one can perform an action. This belief might be influenced by specific (legal) rights that make certain actions easier and remove barriers. Yet, the **belief that one has the right to a just and sustainable energy transition** cannot be equated with the belief that one can promote this transition (see e.g., Hamann & Reese, 2020). Despite its relevance for democratic societies, the concept of beliefs regarding specific rights is not fully captured by constructs of the abovementioned psychological theories. Thus, beliefs about people’s rights in the energy transition might offer a novel psychological research angle, and would be a central aspect of energy citizenship.

4.3 Energy citizenship should include a motivation to act

Next to beliefs about rights and responsibilities, a motivation to act in line with these beliefs seems central to energy citizenship. In the following paragraphs, we argue why energy citizenship should include a motivation to act instead of a behaviour. Then, we elaborate on the notion that individual and collective action motivation could feed into an understanding of energy citizenship.

energy citizenship. However, it is open for debate which affective states could indeed be part of energy citizenship in the future. Building on other studies from environmental psychology, negative and positive affective states would present promising predictors of energy citizenship (Kothe et al., 2019; Hamann et al., 2021).

4.3.1 Motivation to act vs. behaviour

One of the major advantages of the TPB (Ajzen, 1985) over previous psychological theories was its distinction of intention from behaviour. The TPB clearly specifies motivation to take actions (i.e., behavioural intention) and actual behaviour as separate constructs, and conceptualises intentions as predictors of behaviour. In the NAM (Schwartz, 1977) and the VBN theory (Stern, 2000), this distinction is not as focal. Research on organisational citizenship behaviour explicitly states that they refer to behaviour (Organ & Ryan, 1995; Fox et al., 2012). Psychological research thus poses the question if energy citizenship should include a motivation to act, actual behaviour, or both.

This question has some similarities with the debate about **impact- and intent-oriented approaches to pro-environmental behaviour** (Stern, 2000; see also Bamberg & Rees, 2015). In the impact-oriented approach, pro-environmental behaviour is defined in terms of harm to or protection of the ecosystem. The impact-oriented approach therefore revolves around the environmental **impact of a behaviour**. In the intent-oriented approach, pro-environmental behaviours are any behaviours undertaken with the aim to protect the environment or harm it as little as possible. Thus, in the intent-approach, the **intention** underlying a certain action **defines the particular action**. Bamberg and Rees (2015) suggested that the impact-oriented approach is necessary for understanding the structural barriers of large-impact behaviours (see also Nielsen et al., 2021). The intent-oriented approach, however, is more suitable for understanding people's motivations, for example, regarding energy citizenship.

What the authors don't mention is that an **intent-oriented approach might also be more suitable for concepts that highlight social justice and inclusivity**. Everyone can build motivation but not everyone can, for example, afford to put solar panels on one's roof or make time to volunteer for an energy community initiative. While an impact-oriented approach might find that structural factors constrain a behaviour, an intent-oriented approach focuses on psychological motivations apart from those constraints (Bamberg & Rees, 2015). In the context of a sustainable *and* just energy transition, it therefore seems appropriate to choose an intention-oriented approach to behaviour and focus on the motivation to take actions. This is another point where our definition diverges from previous empirical work (e.g., Stern et al., 1999), and aligns with former ideas that energy citizenship should be understood as a potential rather than a behaviour (see Tyler et al, 1986).

It is pivotal to take an **iterative perspective** when looking at the relationship of energy-related behaviour and the motivation to act as a part of one's energy citizenship. In the TPB, behaviour follows an action motivation (i.e., intention, Ajzen, 1985). Cognitive dissonance theory posits that if attitudes and behaviours are not in line, individuals experience an unpleasant feeling urging them to change either their attitude or their behaviour, in order to align them (again) (Festinger, 1957). Thus, cognitive dissonance theory implies that action motivation might also follow a behaviour (Festinger, 1957). For example, joining an energy community out of financial reasons might be accompanied by strengthened feelings of responsibility due to alignment of one's attitudes with one's behaviours, or due to social interactions in the energy community (see section 4.5). However, cognitive dissonance could also hinder energy citizenship. For example, a person without financial resources to contribute to the energy transition might not build strong motivation to act in order to avoid the unpleasant state of

cognitive dissonance. In our view, action motivation can concern both individual and collective action in the energy citizenship concept.

4.3.2 Motivation to act individually and collectively

Above, we highlighted that previous research diverged with regard to studies describing either a behavioural construct (only behaviour) or an attitude construct (belief, affect, behaviour). This dissimilarity can also be understood as a difference in level of complexity, with behaviour concepts being less complex and attitude concepts being more complex. Next to these contrasting conceptualizations, we found that studies differed on another level of complexity. While some studies described energy or environmental citizenship to entail individual consumption as well as collective action (more complex), other studies highlighted that only collective action would comprise the citizenship concept (less complex).

From a psychological perspective, **collective action** is defined as individuals' actions for a joint purpose that are based on their group membership (see Brunsting & Postmes, 2002; van Zomeren et al., 2008; see also Wright et al., 1990). Devine-Wright (2007) argued that while earlier understandings of citizenship mainly concentrated on collective action such as energy community membership (Reeve, 1996), later definitions highlighted the need to include individual consumption and ideas of the ecological footprint (Dobson, 2003; Barnett et al., 2005). In his characterization of energy citizenship, Devine-Wright (2007) emphasises that energy citizenship includes actions of both individuals and collectives. Hadjichambis et al. (2020) included the role of individual consumption directly into their definition of energy citizenship.

Again, their notion diverged from empirical psychological research around Stern et al.'s (1999) environmental citizenship concept. Stern et al. (1999) defined **environmental citizenship as an active form of non-activist public behaviour**, and presented examples such as "writing letters to political officials, joining and contributing funds to movement organisations, and reading movement literature" (p. 82), or signing a petition (Stern, 2000). For them, environmental citizenship contrasted to more passive policy acceptance, to riskier environmental activism, and private-sphere environmentalism such as individual energy consumption (see also Bain et al., 2012, 2013; Fernando et al., 2018; Lee et al., 2014). Thus, they focused primarily on collective action and clearly separated environmental citizenship from individual consumption. Their view aligns with other studies from environmental sciences stating that energy citizenship can be seen as active involvement, prosumerism, or even a social movement (Campos & Marín-González, 2020). Yet, there are also studies that drew on Stern et al.'s (1999) concept but included both collective action and individual consumption in their items to assess energy citizenship (Yeboah & Kaplowith, 2016).

Overall, previous research does not seem to clarify which collective and individual actions should be included in the energy citizenship concept (see Figure 7 for an overview of the two dimensions of complexity in previous research). We believe that **only a more complex individual as well as collective view on energy citizenship can foster a thorough understanding of human motivation for the energy transition**. Therein, individual consumption should be included because it reflects one potential strategy of engaging in the energy transition in current societies, based on one's beliefs about rights and responsibilities.

Yet, several studies showed that focussing merely on individual behaviour involves the risk to undermine pro-environmental policy support (Truelove et al., 2016; Noblet & McCoy, 2017; Werfel, 2017; but see Sharpe et al., 2021). Moreover, researchers highlight that energy citizenship needs to go beyond individual consumption if broad changes of the energy system are targeted (see Bourban, 2020; Devine-Wright, 2007; Bögel et al., 2021). Therefore, collective action would be the key ingredient of the energy citizenship concept.

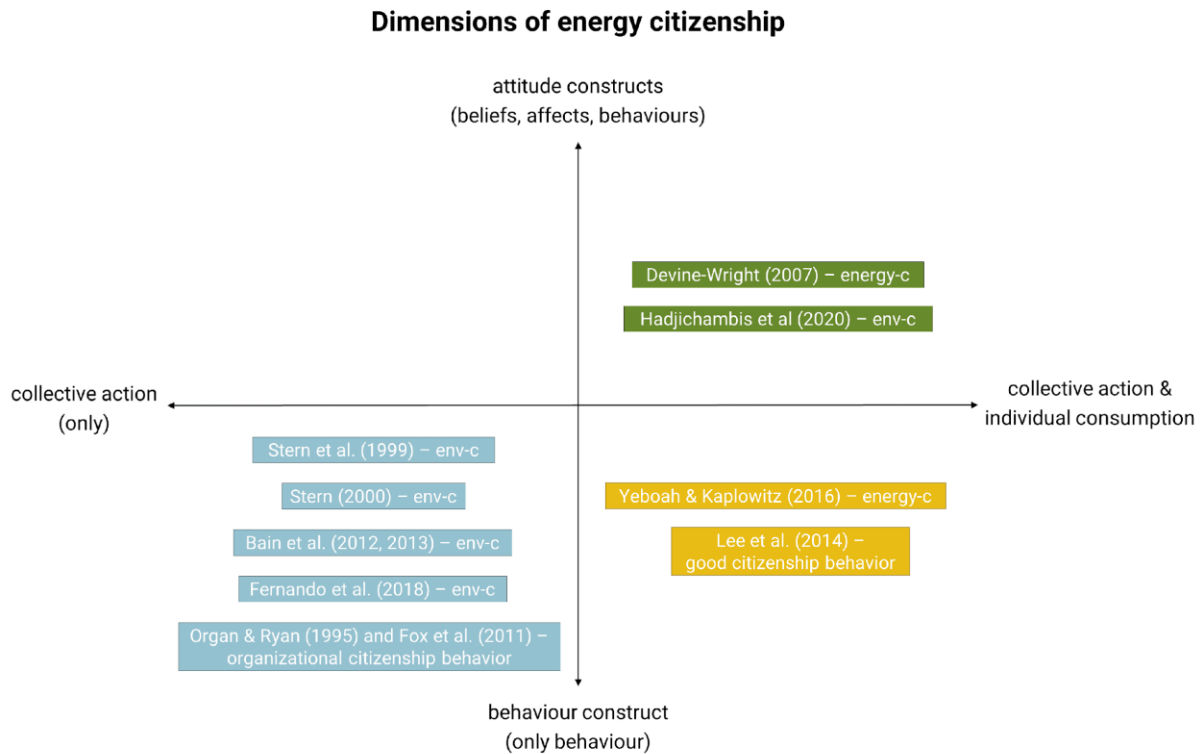


Figure 7. Psychological literature on energy citizenship and other related citizenship concepts organised along the lines of two levels of complexity: (1) behavioural vs. attitude construct, and (2) collective action vs. collective action plus individual consumption. Energy-c represents energy citizenship and env-c stands for environmental citizenship.

While Stern et al.'s (1999) definition explicitly distinguished environmental citizenship from activism, we think that both **active and passive forms of collective action would be part of energy citizenship**. Apart from individual consumption, the energy citizen concept would consider a plethora of collective actions such as voting, petitioning, writing to government officials, protesting, or joining energy community initiatives (Campos & Marín-González, 2020). From a theoretical perspective, protest action can be seen as an expression of one's beliefs, and should thus be included when talking about people's rights and responsibilities (Campos & Marín-González, 2020; Fernando et al., 2018). From an empirical perspective, studies have also shown that a distinction between public citizenship behaviours and environmental activism is not as clear cut as Stern et al. proposed (1999, e.g., Alisat & Riemer, 2015; Hamann et al., 2021). Public and activist behaviour tend to have a similar predictor structure (see Hamann & Reese, 2020; Hamann et al., 2021), and are typically not distinguished but integrated into one measure in collective action research (e.g., van Zomeren et al., 2008; Landmann & Rohmann, 2020; Sabherwal et al., 2021). Consequently, energy

citizenship needs to include the motivation for individual consumption and a diverse range of energy-related collective actions that are more or less difficult for individuals under specific structural circumstances.

It is important to note that, even though we might take an intent-oriented approach, people's beliefs and motivations to act are largely influenced by **structural factors** such as legal and economic structures. Thus, we distance ourselves from concepts such as "good citizenship behaviour" (Lee et al., 2014) that imply that it is the citizens' obligation to think, feel and act in line with what a specific government would refer to as normatively correct (see also Lennon et al., 2020). Rather, energy citizenship represents people's relation to the energy transition as beliefs and motivations that are based on their personal and social identities. TPB, NAM, and the VBN theory strongly focus on individual perspectives and tend to neglect the social context that people's actions are embedded in. It is a great potential of energy citizenship to include individual as well as collective aspects - not only regarding people's actions but also regarding their motivation.

4.4 Energy citizenship should consider individual and collective aspects of human motivation

We propose that energy citizenship from a psychological perspective is people's belief that they as individuals and as collectives have rights and responsibilities for a just and sustainable energy transition. This idea is rooted in a social identity perspective that could be very useful in building a bridge between psychology and associated transformation-oriented disciplines (Schulte et al., 2020). According to **social identity perspectives** (Tajfel & Turner, 1986), an action can be understood in terms of collective action (see section 4.3.2), and concepts of the individual self are extended by a social self (see Fritzsche et al., 2018; van Zomeren, 2014). A social identity is that part of an individual's self-concept that arises from their group memberships and its emotional valence (see also Tajfel, 1978, p. 63). Put simply, it is the human capacity to define the self as **"we" instead of "I"** (see Fritzsche et al., 2018; Tajfel & Turner, 1986). Social identity theory posits that people can flexibly shift between various social identities (see Brewer, 1991). According to Devine-Wright (2007) and Hadjichambis et al. (2020), energy citizenship can be conceptualised on a local, regional, national, and global level. With regard to their social identities, individuals' energy citizenship might be connected to their identification as a local citizen, a voter of a specific party, a consumer, an EU citizen, a global citizen, a member of a specific energy community, and many more (see McFarland, 2019; Sloat et al., 2019).

Specific social identities can be more central than others in the energy citizenship concept. A meta-analysis by Van Zomeren et al. (2008) revealed that identification with a social movement is associated more strongly with collective action than identification with a social category. In a recent meta-analysis, Vesely et al. (2021) found that identification with groups that are pro-environmental (but less so identification with groups that are not associated with specific environmental norms) predicts pro-environmental behaviour. In terms of energy citizenship, a social psychology approach would thus expect identification with a respective social ingroup pursuing norms and goals and acting in line with energy citizenship (e.g., through energy communities or movement engagement) to be of particular relevance for the motivation to act upon one's rights and responsibilities as energy citizens.

Indeed, previous research showed that people's involvement in **energy communities** (in terms of membership and identification) was positively associated with individual and collective action intentions to further a sustainable energy transition (Sloot et al., 2018; Jans, 2021). Other identities might be less connected, or only show strong relations if their specific context matches, for example, a strong **EU citizen identification** might be connected to energy citizenship beliefs, affects, and potential actions at the EU level.

A social **consumer identity** might even have adverse consequences for energy citizenship. In a framing experiment, cueing a consumer identity (e.g., by labelling a task "consumer reaction study" as compared to a "citizen reaction study") led to more self-enhancement values, and less responsibility and trust (Bauer et al., 2012). In a number of studies, materialistic cues such as cueing a consumer identity, were associated with less prosocial and pro-environmental action, as well as less well-being (Kasser, 2018; Dittmar et al., 2014; Moldes & Ku, 2020). These results lend support to the notion that a citizen-based approach to human motivation has a transformational potential that is undermined by deficit model cues of individuals portrayed as consumers (see Lennon et al., 2020). Depending on developments regarding people's rights and responsibilities in the energy transition, it might be that energy citizenship itself will become a relevant identity content in the future. While it can be currently seen as a kind of opinion-based identity that focuses on shared beliefs about rights and responsibilities, it might at some point become a social identity such as a specific energy citizenship movement (see Bliuc et al., 2007).

Linked to a social psychology perspective on social identities and collective action are a number of psychological processes and factors that might be important for the context of energy citizenship. The social identity model of pro-environmental behaviour (SIMPEA, Fritzsche et al., 2018) and the social identity model of collective action (SIMCA, van Zomeren et al., 2008; see also Agostini & van Zomeren, 2021) emphasise those factors. Next to social identity as a central determinant of behaviour, those models highlight **the role of appraisals, group-based motivations and emotions** (such as anger, guilt, being moved, or enthusiasm), moral convictions, ingroup norms and goals, and group-related efficacy beliefs (see also Landmann & Rohmann, 2020; Hamann et al., 2021). While we will not go into detail with all those facets, it is important to notice that they are all experienced through the lens of social groups, and might be connected to energy citizenship. For example, not only the belief that oneself can exercise energy citizenship, but also the perceived contribution that one can make as a citizen for an energy community project could foster action motivation. Not only one's personal values would lead to motivation for energy citizenship. People's motivation could also depend on the joint aims around sustainability and justice that are set at an EU level (e.g., a carbon emissions reduction of 55% by 2030) and the joint visions of a sustainable energy transition accompanying them (see European Commission, 2021a), and on moral outrage if those group aims are at risk, as expressed in the Fridays For Future movement (BBC, 2019). It is noteworthy, though, that a lot of these predictors have been tested in the context of protests, and not with respect to a person's perceived rights and responsibilities. Energy citizenship might therefore be driven by other factors such as intragroup processes in an energy community.

A social psychology view further offers perspectives into **relationships between individuals and governments** that might be of great importance when talking about energy citizenship. Factors such as political efficacy (Stenner-Day & Fischle, 1992; Sleeth-Keppler et al., 2015), trust (Valentino et al., 2009; Smith & Mayer, 2018), and opportunities for citizen participation (Zimmerman, 1990; Foster-Fishman et al., 2013) could be relevant for empowering people to take up a political energy citizen role. In an iterative process, governmental policies can in turn have positive effects on people's acceptance of sustainability measures (Poortinga et al., 2013; Islar & Busch, 2016; Walker et al., 2010).

All taken together, **energy citizenship can be viewed through the lens of many personal and social versions of the self**. With respect to societal transitions, a focus on the individual alone would be insufficient. Individual and collective motivations that are connected to personal and social identities need to be part of energy citizenship. Only then can an energy citizenship concept acknowledge that not only people's individual beliefs but their group-based beliefs constitute their beliefs and motivation as part of their energy citizenship. For example, a person might believe that they as an individual have some but only a limited amount of responsibility for an energy transition, but that they as a local community need to promote an energy transition out of their shared responsibility for future generations. A community member might be satisfied with their individual rights in the energy transition but believes that they as a community have the right to an unbureaucratic and voluntarily manageable setting up of an energy community. A psychological perspective solely focusing on individual beliefs would miss such relevant collective beliefs that form the basis of a just and sustainable energy transition. Therefore, people's belief that they as collectives have certain rights and responsibilities should be featured in the energy citizenship concept. The pertinent research on the factors which drive action motivation from individual energy consumption up to collective action in the energy transition indicates that individual and collective beliefs and motivations are crucial. It thus provides a solid basis for understanding energy citizenship. One of the most relevant identities in the context of energy citizenship might be the identification with an energy community.

4.5 The case of energy communities

Energy communities are one example in which many aspects of energy citizenship can be united. Other than previous elaborations on energy and environmental citizenship, energy community research offers a more coherent quantitative research body that psychological research on energy citizenship could build upon. In the following, we first define energy communities, and then present them as antecedent and consequence of energy citizenship.

4.5.1 Defining energy communities

Policy makers, scientists, and citizens are paying increasing attention to the potential of energy communities to be involved in, initiate, and run energy programs that promote a just and sustainable energy transition (IPCC, 2018; Middlemiss & Parrish, 2010). Energy communities are expected to play a significant role in the energy transformation, leading to a low-carbon, secure, affordable, and renewable energy system (Koirala et al., 2018; Lennon et al., 2020; Sloot et al., 2017, 2019). An increasing number of energy communities have been set up in recent years (e.g., Bauwens et al., 2015; Bailey et al., 2010; Magnani & Osti, 2016;

Middlemiss & Parrish, 2010; Seyfang & Smith, 2007; Seyfang & Haxeltine, 2012). For example, there are now over 1500 local renewable energy projects up and running in Europe, with more than one million members in total (REScoop.eu, 2019). They challenge a deficit model of people's part in a transition as the role of citizens is changing from consumer to prosumer (Inês et al., 2020).

Energy communities across the EU vary substantially (Hannoset et al., 2019; Tounquet et al., 2019), and to that end, there is still ambiguity about what the concept of energy community exactly entails (Walker, 2011; Walker & Devine-Wright, 2008). Yet, some key common characteristics stand out. Energy communities evolve around **environmental sustainability goals**. They are often initiated by community members aiming to promote more sustainable energy behaviours in their community (Igalla et al., 2019). In that sense, they differ from top-down energy governance, although external organisations, governmental bodies, and NGOs are also often involved (Bomberg & McEwen, 2012; Jans, 2021; Warboek et al., 2019). Energy communities are generally concerned with the generation or facilitation of sustainable energy and/or sustainable practises within a community (Bauwens, 2016; Seyfang et al., 2013; Walker & Devine-Wright, 2008). This entails, for example, energy saving programs, self-consumption and providing energy surplus to the grid, collective purchase of solar cells, and energy production via a local renewable energy project. Open and voluntary participation and effective control by citizens, local authorities and smaller businesses are typically at the heart of energy communities²⁴.

Next to environmental sustainability goals, many energy communities aim to contribute to **other (collective) benefits** for their communities and beyond (Hinshelwood, 2003; Rogers et al., 2008; Walker et al., 2007; Walker, 2011; Goedkoop, 2021). Such benefits may include contributing to local economic development (Rogers et al., 2012), local social cohesion (Bomberg & McEwen, 2012; Dóci & Vasileiadou, 2015; Hoffman & High-Pippert, 2010; Rogers et al., 2008; Seyfang et al., 2013), economic benefits (Boon & Dierperink, 2014; Kamin et al., 2002; Lizarralde et al., 2020), or enhancing resource independence (Seyfang et al., 2014; Seyfang & Haxeltine, 2012; Sokona et al., 2012). In addition, energy communities potentially have the ability to draw upon existing personal (trusted) relations between community members which can ensure that energy communities are developed in ways which are adjusted to local interests and needs (e.g., Walker et al., 2010).

Finally, research highlights the potential of energy communities to represent a shift towards more **equitable and democratic energy systems** (e.g., Hess, 2018, Delina, 2018, Burke & Stevens, 2017). As energy communities aim to benefit the environment, involvement in those communities can be conceptualised as a type of pro-environmental behaviour that is typically investigated in environmental psychology research (e.g., Kalkbrenner & Roosen, 2016; cf. Stern, 2000). Beyond this characteristic, though, they can have wider impacts. For example, they can promote inclusion by allowing more and different types of people to participate in

²⁴ As mentioned in earlier sections, the EU acknowledges Renewable Energy Communities (Art. 22 Dir. 2018/2001/EC; Renewable Energy Directive II) and Citizens Energy Communities (Art. 16 Dir. 2019/944; Electricity Market Directive). Both are defined as non-commercial types of market actors who may produce, consume, store, sell or distribute energy with the primary purpose to provide environmental, economic or (social) community benefit rather than financial profit.

energy transitions²⁵. Moreover, by allowing citizens to influence decisions that affect and benefit them directly, they contribute to a socially just energy transition. Figure 8 presents an overview of common characteristics of energy communities.

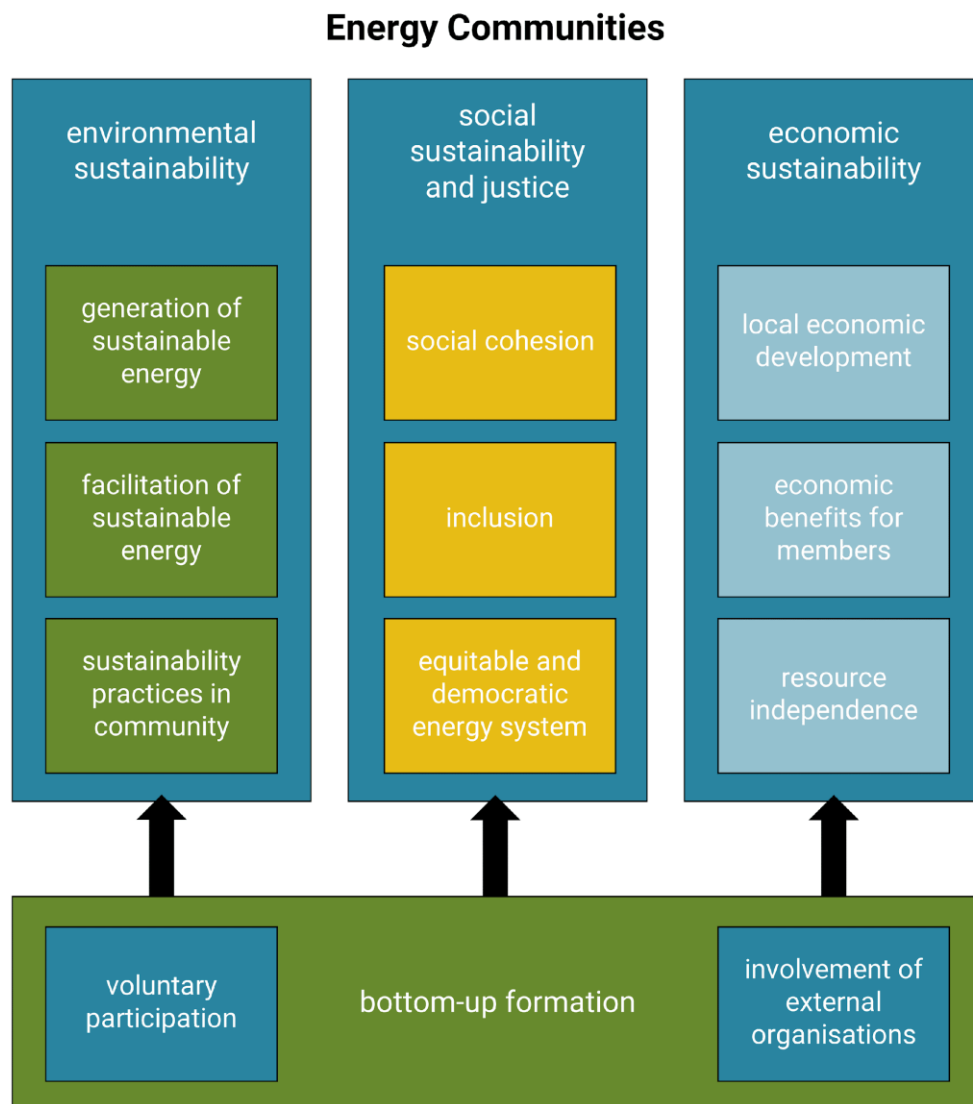


Figure 8. Overview of common characteristics of energy communities.

Energy communities potentially **unite a number of aspects of energy citizenship**. They are often founded out of people's perceived responsibility to promote environmental sustainability and social justice goals. Therein, they provide the opportunity to exercise one's perceived right to partake in the energy transition, and offer a more agentic role of individuals in the energy transition. In an energy community, rights and responsibilities are not only perceived and practised individually but also as a group, highlighting both individual and collective aspects

²⁵ We would like to acknowledge that more systematic evidence is needed with regard to the outcomes of energy communities. Energy communities could potentially also lead to negative unintended consequences such as exacerbated inequalities (Creamer et al., 2019), sometimes referred to as the "dark side" of energy communities.

of human motivation and behaviour. Nevertheless, a lot of people might have the motivation to act and to join an energy community as a sign of their energy citizenship, but cannot do so due to structural barriers. Psychological concepts such as perceived behavioural control from the TPB (Ajzen, 1985) help to get a grasp of those barriers.

From a psychological perspective, **energy communities can be viewed both as antecedent and consequence of energy citizenship**. It is a vital question whether and how energy communities can promote energy citizenship, and vice versa, as it prompts specific paths of a just and sustainable energy transition. In the following paragraphs, we expand on the idea that energy citizenship can potentially both strengthen involvement in energy communities, and be enhanced as a result of involvement in energy communities.

4.5.2 Energy citizenship as antecedent of involvement in energy communities

Taking part in energy communities can be a way for people to exercise their rights and responsibilities for a sustainable and just energy transition. Citizens with stronger beliefs and motivation regarding their energy citizenship may therefore be more likely to participate in energy communities than citizens without those beliefs and motivation. Energy communities might seem especially attractive to people actively searching for possibilities and spaces to develop and act upon a broad range of their prior individual and collective beliefs and motivations.

Previous research indeed has shown that **individual beliefs and motivations** regarding ecological sustainability are associated with joining an energy community. People with a stronger pro-environmental motivation are more likely to join an energy community (Hoffman & High-Pippert, 2010; Sloot et al., 2018, 2019). This motivation is rooted in people's environmental self-identity and strong biospheric, and therefore self-transcendent, values (e.g., van der Werff & Steg, 2016). Particularly, the extent to which people are interested in renewable energy related to the behaviours often targeted in energy communities (Sloot et al., 2018). However, this interest and motivation should not be mistaken for people's energy literacy.

Besides their individual beliefs and motivations, **people's collective motivations** encourage them to become part of an energy community. Energy citizenship as conceptualised in this paper explicitly includes beliefs and motivations that people have as individuals and as part of collectives, as well as individual and collective forms of action motivation. This conceptualization highlights the need for people to (be able to) contribute to broad changes within the energy system, going beyond mere individual consumption (see Bourban, 2020; Devine-Wright, 2007; Bögel et al., 2021). Energy communities provide the opportunity for collective action and collaboration towards achieving a common goal (Rees & Bamberg, 2014). People might be especially motivated to join energy communities if they feel responsible not only as an individual but as a community member. Indeed, research indicates that people are more likely to join energy communities if they have stronger collective motivations driven by a social community identity, contact with other community members, or the strong urge to contribute to the community (Goedkoop et al., 2022; Sloot et al., 2019). Motives related to community living represent a main category of motives for joining energy communities (Holstenkamp & Kahla, 2016; Kamin et al., 2020). Choosing a communal and

environmentally friendly way of life together with other members who share the same worldview is a central motive for joining energy communities.

Paths from energy citizenship to energy communities might take different forms. For some, the way to energy community membership may be based on an active and independent search for energy communities or membership encouragement by others. Alternatively, for some people, joining an energy community already results from belonging to a social unit that collectively decides to be part of the energy transformation (Kamin et al., 2020). Particularly for members of those self-established communities, collective motives play a prominent role. Here, the collective is already a highly relevant group for their members, thus increasing the importance of acting in line with perceived group goals and norms (e.g., Bouman & Steg, 2019; Jachimowicz, Hauser, O'Brien, Sherman, & Galinsky, 2018). Those examples highlight that energy citizenship, as indicated by individual and collective aspects of people's beliefs and motivations, can encourage involvement in energy communities.

4.5.3 Energy citizenship as a consequence of involvement in energy communities

By transforming their member's beliefs and motivations, energy communities could also potentially enhance energy citizenship within individuals. Research suggests that **those involved in energy communities generally behave more sustainably** with regard to several types of pro-environmental behaviours than people not involved in an energy community (Middlemiss, 2011; Sloot et al., 2018). This stronger overall commitment to sustainability might reflect a change of an energy community member's energy citizenship. Members may be motivated to act in line with the goals and motives of the energy community because they perceive these actions as effective, normal, or appropriate in a given situation, or because they want to avoid social sanctions from others. It is also possible that interaction in the energy communities raises their awareness about their individual and collective rights and responsibilities in the energy transition.

Kamin et al. (2020) interviewed members of energy communities. Most of their participants indicated that, after joining the energy community, they noticed gradual changes of their daily practises and an increase in their **general pro-environmental attitude**. Importantly, it seemed that energy communities became a relevant social identity for members, and that this internalised group membership promoted behaviours in line with this identity. Indeed, Sloot et al. (2018) found that members who identified more with their energy community were more willing to engage in a broad range of sustainable behaviours, on both individual and collective levels. Especially, the more energy communities are perceived as formed from the bottom-up by members of the community themselves, the more they seem to enhance the formation of a strong pro-environmental social identity (in terms of group norms and identification), and consequential behaviours (Jans, 2021). Drawing attention to such bottom-up formed energy communities can also foster the formation of pro-environmental social identities, norms, and behaviours among those not directly involved in the energy community (Jans, 2021). This way energy communities might also stimulate energy citizenship among non-members (and foster involvement in energy communities in turn).

Energy communities promote energy citizenship in individuals. They also provide a basis for increasing people's rights to a just and sustainable energy transition at the basis of energy

citizenship. In themselves, energy communities are argued to represent a shift towards more equitable and democratic energy systems (e.g., Hess, 2018; Delina, 2018; Burke & Stevens, 2017), reflecting notions of participatory democracy (Somerville, 2005). Access to economic, cultural, social and symbolic capital and internalised habitus are important preconditions for, and therefore potential barriers to, actively participating in an energy transition. Social energy communities hold great potential to bridge these factors, making them important catalysts for promoting energy citizenship: Energy communities create an opportunity to produce clean energy and deliver social benefits (e.g. Walker et al., 2007; Warren & McFadyen, 2010; Seyfang & Haxeltine, 2012). They also represent potential vehicles for citizens to exercise their decision-making power and voice in energy policy making, and demand their rights to a just and sustainable energy transition. Thereby, they contribute to developing, maintaining, and exercising one's energy citizenship. Yildiz et al. (2015) identified democracy motives, such as the desire to influence energy policy, as central for people's motivation to join German energy communities.

Building strong personal ties in energy communities and the experience of collective collaboration can lead members to feel collective power in achieving shared common goals. This is the basis for collective empowerment processes by which people gain a stronger sense of **personal and collective agency** as an energy citizen (Boon & Dierperink, 2014; Kamin et al., 2020). Depending on their specific goals, their interactions, and numerous other factors, energy communities can promote energy citizenship among their members. For example, they create awareness of the rights and responsibilities and what a socially just energy transition entails. Questions remain how and when involvement in, and observation of, energy communities results in people perceiving themselves as part of sustainably minded and environmentally efficacious communities, which in turn could trigger changes in energy citizenship beliefs and action motivation. Vice versa, it is to be investigated in which ways and under which circumstances people's energy citizenship leads them to become active members of energy communities.

4.6 Summary of psychological perspective on energy citizenship

Taken together, in this psychological perspective on energy citizenship, we reasoned why energy citizenship should be psychologically conceptualised as people's belief that they as individuals and as collectives have rights and responsibilities for a just and sustainable energy transition, and motivation to act upon those rights and responsibilities. Moreover, we illustrated how energy communities are central to energy citizenship, and how they can help understand people's beliefs and motivations for such a transition. Our concept of energy citizenship combines previous ideas by Devine-Wright (2007) with further elaborations of psychological theories, and translates them into a viable construct for empirical psychological work that is suitable for a just and sustainable transition. It therefore paves the way for systematic qualitative and quantitative psychological research on the topic of energy citizenship.

5 Commonalities and differences between the three perspectives

In the following paragraph, we describe where the above mentioned disciplinary perspectives share commonalities, what their differences are, and how they can build on and learn from one another (see Figure 9). An integration of disciplinary ideas will advance an interdisciplinary understanding and discourse of energy citizenship that can iteratively influence the included scientific fields, scientific disciplines beyond these fields, and practical discussions. Despite their diverging research traditions, we found a number of commonalities between the legal, economic, and psychological perspective.

Commonalities and differences

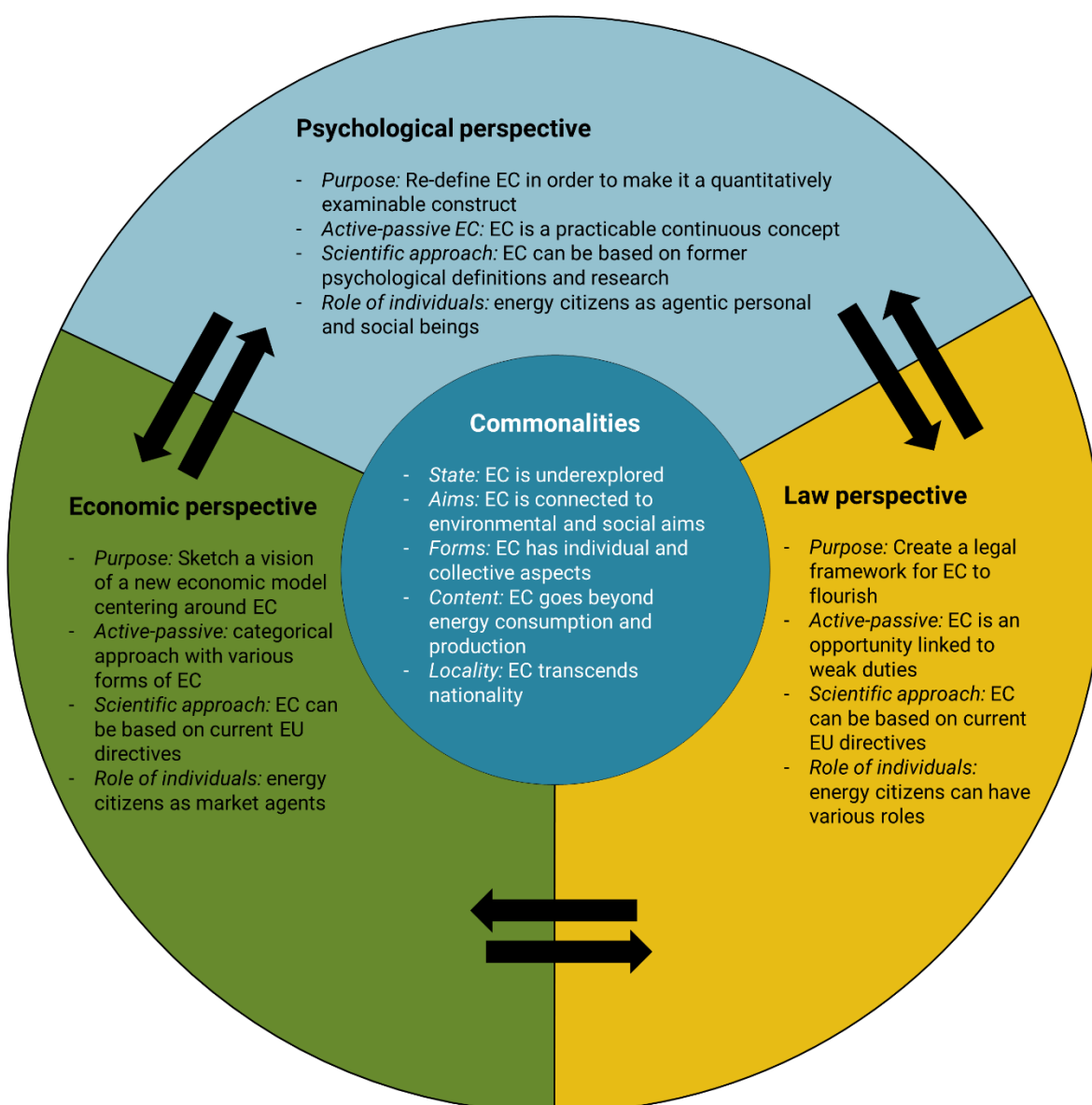


Figure 9. Commonalities and differences between a psychological, economic, and legal perspective on energy citizenship. Commonalities are portrayed at the centre. Differences are portrayed underneath the respective perspectives. Arrows represent potential learning opportunities between disciplines. EC = energy citizenship.

5.1 Commonalities between disciplinary perspectives

First and foremost, we observed a trend to energy citizenship concepts (e.g., in the European Union) that is **not yet captured in any of our disciplines**. The definition by Devine-Wright (2007) offered a starting point for discussion. However, it was not completely transferable to any of our disciplines. In a legal sense, energy is not part of classic or traditional concepts of citizenship, which makes it necessary to argue why this has changed and how energy can form part of citizenship. From an economic perspective, the definition could not easily be transferred yet to the market level as it is incongruent with the mainstream neoliberal economic model (e.g., producer-consumer role). From a psychological perspective, the definition in turn was so rich of ideas that it seemed too broad for a quantifiable psychological construct. As a result, energy citizenship has been underexplored in these disciplines. In the course of WP2, all three disciplines underwent a similar working process by employing our self-generated interdisciplinary definition, dealing with all aspects of the definition (e.g., rights and responsibilities), and deriving a number of disciplinary questions from this definition.

Second, all disciplines suggest that energy citizenship is driven by **environmental and social goals**. An individual was not viewed as a homo economicus that acts in their own best interest, but as a social being pursuing societal goals, such as preventing climate change and promoting an equal society. Energy was not only viewed as a commodity (consumer concept) but as a social necessity and resource (citizenship concept, see Stern & Aronson, 1984). Environmental and social concerns should therefore play an important role in the process of people exercising their energy citizenship. This idea is reflected in the republican approach according to which people have the public good in mind (legal perspective), collectivist and citizenship-based concepts of the energy transition (economic perspective), and perceived responsibility driven by ecological and social values (psychological perspective).

Third, all disciplines noticed that **individual as well as collective aspects** of energy citizenship have to be taken into account. Therein, energy citizenship links the individual to a group (e.g., EU, energy community, energy cooperative). From a legal and economic point of view, people can be both individual and collective prosumers that are either part or not part of a collective legal form. From a psychological perspective, energy citizenship could be associated with individual factors (e.g., perceived responsibility as an individual) as well as group factors (e.g., identification with one's community). Thereby, energy Citizenship is connected to numerous individual and collective identities that form decisions around one's commitment for a just and sustainable energy transition. In addition, all three research approaches viewed energy citizenship as *not being limited to nationality*. The legal part argued that, relying on the multifunctional nature of EU citizenship, energy citizenship within the EU is not connected to nationality. From a psychological viewpoint, national identity is not the only and potentially not the most relevant predictor of people's motivations and actions (Vesely et al., 2021).

Fourth, we found several characteristics of energy citizenship that represent a common ground of the law, economic, and psychological disciplines. All disciplines argued for an understanding of energy citizenship that goes **beyond consumption and production of energy** by showing the variety of forms that energy citizenship can take. From a legal perspective, energy citizenship could be seen as containing a right that everyone has, independent of their connection to energy consumption or production. Economics and psychology took a closer

look at more active forms of energy citizenship, yet, this was also not bound to energy consumption and production. From an economic stance, energy citizenship can include various forms from material engagement (e.g., production and consumption) to non-material engagement (e.g., virtual, alternative models, services, energy as a means of exchange). From a psychological point of view, for example, joining a protest that supports the energy transition could be regarded as an act of energy citizenship, even though it does not include energy consumption or production.

Fifth, we registered certain similar underlying assumptions on how societal change comes about. It was assumed that a just and sustainable energy transition does not naturally emerge, but that it has to be disruptive and be supported against more rigid societal structures. The legal and economic perspective suggested that beneficial economic and legal frameworks of action had to be created in order for citizens' empowerment to take place. Psychology assumed that people had to be motivated in order to foster a just and sustainable energy transition. It is noteworthy that energy communities were key to understanding energy citizenship in all disciplines.

In sum, all considered disciplines highlighted that energy citizenship is still rather unexplored. They agree that energy citizenship is directly connected to the pursuit of social and environmental goals, and should take individuals as well as collectives into account. Further, energy citizenship needs to go beyond energy consumption, energy production, and nationality. In our interdisciplinary view, energy communities are central to energy citizenship, in that they serve as a starting point for understanding what energy citizenship is, what it could be, and for investigating how energy citizenship is presently exercised (see WP3 and WP4).

5.2 Differences between disciplinary perspectives, and development opportunities

Despite their commonalities that partially arose as a consequence of interdisciplinary debate, a number of differences between legal, economic, and psychological perspectives on energy citizenship remain. We did not attempt to resolve them but aimed to use these differences as a basis for further developing all disciplinary perspectives. A most obvious difference in our approaches were the **different purposes** behind the disciplinary sections. The purpose of the legal part was to introduce energy citizenship as a legal concept, investigate whether a general commitment was laid down in legal norms, and determine specific possibilities to act as energy citizens under the EU's legal framework for energy communities according to the IMED and the RED directive. The economic part elaborated on energy citizenship as a concept introducing a vision of a new economic model that goes beyond a neoliberal consumer model. The psychological part aimed at re-conceptualizing energy citizenship, so that it would be empirically examinable in psychological research – as a basis for investigating and fostering energy citizenship as well as the exercise of energy citizenship. As such, it might inform researchers from law and economics about how to translate energy citizenship into beliefs, attitudes, and actions, and what then motivates people to exercise energy citizenship (see Task 2.4).

The **active-passive energy citizenship** concept emerged as another major difference. From a legal perspective, energy citizenship is a status that gives opportunities and is to some extent

also linked to duties. Thus, it might be interpreted as considering both passive and active forms of energy citizenship. Phrased differently, it does not depend on whether someone acts and makes use of their rights. Rather, energy citizenship could be seen as providing the individual with (enforceable) rights, which allow them to contribute to the energy transition. In turn, from an economic and psychological viewpoint, energy citizenship rather focuses on what can be empirically investigated at the present moment. At the same time, these approaches reveal trends about how energy citizenship could develop. From an economic perspective, a more categorical approach might be most suitable, distinguishing between legal forms, informal forms, and action-specific forms of energy citizenship. Recognition of new forms and business models of citizens' cooperation and covering them with legal and economic support will make it possible to strengthen their position in relation to the actors already operating in the market. In a psychological view, energy citizenship could be conceptualised as a continuum from more passive to more active forms of commitment to exercising one's energy citizenship. For example, people can place more or less importance on their rights, feel more or less responsible for a just and sustainable energy transition, and be more or less willing to make use of their rights and responsibilities. While energy citizenship needs to be introduced by law, economic and psychological perspectives show that citizens also have to get a meaningful, equal, and empowered position in relation to incumbent actors in the energy transition process, which they don't have yet.

As psychology shifts the focus to individuals and their actions, it might create the unintended impression that a large part of the responsibility for an energy transition lies in individuals. Thus, a psychological perspective would benefit from taking into account legal and economic perspectives on energy citizenship that specifically emphasise justice aspects. This view questions the assumption that people do not act because they lack motivation to do so. Rather, it acknowledges that numerous structural and economic barriers hinder individuals to become more actively involved in the energy transition. Viewing individuals as endowed with equal rights to energy citizenship as an ideal carries the potential to fundamentally change the way psychologists plan interventions (e.g., by strengthening a focus on energy poverty), interpret the magnitude of their results, and reflect upon their own unspoken assumptions in relation to the current economic paradigm.

The legal considerations are based on what has already been formulated in law. For the creation of legal possibilities of energy citizens in the future, the findings of economics and psychology (and other disciplines) are key: Knowledge on currently practised forms of energy communities and citizenship (possibly informed by economics) and current societal and political opinions and goals (possibly informed by psychology) can potentially validate existing and shape future laws. Moreover, psychological and economic perspectives might display whether a law works as intended (e.g., in specific marginalised groups). Thus, a legal perspective might make use of more active concepts of energy citizenship from further disciplines, for example, for criticising existing forms of citizenship with regard to economic conditions. Knowing about economic and psychological conditions will help improve laws such as the rights and obligations that form energy citizenship. In an iterative process, this legal ideal then again influences economic and psychological processes. For example, it determines which types of energy communities are recognized as such, and possibly receive financial support. Legal possibilities also shape people's actions and perceptions. For

example, laws in themselves represent social norms conveying what is socially acceptable and thereby influencing people's actions (see Eisner et al., 2020).

A further difference between perspectives was the **scientific approach** to energy citizenship. The economic and legal perspectives built on current EU directives. The psychological perspective drew on pre-existing research connected to energy citizenship, environmental citizenship, and energy communities. While energy communities were central to all approaches, the legal and economic perspective used them as a starting point, whereas the psychological perspective used a different starting point to present energy communities as entities where all qualities of energy citizenship can potentially concur (notably, the justice aspect of energy citizenship might not be represented in all these communities). On the one hand, an attempt to link psychological theorising to EU directives might be a promising endeavour, so that a psychological perspective on energy citizenship becomes more relevant to law, economics, and practice. On the other hand, psychological perspectives that apply broader definitions of energy communities than current EU directives might enable the study of further forms and configurations of energy communities (e.g., informal energy communities).

Lastly, one might notice that the **role of the individual** differed between disciplines, and therefore also the role of the individual as energy citizen varied. According to the legal perspective, energy citizens can have different roles depending on whether they exercise energy citizenship as part of an energy community or in other forms. An economic perspective viewed energy citizens as new kinds of market agents in a new economic model. If a new economic model would enter governmental visions of society, it could possibly influence future laws (legal perspective) and people's commitment to the energy transition (psychological perspective). Moreover, according to economic perspectives individuals are one among many market actors. Context-specific boundary conditions to individual action are revealed by the legal (e.g., incentives and punishment) and the economic perspective (e.g., level of income), and need to be considered in a psychological perspective. At large, legal and economic perspectives focused on energy citizenship as a concept outside of individuals. The psychological part described energy citizens as agentic social beings with beliefs and motivations, and thereby focused on energy citizenship within the individual. Behavioural economics might represent a point where economic and psychological concepts to energy citizenship meet. All in all, the purpose, breadth, theoretical approach, and role of individuals in a transition differs between our economic, legal, and psychological discipline. We view these differences as a chance for further developing all three fields.

6 A transdisciplinary perspective on energy citizenship

In order to receive feedback on our interdisciplinary definition from a diverse audience, we conducted three co-creation workshops in December 2021 that took place in Wrocław (Poland), Graz (Austria) and Leipzig (Germany) (Task 2.3). They included 28 participants in total. Two co-creation workshops in Graz and Leipzig were moved online in order to adapt to the Covid-19 regulations of that time. The workshop in Wrocław took place in person. Participants had diverse backgrounds. Overall, 11 were practitioners (e.g., from energy communities), 5 participants were connected to the area of policy, 5 were scientists, 3 represented business and industry, and 12 stated that they participated as citizens or citizen representatives (multiple choice was possible). On average, participants in Wrocław and Graz were relatively new to the topic of the energy transition, while participants in Leipzig had been engaged in this field for many years.

The co-creation workshop contained a number of tasks: getting to know EC², acquainting yourself with the group, gathering associations with energy citizenship, prototyping energy citizens, validating our interdisciplinary definition of energy citizenship, brainstorming barriers and chances for energy citizenship, and feedback on the co-creation workshop. We now describe the most prominent findings that are of interest for this deliverable.

6.1 Summary of co-creation workshops

6.1.1 Prototypical energy citizens

Prototypes of energy citizens were typically separated into (at least) two categories: prototypes of current energy citizens and prototypes of ideal energy citizens. Participants stated that in their perception, energy citizens nowadays are typically people with money, time, technological interest, and of male gender. Moreover, they are not only interested in environmental aspects but also in economic benefits. However, some participants also sketched the image of young pioneers of the energy transition as energy citizens.

Similar to these pioneers was the image of ideal energy citizens. These energy citizens are marked by consciousness, awareness, perceived responsibility, and openness to change. They are interested in (learning about) energy-related issues, and are well-educated in order to understand the complexity of the energy transition. Moreover, they are able to change their own behaviour and encourage others to join. Their most prominent feature is their activeness. Ideal energy citizens actively participate in the energy transition privately (through sustainable energy use), socially (in energy communities), economically (in the energy market), and politically (in decision-making processes). While in some workshops, energy citizens were portrayed as prosocial, with a sense of community and cooperation, in other workshops they were rather characterised by their self-determination. One group drew a picture that “by the year 2030, everyone should be an energy citizen, no matter what social class you come from, or what gender you are, because it is the only logical thing to do”.

6.1.2 Revising our interdisciplinary definition

Building on these prototypes, participants were confronted with our interdisciplinary definition of energy citizenship as “people’s rights to and responsibilities for a just and sustainable energy transition.” A number of workshop participants felt like the definition is complete.

Especially the focus on rights and responsibilities, as well as justice and equality aspects were positively highlighted.

Other participants indicated that they felt something was lacking in our definition, or that it had to be revised in a specific way. In line with their prototyping, participants suggested adding an **active notion** to the definition, for example, willingness to act or active participation. Moreover, they mentioned that a **decentralisation** of the energy market and a bottom-up transition should be more central in the definition. Some participants' take on energy citizenship described a **co-responsible relationship** between citizens and the authorities, in which municipalities and communities are obliged to participate in the energy transition and support people in joining. In turn, people are willing to actively participate in a conscious fashion. Further, the term sustainability was critically discussed in a number of workshops as possibly being too broad, and participants noted that the definition did not reveal specific improvements of the current situation.

Next to content-specific remarks, participants noted that the definition does not separate its method from its goal, was possibly not comprehensible for the general public, and seemed somewhat artificial. In all countries, issues with the term "energy citizenship" were mentioned. In Poland, the citizenship concept clashes with a sceptical approach hence individuals rely little trust in government. The lack of agency and empowerment leads to less engagement in civic activities. In German, there is no word for "energy citizenship", and it might be important to find a German equivalent or establish the English term in the German language. While some participants used the terms energy citizenship and energy citizens interchangeably, others stated that they felt confused by the two terms and would like to have clarity on their relation.

For means of intelligibility, we now present three definitions of energy citizenship that were the result of (single) participants' elaborations: "The energy citizen accepts the rights, privileges and obligations of a just and sustainable energy transformation and takes responsibility for this transformation." (Wrocław), "Energy citizenship means dealing responsibly with energy and taking care of its production and use in the sense of a responsible citizenry that takes into account the consequences of its actions in a globally just way. It is a prerequisite. Currently, the hurdles are high, because energy supply is organised non-transparently. All people have the right and the responsibility to be energy citizens, and political hurdles should therefore be lowered." (Leipzig), and "Energy citizenship describes the opportunity for active, direct, and self-determined participation in the energy market, with the goal of achieving a just and sustainable energy transition." (Graz).

6.1.3 Barriers and facilitators

In the last part of the co-creation workshops, participants brainstormed factors that pose barriers and facilitators to energy citizenship. Among them were **legal and political factors** (clear rights and obligations, opportunities to participate, tax system, legal restrictions, level of democracy, (non-)caring authorities, change in infrastructure, legal and political complexity), **economic factors** (funds, costs, access to new technology, energy poverty, the centralised energy market, new job market, landlord-tenant relationship), and **psychological factors** (problem awareness, fear, perceived responsibility, intrinsic motivation, efficacy beliefs, trust, (dis)information, convenience). In all co-creation workshops, the possibility of

creating energy communities was mentioned, as it is linked to all of the abovementioned factors.

6.2 A practical definition of energy citizenship

In this section, we will present a practical and transdisciplinary definition of energy citizenship. Similar to our previous legal, economic, and psychological sections, this definition builds on our interdisciplinary definition, and includes findings of the co-creation workshops, and discussions with practice partners of EC². Other than the interdisciplinary definition, this practical definition has more practically-oriented criteria: It should be understandable for the general public, relatable, and motivating to actively participate in the energy transition. From a practical perspective, we therefore define energy citizenship the following way:

Energy citizenship describes people's opportunity and willingness for active participation in the energy transition, with the goal of achieving a decentralised, equitable, and regenerative energy system. Energy citizenship is characterised by a co-responsibility between governmental authorities and people. Authorities are responsible for creating structural opportunities and decreasing barriers, particularly for marginalised groups, in order to empower people to become active. People are seen as active agents that create the foundation for, participate in, and sustain a regenerative energy system.

Accordingly, energy citizens are people that have the opportunity and willingness for active participation in the energy transition, with the goal of achieving a decentralised, equitable, and regenerative energy system. This practical definition builds on our interdisciplinary definition, and relates to legal, economic, and psychological perspectives on energy citizenship. Opportunities and willingness to act reflect notions of rights and assuming one's responsibility, as central parts of our interdisciplinary definition. An equitable and regenerative energy system could be seen as the ideal outcome of a just and sustainable energy transition. Similar to our interdisciplinary definition, a practical definition highlights that it is not only (national) citizens but a broader range of people that energy citizenship is linked to. A legal perspective clarifies rights and responsibilities connected to energy citizenship (liberal approach), and considers willingness to actively participate in it (republican approach). It informs us in which ways authorities are responsible to provide people with rights for a just and sustainable energy transition. An economic perspective shows how energy citizenship includes a prosocial and proactive view of people that contests ideas of the homo economicus. It highlights people's equal rights to private, economic, and political participation in the energy transition. The economic perspective thereby informs us how structural opportunities could look like that foster a citizen-based and refrain from a neoliberal market approach. A psychological perspective emphasises people's perception of their rights and responsibilities as a precondition for motivation and action. This perspective informs us how people can become active agents in the energy transition. Figure 10 gives an overview of how energy citizenship can be viewed as a co-responsibility process in the interplay of legal, economic, psychological, and practical considerations.

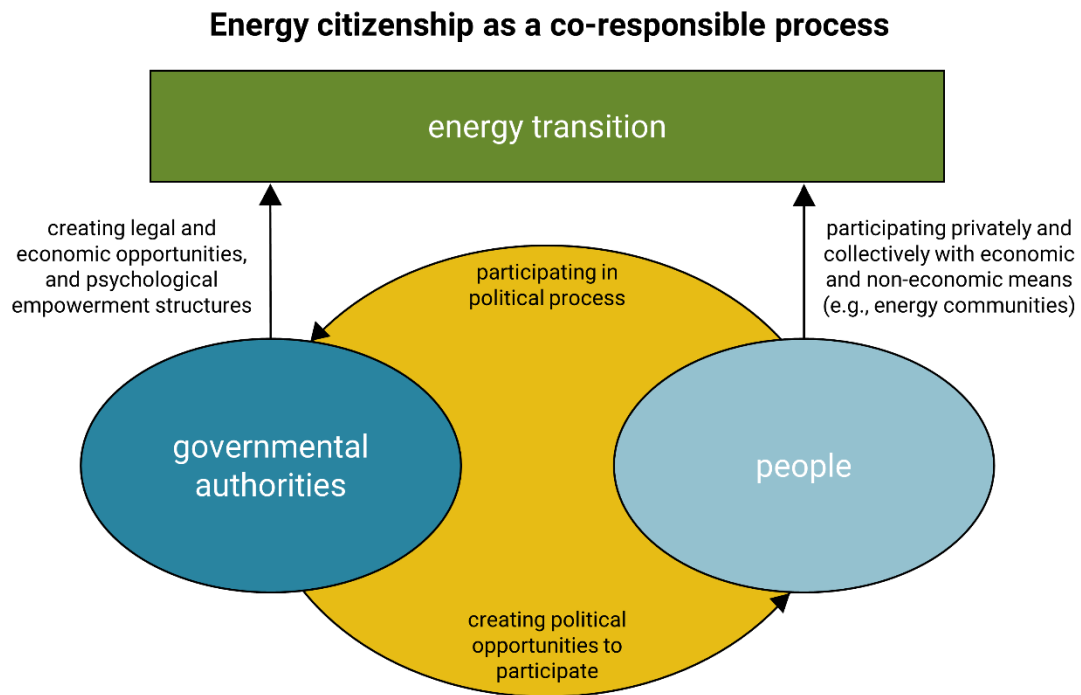


Figure 10. Energy citizenship as a co-responsible process of governmental authorities and people.

7 Conclusion & next steps

In this deliverable, we presented an interdisciplinary definition of energy citizenship as “people’s rights to and responsibilities for a just and sustainable energy transition”. This definition was the product of regular discussions between scientists from the areas of law, economics, and psychology. Simultaneously, scientists from all three fields elaborated on the notion of energy citizenship from their specific perspective. From a legal perspective, energy citizenship consists of energy-related rights and duties, depending on the respective legal system. Energy citizenship according to the legal definition does not force citizens to get active, but rather gives citizens opportunities to act. Taking an economic approach, for energy citizenship to thrive, it requires a new economic model enabling citizens to co-create the inclusive sustainable energy transition. Energy citizenship demands relinquishing the concept of homo economicus and embracing a more holistic idea of an energy citizen for whom energy is not one of the many products that is subject to the laws of supply and demand, but is treated as a social necessity and natural resource. WP3 will use the legal and economic perspectives on energy citizenship to uncover legal and economic barriers and facilitators of energy citizenship and energy communities. From a psychological perspective, energy citizenship can be defined as people's belief that they as individuals and as collectives have rights and responsibilities for a just and sustainable energy transition, and their motivation to act upon those rights and responsibilities. It is a multifaceted concept highlighting individual as well as collective aspects of human motivation. The energy citizenship scale (Task 2.4) builds on the interdisciplinary and psychological definition of energy citizenship, and has already used it for means of item generation. In WP4, psychological studies will be conducted that tap into individual and collective predictors of energy citizenship, and active engagement in the energy transition.

In a next part, we then considered commonalities and differences between our perspectives and approaches that create learning opportunities, and drew a thorough picture of how energy citizenship can be conceptualised in an interdisciplinary setting. This discussion is highly relevant for the interdisciplinary discourse that marks the following work packages of EC². In the last part, we described the results of three co-creation workshops with diverse stakeholders, in which our interdisciplinary definition was discussed and validated. Next to thoughts on our interdisciplinary definition, the co-creation workshops offered first insights into legal, economic, and psychological barriers and facilitators of energy citizenship (see WP 3 and 4). Finally, we presented a practical definition of energy citizenship that is understandable, relatable, and motivating: Energy citizenship describes people’s opportunity and willingness for active participation in the energy transition, with the goal of achieving a decentralised, equitable, and regenerative energy system. Central to this practical definition is a co-responsibility of governmental authorities and people for energy citizenship to develop and thrive. Such a co-responsible process would be based on new frameworks in law, economics, and psychology that we sketched and elaborated in this deliverable, and will continue to refine in the course of EC².

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9 Appendix

9.1 The theory of planned behaviour, the norm activation model, and the value-belief-norm theory

In this appendix, we give an overview of two often applied lines of theory regarding environmentally-related behaviour – one is based in the theory of planned behaviour (TPB, Ajzen, 1985), the other one started with the norm activation model (NAM, Schwartz, 1977). According to the theory of planned behaviour (TPB; Ajzen, 1985, 2012), behaviour is predominantly determined by behaviour intention which is based on attitude, subjective norm and perceived behaviour control. The attitude toward a specific behaviour represents beliefs about the probabilities for consequences of a behaviour multiplied by the subjective value of this consequence. Subjective norms include normative beliefs by relevant others regarding a certain behaviour weighted by the individual's motivation to comply with them. Perceived behavioural control refers to peoples' belief that one can perform a certain behaviour if one wants to do so and therefore encompasses beliefs about resources and obstacles that can facilitate or hinder performance. It is similar to Bandura's conception of self-efficacy (Bandura, 1997).

All three factors - attitude, subjective norm, and perceived behavioural control - are related to each other and, if accessible, they lead to the formation of a behavioural intention. Even though Ajzen (1985) specified perceived behavioural control to moderate the relation between attitude/subjective norm and intention (Ajzen 1985; Bosnjak et al., 2020), in many empirical studies all three are treated as predictors (e.g., Clement et al., 2014). Both intention and perceived behavioural control are then guiding the behaviour. There is strong empirical evidence supporting the TPB in many different domains (Bosnjak et al., 2020; Bamberg & Möser, 2007).

Many studies indicate that TPB constructs are also effective predictors of energy-related behaviour (Clement et al., 2014; Ajzen et al., 2011; Harland et al., 1999; Abrahamse et al., 2009). For example, Clement et al. (2014) looked at four different energy conserving behaviours, namely temperature regulation, other household energy conservation, reducing gas consumption, and driving a fuel-efficient car. They found that each TPB construct predicted at least one of the energy conserving behaviours, while perceived behavioural control predicted all four of them. In another study, the attitude toward the target behaviour "conserving energy" was the best predictor of intentions to save energy, whereas intention best predicted current or past energy-saving behaviour (Ajzen et al., 2011). Overall, studies testing TPB within the energy sector seem to indicate that perceived behavioural control and attitudes are the most consistent predictors of behaviour intentions which in turn predict behaviour.

In comparison with TPB, the norm activation model (NAM; Schwartz, 1977) is more suitable for studying morally charged behaviour. The NAM was originally developed to explain prosocial behaviour, but later on it inspired the value-beliefs-norm theory (VBN; Stern, 2000; Stern et al., 1999), which focuses on environmental behaviour. Both theories could be generalised to other behaviour, but in comparison to TPB, they are more suited to morally charged behaviour such as engaging in energy citizenship. In both theories behaviour is

predicted by personal norms, which is a feeling of moral obligation to behave in a certain way. In the norm activation model, four situational factors (awareness of need, ascription of responsibility, efficacy, ability) and two personality traits (general awareness of consequences, denial of responsibility) determine the activation of personal norm. However, during the development of the theory, the situational factors received much more attention than the personality traits (Harland et al., 2007). Furthermore, the label of the factors could vary between studies and the factors are sometimes loosely defined or combined (Steg & de Groot, 2010). For example, the perception that one is responsible to take action (ascription of responsibility) is mixed with the belief that one's action can actually achieve its aim (efficacy). In addition, the causal relation between the factors is still open to some debate. Some researchers describe a sequential mediation model, in which awareness of need leads to ascription of responsibility and efficacy consideration, which in turn activates personal norm (Steg & de Groot, 2010), whereas others describe an independent influence of the factors (Harland et al., 2007; Klöckner, 2013).

The assumption of a sequential mediation model is also the structure of the factors in the VBN theory (Stern, 2000). In this theory, ascription of responsibility (similar to efficacy and ability in NAM) and awareness of adverse consequences (similar to awareness of needs in NAM) are determining personal norms. They themselves are influenced by more general beliefs (about the human impact on the environment and climate change like in the New Environmental Paradigm, Dunlap & van Liere, 1978), and, as the most distal factor in this causal chain, by peoples' general values. Values, as they are described by Schwartz (1992), constitute people's beliefs, refer to desirable goals and motivate action, but transcend specific situations and behaviour. Schwartz's universal value system distinguishes ten values that vary on the two orthogonal axes: self-enhancement to self-transcendence and openness-to-change to conservation. Within VBN, hedonistic, egoistic and altruistic values appear most crucial, and a new type of value was added: biospheric values.

Taken together, both NAM and VBN conceptualise personal norms as the most central predictor of environmental behaviour. This is supported by numerous empirical studies (Van der Werff & Steg, 2015; Zhang et al., 2013; Harland et al., 2007). For example, Van der Werff and Steg (2015) showed that the norm activation model is effective in the prediction of energy behaviours in various domains, specifically transport, food and energy use in the house which represent direct as well as indirect energy consumption behaviours. They showed that higher awareness of environmental problems caused by energy consumption (awareness of consequences) strengthened the extent to which people think they can reduce these problems by changing their behaviour (outcome efficacy). Further, the more people felt they could reduce these problems, the stronger their feelings of moral obligation to save energy (personal norm). Finally, moral obligation predicted the intention to save energy, as well as different energy behaviours like showering time, energy-efficient driving and meat consumption (Van der Werff & Steg, 2015). Thus, personal norms predict behaviour and specific perception of or beliefs about the situation and actions activate this norm, whereas more general beliefs, values and personality traits have a more distal influence.

9.2 References Appendix

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