ENCLUDE
Energy Citizens for Inclusive Decarbonization

WP2 – Characterizing and conceptualizing both individual and collective expressions of energy citizenship

D2.2 Typology of Energy Citizenship(s)

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Preface

The overall vision of ENCLUDE is to help the EU to fulfil its promise of a just and inclusive decarbonisation pathway through sharing and co-creating new knowledge and practices that maximise the number and diversity of citizens who are willing and are able to contribute to the energy transition. Motivated by achieving an equitable and sustainable future and the fulfilment of individual potential, ENCLUDE will contribute to the upcoming transformation of energy use by: (1) Assembling, aligning, and adapting disparate energy citizenship concepts for diverse communities of citizens and for different scales of policy making, lowering the barrier for action. (2) Operationalising the energy citizenship concept at all scales of policy making for decarbonisation. (3) Catalysing a chain reaction of decarbonisation actions across the EU.

1. Changes with respect to the DoA

The preparation of this report took longer than originally envisaged due to a combination of issues. The effort required to identify and recruit the participants engaged during the study was substantially more than expected, this resulted in delays in the work. While the reasons for the need for addition effort are not quite clear there does seem to be an element of research fatigue amongst the focal groups. It is also the case that staffing issues within the research group leading this work had a significant impact of the realisation of the study. Difficulties in finding replacements for key members of the team led to further delays in the completion of the work.

2. Dissemination and uptake

This deliverable presents an analysis of citizen participation around energy and related expressions of energy citizenship. This the second of two reports on characterizing and (re)conceptualizing expressions of energy citizenship. The report contributes to the ongoing discourse on the place of the citizen in the energy domain[1] through its exploration of the concept of energy citizenship and the development of an energy citizenship. This report will be of interest to both researchers and practitioners interested in transforming the currently energy system (and its implications for the way we live our lives.

3. Short Summary of results

There are many existing and emerging modes of participation (including non-participation), which are manifested in multiple expressions of energy citizenship. Not all perspective on energy citizenship are equally supported by those with power. There is support amongst traditional energy system powerholders for certain expressions of energy citizenship. The more 'acceptable' expressions are those that do not threaten the status quo. Other expressions which challenge incumbents or government policy are not so welcomed, and indeed such energy citizens are often marginalised by the incumbent powerholders.

4. Evidence of accomplishment

This report serves as evidence of accomplishment.

[1] Including discourse within and between the sibling projects working on this particular call topic.

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Executive Summary

This deliverable comprises a typology of citizenship in the energy domain. It presents a scoping literature review on energy citizenship and related ideas. It includes a report on a comprehensive engagement of citizens, practitioners and experts through a mixed methods approach involving surveying, in-depth interviewing and asynchronous email interviews. A typology of energy citizenship is presented comprising four categories of 'access to energy', 'energy consumption', 'energy production', and 'politics and governance'. Fifteen expressions of energy citizenship were described, three under the first category, and four in each of the others. This report comprising the typology, the appreciation of an inclusive multifaceted energy citizenship that will underpin it, and the understanding of the different manifestations of citizenship around energy described in it will contribute to both understanding and mobilising the decarbonisation potential of the energy citizens. This report along with its companion report (D2.1) also contribute to the ongoing discourse (including with peer projects) on the role of citizenship in the energy transition and the meaning and value of energy citizenship.

Acronyms and abbreviations

CEC	Citizen Energy Communities
CEP	Clean Energy for All Europeans Package (Clean Energy Package)
DSR	Demand side response
IEMD	Internal Electricity Market Directive (EU) 2019/944
LNG	Liquefied Natural Gas
REC	Renewable Energy Communities
RED II	Revised Renewable Energy Directive (EU) 2018/2001
RES	Renewable Energy Source(s)
SEAI	Sustainable Energy Authority of Ireland
SME	Small and medium-sized enterprise
SSH	Social Sciences and Humanities
WHO	World Health Organization

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1 Introduction

1.1 Background

'ENCLUDE – Energy Citizens for an Inclusive Decarbonization' is a collaborative research project[2] funded under the Horizon 2020 programme. The project was developed in response to a call topic on energy citizenship which sought to harness the concept to achieve energy and decarbonisation goals in the European Union and associated countries. The project's research (like that of its sibling projects) is intended to achieve this through developing "*a better understanding of socio-economic, gender, socio-cultural, and socio-political factors, their interrelations with technological, regulatory, and investment aspects, yield practical recommendations for harnessing energy citizenship*" [3].

The transdisciplinary project coordinated by TU Delft is being delivered by a consortium comprising leading universities, research institutes, small and medium-sized enterprises (SMEs), and non-governmental organisations from a range of countries[4]. Cognisant of the fundamental importance of the human dimension, ENCLUDE is built on the premise that the role of citizens around energy and the energy system is key to the ongoing energy transition. This transdisciplinary project aims to contribute to achieving a just and inclusive decarbonisation pathway through co-creating and sharing knowledge and practices that maximise the number and diversity of citizens who are willing and able to contribute to the energy transition.

ENCLUDE aims to create a typology of energy citizenship applicable to diverse communities of citizens. It has done this by exploring real life case studies of people's relationship with energy, including but not limited to existing decarbonisation efforts such as renewable energy projects. Drawing from knowledge derived in such explorations insights about who is affected by (different conceptualisations of) energy citizenship and how they might affect decarbonisation pathways will be incorporated into agent-based models and integrated assessment models. In this way the project aims to operationalise energy citizenship at multiple scales of policy and decision-making.

The project has created the ENCLUDE Academy for Energy Citizen Leadership, an online program for leadership development and civic engagement for decarbonization. In the Academy newly developed knowledge about energy citizenship, opportunities for the energy transition, along with strategies for collaborative decision making and joint problem framing are shared with citizens and non-governmental organisations across the EU (and further afield). The aim is to help mobilise citizen actions for decarbonisation, including (and indeed importantly) amongst communities that normally do not, or are not able to, participate in such civic processes. In this way, the Academy aims to launch a bottom-up mobilisation of energy citizenship by training influential individuals that can help change energy behaviours and engage other citizens in the transition.

1.2 Context

This is the second of two deliverables produced in the context of Work Package (WP) 2 of the

[2] ENCLUDE project fact sheet on Cordis: https://doi.org/10.3030/101022791
[3] Extract from the Energy Citizenship theme of call topic LC-SC3-CC-1-2020 Social Sciences and Humanities (SSH) aspects of the Clean-Energy Transition.
[4] Austria, Belgium, Canada, Greece, France, Ireland, Netherlands, North Macedonia, Romania, Switzerland and the United Kingdom

ENCLUDE project. The aim of this WP is to characterise and conceptualise expressions of energy citizenship, at both individual and collective levels. In the preparation of these reports, our aim was to explore meanings and attributes attached to the concept in different contexts, capturing and characterising the diverse forms of energy citizenship emerging within the energy domain. While our geographic focus was Europe, other regions of interest were also considered. The WP has three principal objectives, namely to:

- Document varying conceptualizations of energy citizenship found in different contexts.
- Map patterns of (emerging) examples of citizenship participation found in Europe's energy domain.
- Develop a typology of energy citizenship which will connect the different ways in which citizens around energy.

This WP is divided into three tasks: T2.1 considers different conceptualizations of energy citizenship and seeks to map existing patterns of citizen participation and energy citizenship; T2.2 explore people's relationship with energy and attempts to understand their perspectives on energy 'citizenship'; and T2.3 comprises the development of a detailed typology of energy citizenship drawing together the results of the previous two tasks.

The work collectively undertaken in these tasks has been presented in two parts. The first part comprising D2.1[5] comprised a treatment of existing and emerging ideas of citizenship in the energy domain generally. Drawing from the work of T2.1 and T2.2, different modes of citizen participation around energy were characterised and connected expressions of energy citizenship conceptualised (or re-conceptualised).

This report aims to build on the work of D2.1, drawing from all three tasks in the WP to forward a typology of energy citizenship connecting the different ways in which citizens act in, or on, the energy system noting the socio-political structures that shape their action, and the discourses which act to (in)validate such actions.

1.3 Structure of the report

This report is divided into six sections as outlined below:

1 – *Introduction*, presents an overview, details the background to, and provides context for, the work undertaken, describing the aims and objectives and presents the structure of the document.

2 – *Methodology*, outlines both the research strategy and subsequent research methodology that has been designed for this package of work.

3 – *Energy citizenship: transformative practices or old sites of socialisation*, this systematic scoping review provides an analysis of the discourse around energy citizens in the literature.

[5] Dunphy, N. P., Lennon, B., Quinlivan, L., Revez, A., Brenner-Fließer, M. (2023). *Report on intersectional analysis of emerging examples of energy citizenship* (D2.1). A research report arising from the ENCLUDE Horizon 2020 project, grant agreement no. 101022791. https://doi.org/10.5281/zenodo.7598736

4 – *Engaging the energy citizenry* outlines the implementation of the engagement and provides an overview of results

5 – *Energy Citizenship(s): Expressions of citizenship in the energy domain* examines the very idea of citizenship in the energy domain. Building on the work presented in D2.1, it considers the energy citizen in its varied manifestations, and forward a typology of energy citizenship.

6 – Conclusions, summarises the key findings of the report and position them in relation to related ongoing work and to the work of the ENCLUDE project as a whole.

2 Methodology

Crotty (1998, p. 3) forwards a succinct definition of methodology as "the strategy, plan of action, process of design lying behind the choice and use of particular methods and linking the choice and use of methods to the desired outcomes."[6] Following this perspective, this section considers the philosophy of knowledge and the paradigm or world view (Kuhn, 1996; Creswell & Creswell, 2017) upon which the research undertaken in the preparation of this report is based[7].

2.1 Research philosophy

All research[8] is underpinned by certain assumptions: ontological assumptions, on the nature and structure of existence and reality (*i.e.,* what is there that can be known about); epistemological assumptions, on the nature of knowledge and obtaining understanding (*i.e.,* how does the inquirer relate to what can be known); and methodological assumptions (*i.e.,* how can the inquirer proceed with finding out what is thought to be knowable), that inform the framing and approach to gaining knowledge on a subject (Guba and Lincoln, 1995). The set of assumptions adopted by a researcher – whether explicitly or by default – establish a paradigm (Kuhn 1996), under which the research will be conducted. Indeed, the importance of considering ontological and epistemological issues at the starting point in a research process is often stressed (Johnson 2014).

The research presented in this report is the epitome of a social study, it is concerned with appreciating people's understandings, perceptions, attitudes and practices around energy and the energy system. We posit that such knowledge cannot be objectively determined[9], there is no 'one truth' – each person will have a different understanding of the truth. In this, we concur with

[6] We note than many researchers (particularly those who adopt a scientific method and who may not see the need for examining the philosophical basis of their research - for many it is inconceivable that there is another way of viewing the world) conflate the terms methodology and method. For instance, Moses and Knutsen (2012) observe that many researchers use methodology as a 'fancy' term for methods.

[7] Although as Fellows and Liu (2008, p. 67) observe '*Many people are prone to use the term methodology as equivalent to the scientific empirical approach*', the so-called scientific method (if indeed there can be said to one such approach) is only one potential research philosophy and is not always the best approach when exploring humans and the social world.

[8] Although unknown to many of its adherents, even the scientific method is based on multiple assumptions *i.e.,* that the world we observe is 'real', existing independently of our senses (objectivist ontology) and that it is capable of being objectively described and understood (positivist epistemology) (Hammond & Wellington, 2013).

[9] We acknowledge that positivist approaches are commonly applied to understand many aspects of the social world. Such perspectives can be usefully applied in many contexts; however, we suggest that its tendency to reduce "*qualities of human experience to quantifiable variables*" (Charmaz, 2003, p. 83) makes it inappropriate for this study.

Haraway's (1988) proposition that knowledge is partial and linked to the context of its creation. Indeed, nor can this knowledge be subjectively determined, as social interactions that act to create the space for peoples' understandings and perceptions to evolve through both competition and negotiation. Drawing on an anti-foundationalist ontology, we view the world as a social construction[10] that needs to be interpreted and adopt a social-constructivist epistemic view (Berger & Luckmann, 1966) for this study.

There is an inclination to associate specific methodologies with particular philosophical stances – *e.g.,* qualitative research is typically associated with constructionism (*e.g.,* Boeije, 2009), and quantitative research with positivism (*e.g.,* Pollack, 2007). Notwithstanding this tendency, it unquestionable that can have value across a range of philosophies (Saunders *et al*., 2009). Many of the research methods applied in energy transition and related research have traditionally been quantitative in nature. There is a growing (albeit arguably overdue) recognition of the value of qualitative methods in such work (Cohen 2021). As Denzin and Lincoln (2005, p. 10) observe the term 'qualitative' suggests an emphasis on the "*qualities of entities and on processes and meanings*" that are not derived from experimentation or quantifiable measurement[11]. In such studies, people's actions, words, gestures and other social interactions are the raw material for analysis. Quantitative research is based on testing of deductively derived hypotheses[12]. In contrast, qualitative research is generally more inductive, with theories being developed from the analysis and interpretation of collected descriptive data (Chambliss & Schutt, 2013).

2.2 Approach to research

Luker (2009, p. 9) suggests that "… the extent of information available has begun to overwhelm the human capacity to process it, radically separates those who teach from those who need to be taught, but not in the way you might expect." Information overload and the speed at which data is shared and diffused is a real threat in most fields of research; it undermines the rules and traditions on which we base our research methodologies (Luker, 2009; Andrejevic, 2013). In the face of this challenge social science research practices are evolving, and as such steps such as iteration and discovery become equally as relevant as more traditionally accepted research practices such as indexing and verification (Luker, 2009). Critically we must reframe our methodologies and assumptions that are grounded on information scarcity and knowledge deficits and advance a reflexive approach that embraces situated and emergent ways of knowing (Andrejevic, 2013). The research challenge we face therefore both for education and science policy is to offer timely and meaningful information in the context of 'super-abundance' (Kearney, 2002) and accelerated circulation of knowledge in a responsible manner (Skjølsvold & Coenen, 2021). The focus of our research on Energy Citizenship further enhances this challenge. Ringholm (2022, p. 5) points out that energy citizenship is likely to 'remain a practice in the making' and that 'allocating categories based on empirical observations is an exercise in hitting a moving target'.

Our methodological approach takes up this challenge and seeks to bring into dialogue key insights

[10] In such an anti-foundationalist ontology, social reality is seen as being subjective to the observer(s), and/or as being negotiated within groups.

[11] Lindlof (1995, p. 1822) describes the qualitative research as preserving the "*form and content of human behavior and to analyze its qualities, rather than subject it to mathematical or other formal transformations*".

[12] This type of research is associated with deductive approaches, developing hypotheses (tentative, testable explanations) "*… based on existing theory, and then designing a research strategy to test the hypothesis*" (Wilson 2010, 7).

from the literature with an appreciation of the human understandings, perceptions, attitudes, and practices around the energy system and indeed energy itself. To develop our typology of energy citizenship we employ a mixed-method design relying on qualitative and quantitative insights to produce a critical review of energy citizenship that hopefully can broaden and deepen our understanding of this concept within the wider energy transitions and climate crisis debates.

Our purpose is to look for ways to broaden and enhance our collective 'civic imagination' (Mullally *et al.,* 2022) by enhancing the tools and capacities needed to transpose existing concepts into new configurations and contexts. Emergence is a helpful notion to both consider potential new spaces of citizenship and public engagement with energy and overcome the problem of portraying and containing these concepts into more fixed definitions (Revez *et al.,* 2022). Indeed, from an energy transitions perspective, this is critical as experimental collectives and expressions of citizenship may emerge that reframe problems and solutions in new ways (Chilvers and Kearnes, 2020).

2.3 Methods of collection and analysis

The fundamental question behind the research undertaken for this report is "in what contexts is meaningful citizen participation in the energy system to be permitted?" and "who is to be allowed participate?" We have worked to identify and characterise examples of energy citizenship found in different contexts. It was not the intention to have a definite mapping in all contexts, if such a mapping was even possible. Rather the research aimed to capture a wide-ranging selection of expressions reflecting the diversity of the energy citizenships across different contexts and to use. This information was be used to better understand patterns of citizen engagement around energy and to develop a typology of expressions of energy citizenship.

Mindful of the thick, rich data[13] required to appropriately explore this topic and appreciate the informants' contributions a qualitative methodological approach has been adopted for this work. Qualitative research has been described as "*the systematic study of social phenomena, expressed in ways that qualify – describe, illuminate, explain, explore – the object of study*" Bearman (2019, 73). Vaismoradi *et al.* (2013) suggest that the similarities shared by the different qualitative methods are more important than their differences. In this context, the methods selected will depend on specificities of a particular study *e.g.,* level of participation, inputs requirements, *etc.* (Mukherjee *et al.* 2015). For instance, face-to-face interactions may be preferred when more in-depth discussion of topics is desired, remote engagement can work to overcome geographical isolation, group discussions can create more dynamic conversations, Delphi panel like approaches can elicit expert opinion, *etc*. (*ibid.*; Quinlivan & Dunphy 2023).

Ritchie & Ormston (2013) note four discrete functions of qualitative research, namely:

– Contextual: describing the nature of what exists.

– Explanatory: discovering the reasons of what exists.

– Evaluative: assessing the effectiveness of what exists.

– Generative: generating theories for what might exist.

[13] Containing a lot of sometimes multilayered information.

As mentioned in the earlier report from this work[5] the research reported here within can in some way be said to be aligned with all four functions. Its primary function however is contextual (with some generative) in that is seeks to characterise expressions, and develop a typology, of energy citizenship.

The approach adopted for this research is a generic qualitative methodology, so-called because such methodologies are "not guided by an explicit or established set of philosophic assumptions in the form of one of the known qualitative methodologies" (Caelli, Ray, & Mill, 2003). Generic qualitative research of course should not be assumed to be lacking theoretical and philosophical basis to its design (Ormston et al., 2013). As Kahlke (2014) observes by borrowing different elements "generic qualitative studies can draw on the strengths of established methodologies while maintaining the flexibility that makes generic approaches attractive to researchers whose studies do not fall neatly within a particular established methodology".

In realising this research, a mixed-methods approach was adopted so as to capture diverse perspectives. This involved the use of several methods for the gathering and analysis of data as outlined below.

- A systematic review of literature was used both to explore existing knowledge and concepts around energy citizenship and related areas, and to develop new insights.
- Surveys were used as a means of capturing perspectives and opinions from a large number or people.
- In-depth semi-structured interviews were used to gather so-called rich, thick data for a more deep-dive analysis.
- Asynchronous interviews – in the form of email interviews – were used to capture expert opinion.
- Thematic analysis was used to 'make sense' of the collected qualitative data.

2.3.1 Literature Review

Conducting a literature review is a foundational research method for the advancement of knowledge. It comprises a systematic exploration of existing knowledge, theories, and practices in focal areas, through identification and synthesis of outputs arising from previous research. This enables an understanding of the background to the research, facilitates the development of theory, highlights gaps in knowledge and identifies appropriate methodological approaches (Webster & Watson, 2002). As Jesson & Lacey (2006, p. 139) comment "*good critical literature reviews tell a story and help to advance our understanding of what is already known*."

It is not uncommon to see research studies that consider the review of literature as a preliminary, preparatory, and in many cases perfunctory, task that serves as a prelude to the 'real' research. We do not accept this perspective. We agree with the views expressed above that the review of literature is a fundamental part of any research. Moreover, we further agree with those who hold that such a literature review may serve as a research method – in its own right, producing new knowledge and offer new insights (Onwuegbuzie & Freis, 2016; Webster & Watson 2002).

We adopted a scoping review approach to carry out the literature review for this study. Scoping reviews provide the means to consider existing evidence around a field of research in a way that is more systematic and that accounts for the larger body of research available rather than summarising a pre-selected and unrepresentative sample of literature. Systematic reviews involve several steps that in some ways parallel primary research procedures (Mullen & Ramírez, 2006).

These include an outline of specific aims, the establishment of inclusion and exclusion criteria, the design of a strategy to search and retrieve data, a pre-set screening process, a plan to assess and represent findings, the coding of studies, analysis, and display of data, and finally the development of multilateral interpretations and conclusions (Mullen & Ramírez, 2006, Arksey & O'Malley, 2005). As such systematic reviews allow researchers to deal with the 'information mountain', common in many fields of research, in a way that makes it possible to distil and manage these large volumes of information (Petticrew & Roberts, 2008). Critically it also makes this process more transparent and inclusive. The framework we employ to carry out the literature review was originally developed by Arksey and O'Malley (2005). The scoping process includes the use of a transparent and methodical system of literature search, screening and analysis followed by a structured presentation of results that considers emerging themes and knowledge gaps. Although the scoping process follows a set of similar steps to those applied in a systematic review the process, it is less exhaustive (Arksey & O'Malley, 2005) and hence we seek with this approach to offer a representative sample of the literature available but do not claim to capture all available articles and reports in this space.

Scientific insights achieved through more systematic review processes have increased over the years and are particularly useful to capture reliable, unbiased assessments of past research (Mullen & Ramírez, 2006). Keeping pace with research in a timely fashion is increasingly important and bring added benefits in terms of responsible research and innovation aspects that help accelerate change while engaging with any tensions in emerging bodies of knowledge (Skjølsvold & Coenen, 2021).

The review followed a staged process that included the development of search terms, and the use of inclusion and exclusion criteria to screen through materials. The databases[14] used included Scopus, Annual Reviews, Applied Social Sciences Index & Abstracts, JSTOR, and Project Muse databases. Search terms used were TITLE-ABS-KEY (Energy Citizen*) In TITLE OR ABSTRACT OR KEY. The timeline included articles from 2000 to (16 May) 2022. After preliminary review of borderline articles and removal of duplicates we identified 66 articles for in-depth review. The inclusion/exclusion criteria comprised: Title/Abstract/Key Words (Energy Citizenship); Any type of study (peer-review or grey literature); Focused exclusively on literature related to 'energy'; Timeline of 2000-2022

Search results in each database were sorted by relevance and key articles were identified manually using a pre-defined protocol, which looked for papers that offered empirical evidence concerning practices of energy citizenship. This was carried out by screening through titles, abstracts and methods sections to identify further texts for elimination. For instance, several articles emerged in the area of energy and citizenship which provided limited insight into what these mean either conceptually or in a more applied sense and therefore they were excluded from the review. Furthermore, the screening involved a review of 'borderline' articles and reports which appeared to have some adjacent connection to the theme and required more careful consideration for either inclusion or exclusion.

[14] Scopus was selected as it is a source-neutral abstract and citation database curated by independent subject matter experts who are recognised leaders in their fields. Produced by Elsevier, the Scopus database is extensive with *c*. 85 million records covering more than 25,000 active titles from over 7,000 publishers. Other databases were used to supplement and complement Scopus to over the weakness inherent in relying on any one individual service.

To analyse the data a preliminary synthesis approach was adopted, followed by a more in-depth thematic analysis, in which we utilised the NVivo software. The NVivo software is an effective tool for open coding and for the refining of the thematic process through the identification of relevant sub-themes and to explore relationships between themes (Creswell & Creswell, 2017, Min *et al.,* 2017). The initial thematic analysis was performed by one researcher, where an independent exploratory analysis was carried with no predefined structure. Themes were identified and coded as they emerged in the various articles. This was subsequently refined with the feedback of the wider research team.

As an inherently gendered policy domain we wish to understand how energy citizenship perspectives address these often-overlooked dimensions of energy system change. A content analysis of the literature was also performed exploring gender and intersectional issues associated with citizenship. We further used NVivo to conduct a content analysis of retrieved literature delving deeper into questions of gender, intersectionality and the way it is addressed in the literature. This involved running queries and text searches, to determine how and where gender appears in this body of research.

To refine the findings, we also looked at wider debates on citizenship within contemporary discourses that go beyond energy specific discussions and include a broader reflection on how this applies to specific issues such migration, disability, young people's participation as well as wider debates regarding capitalism and its relationship to trends such as (neo)colonialism, globalisation, and neoliberal governance. This piece follows a more traditional outline of relevant debates (*i.e.,* not a systematic process) and is used to help determine the contribution, influence and/or specificity of energy citizenship relative to other entry points and debates on citizenship.

The literature review was conducted in parallel with other research feeding into the development of this typology (which each method informing and being informed by the emerging results from the others). The first report[15] from this package of work drew on several early findings from this review. Section 4 below presents insights from the complete scoping review – exploring instances where energy citizenship has proven to be transformative, and/or areas where it serves as a site to reproduce existing power dynamics within the energy system.

2.3.2 Surveys

Survey research is an approach for systematic collection of information from individuals by eliciting answers to questions (Check & Schutt, 2012). Ponto (2015) observes that such research can be very diverse in terms of aims and objectives, strategies for identifying and recruiting respondents, collection of data and in the methods used to administer the surveys. The instruments used for such engagement can range from a few targeted questions to large complex (and sometimes multi-stage) rigorous studies using numerous surveys.

[15] Dunphy, N. P., Lennon, B., Quinlivan, L., Revez, A., & Brenner-Fließer, M. (2023). *D2.1 – Report on Intersectional analysis of emerging examples of energy citizenship*. A research output of the ENCLUDE H2020 project. https://doi.org/10.5281/zenodo.7598736

Surveys may be quantitative[16], with short, closed questions, or qualitative[17] in nature, involving more open-ended questions. The former is typically analysed statistically, meaning that issues of representativeness, confidence limits, data quality *etc*. are important quality criteria (Jansen, 2010). The latter does not usually aim for generalisable results, and the emphasis is more on capturing rich data with 'thick descriptions' (See *e.g.,* Geeetz's seminal work on thick description in exploring social phenomena[18]) that facilitate a more comprehensive analysis.

Online surveys have grown in popularity in recent years, as the use of information technology has become more pervasive. Such surveys use online forms (or one type or another) to collect information from people via the internet. While they are not without disadvantages (including inherent sampling bias) (see *e.g.,* Andrade, 2020), they have many advantages for a study including, low administrative costs, convenience, flexibility, geographical reach, easy follow-up, controlled sampling, *etc.* (Evans & Mathur 2005).

The surveys for this study were administrated online[19] using the Microsoft Forms[20] tool. Mixed (but qualitative leaning) surveys were employed to capture the perspectives of individual citizens on their relationship with energy and the energy system. Questions were also included which aims to collection information on their perceptions of citizen energy participation and the idea of energy citizenship. This approach offered complementary views on the findings of the literature review but also highlighted emerging perspectives perhaps not yet captured by the literature on this topic. A copy of the survey questions is included as Appendix 1. Over 500 survey responses were obtained, which were analysed both quantitatively and qualitatively.

2.3.3 Interviews

Interviews[21] are managed verbal exchanges, which offer a good approach to better understand the social world from the viewpoint of the respondent. While the practice of interviewing has existed for a long time, it has not always been "*been treated as a distinct method*" (Platt, 2012). Roulston (2022) notes that '*the term 'interviews' is used to encompass many forms of talk*" and that *"what these forms have in common is that speakers engage in asking and answering questions"*. There are of course different ways of asking questions, in this respect, Gill *et al.* (2008, p. 281) suggest there are three types of interviews[22], as listed below.

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[16] Scharz *et al*.'s (1998, p. 143) definition of survey research reflects the traditional quantitative understanding of the term: describe surveys as "syste*matic data collection about a sample drawn from a specific larger population*." Interesting also to note the emphasis on collection on information about (rather than from) the population in line from the origins of survey in census taking (Ornstein, 2013).

[17] While for some the term survey almost exclusively means the 'opinion surveys' so beloved of newspapers, connotations, also considering those with a qualitative focus fit well with the dictionary definition of survey being *"a general view, examination, or description of someone or something*" (Oxford Dictionary of English)

[18] Geeetz, C. (1973). Thick Description: Toward an Interpretive Theory of Culture. In: *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.

[19] Although some of the activities promoting the online survey were conducted in-person.

[20] Microsoft Forms (using institutional credentials) was utilised for the survey as its data management provisions met the GDPR requirements of the university performing this work.

[21] Webb & Webb (1936, quoted in Legard *et al*., 2003, p. 138) describe an interview as a "*conversation with purpose*". This description while useful, without context risks minimizing both the effort involved and the value that can emerge from such "conversations".

[22] Although in practice, interviews can be said to form a continuum from un-structured (closer to observation) to structured (closer to forms of questionnaires) (Newton, 2010).

– Unstructured interviews – open-ended dialogue based on an initial open 'inviting' query, in which neither the question nor answer categories are predetermined.

– Structured interviews – essentially a verbally administered questionnaire, with predetermined questions. There is little, if any, scope to seek elaboration or for follow-on queries.

– Semi-structured interviews – comprising several key questions; allowing the topic of the interview to be defined, while still allowing areas of particular interest to be explored in more detail.

Semi-structured interviews set up a scenario in which an informant is provided with the time and scope to talk about their opinions on a particular subject. As Dörnyei (2007) observes, the interactive nature of such engagement facilitates mutual understanding, allows for clarifications to be sought, and facilitates probing for additional information as required. Accordingly, in-depth semi-structured interviews were utilised in this work to better understand interviewees' experiences of the energy system and to develop an appreciation of their perspectives on the concepts around energy citizenship. Longhurst (2009, p. 282) observes that other "*... methods such as observation, closed questionnaires, census data and structured interviews do not allow for much discovery or probing*" compared to semi-structured interviews. The type of interviews conducted involves direct interaction between interviewers and informants, is of relatively long duration and requires a greater commitment from participants. Moreover, the nature of the interaction, and the need to develop a rapport[23] with interviewees, means that interviewers tend to express their 'self' more than in other forms of engagement (Johnson & Rowlands, 2012).

Interviewees were purposefully selected so that they would best address the research question. This section aimed to highlight both group differences and similarities and intra-group variation (Joffe, 2012). Prospective interviewees were identified through a scoping exercise (which drew from a review of literature and referrals from colleague). Subsequently, these potential respondents were contacted by email in which the project was introduced, the specific study outlined, and an invitation extended for their participation. A total of 53 respondents were interviewed[24] during the course of this study exceeding the target set out in the project description[25]. These interviews were transcribed and analysed as outlined in Section 2.2.5 below.

2.3.4 Asynchronous expert interviews

Expert opinions were elicited through asynchronous interviews. These are interviews conducted in non-real time[26] through one of numerous remote methods[27] offering a good way to overcome geographical barriers (Hawkins, 2018). Communication methods used for this type of interview can be video-based (facilitating both verbal and non-verbal communication), audio-based (capturing a full range of verbal expressions), text-based (allowing emphasis through fonts, colour, emojis, *etc*.), image based (displaying *e.g.,* charts or graphics), or multichannel based (using a

[23] Building a rapport with the interviewees is a vital part of the interview process and indeed Gill *et al.* (2008, p. 292) argue that doing so in advance of the interview "can have a positive effect of the subsequent development of the interview."

[24] A copy of the interview schedule is included as Appendix 2.

[25] Most interviews were conducted via videoconferencing with two in-person interviews.

[26] Often realised over an extended period of time.

[27] Dawson (2020, p. 268) lists the following methods for asynchronous interviewing: "email, pre-recorded video, microblogs, blogs, wikis, or discussion boards."

combination of approaches) (Dawson, 2020). James & Busher (2006; 2012) note several advantages to asynchronous interviews – perhaps most significantly for eliciting expert opinion – that the respondents can take as much time as they wish, reflecting on answers, amending responses and only sending their contribution when they are happy with it[28]. Curasi (2001 quoted in Bryman 2004 p. 479) posits that the "*greater commitment and motivation … required for completing an online interview"* meant than "*replies were often more detailed and considered than with face-to-face interviews."*

For the purposes of this study the expert interviews were conducted through emails. This offered convenience for both the respondents (*e.g.*, based on the existing dominant mode of professional communication for the target group) and the interviewer (*e.g.,* time saved transcribing). Eight experts from a variety of disciplines (including engineering, energy, human geography, sociology, political economy, and history of technology) from six countries[29] were engaged to consider their perspectives on the concept of energy citizenship. This engagement was originally envisaged as taking the form of a modified Delphi panel[30], following the approach utilised by Revez *et al.* (2020) to collaboratively envision energy futures. Delphi panels are a means of facilitating structured communication on relatively complicated topics (Hasson *et al.,* 2000), they are often used to capture expert opinion for forecasting and (participatory) decision-making. The approach typically entails rounds of questions coupled with anonymous feedback on aggregate responses to participants (Mukherjee *et al.*, 2015). The first round of questions can be open-ended or semi-structured depending on the needs of the study – with subsequent rounds based on, and reacting to, the initial responses. There is a substantial overlap between the modified Delphi panel approach – referred to as asynchronous structured dialogues by Quinlivan & Dunphy (2023) – and asynchronous interviews. The first round of questioning was sufficiently rich and informative that it negated the need for a second round[31]. The modified Delphi panel first-round questioning and analysis, when uncoupled from feedback loops and consensus-seeking is analogous to asynchronous email interviews.

The realisation of the asynchronous interviews involved three steps. The first of which involved the development of the research instruments and the associated ethical approval processes (a copy of the questions posed to the experts is included in Section 3.3). The second step involved recruitment of the panel members, in this, following good practice, a purposive sampling strategy was used to achieve greater diversity and ensure sufficient coverage of relevant knowledge (Revez *et al.,* 2020). Prospective interviewees were approached by email, the nature of the project and the proposed engagement was explained, following which they were invited to participate. The collected information was analysed using thematic analysis techniques as described in the following section.

[28] Other advantages suggested include: greater convenience and less stress with respondents being able to answer at a time suitable for them (James & Busher, 2006); the provision of answers in written text means there is no need to transcribe but also significantly no need to 'clean up' text meaning a researcher will "… *not modify the respondent comments by deciding which verbal tics and stuttering to remove*" (McCoyd & Kerson, 2006, p. 397)

[29] Ireland, Norway, Spain, Sweden, the UK, and the USA

[30] The Delphi method is a widely used tool for foresight and forecasting activities (*e.g.,* Bañuls & Turoff 2011; Marchais-Roubelat & Roubelat 2011), including in the literature on energy technologies and transitions (*e.g.,* Rikkonen & Tapio, 2009)

[31] The decision was made to pivot given the informative responses captured in the initial round of questions and considering the need to reallocate time to complete surveys and interviews, which required additional effort.

2.3.5 Thematic analysis

The analysis of qualitative data such as interview transcripts, emails and other textual materials is a recursive, laborious, and time-consuming process. It involves moving back-and-forth between data and ideas. Such analysis has been described by Schwandt (2007, p. 6) as making sense of, interpreting and drawing theories from data. This is achieved by systematically (and iteratively) ordering and categorising data – a process known as 'coding'[32]. There are several methods for the analysis of qualitative data, amongst the most prominent include Straussian and Glaserian variants of Grounded Theory[33] analysis (see Strauss, 1987 and Glaser, 1992 respectively)[34]; conversation analysis (see *e.g.,* ten Have, 2007); discourse analysis (see *e.g.,* Dick, 2004); narrative inquiry (see *e.g.,* Riessman, 1993). Thematic analysis – perhaps the most common approach to qualitative analysis – was adopted as the analysis method for this study. This term is used to refer to systematic qualitative analysis that does not follow one of several specified methods (such as those mentioned above). Braun & Clarke (2006) comment that thematic analysis is used to identify and analyse specific patterns of meaning or 'themes' in a dataset – helping to identify the principal in describing a phenomenon under study. Merton (1975) notes that thematic analysis evolved as a means of uncovering more implicit, tacit themes beyond the plainly obvious.

Thematic analysis draws on both explicit and implicit content to deduce latent meanings underpinning sets of themes (Joffe & Yardley 2004) – themes may be something directly observable (*i.e.,* something clearly mentioned) or latent content (*i.e.,* something implicitly referenced. Moreover, thematic analysis can include both deductive and inductive themes – enabling the examination of both preconceived categorisations (*e.g.,* derived from theories, or previous work) and new emerging themes (Joffe 2012). Vaismoradi *et al.* (2016) describe four general phases in theme development, namely:

– *Initialisation* involves transcription and note-taking. Texts are read several times and quotations from the transcripts identified as appropriately describing trends found in the respondents' perspectives.

– *Construction* entails carefully considering passages of text, noting similarities and differences, and assigning labels to clusters of with similar codes.

– *Rectification* is where themes begin to emerge. Here, the analysis process is (re) appraised multiple times – aiming to achieve a relative certainty about the themes developed.

– *Finalisation* is where in a narration evolves outlining and connecting various themes through a "story line", which ultimately, and holistically, address the study question[35].

[32] This involves applying codes to passages of text *i.e., "… a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data"* (Saldaña, 2013, p. 3).

[33] See Glaser, B. G. & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Piscataway: Aldine Transaction.

[34] Stern (1994, p. 220) observes that Straus sees induction, deduction and verification as each being important elements of Ground Theory analysis, while Gasler considers such analysis as being wholly inductive.

[35] The process of theme development is rarely finite, in this context the storyline aspect is useful for appreciating possible theoretical data saturation, a key principle underpinning data collection and analysis finalisation in qualitative research (Vaismoradi *et al.* 2016).

The analysis of the textual data was an iterative process involving several rounds of analysis, commencing with the transcription itself (while often not considered as such transcription is a very important round of analysis, and even at this early stage, prospective emergent themes will be evident). Over multiple rounds, themes in the text were identified, and relationship between themes considered. The process repeated in a reflexive manner, refining, rearranging and consolidating themes, developing insights, and further exploring relationships. While qualitative data analysis software is often used for this type of research – and indeed has been used for the literature review presented as Chapter 3 of this report – the analysis was conducted manually[36] (principally involving notation and highlighting on texts but also including hands-on tabletop 'physical' methods involving the use of *e.g.*, scissors, adhesive tape, *etc*.). This approach meant that researchers became (even more) familiar with the material[37], a good starting point for this type of analysis. The researchers undertaking the analysis coordinated their approach through a coding workshop and regular informal discussions. In this research, a mixed inductive and deductive approach was adopted – the literature review and survey informed the analysis and so some themes were defined *a priori*, while other emerged over the course of coding the interview transcripts. General themes emerging from the analysis, include Climate change; Communitarism; Consumerism; Decision-making; Exclusion; Exploitation; Future; Investment; Protest; Public policy; Responsibilities; and Rights.

3 Engaging the energy citizenry

3.1 General survey

The survey questionnaire is one of the most used quantitative tools for collecting data in social science (Roopa & Rani, 2012; Taherdoost, 2016; Krosnick, 2018). However, its ubiquity as a research tool belies the skills required[38] to designing a 'good questionnaire' and the complexity of its implementation. Numerous factors must be considered, not only when designing a questionnaire but also how it is presented to prospective respondents, the time being asked of the respondent to complete the survey, and the tone of the questions being asked. A poorly phrased questionnaire may elide the true meaning of the questions being asked, in turn eliciting poor responses, or may even cause the respondent to give up answering the questionnaire entirely. Therefore, it is important to expend considerable time and informed effort when designing a good questionnaire that is "*valid, reliable, clear, interesting and succinct*" (Jenn, 2006, p. 32) and one that "*collects the data that answers your research questions and attracts a sufficient response rate*" (Rowley, 2014, p. 308). Consequently, the "*key steps in designing a questionnaire are to: decide what data you need, select items for inclusion, design the individual questions, compose the wording, design the layout and presentation, think about coding, prepare the first draft and pretest, pilot, and evaluate the form*" (Stone, 1993, p. 1264) before finally conducting the questionnaire. The research effort planned for this report involved completing over 500 responses to complement the in-depth semi-structured interviews running in tandem with the survey work.

[36] Of course, qualitative data analysis software does not automate analysis but rather facilitates organisation and visualisation, with coding remaining very much in the hands of the researcher.

[37] It also offered an opportunity for researchers less familiar with the techniques to become (re-) acquainted with the coding process, with additional guidance provided as required.

[38] and by extension the degree of training required

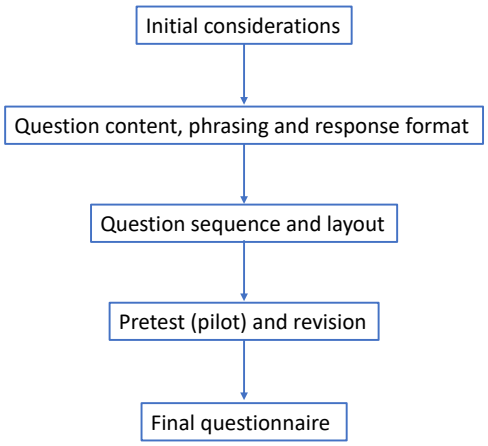

Figure 1: Five stages of designing a questionnaire (after Roopa & Rani, 2012, p. 273)

As mentioned in Chapter 2, the surveys for this study were administrated through online forms. Careful consideration given to the choice of methods (and social network platforms) to share with prospective respondents. The channels used to raise awareness of the survey and to invite people to complete the survey, include partners' networks; mailing lists; online fora; X/Twitter[39]; LinkedIn; and Facebook[40]. A copy of the survey questions is included as Appendix 1 and results from this effort are outlined below.

4.2 Survey results

There were 503 responses to the survey from 44 identified countries (with 25 participants chose not to state their country) as detailed in Figure 2 below.

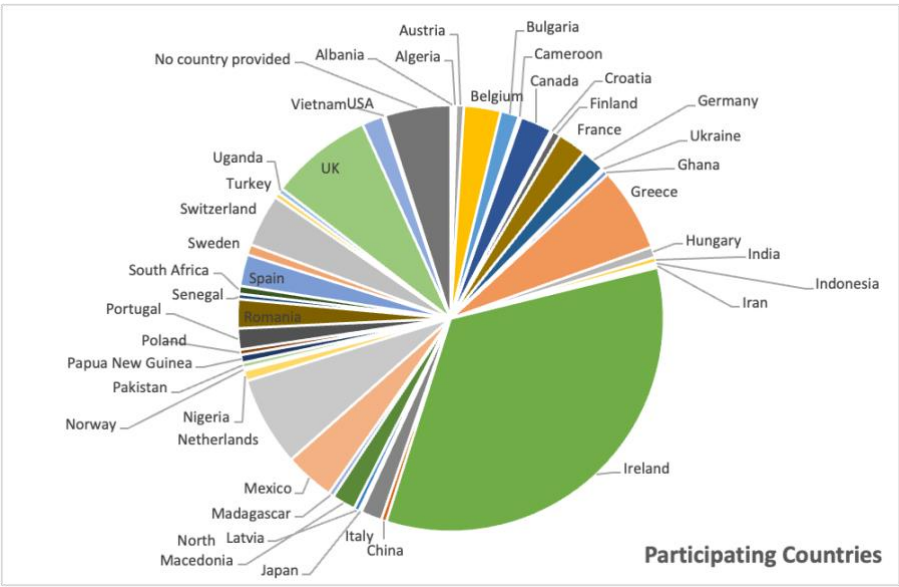

Figure 2: Participating countries weighted by number of respondents.

[39] Despite the recent flight of many of its most active users, X/Twitter still has a considerable presence.
[40] Including the use of Facebook advertisements to raise awareness of the survey.

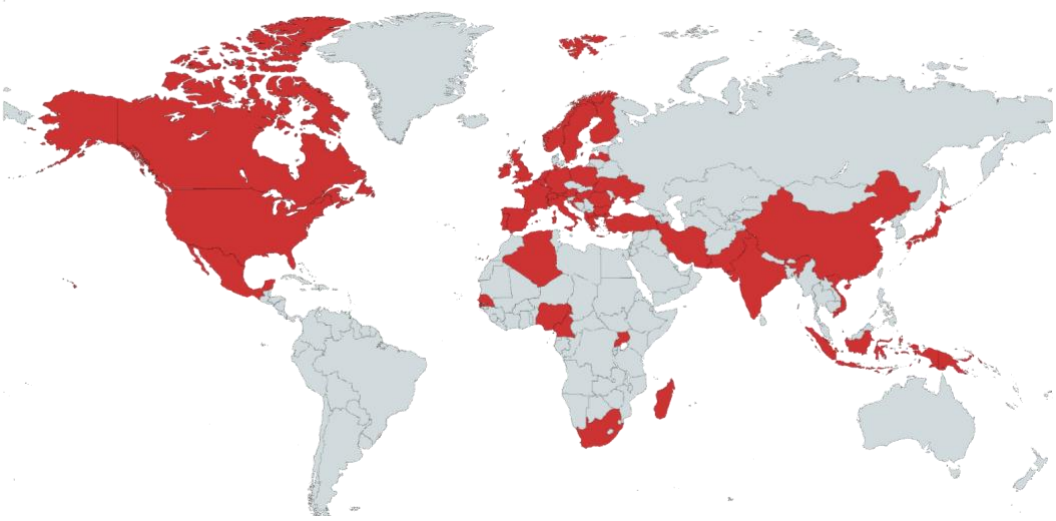

Figure 3: Global map showing the geographic spread of survey responses.

Figure 3 above, illustrates the geographic spread of respondents with South America, significant parts of Australasia and northern Eurasia absent. However, respondents from across Africa, Asia and Oceania participated, offering a counterweight to the responses coming from North America and Europe. The highest number of participants came from Ireland (approximately 34%), followed by the UK (8%), the Netherlands (7%) and Greece (6%). Notable responses also came from Mexico, Ukraine, India, Iran, Indonesia, Papua New Guinea, Vietnam, China, Uganda, Senegal, Nigeria, Madagascar, South Africa and Cameroon. Respondents were all over 18 years with the eldest being 83. Other notable takeaways include:

Gender: There was an approximate even split between men and women.

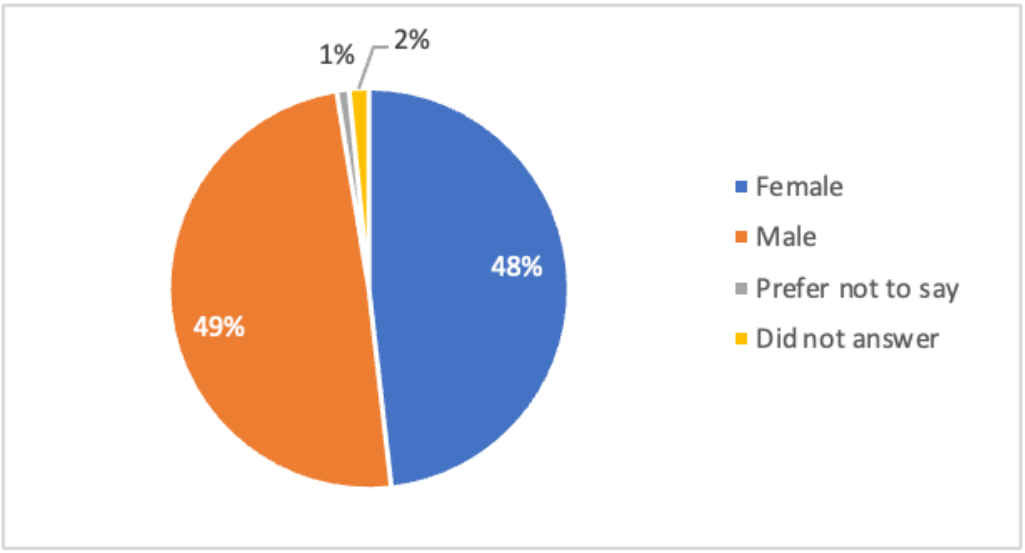

Figure 4: Breakdown of respondents in terms of gender

Education: Respondents were educated, with over half having received a postgraduate education and while an additional 21.7% having other further or higher education. This bias towards an education is somewhat expected given the topic of the survey.

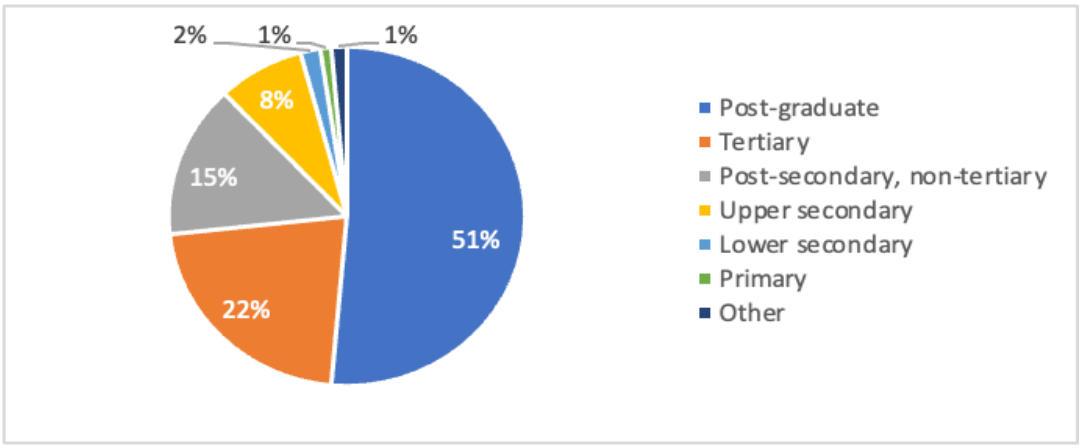

Figure 5: Breakdown of respondents' formal educational attainment

Employment status: When asked about their employment status some 75% of respondents were in paid employment or self-employed, just over 7% were retired, 5.5% seeking employment, and the rest comprised of those still in education or dealing with an illness or disability[41].

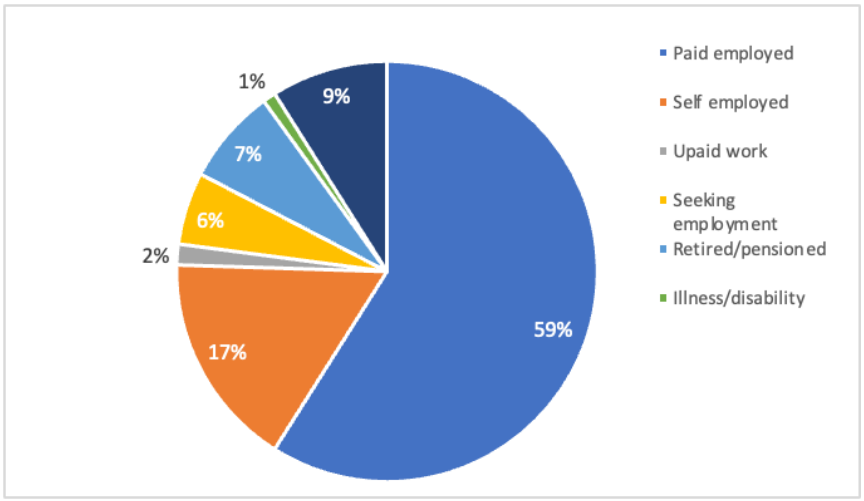

Figure 6: Breakdown of respondents' employment status

Relative household income: when asked about their income, a majority of respondents considered themselves to be earning similar to the national average (36.8%) or a bit higher (31.8%), while 10.1% earned "much higher" than the national average, a bit lower (12.3%), or much lower (8.9%). This is in keeping with the educational status of many of the respondents, with the much lower responses potentially coming from students in full-time education or in receipt of part-time employment.

[41] Other responses included full time student; student (mainly); paternity leave; student with job; school; both self-employed and paid employed; funded PhD candidate; and vocational work.

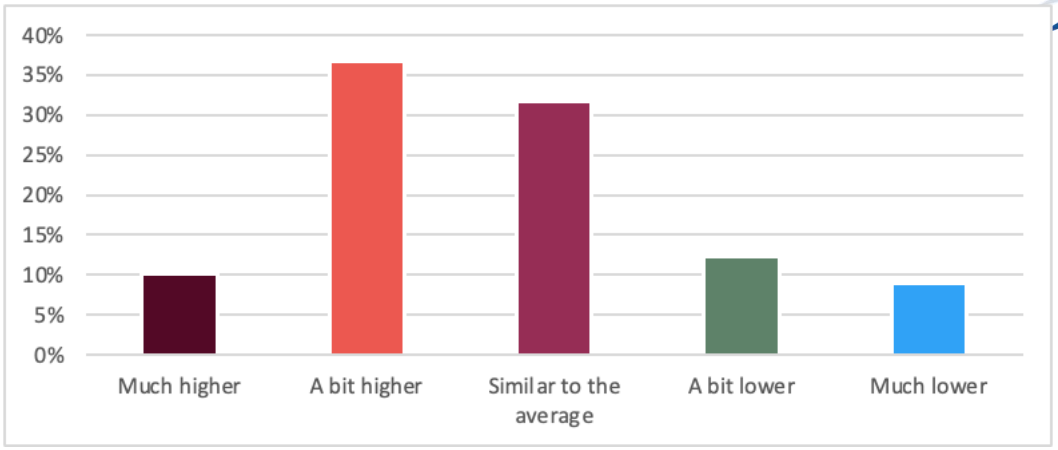

Figure 7: Respondents' perceptions of their household income relative to the general population

In an effort to explore respondents' relationship with the energy system, they were asked where they thought energy is an obvious or visible part of their daily life. Responses ranged from the succent, *e.g.*, "everywhere", "my home", "when I pay my bills" to more developed considerations like:

> "*I have worked in the energy industry for several years and am currently studying the energy transition, so I think I'm more hyper aware of my energy consumption in my daily life than others might be. I try to take readings monthly and keep an eye on my average consumption, but ultimately, I consume what I feel I need to in order to live a 'good life'*".

What constitutes a 'good life' is different to everyone, but there are also commonalities shared across the responses. Numerous respondents described a variation of the following quote, whereby:

> "*Energy is a fundamental part of my daily life, and I rely on it in numerous ways throughout the day, e.g., most of the appliances and devices I use, from lighting to home appliances and my pc on which I am answering this questionnaire. Energy is essential for transport (electric cars, bikes, trains, etc.) and for heating and cooling. Finally, it is essential for 2 things that I love to do every day after work like cooking and watching a good movie or show (in general for the entertainment).*"

The ubiquitous nature of energy (in all its forms), and the energy system more generally, is often only noticeable in its absence. As another respondent noted "*from waking up in the morning to turning off the lights before going to bed, the need for energy is continuous. We realise our dependence on it usually when our phone battery drops or the power goes out at home*".

We also wanted to get an understanding of individual perceptions of well-being in relation to energy and framed in terms of its impact on one's health, education, safety, financial, relationships. A majority indicated they saw health benefiting from the current energy system, followed by a perceived positive impact relating to safety and financial security.

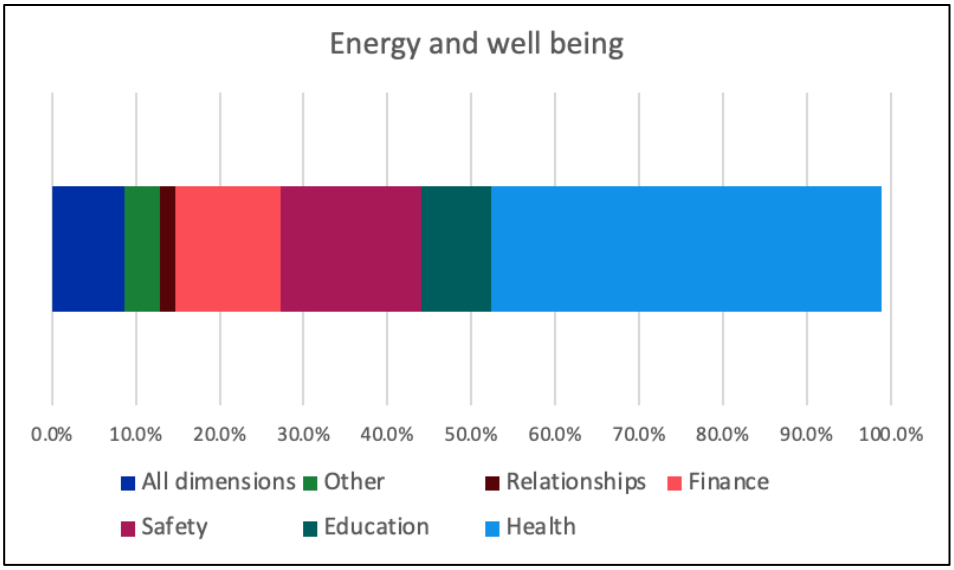

Figure 8: Perceptions of dimensions of well-being in relation to energy

There was limited gender variability except for safety which was selected by 11% of men and 23% of women. The most notable variance relative to age is that health was selected by 86% of participants in the 75+ category compared to selection across all age categories which was 46%. Equally in terms of occupation status 100% of respondents with illness/disability selected health. Primary education respondents also selected health only as an option.

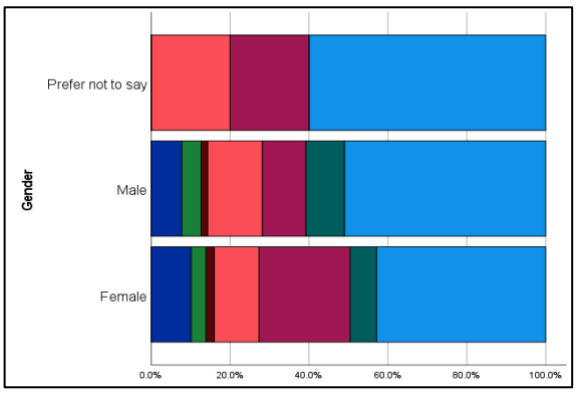

Figure 9: Perceptions of energy well-being relative to gender

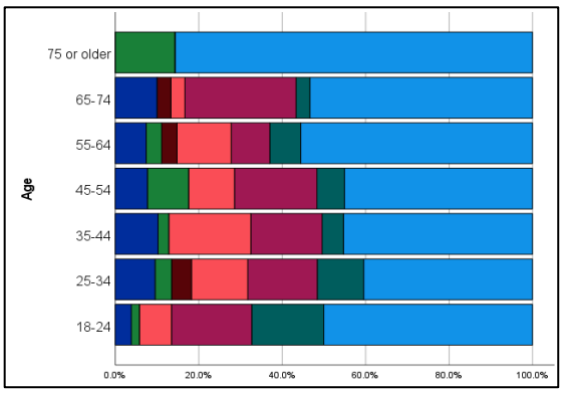

Figure 10: Perceptions of energy well-being relative to age

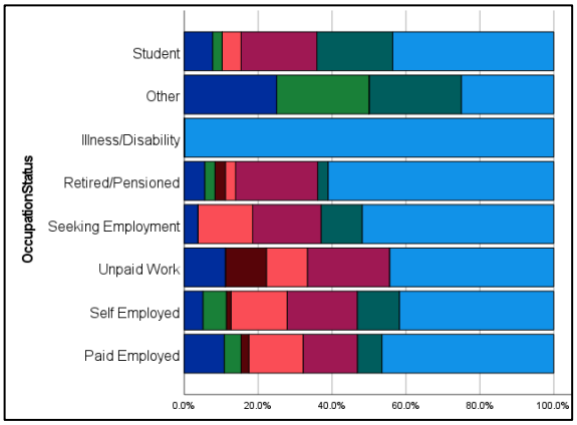

Figure 11: Perceptions of energy well-being relative to occupational status

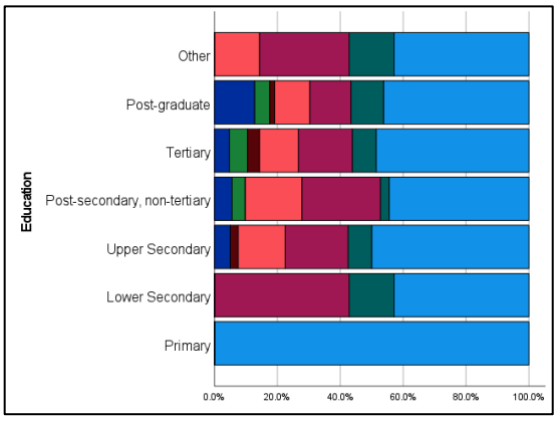

Figure 12: Perceptions of energy well-being relative to education

When asked what the term 'energy transition' means to them, respondents again offered a variety of responses. These included the concise, *e.g.,* "nothing", "more wind turbines", "phasing out fossil fuels", "moving to electric cars and solar panels on my roof", and "less CO_2 generation". While for some, they chose to use definitions taken from the internet[42] rather than explain what it means to them in their own words, *e.g.,* from the S&P Global website reproduced below:

> "*Energy transition refers to the global energy sector's shift from fossil-based systems of energy production and consumption — including oil, natural gas and coal — to renewable energy sources like wind and solar, as well as lithium-ion batteries.*"
>
> (S&P Global, 2020)

The theme of change pervaded many responses, with several respondents describing it as:

> *"Changing the source of energy, investing money in sustainable energies and changing our lifestyles to use less energy; thus, a technical, economical and societal part."*

and

> *"Changing the energy system from what it is now to one which is zero emissions, much more physically distributed and owned, governed and controlled by end users rather than large companies/governments."*

However, while there was a note of optimism in some responses one respondent described it as both "*a challenge and an illusion*", while another noted "*there is no transition without justice*". One went so far as to describe it as "*basically it's a technology shift but where the social problems stay the same*". This sense of scepticism in the motivations behind the transition was indeed shared by others, with many pointing to the link between ongoing environmental crises and the destructive impact the current fossil-based energy system has had in driving much of it: "*the energy transition represents a huge systemic change that is the only opportunity to maintain conditions conducive to life on Earth*". However, a note of optimism was shared by others who wished to see "*a greener healthier environment*" resulting from the transition. The respondents' own backgrounds informed many perspectives, for example one noted that the energy transition is: "*something that should have started a long time ago - as an ecologist, when I hear energy transition, I think renewable energies and immediately imagine a European-wide grid*".

One respondent, who had perhaps studied the issue in more than others described it as:

> *"The transition from fossil fuel energy sources to renewable sources (mainly onshore and offshore wind & solar PV), associated technology (smart demand management, power grid interconnectors, gas peaker[43] substitution, battery storage, green hydrogen) and including the transition of industrial & agricultural processes away from using fossil fuels."*

While another indicated they preferred different terminology, noting they

[42] This was very much a minority response though, with most respondents choosing to frame their answers through their own understanding.

[43] This is a reference to peaking power plants, which generally run only when there is a high demand, (peak demand) for electricity.

"… prefer energy transformation since transition implies that the end state is given which is not the case of energy, however, a just and ecologically non-harmful energy system would be my preference towards transforming our current energy system."

The burgeoning expressions of energy citizenship also appeared to encapsulate sentiments with the themes of change and movement characterising several responses. Indeed, some already see the tangible results of the transition happening to them in real-time "nearly all my tools are now battery-powered, and everything is more electrified". Only one respondent suggested it will lead to "more costly renewables", which may indicate a minority still do not know or acknowledge the massive state subsidies given the fossil fuel industry annually despite the cascading harmful effects this continue to have both on society and the environment. Another notable insight is the number of respondents who equated the transition to the deep systemic changes that are need for society to move away "from an industry based on fossil fuels to one [that is] more equitable, renewable, decentralized, where people are involved and have a say".

When asked how they agreed with the statement: "*The current path of the energy transition is inclusive and equal for all citizens" (1 strongly disagree, 5 strongly agree)*: 66% of respondents either disagree (39%) or strongly disagree (27) that the current energy transition path is inclusive and equal for all citizens.

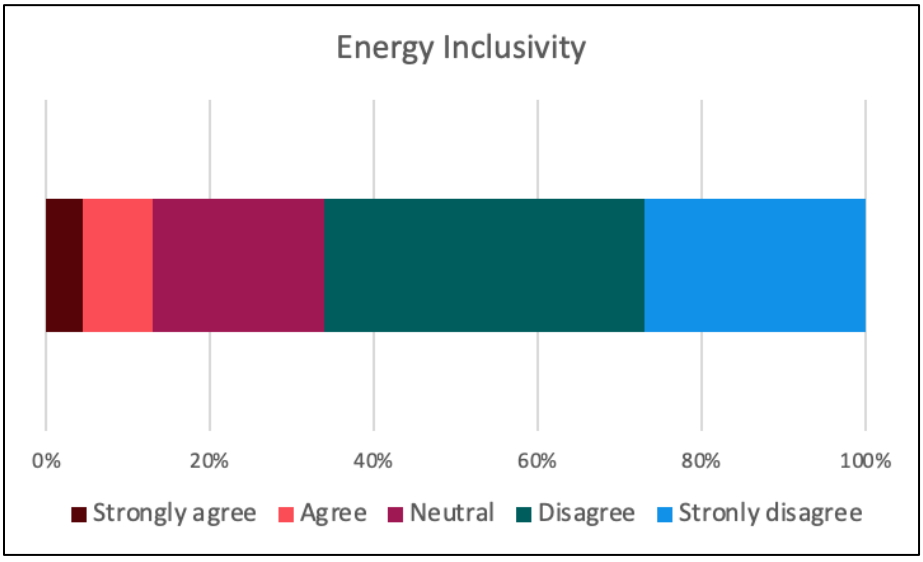

Figure 13: Agreement with the idea that the current energy transition is equitable and inclusive.

There are no significant gender-related differences in responses to this question, though there were some notable differences across age groups include 43% of 75 or older respondents displaying a neutral position to this statement (compared to 21% average). The age categories of 25-34; 35-44 and 45-54 have higher rates of disagreement or high disagreement with the statement.

Education levels also revealed some notable differences with post-graduate respondents revealing marginally higher levels of disagreement/higher disagreement combined. While those with lower secondary education expressed higher levels of strong agreement and higher levels of a neutral stance to this statement. In terms of occupational status, those on illness/disability display no respondents in agreement with the statement.

When asked to consider whether discourses around the energy transition acknowledge that there will be winners and losers, 54% largely agreed, while nearly 30% remained neutral on the topic,

and combined total of 16% either disagreed or strongly disagreed.

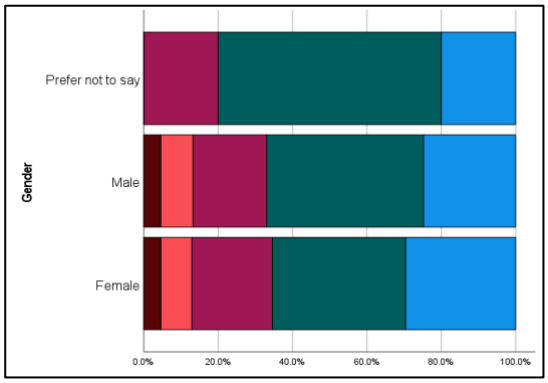

Figure 14: Perceptions of equity and fairness relative to gender

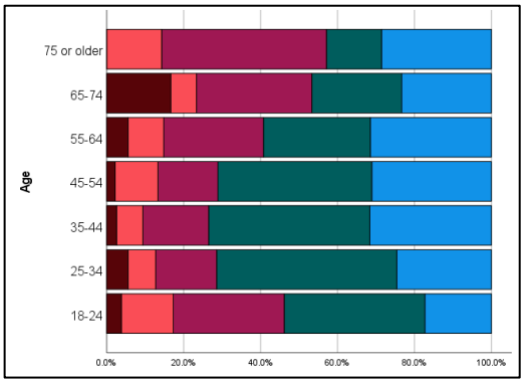

Figure 15: Perceptions of equity and fairness relative to age

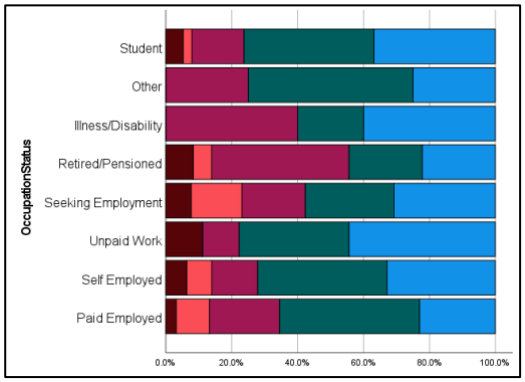

Figure 16: Perceptions of equity and fairness relative to education

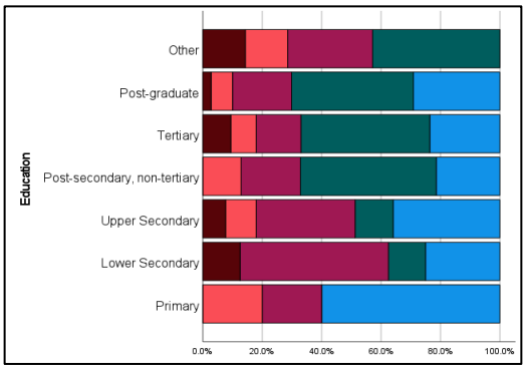

Figure 17: Perceptions of equity and fairness relative to occupational status

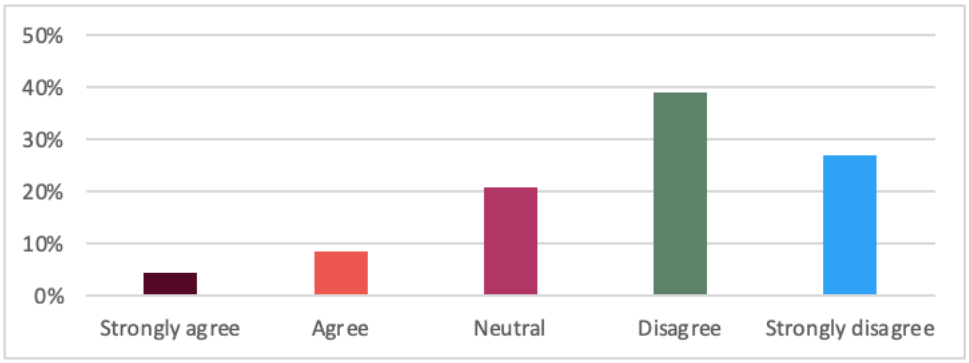

Figure 18: Agreement with the statement: "The fact that the energy transition will result in both winners and losers is not acknowledged in the discourse on the energy transition."

To elucidate participants' perceptions of their own efficacy in formal decision-making processes we asked respondents to consider two inter-related statements, 1. *I am confident that I would be invited and encouraged to participate fully in the decision-making process*, and 2. *When I have participated in the decision-making process, I have felt heard and considered*. For the first statement, almost 70% of respondents disagreed that they would be considered to participate in formal decision making. This sentiment was almost shared evenly by both sexes, with 47%/51% F/M disagreeing and a 48%/48% split between female and male responses who strongly

disagreed. The largest variance between the sexes were those who were neutral with 58% of females and 42% of males choosing to do so, and those who strongly agreed 38% F and 57% M expressing confidence that they would be invited to participate. However, it should be noted that those who agreed made up a small minority of the responses (15% total).

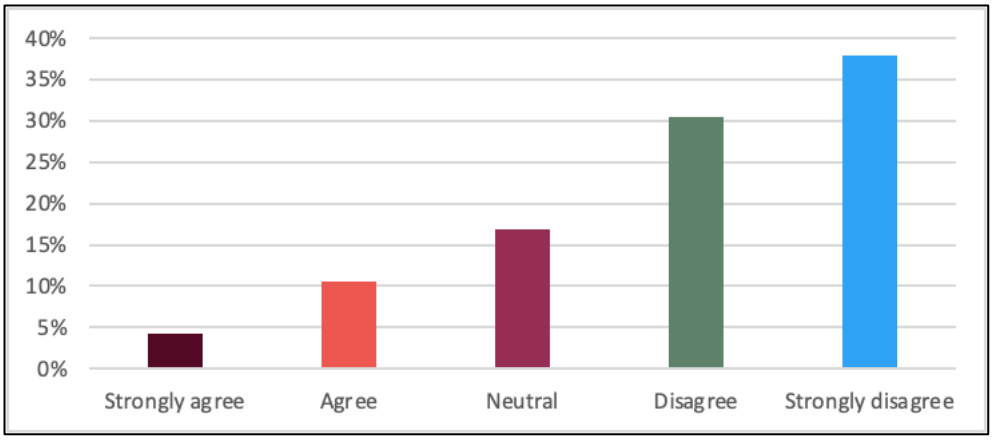

Figure 19: Agreement with the statement: "I am confident that I would be invited and encouraged to participate fully in the decision-making process."

For the second statement, 38% of respondents adopted a neutral stance, while 45% of respondents either disagreed or strongly disagreed that when asked to participate in formal decision-making they did feel heard by those running the process.

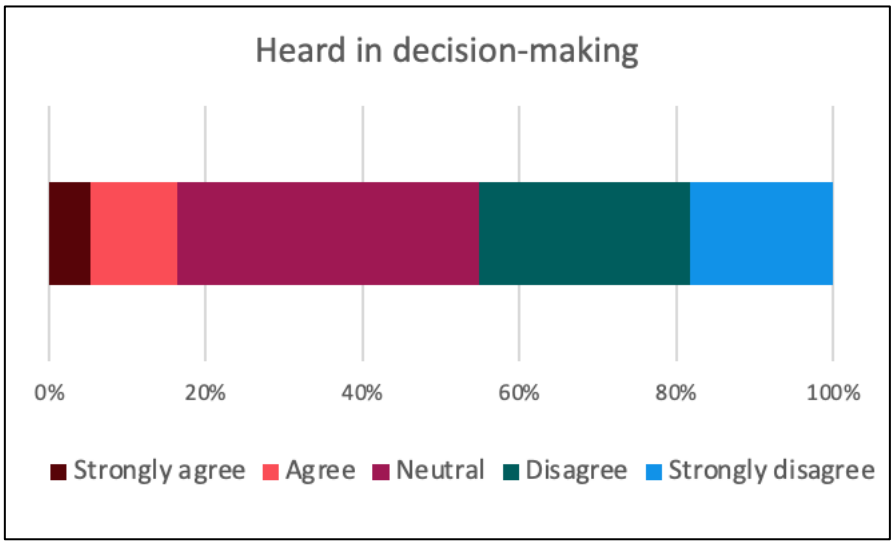

Figure 20: Respondent feeling 'heard and considered' in decision-making processes.

With regards to gender, there was no notable difference in response relative to gender. While 30% of younger respondents (18-24 years) either highly agreed or agreed with the statement compared to 15% results across all ages. Also of note, respondents with primary education only expressed a strong agreement (20%) with the statement compared to 5% across all results. While respondents with illness or disability displayed no agreement with the statement.

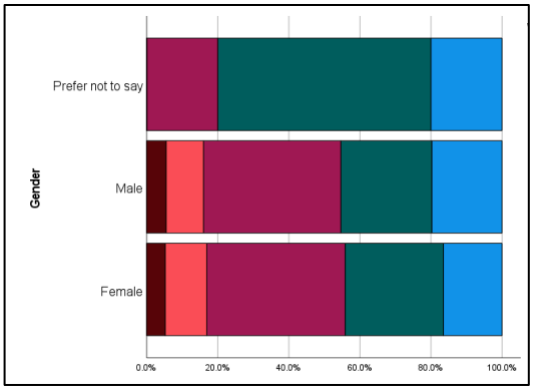

Figure 21: Perceptions towards participating in decision-making relative to age

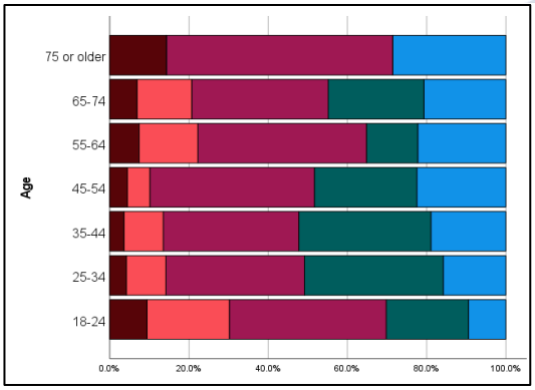

Figure 22: Perceptions towards participating in decision-making relative to gender

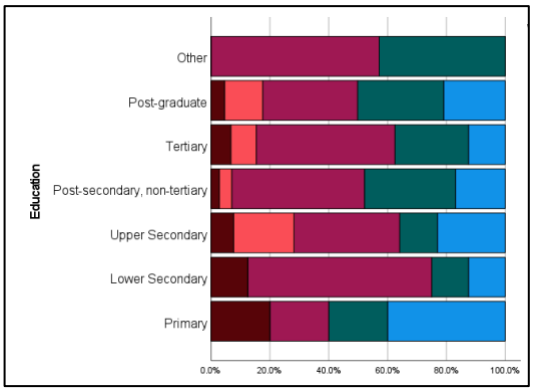

Figure 23: Perceptions towards participating in decision-making relative to education.

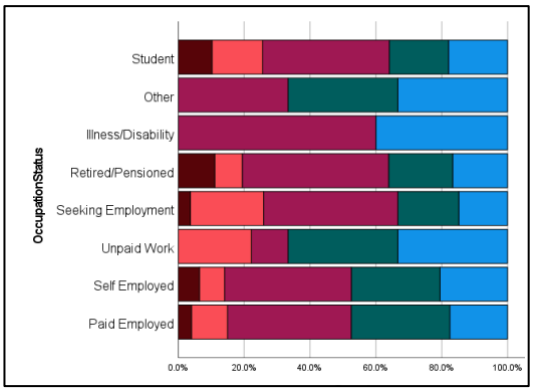

Figure 24: Perceptions towards participating in decision-making relative to occupational status.

When asked to consider whether the decision-making process of most energy infrastructure projects is fair and just, it is notable that only 11% of respondents agreed or strongly agreed. Nearly 24% were neutral, while 65% disagreed or strongly disagreed.

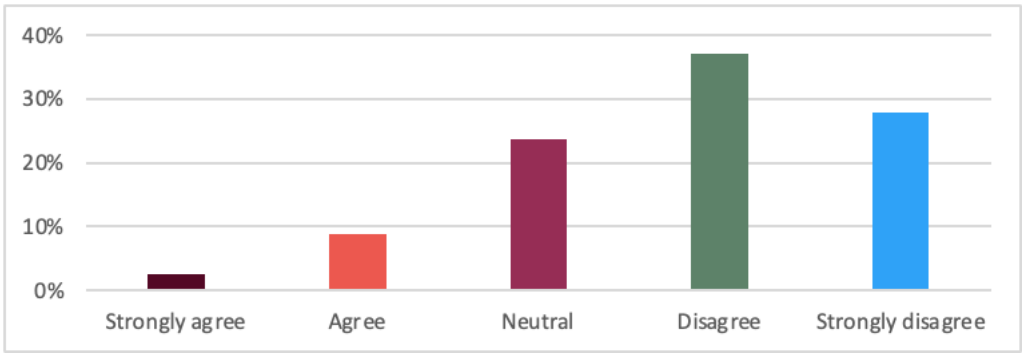

Figure 25: Agreement that there is fairness in decision-making around energy infrastructure.

When asked whether their efforts to participate in the energy system have been intentionally/unintentionally limited by current governance structures/decision-makers, 34% and 18% either agreed or strongly agreed. While 31% remained neutral, only a small percentage either disagreed or strongly disagreed at 11% and 6% respectively.

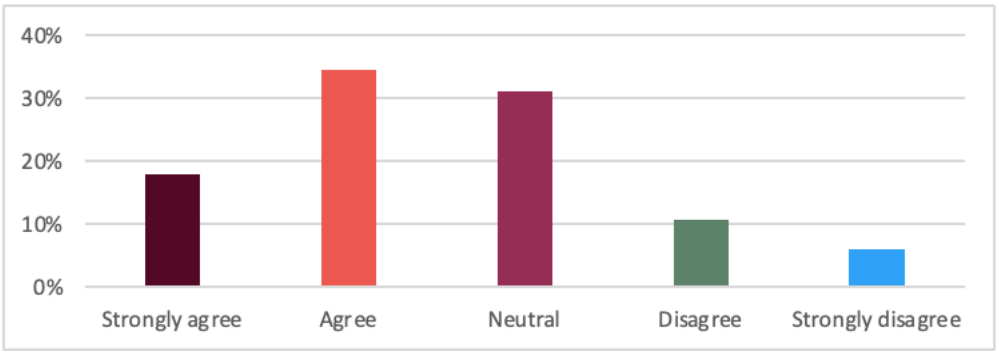

Figure 26: Agreement with the idea that current governance structures limiting citizen participation in the energy system.

Similarly, respondents indicated that they felt those in power do not want citizens to engage with the decision-making process, with a majority of 62% either strongly agreeing (26%) or agreeing (36%).

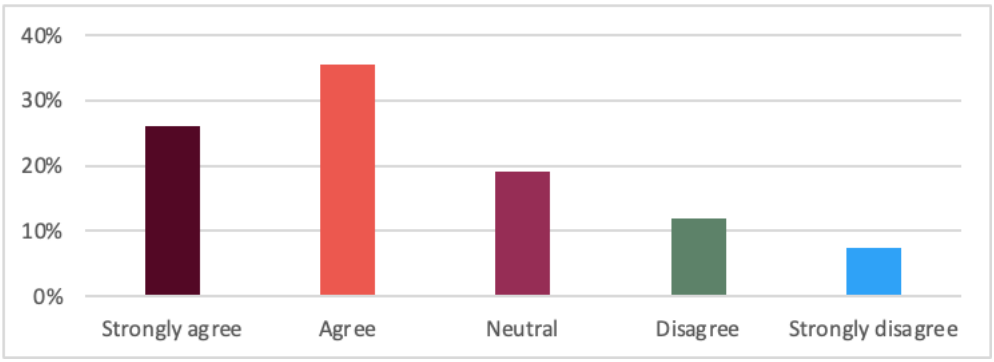

Figure 27: Agreement with the statement that "those in power do not want citizens to engage with the decision-making process."

Regarding to the concept of 'energy citizenship', 51% of respondents to the survey indicated they were newly acquainted with the term. Despite this, many still had several astute observations to share as to what they thought it is or should be – responses ranged from those with little knowledge on the topic to those with substantially more expert knowledge. While some described it as a very new concept to them, the significant range of responses mirrored the deeper reflections expressed in the semi-structured interviews with more detailed assessments like this one:

> *Energy citizenship means that an individual or a community is actively engaged in the green energy transition. It also means taking responsibility for one's own energy consumption and advocating for policies that promote renewable energy, energy efficiency, and energy justice. It means recognizing that energy issues are not just technical or economic matters but also social, cultural, and political issues that affect people's daily lives. It emphasizes the role of individuals and communities in shaping energy policies and practices, and in promoting a more democratic and participatory energy system.*

Others chose to frame it in terms of her/his experiences from their respective countries, e.g., "while not used or applied in my country, theoretically it means to me a radically democratised energy system which is controlled by local citizens, their communities (i.e., controlled by energy citizens)."

Reflecting findings in some of our previous work (see Lennon *et al.,* 2020) one respondent outlined their dissatisfaction and cynicism with how the current energy transition pathway is being charted, describing energy citizenship as a marketing term to get people to support changes to energy system. Most respondents chose to take a more optimistic perspective, suggesting it should involve citizens being able to plan and produce their energy. Essentially, energy citizenship means that citizens actively participate in energy systems and preferably have a positive impact on the energy transition with (particularly electrical) power being decentralised from incumbents to all ordinary citizens. Other respondents noted that energy must be a basic asset of citizenship itself with meaningful participation in the energy system, *i.e.,* by being a prosumer, involving citizens being respected and being listened to about energy decisions and active participation in the energy system being underscored with rights and responsibilities; essentially having a right to energy.

> *"Energy citizenship means the awareness of the people that they can contribute to the better utilisation of the resources. Also, it means the readiness of the people to contribute to a sustainable energy system, readiness to engage with other people and to aim for a successful energy transition. In a more theoretical manner, I understand energy citizenship as the involvement of people in different initiatives and activities that aim to make the energy consumption and system greener and more sustainable."*

Another question from the survey asked respondents to consider the following statement "citizens are often asked to react to plans and measures developed by experts, this implies information and power imbalances from the start of a project process". Again, most respondents agreed (35%) or strongly agreed (28%) that the role of citizens still seems to be to react to decision making rather than contribute to or actively participate in [*e.g.,* energy infrastructure] a project process. Despite Halliday (1993) describing a turn in project management approaches during the 1990s moving from traditional 'decide-announce-defend' approaches to public engagement to a more participatory 'consult-consider-modify' approach the experiences expressed by respondents in this survey indicate official attitudes to engagement and participation continues to be more closely aligned to the former rather than the later.

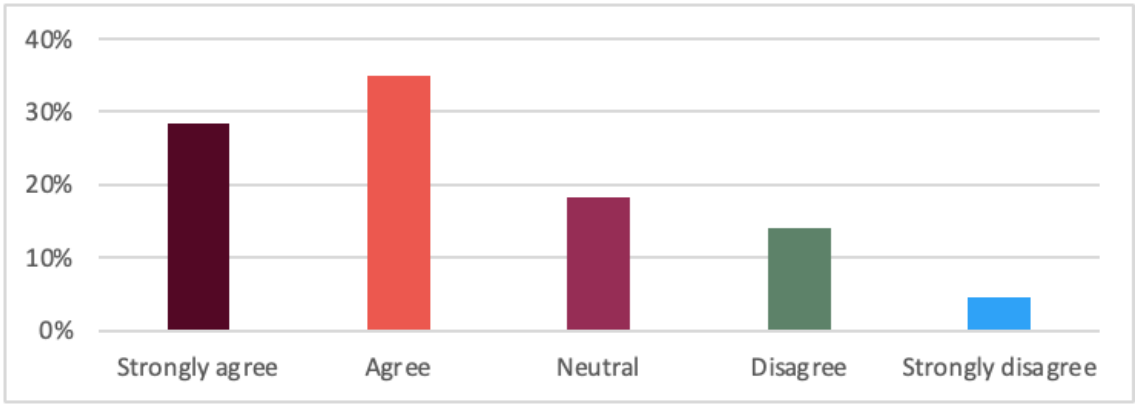

Figure 28: Respondents' agreement that is a power imbalance in the project development.

Finally, respondents were asked to elaborate on what they saw as being essential to bringing about the changes needed for them to be able to participate more in the energy transition. The range of responses were considerable and ranged from suggestions on how greater participation might be encouraged to more reflective contributions on individual personal circumstances and how they relate to fellow citizens, *e.g.,* "*I think that the existing participation mechanisms are ok for me as I know how to access them, but this may not be the case for all citizens*." To more immediate personal perspectives on how one is locked into constantly reacting to (negative)

developments arising with the current energy system, and having no space/supports to plan effectively to instigate change to one's personal circumstances, *e.g.,* "*If I wasn't being punished with high energy prices, I might be able to think about participating more. I can't afford to make any changes to my home like switching from home heating oil even though it's so expensive*."

Some called for more expert-informed decision-making and a complete change in attitude of government and others involved as there are not enough checks and balances for big energy companies. Customers don't have much say in how changes are happening. We have to react all the time. It's exhausting. Essentially, the changes must be substantial and structural. One participant called for more progressive policies, social reform, fair and equitable distribution of costs and benefits, while another respondent framed it as such: "*I participate through my wallet, but I do not really have a say*." Decoupling financial ability from power and decision making would make it easier for people to participate. When considering the role of experts and project leads, they should make the detailed plan, but more consideration should be given to the losers as that is where the most resistance will come from. At present, the structures are not in place to allow people participate beyond what their pocket allows them. Decision making is left to those in power and those with the deepest pockets. A common experience for many we spoke to in the semi-structured interviews, and which correlates with the results in Figure 26 and Figure 27 above, can be encapsulated by the following statement: we're not asked to participate. Any time a project is proposed in my area we barely get told it is happening never mind how we might contribute.

A German-speaking respondent gave their perspective thusly "*To gain more experience and better financial opportunities to participate in training processes*" [44]. Considering the urban versus rural experience of citizens another respondent put it like this first, I think this question is going to be very different between urban and rural areas. Where energy production is easier, such as in rural areas, it would mean being invited to deliberate in local decision-making arenas. In urban areas, as there is less space for energy production, I guess other dimensions of the energy transition could be discussed, such as mobility, heating and cooling or the food sector. Another respondent, with an expert background in energy-related research also highlighted the nuance around whose expert opinion is considered more important, *e.g.,* "*I am in a privileged position as a researcher in the field of energy poverty and energy justice. As someone with more knowledge than the average citizen, I think my voice is heard and listened to more intentionally. However, as a social scientist, I would posit that my voice is not as loud as my peers in engineering or economics.*"

3.2 Interviews with key informants

In-depth interviews were held with 53 diverse informants to gather information to on their relationship with energy, and to understanding their perspectives on ideas around energy 'citizenship'. Prospective interviewees were identified [45] primary through the researchers' networks and thereafter using a snowballing sampling approach, wherein informants were asked at the end of this interview to suggest other people that they believed could contribute to the study.

The identified potential respondents were contacted by email, the project was introduced, details

[44] Authors' translation of *„mehr erfahrung zu bekommen und bessere finanzielle möglichkeiten an ausbildungsprozessen teilzunehmen"* in the original German.

[45] It had been originally envisaged to use case studies developed in WP3 as a starting point in identifying and recruiting interviewees. This was not realised to any significant extent as it was considered there was a prospect of research fatigue amongst this group arising from other engagement (including elsewhere within ENCLUDE).

of the interview process outlined, and an invitation extended for their participation[46]. A total of 53 respondents were interviewed during the course of this study, which is a little over the target number identified in the work plan. The interviews were primarily conducted via video-conferencing (with two in-person interviewees), this enabled us to overcome geographic limitations on selecting interviewees but reduced the time commitment for the interviewers, but more importantly for the interviewees. The objective is recruiting the interviewees was to assemble a diverse group of people with different life experiences and perspectives from which we could capture the thick, rich data (as discussed in Section 2.3.3), which would enable us to appropriately explore this topic. The interviews were transcribed and qualitatively analysed as described above.

There were 31 men and 22 women interviewed as part of this study as illustrated below. There came from across the globe from countries[47] in Africa, Asia, Europe, North America, and South America. While there was a (perhaps unsurprising) geographic skew towards Europe, sufficient diversity of voice was captured which informed the study.

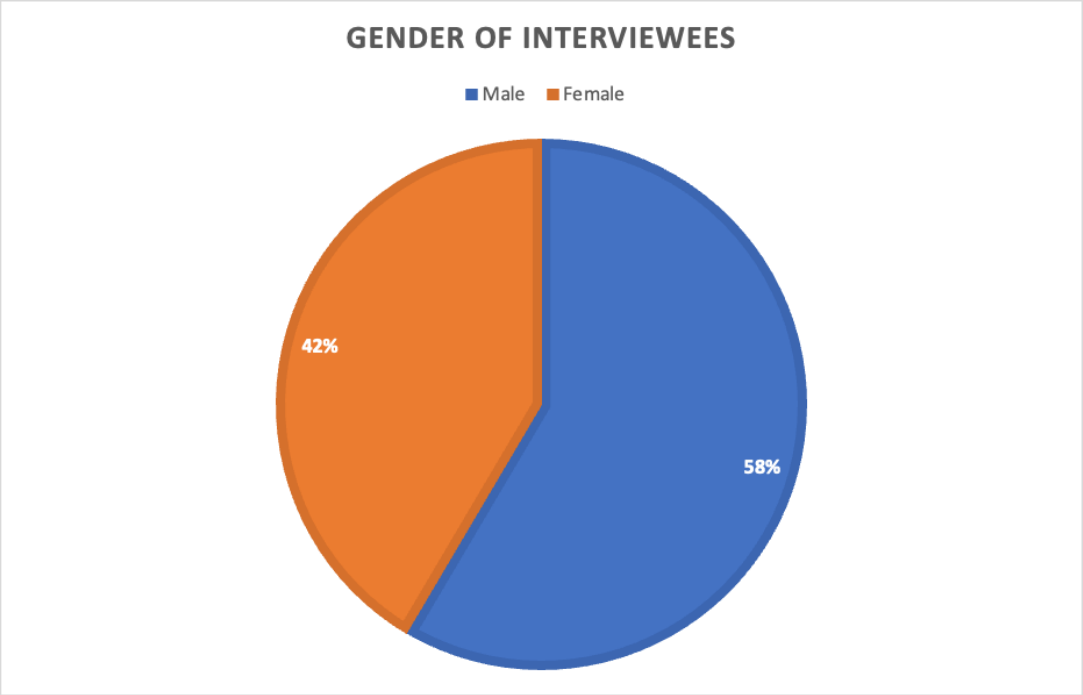

Figure 29: Gender profile of interviewees

All of the interviewees were of course individual citizens, however when discussing their relationship with energy, most of the participants related it in some way to energy. Notably just six

[46] Once they indicated their willingness to participate they were provided with a participant briefing sheet to provide them with all information about the process and asked to provide their informed consent to participate in the study.

[47] Interviewees were from the following countries: Belgium, Brazil, Canada, Chile, Finland, France, Germany, Ghana, Ireland, Italy, Japan, Mexico, Netherlands, Paraguay, Peru, Portugal, South Korea, Taiwan, United Kingdom, and USA. (note: Additionally some interviewees did not state their country but gave their location as 'Africa', 'Central America', or 'South America')

of the group expressed their role in relation to energy as 'citizens' (and even then, two of these stressed that they were farmers), highlighting the way in which people see their relationships with energy. Figure 30 below illustrates the role of the interviewees in the energy system as they see it. There was a good spread of roles including public representatives and policy makers (traditional decision-makers, but also those working to realise change from the inside), Industry (*i.e.,* energy businesses), co-operative member (*i.e.,* collective energy production orientated communities), activists (*i.e.,* those challenging the system from the outside) and researchers (those studying energy and the energy system from various perspectives).

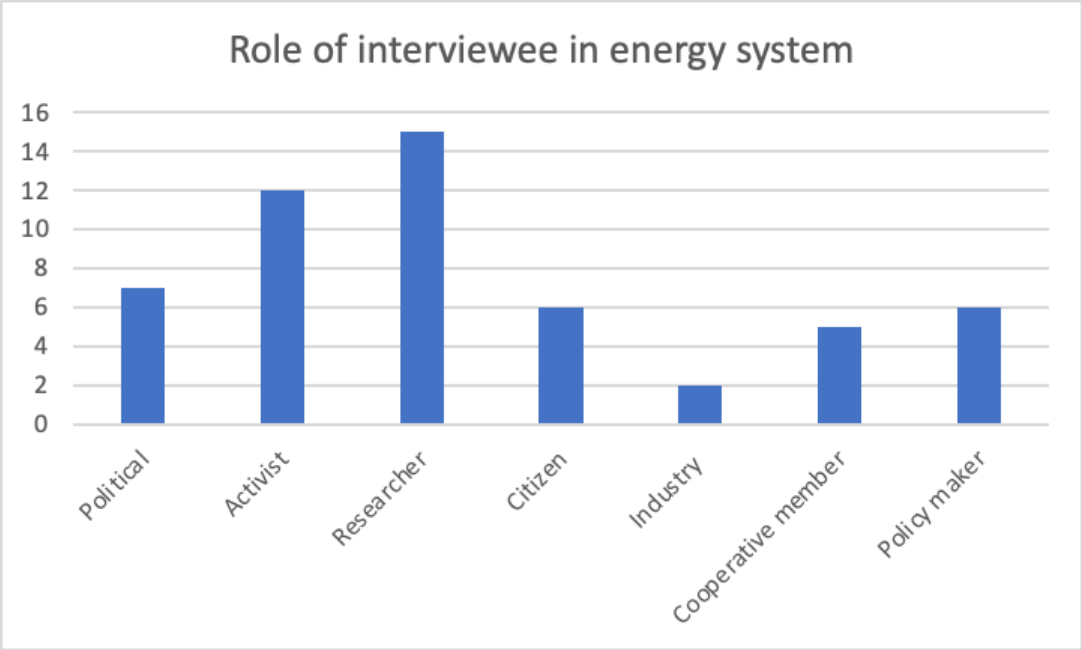

Figure 30: Interviewee distribution according to their perception of their role in the energy system

It's perhaps fair to say that all the interviewees had quite a lot to say about energy, the energy system and the transition to a decarbonised future. This is perhaps not surprising given the ongoing energy crises arising from the Russian invasion of Ukraine, and the ever more evident effects of climate change. This has greatly informed our analysis. In particular, the inclusion of interviewees from outside Europe and especially those from the global south raised very important issues, which might otherwise have been overlooked or minimised without their voice being heard.

The general themes emerging from these interviews[48] include Climate change (minimising the impact, and living with the effects); Communitarism (collective arrangements for production and consumption); Consumerism (harnessing consumer power for change, but also moving away from consumer-orientated perspectives); Decision-making (fairness in participation and process); Exclusion (from the energy system, but also from decisions on the energy system); Exploitation (of both the natural world and of vulnerable communities); Future (envisioning a more sustainable and equitable energy system); Investment (regulations, business models, value propositions for communities); Protest (challenging from outside the system); Public policy (integrating with other policy domains); Responsibilities (being a 'good citizen'); and Rights (energy justice).

[48] Complemented and supplemented from the findings in the literature review, survey and expert engagement.

3.3 Asynchronous interviews with experts

A panel of experts, knowledgeable about people's relationship with energy, was assembled to input into the study through asynchronous interviews. This panel comprised eight academic researchers[49,50] from a diverse range of disciplines including: engineering, energy, human geography, sociology, political economy, and history. Each of the researchers were actively involved in research on energy and more specifically considering some aspect of what might be termed the human dimensions of the energy system.

The panellists were engaged primarily through email. This engagement was intended to complement, validate (to an extent) and to help interpret the information being gathered through the literature review, survey and in-depth interviews. As mentioned in Chapter 2, a key advantage with this type of engagement is that participants can respond at their own pace, working around their everyday schedule and taking as much time as they wish time to reflect on the issues involved before submitting their responses.

Participants were asked to reflect on nine statements relating to the idea (and ideals) of energy citizenship drawn from the literature, and to write a response to each one. Initially, as explained in Section 2.3.4, it had been intended to revert to the participants with a second round of questioning to seek clarification or elaboration to refine the ideas expressed. However, contributions from participants were quite thoughtful and considered (validating in some way the advantages expressed of asynchronous interviews in this respect). Given the more than adequate response received in the initial round and as there was a greater than expected additional effort required elsewhere in study[51], a second round of question was considered superfluous to requirements. The statements considered by the experts along with selected insights are presented below:

Statement 1: Energy citizenship is a form of active citizenship – it is typical for the concept of energy citizenship to be used to refer to citizens being active in the energy domain. This is often contrasted with the traditional scenario where citizens were considered passive subjects at best and often seen as obstacles, particularly in the context of deployment of new infrastructure. Indeed, one contributor observed that so strong is the vision of an engaged, active energy citizen, that referring to energy citizenship as being active is almost seen as redundant. Some contributors agreed with the statement, noting for instance that "*citizenship involves rights and obligations and typically involves a citizen-subject relationship.*" Others, however, saw the emphasis as being problematic, not least because it infers only those with capacity to act could be full energy citizens. In such a view, those without the awareness, knowledge, skills (and motivation) to act on the energy system[52] are consigned to be deficient citizens or non-citizens in the energy domain. Several contributions pointed out the "*different shades of grey*" relating to activity found in citizenship scholarship; an almost continuum of activity was suggesting including passivity, latent participation, and active participation (in any of several participation modes). There was also a

[49] The members of the panel came from six countries namely, Ireland, Norway, Spain, Sweden, the UK, and the USA.
[50] The nature of such engagement, and the demands in people's everyday lives meant that not who agreed could respond. In such cases they were replaced in so far as possible with colleagues working in cognate areas.
[51] Achieving the >50 in-depth interviews, but even more so the >500 survey responses targeted in the work plan took a great deal more effort (and time) than originally envisaged.
[52] Or indeed to act it a way not sanctioned by those with power in the system; many power incumbents want citizens to participate ('become' an energy citizenship), but only if that participation take the form of predefined actions which support the interest of incumbents.

view (albeit perhaps somewhat understated) that emphasising the active nature of energy citizenship implied the need for change in energy governance, an "*empowerment of citizens*" as expressed by more than one contribution.

Statement 2: Energy citizenship is a normative ideal – post-cosmopolitan concepts of citizenship, including energy focus, typically have a focus on virtues (Dunphy & Lennon, 2022). It is not unexpected therefore that there was widespread agreement amongst the panellists that the concept has strong normative connotations. One contributor opined "*Much like sustainability, energy citizenship describes a state of affairs we wish to move towards and realise, yet whose realisation is always in the making.*" Linking with the first statement, one contributor arguing that it "*ideally reflects empowered and engaged citizens making conscious decisions.*" In contrast with the contention expressed in our earlier work (see *e.g.,* Dunphy & Lennon 2022; Dunphy *et al.,* 2023), there was a strong undercurrent in the contributions that energy citizenship an ideal. That it should be something to become; a North American based contributor spoke of a "*trajectory towards energy citizenship*." Although there was some dissension reflected in the view of one contributor "*that it is problematic to assume an ideal that everyone should or should want to engage (around) energy*", which poses the question does this exclude them from the energy citizenry?" Of course, energy citizenship, while perhaps considered by many as normative, is still very much a contested concept. One contribution noted that "*the substantive content … is neither a normatively well-defined nor a widely agreed upon notion.*"

Statement 3: Energy citizenship is an expression of agency – for many the issue of agency is central to the consideration of energy citizenship as captured by the view of one panellist that "*energy citizenship is a mode of expressing agency.*" Although it was posited that agency is often a mirage in the energy system, as illustrated by the difficulties *e.g.,* "*when it comes to infrastructure investments, even at a local level.*" It is in the responses to this statement that a clearer divergence can be observed on the issue on normatively discussed above. On one side are those who see energy citizenship as something "*to be enacted through active participation rather than … conferred by a set of legal obligations and entitlements*" while others argue for a more inclusion understanding, opining that energy citizenship *"cannot only be dependent on full active participation*." It was noted also the emphasis on typical individualistic perspectives of agency can be rather limiting and that collective agency should be also understood as a key element of energy citizenship – as exemplified by initiatives such community energy co-operatives[53]. A key point made by several contributions is that agency around energy can be expressed in many different forms and as discussed in Chapter 4 found in many different places.

Statement 4: Energy citizenship involves increased participation in community energy – as mentioned above collective energy actions are important manifestations of the concept. Indeed, for some energy citizenship is almost synonymous with membership of an energy co-operative or other collective initiative[54]. This understanding was seen by the panellists as an important element of the concept, but on its own insufficient. One contribution from southern Europe expressed it thusly "*If energy citizenship is only about my participation in my community, then that only covers a part of what I believe a 'citizenship' should entail*." This fourth statement was not something that

[53] Such collective agency is of course a key enabler for citizenship participation in the energy system (see Dunphy & Lennon 2020).

[54] This is quite interesting when one considers the rather individualistic framing of energy citizenship in much of the discourse around the topic.

was likely be opposed to any great extent. However, the way in which the panellists expressed their 'support' was quite informative. Some saw such initiatives as positive expressions of collective agency noting their "*potential to advance key aspects of energy citizenship*," – while others saw them simply as a means of expressing individual agency observing *e.g.,* it was not "*necessarily clear that community energy generation suits highly individualised needs and values.*"

Statement 5: Energy citizenship is a concession to secure acquiescence for energy developments – this statement provoked some thought amongst the panellists, many of whom had not really fully considered the proposition previously. The panel acknowledged that the idea of the 'good citizen'[55] is often used (by governments and other power incumbents) to argue for acquiescence to energy-related decisions. However, such an instrumental view of energy citizenship, although potentially supporting the normative view of the concept, is not compatible with ideas of agency. This raises the question "what if citizens exercise their agency in such a manner that conflicts with instrumental views on energy-related decisions? are you only an energy citizen if you agree with the power-incumbents' decisions?" One contributor suggested that there might be a "*need for a certain hierarchisation of ideals and values, between rights to co-determination and content as a spectrum of possible outcomes of that co-determination*" – this competition between different ideals, values and rights is central to the realisation of energy citizenship. As Dunphy & Lennon (2022, p. 439) posit the different narratives about energy system participation (*e.g.*, who will be permitted to participate? where? and to what end?) will compete[56] "*across a range of sociocultural, sociopolitical, and sociotechnical battlegrounds*."

Statement 6: Energy citizenship is an analytical category – this statement lies at the core of the issue, is energy citizenship simply a means for policy actors to "*make sense of the transition*"? or is it a normative ideal? a set of principles? Here, once again an inherent conflict in the concept is evident. There is contestation not just on what energy citizenship means but also its utility. While its potential value as an analytical category was agreed (indeed, almost assumed), contributors were keen to highlight other functions. For instance, one contributor commented "*It can certainly be analytically articulated and used to do heuristic work"* but noted they *"do not see it as simply, or necessarily, an analytical category."* While another suggested that it represented "*both a set of ideals and an empirical phenomenon in which such ideals are enacted.*" Contrasting with the rather paternalistic normative framing of the concept, there was some exploration of a potential role for energy citizenship to challenge the status quo in the energy system.

Statement 7: Energy citizenship is open to interpretation – energy citizenship is very much a nebulous concept. Lennon & Dunphy (2023a) observe that it is used as a "*catch-all term*" to describe citizens' "*multiple evolving roles in the energy sphere, which overlap and … change over time*." This was supported by many of the responses elsewhere in this exercise. In response to this statement, the panellists referred to energy citizenship as being "*a malleable concept*" and "*a contested concept*", one that is at "risk of co-option" and "*subject to political appropriation*" (for instance the emphasis by some on individual behaviour change). It was seen as lack a consistent definition and being "*still relatively open to interpretation*" – with one panellist noting that they themselves would "*interpret it as broader concept than how (they) have often seen it used.*" However, it was noted that there is some consensus that energy citizenship "*involves a certain empowerment and inclusion and that it – somehow – plays a part in the pursuit of energy*

[55] See e.*g.,* Mullally *et al.*'s (2018) discussion of the 'good citizen' framing in relation to energy decision-making.
[56] Those supporting the competing narrative will likely also find themselves at times collaborating and negotiating.

democracy and energy justice." Thus, energy citizenship inherently involves critique of the status quo, envisioning more equitable energy futures and arguing for the societal transformation needed to realise these desired futures. It is therefore perhaps not surprising that there is contestation of the energy citizenship concept, given the competing foundational ideologies, governance structures, technologies, business models, *etc*. implicit in any specific energy future[57].

Statement 8: Energy citizenship means the participation of citizens in energy governance. As we have seen in Chapter 4 – in contrast with classical definitions – given the intertwining of energy in almost every aspect of our daily lives, citizenship in the energy domain is not, and cannot be, limited to the public sphere[58]. However, participation in decision-making and political agency is often seen as a key component in being an energy citizen. The panellists were generally in agreement that increased participation in energy governance was an important attribute of the 'energy citizen' with some linking it concepts such as energy democracy[59] energy justice and energy equity. Although one contributor expressed dissented somewhat, opining energy citizenship "*cannot be meaningfully reduced to participation*" – albeit not contesting the importance of such participation. We noted previously, an emphasis in much of the energy citizenship discourse on the obligations of the citizen, there has less attention paid[60] to the rights of citizens[61]. Having a right to participation in decision-making around energy is something for which many individual citizens and community groups have been fighting for some time. With one expressing the view "*I believe this may be an example of a more fruitful to way to view energy citizenship.*" Although it was noted that such participation can be difficult for "*individuals and communities given that they are locked-out of decision-making processes (which is often by design)"* and that there is a need for "*structural changes to support involvement in decision-making that does not actively prevent inclusion*."

Statement 9: Energy citizenship is a buzzword – There is a common allegation that the term 'energy citizenship' has been appropriated[62] by energy system incumbents for their own purposes, and that it is little more than a buzzword. Most panellists acknowledged that it was somewhat of a fashionable term, although one quipped "*what isn't"*. It was also noted that being a buzz word is not necessarily a negative, once it was put to a worthwhile use. One contributor described it as a social construction, which offered *"… a way for policymakers, activists, consultants, researchers and other societal actors to make sense of the transition towards future energy systems.*" The ability of the energy citizenship concept, albeit somewhat ambiguously described, to empower and enable people was commented upon. This marks it perhaps as being somewhat more than just a buzz word, although there was a caution to avoid over-promising around the concept lest we fall into a cycle of "*hype and disillusionment*." It is suggested that the concept can be thought of as a means for "*policymakers, activists, consultants, researchers and other societal actors to make sense of the transition towards future energy systems*", by expressing "*ideas about the*

[57] With the choices associated with each having winner and losers.
[58] The inverse also holds true, as Pel *et al.* (2021, p. 35) observe political views on energy citizenship often focus on private activities – this too is limiting, energy citizenship must embrace both the public and private dimensions of people's lives.
[59] Szulecki & Overland (2020) note that energy democracy, originating as a term identifying a larger role for citizens in decision-making on energy broadly, has evolved into a term more concerned with energy governance.
[60] Particularly by governments, regulators, energy companies and other power incumbents in the sector.
[61] Contrast between liberal and civic republican citizenship traditions, the former of which focuses on entitlement to fundamental rights (Schuck 2002), and the latter is based on duties and responsibilities (Richard 2002).
[62] If indeed it was ever otherwise.

responsibilities and roles of citizens in energy system transformation" (Pel *et al.*, 2021, p. 9).

3.4 Takeaways from engagement process

The following reflect some of ideas emerging from the survey and interview engagements with citizens. While valuable in its own right as a source of potential recommendations, they offer a good insight into how the wider citizenry see their relationship with the energy system.

i. Additional, low-cost financial supports to help homeowners and small businesses to invest/develop their own renewable energy solutions.

ii. Mandatory informed referendums with local citizens when implementing strategic development plans.

iii. Establish and appropriately support of deliberative institutions to help citizens explore the potential for real ownership opportunities, participate in decision-making, encourage trust through oversight of decision-making, *etc*.

iv. Develop opportunities for renters to work with landlords on installing renewable energy infrastructure (*e.g.*, solar panels on roofs of rented properties) or facilities whereby they can buy in or directly benefit from existing renewable infrastructure (*e.g.*, group heating schemes, *etc*.)

v. Greater access for citizens to participate in energy cooperatives, especially where citizens do not have the social or financial capital to actively do this on their own.

vi. Establish citizen fora (national, local) where citizens can engage with experts and share information.

vii. Stronger governance structures that ensure greater inclusivity and transparency when developing energy infrastructure, both at the local and national levels. In addition, greater transparency by public representatives, when commenting on a local energy infrastructure project, whereby they must outline reveal any campaign contributions received or relevant passed work with a project lead.

viii. Orientate decision-making away from the market towards the citizen and natural world.

ix. Better communication and dissemination of research and policy decisions around the energy transition for non-experts.

x. Interests of those who do not wish to participate directly in the energy transition should also be respected and protected.

xi. Provide citizens information portal on energy projects, including information on which company is involved in the development and the potential implications.

xii. Stop subsidising fossil fuels. Sustainable forms of energy (whether they are for electricity, heating, transport) should be much cheaper than conventional energy.

4 Energy citizenship: transformative practices or old sites of socialization?

4.1 Emerging energy citizenship within energy transition debates

Energy related matters, typically dealt as technical issues, are increasingly recast as significant within public and political debates. Energy citizenship epitomises this shift, which very generally is a change that seeks to broaden and deepen the role that citizens can play in decarbonising the energy system (Lennon *et al.,* 2019).

The relevance of this concept at this critical juncture, in no small part arises from the fact that the extensive use of fossil fuels in what has been a highly centralised system of energy production and distribution across the globe, has often rendered the energy system invisible to most people (Ambrose, 2020; Dunphy *et al*., 2017; Hargreaves, Nye & Burgess, 2013). This (in)visibility has been reproduced through highly hierarchical and technocratic forms of engagement with the energy system in which individuals and communities had a minimal role to play. Moves to accelerate the development of alternative low-carbon energy systems have called for reimagined modes of dialogue and democratic collaboration where deliberation, participation, ownership, and engagement are increasingly relevant within the energy system vocabulary seeking to reconnect people with energy in a transformative manner (Revez *et al*., 2022).

Lennon *et al.* (2019) have argued that while expectations concerning energy citizenship are high, we have yet to establish more precisely what this means and how it will help shape the energy systems of the future. As such the characterization of an emergent energy citizenship bears some resemblance with citizenship ascribed to children and young people as the promotion and crafting of 'citizens-in-the-making', 'future citizens' and 'active citizens' (Hall & Coffey, 2007; Ignagni, 2011). Aptly explored by Escobar (2017) in the context of different models of democracy we must therefore ask: What kind of citizen are citizens invited to be? (p. 1). Likewise, this vague figure of the energy citizen could be understood as illustrative of how citizenship is formed and reformed; highlighting the need to adopt a '*fluid and dynamic conception of citizenship'* (Isin, 2009, p. 368) that recognises this as a process constantly in flux and forged through contemporary struggles for recognition, meaning and salience (*ibid*.).

Another aspect of this agenda of change associated with energy citizenship concerns the need to align divergent visions of energy transitions, to enable a 'shared' direction away from fossil fuels and toward low carbon sources. This may be understood as the need to hold the future together (Brown, Kraftl, Pickerill, & Upton, 2012) in the face of uncertainty (Montuori, 2014), increased polarisation (Dryzek & Niemeyer, 2019) and fragility (Escobar, 2017; Strathern, 2007) born by the looming realities of climate change and geopolitical instability. New ideas of shared agency, which look beyond negative footprints (*i.e.,* carbon consumption, and climate disruption) and towards more positive 'social handprints', have been proposed as an important way to leverage the power of civic imagination (Hayward, 2012). These new imaginings can be understood as building blocks offering new pathways for mobilising citizens to build their own shared realities and surpass more linear, predetermined views of how the future may unfold (Castoriadis, 1997). This aspect of citizenship appeals to the unifying hold that emerging energy citizenship dynamics can have within a collective space. It draws from more traditional conceptions of citizenship often defined as sameness, providing a shared sense of belonging and stressing a range of collective rights and duties that ensure equality and justice for all citizens (Young, 2005).

Whether as a concept in flux with the power to disrupt and transform or as an enduring idea that

brings cohesion and a shared sense of purpose to increasingly polarised societies, energy citizenship represents an influential set of ideas that permeates contemporary debates around climate action and energy transitions (Ringholm, 2022; Ryghaug, Skjolsvold, & Heidenreich, 2018; Wahlund & Palm, 2022).

This chapter of the report offers insights from our scoping review of energy citizenship literature, looking to consider instances where energy citizenship has proven to be transformative, and/or areas where it serves as a site to reproduce existing power dynamics within the energy system. We begin by briefly considering the concept of citizenship more widely, and how it is increasingly mobilised in ways that have generated new and illuminating notions of citizenship. These are apparent not just from top-down acts and strategies of citizenship, as well as from conceptions of citizenship tied to self-creation either stemming from political struggles for recognition or emerging from normative notions of what it means to be a 'good citizen' (Lazar & Nuijten, 2013). We then move to offer a brief descriptive synthesis of the articles retrieved through the scoping process; outlining a timeline of publications and offering a break down regarding the types of articles retrieved. We finally move to consider how energy citizenship provides new dynamics in democratic processes in ways that may enrich broader debates on citizenship based on the articles reviewed.

Within this review we specifically try to find answers to two questions. Firstly, we seek to explore emerging energy citizenship in reference to gender. Feminist theory and concerns around gender have been at the cutting edge of critical ideas of citizenship and draw attention to disparities in experiences of citizenship stemming from exclusion (Lister, 2008). Looking to ascertain whether we can identify evolving expressions or ideas related to gender in this body of literature is therefore fruitful as it stresses the need to consider how citizenship can work as both a force for inclusion and exclusion (Lister, 2007; 2008). Critically it addresses the fact that certain differences among citizens such as gender or ethnicity can't be 'fixed' or 'erased' and therefore must be reconciled in different ways (Phillips, 1998). Secondly, we seek to ascertain what new sites of citizenship become relevant as a platform for emerging energy citizens to articulate their interests, concerns, and stakes in the energy transition. This line of enquiry brings into focus what people do, as opposed to what people say about citizenship (Isin, 2009). This offers a complementary opportunity to studies that tend to focus solely on how people identify and perceive their own status as citizens (*ibid*.). It delves into practices of lived citizenship and the places and spaces in which it occurs (Lister, 2007). By doing so we seek to explore what models of citizenship are enacted, how boundaries are practically defined and what criteria of belonging are created. Adopting a politics of space approach, we can further query how change occurs through the emergence of 'sites of governance' which develops from the confluence of citizen and institutional relationships (Stepputat, 2001). In this instance it's relevant to ascertain which localities and populations are imagined, assembled, and mobilised (*ibid*.).

4.2 The revitalisation of citizenship and contemporary forms

The turn to citizenship as a policy solution has endured and even strengthened in the face of the multiple crisis that we face in contemporary life including climate change and biodiversity loss (Bellamy, 2008). It has animated much political and academic discussion (particularly in Europe) where other ideas such class struggle have declined in salience (Phillips, 1998). Long considered a positive democratic asset, citizenship is a prospering concept built up largely through claims and ideals of universal membership that have looked to allay enduring tensions and to smooth over various social divides experienced for instance through gender, ethnicity, religion, and disability circumstances (Phillips, 1998). Yet as we need to account for the radically changed conditions in life that such multiple crisis imposes the ethos of citizenship is also becoming a source of contention (Camilleri, 2015). This has resulted in the emergence of differing citizenship approaches applied to different contexts.

The widespread take up of citizenship across various environmental fields includes emerging notions of food citizenship (Sage, 2014); agroecology citizenship (Smaje, 2014); marine citizenship (McKinley & Fletcher, 2010); ecological citizenship (Dobson, 2006) and energy citizenship (Devine-Wright, 2012). Capturing differences across other domains and social contexts we see the emergence of a variety of citizenship forms which includes cosmopolitan citizenship (Linklater, 1998), flexible citizenship (Ong, 1999), neoliberal citizenship (Hindess, 2002), networked citizenship (Castells, 2007), intimate citizenship (Plummer, 2011), cultural citizenship (Ong, 2013) and many more besides.

Some conceptions of citizenship wish to highlight what citizens have in common as opposed to where they diverge; many drawing from Marshall's theory of citizenship as engendering stability and as a universalising status (Ignagni, 2011; Isin, 2002). Contemporary notions such as cosmopolitan citizenship and flexible citizenship extend this universalising status to wider geographical and social positionings, highlighting transnational contexts that go beyond state-imposed identities (Linklater, 1998; Ong, 1999). Yet other notions of citizenship seek to highlight difference, for instance inclusive citizenship, intimate citizenship and cultural citizenship place emphasis on the need and value of differentiated conceptions of citizens in society and critically the spaces where these are formed and enacted (Lister, 2007; Ong, 2013; Plummer, 2011). The politicisation of the private sphere is an interesting point of discussion here. It highlights growing political debates over 'intimate' identity issues such as gender, parenting, family structures and ageing for instance, stressing the right to self-determination and challenging institutionalised conceptions often experienced as excluding and leading to perceptions of non-belonging in many instances (Lister, 2007; Plummer, 2011). Citizenship as a transformative concept also holds much influence in some contemporary notions, Sage (2014) likens food citizenship to a social movement, that goes beyond consumer relations of individuals to food to a way to transform the food system. Equally, Dobson (2006) highlights the critical value of ecological/environmental citizenship as a commitment to democracy, including participatory processes which are essential to establish new requirements for social-environmental justice under conditions of scarcity.

Another important aspect of contemporary notions of citizenship relates to the complexity of actors, relations and sites that make up this space. Ong (2006) considers how new relationships between government and the governed have changed the way in which citizenship is defined, practiced and instrumentalised (Ong, 2006). In a Foucauldian sense these shifting relationships represent a new system of knowledge and governing techniques - a 'governmentality' that place greater emphasis on market-driven thinking, optimised decision-making and self-governing (Ong, 2006). In general terms such thinking comes under the umbrella of neo-liberalisation as a political ideology that has worked to transfer some state functions into the private sphere, it has accelerated the globalisation of supply chains, and it has led to measures seeking to optimise public service delivery through technocratic administration. Ideas of neoliberal citizenship advanced by Hindess (2002) highlight the increased involvement of non-state and non-political bodies in governing regimes and stress the value of locating citizenship within supra-national regimes of governance. Ideas of cultural citizenship proposed by Ong (2013) also highlight diversity and stress the disciplining role of everyday sites and exchanges between stakeholders which are very much contingent and context specific (relative to class, ethnicity, and gender for instance). Complexity is a key notion advanced through the idea of networked citizenship by Castells (2011) it speaks of growing mistrust in traditional politics, the erosion of gatekeeping through the explosion of media channels and the emergence of numerous axes of information. This further builds on ideas of mobilisation through other means other than traditional political representation.

From recent urban geography insights, we can further note that what constitutes agency in climate action and where we may find sites within which transformation occurs is becoming more dispersed and its politics deeply woven with what are commonly termed the 'co-benefits' of climate action such

a clean air, regeneration, and health and wellbeing (Bulkeley, 2021). This is described by Bulkeley (2021) as a form of climate urbanism expressed as 'climate connected' urbanism which has brough new emphasis onto social justice. The fact that we may find expressions of citizenship in more dispersed spaces and through various 'co-benefit' arenas of climate action is quite revealing and important. However, a potentially more important and less visible aspect of citizenship concerns the tacit work that individuals and communities often do to strengthen rather fragile 'lived' forms of citizenship experienced for instance by people with disabilities and young people (Ignagni, 2011; Wiseman, 2019) or those of women in the home (Lister, 2007; 2017). This issue further stresses the significance of varying citizenship status, that in the case of children and people with disabilities is fragmented and diluted through limiting characterisations of such individuals as less competent and dependent; such characterisations leading to policies that focus often exclusively on families and carers rather that than the individual citizens themselves (Ignagni, 2011). Indeed, much contemporary notions of citizenship involve narratives that look for recognition and describe various struggles of groups for gaining this recognition by contesting institutions of power. This struggle denotes activism rather than merely active citizenship as a key characteristic for which to account (Isin, 2009).

4.3 Findings: brief synthesis of literature review

The results of the scoping review show that there is an emerging body of literature contributing toward energy citizenship debates. Sixty-six academic articles and reports were identified. Energy citizenship was, for the most part a central theme within these items of literature. This area of research has received growing interest and our search of the literature from 2000 to 2022 (May 2016) shows that over 70% of all articles and materials have been published between 2018 and 2022 (as illustrated in Figure 31). The results also show that most articles are European based (as illustrated in Figure 33), with a greater tendency for articles focused within northern European countries[63].

Another relevant aspect in terms of a more descriptive content analysis of the literature relates to the type of study that is used to delve into energy citizenship. From this perspective we can see, as depicted in Figure 32 that the most common approaches are mixed-methods, desk studies, literature reviews and case studies. As such we note that 54% of retrieved literature are empirical studies drawing from observed and measured phenomena and 46% are desk-based studies including conceptual papers, literature reviews and policy reviews. We carried a content analysis of the literature retrieved to explore how gender emerges in this literature and we also screened all articles to ascertain prevailing sites of energy citizenship. These findings are outlined in the following sections.

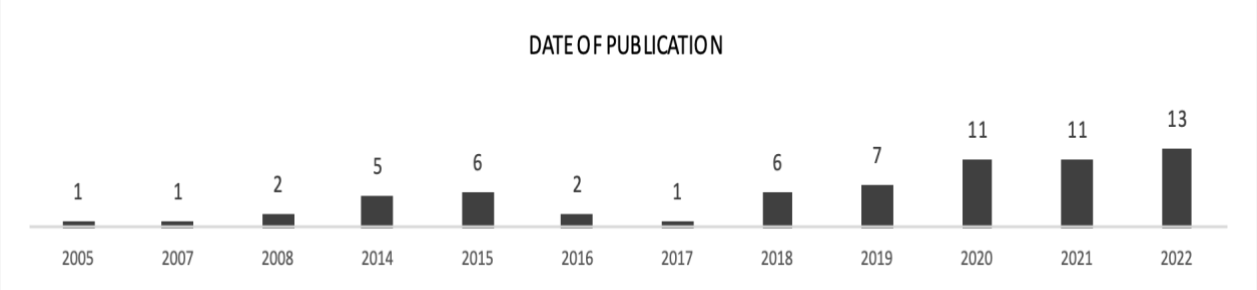

Figure 31: Numerical distribution of articles retrieved by publication year.

[63] Specifically Denmark, Ireland, the Netherlands, Norway and the UK.

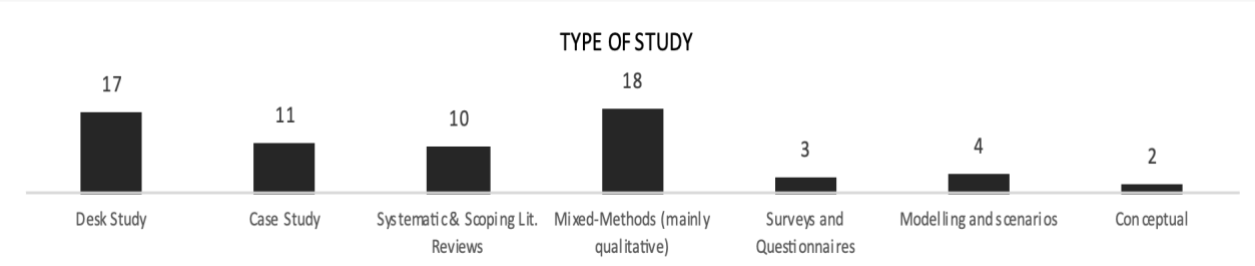

Figure 32: Numerical distribution of articles retrieved by type of study.

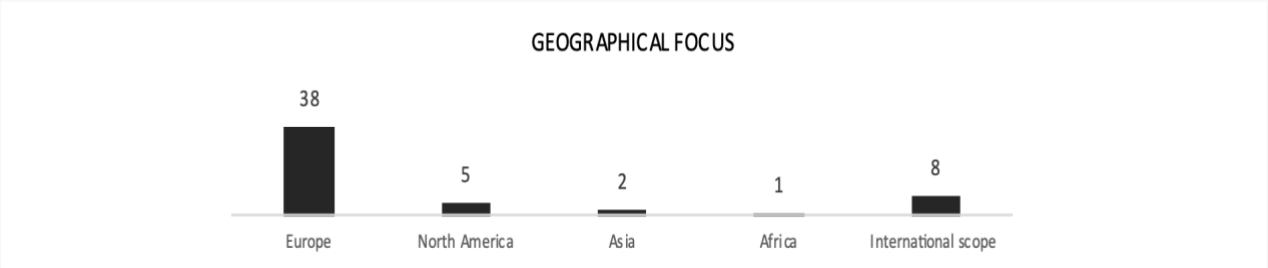

Figure 33: Numerical distribution of articles by geographical focus.

4.4 Evolving Gender perspectives?

Our review suggests that gender is an overlooked dimension of the energy citizenship debate. The energy citizen is often portrayed in gender neutral terms and the implied deeper democratic 'gendered' role of the citizen is largely unexplored. There is also an evolving policy context that merits further exploration. Public engagement with energy system change is increasingly placed at the centre of political strategies seeking to promote and accelerate low carbon energy pathways. While there is a shared objective toward deepening engagement with energy, there is often unacknowledged complexity and diversity in the way public engagement is promoted and facilitated. These are concepts made complex because they are subject to various interpretations and 'rules', that frequently govern the way public engagement is advanced in policy (Cowell & Devine-Wright, 2018). Yet, in the context of accelerating processes of change toward decarbonisation it is expected that public engagement practices and ideas will continue to evolve, with new and emergent engagement processes reflecting unfolding needs and contexts. To deepen engagement with energy therefore we must recognise that 'publics' are varied and evolving and that some ideas and processes can fall -in or -out of favour, others are fleeting, and others may perhaps express resistance, or ambivalence (Wynne, 2016; Chilvers & Kearnes, 2020). Indeed, it is likely that new spaces and processes of participation will emerge beyond those that we recognise and rely on today (Avelino *et al.,* 2020). As such accounting for emergence and change in terms of public engagement highlights the value of exploring the effects of '*new technologies of participation'*, and anticipating how they transform or reproduce power relations, social networks, and agency in society (O'Brien *et al.,* 2014). It would be valid to assume that gender perspectives will continue to evolve in this context and that we may find new or different expressions and manifestations of gender vis-à-vis collective networks in a shifting landscape of emerging actors with different roles and expectations. The institutionalised expression of these through policy merits further attention.

4.4.1 Prevalence of gender in the literature

To determine the prevalence of gender related themes in the literature we performed a content analysis using 'gender' as a key search term to explore the articles retrieved through the scoping

process (we also explored other gender related search terms such as female/male, which did not provide further insights). A key finding from this initial appraisal is that gender is a very peripheral focus of discussion within this body of literature. Of the sixty-six articles initially retrieved the content analysis shows that twenty-one mention gender. However as seen in the illustration below, many of these articles only make one or two mentions concerning gender. Furthermore, most of these mentions happen in passing as part of wider discussion.

We have also seen that a common way in which gender is often addressed is in terms of methodology. This speaks of gender in terms of representative sampling processes and in ensuring via quota sampling methods that socio-demographic dimensions such as income, age, class, ethnicity, and gender are evenly represented. Articles include exploring gender-inclusive aspects of smart energy technologies and other material forms of participation (Ryghaug *et al.,* 2018), the distribution of data samples with regard acceptance of new technologies (Vainio *et al.,* 2019) and a choice experiment exploring preferences for community renewable energy investments in Europe (Cohen *et al.,* 2021). We further note that while sampling strategies are in place to consider gender and other socio-demographic variables most findings in these articles are not disaggregated to elucidate on data specifics relative to these variables.

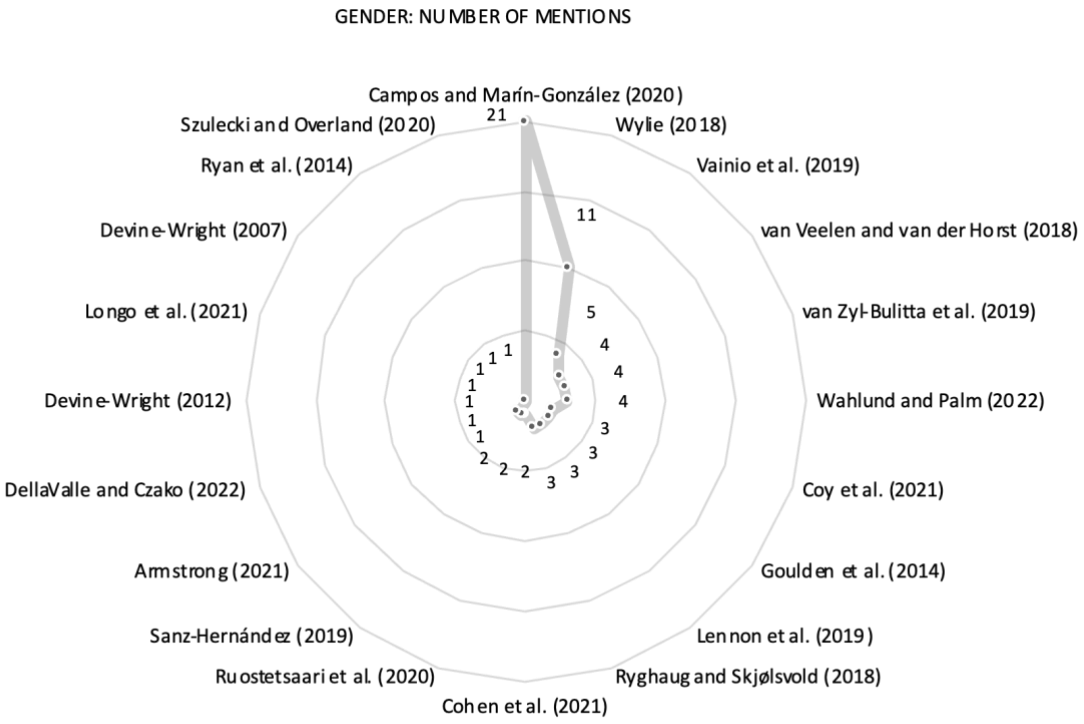

Figure 34: Number of mentions by article that included the search term "gender" (n=21)

4.4.2 Emerging insights on gender and energy citizenship

The emerging literature on gender and energy citizenship is still limited but it does bring new critical thinking that seeks to challenge commonplace rhetoric on activating public participation without acknowledging power, agency, and other differentials across society (MacEwen & Evensen 2021).

The work by Campos & Marín-González (2020) gives a more detailed account of gender issues relative to prosumerism and social movements in Europe. Energy citizenship is premised as

representing a view of the public that emphasises a heightened awareness of responsibility for climate change, for equity and for justice. This ranges from the potential for collective action from protest and mobilisation to the ownership of the means of energy production. The study finds growing attention given within these spaces for equality, gender justice and the inclusion of gender-based programmes around energy poverty. However, the study also finds that interest in these remain irregular across different programmes and that issues around gender and energy poverty are often discrete and based on a narrower set of narratives given by programme beneficiaries. 'Gender justice' allied with energy poverty debates is identified in the literature as requiring further attention to close the gap within existing research on overcoming gender-based stereotypes, empowering women, and mainstreaming gender-based perspectives (Campos & Marín-González 2020).

Ryghaug *et al.* (2018) adopt a specific lens to energy citizenship by drawing on the theory of 'material participation' to explore evolving energy citizenship practices emerging alongside the introduction on new material objects and technologies. On this basis, gender is mentioned in the context of smart energy technologies in the home which are shown to have limited appeal, other than to an imagined and technology-focused 'resource-man' (Strengers, 2013) – that is an information hungry and resource optimising man[64] with limited appeal to the wider family cohort. The authors argue that current manifestations of engagement with this technology in the form of demonstration sites and smart technology pilots have failed to produce inclusive forms of participation and that the productions of such limited publics occurs at the expense of other modes of participation. Ryghaug *et al.* (2018) conclude that material participation is unevenly experienced and continues to reinforce and reproduce broader gender and class distinctions across society.

Finally, we can draw some further ideas from a conceptual paper by van Veelen and van der Horst (2018) who have looked at the concept of energy democracy, highlighting limitations in the literature that advocates for active forms of energy citizenship. The paper stresses the need to pay attention to social and economic factors influencing the fulfilment of these citizenship roles such as control and ownership of generating technologies. Two key recommendations stand out from this article. The first is that we must expand our conceptions of energy democracy and citizenship to larger parts of the energy system and the energy supply chain while being mindful of gender and other factors. Secondly, that alongside current calls to promote participatory forms of energy democracy we must also consider institutional democratic aspects and adversarial aspects of energy democracy to ensure a vibrant and inclusive democratic system is in place.

Given the dearth of explicit articles debating energy citizenship constructs and gender in the literature identified we stress the need to close this gap by drawing on insights and contributions advanced within the wider body of research on energy transitions and engagement. The includes for instance Lazoroska *et al.* (2021) article exploring intersectional dynamics in solar energy communities in Sweden and the relevance of promoting women's professional development in the renewable energy industry; MacEwen & Evensen (2021) on equitable participation in renewable energy with emphasis on the gender-blind approach adopted to date; Pearl-Martinez & Stephens (2016), highlighting the multiple benefits of a gender inclusive and diverse energy workforce.

Thus, the literature shows that much is left to say from a gender perspective with notable omissions across the energy life cycle from extraction, production, distribution, and end-of-life (Allen, Lyons & Stephens, 2019; Pearl-Martinez & Stephens, 2016; van Veelen & van der Horst, 2018). Indeed, Lennon *et al.* (2020) argue that while the concept of citizenship needs to be broadened to allow for

[64] And it is typically a man.

non-commercial energy use, domestic spaces, and spaces of caring it also needs to be framed in such a way that introduces and enables more transformative aspects of citizenship. We move to explore sites of citizenship where gender is also considered.

4.5 Sites of citizenship and participation

There are many valid ways to analyse and explore socio-spatial relations and indeed it is essential to acknowledge this diversity and openness from the onset to avoid providing reductionist accounts that assume more fixed and one-sided readings of social relationships, experiences, and attachments to places and spaces (Sayer, 2000; Jessop *et al.,* 2017). But while we should take care not to privilege a single form of socio-spatial relations we must still inquire and critique the physical, structural, and contextual processes that are relevant and meaningful for energy citizenship. Hence, opening a debate on sites of citizenship, which has largely been treated as peripheral in recent research, is beneficial as it allows us to understand how energy citizenship works out in practice and ascertain how locales and publics are imagined, assembled, and mobilised (Stepputat, 2001). Expressions, engagements, and participatory forms of traditional manifestations of citizenship happen in diverse locations, which may include 'premier sites' such as courts, assemblies, schools, news media but also sites of struggle such as places of refuge, places of protest, or networks of activism (Paz, 2019). Sites of citizenship provide the structural conditions for citizenship, and as posited by Lazar & Nuijten (2013, p. 4) they often imply '*an ethical project of working on the self to create good citizens*' This idea highlights citizenship manifestations as processes that are 'learnt' and that must be 'practiced'. Equally, it tells us that that it is through such practices that a stronger sense of democracy is built and where we bring about 'good citizens' (Wolman, 1995). The energy transition in many ways implies a new beginning, and conceptions of energy citizenship in this context have some parallels with citizenship ascribed to children, highlighting the value of processes of socialisation that enable news sets of experiences and establishment of ideal spaces for *becoming* an energy citizen (Ndofirepi *et al*., 2013).

The integration of social concepts and spatial theory has been advanced by Sayer (2002) as important in giving us the means to understand issues such as contextual-dependencies, areal differences, identity formation and mobilities. Despite a wealth of research and theory concerning conceptions of space drawing from geography as well as other disciplines, critical spatial understandings are oftentimes inconsequential to theory development around energy citizenship. This omission is particularly significant given the fact that spatial relations are prominent within this research including discussions extending from local to global energy citizenship dynamics (Armstrong, 2021), energy landscapes, large energy infrastructure and colonialism in Africa using the lens of energopower (Allan *et al*., 2022), network analysis of communities within energy systems (Bauwens *et al.,* 2022), mapping of collective heat networks and cooperatives from a local stakeholder perspective (Beauchampet & Walsh, 2021); a consideration of 'energyscapes' for optimising biomass energy production (Drożdż *et al*., 2022); a consideration of the territorial characteristics of energy citizenship (Lee, 2019), tracing discourses and policy around energy citizenship as aligned to small-scale, micro-generation innovations (Devine-Wright, 2012) among others.

4.5.1 Prevalence of different sites of citizenship in the literature

Like the content analysis we carried above in relation to energy citizenship and gender we also explored the prevalence of various sites within the initial literature retrieved. We identify five key sites of citizenship that include households, cities, municipalities, rural areas, and energy storage. Below we give more details for each site, starting with the Household as shown in Table 1.

Table 1: 'Household' relevant articles and energy citizenship labels explored in each (n=21)

HOUSEHOLD ARTICLES	LABELS EXPLORED
Allan *et al.,* 2022	lived citizenship, national identity, activism
Ambrose, 2020	environmental citizenship, engaged, responsible citizenship, energy literacy
Beauchampet & Walsh, 2021	ownership, active citizenship, prosumer, local democracy
Chaney *et al.,* 2016	active citizenship, home occupancy, energy user, consumer
Cohen *et al.,* 2021	ownership, prosumer, investment, private citizen cooperatives
DellaValle & Czako, 2022	active citizenship, citizens-as consumers, prosumer, energy poor, collective action
Goulden *et al.,* 2014	smart user, energy consumer, engaged persona, active citizenship
Karjalainen & Ahvenniemi, 2019	early adopter, prosumer, energy user, empowerment
Lennon *et al.,* 2019	imagined citizen, citizen consumer, individualisation, private/public-sphere
Longo *et al.,* 2021	vulnerable consumer, vulnerable citizen, energy poverty
Mesarić & Krajcar, 2015	smart user, demand side management, optimised consumption
Moles-Grueso & Stojilovska, 2021	citizen alienation, energy poverty, engaged citizen
Rommetveit *at al.,* 2021	energy user, smart user, extraction, innovation
Ruostetsaari *et al.,* 2020	consumer-citizen, prosumer, demand side management
Ryan *et al.,* 2014	individual action, collective action, socio technical solutions
Ryghaug & Skjølsvold, 2018	active citizenship, everyday lives, material participation
Sanz-Hernández, 2019	public opinion, energy justice, energy justice, affected people, protest
Trivedi *et al.,* 2022	smart citizens, active citizens, consumer-citizen, prosumer, energy communities
Wahlund & Palm, 2022	energy democracy, energy collectives, energy communities
Wuebben *et al.,* 2020	citizen science, energy communities, intermediaries, public control
Wylie, 2018	energy collectives, citizen alliance, monitoring, citizen-consumer

The search terms used for the exploring sites of citizenship are not advanced as an exhaustive list but instead seek to illustrate the diversity and weight of certain themes as they pertain to specific spaces and places of energy citizenship. Both the sites of citizenship and the themes were selected and refined as part of the literature review/coding process within NVivo and SPSS. In some cases, articles address two or more sites of citizenship. As already mentioned, Table 1 offers a full list of the papers retrieved for households as a site of energy citizenship. Further to this we developed a breakdown of key 'labels or manifestations of citizenship explored in each article. The labels note a specific focus, quality, process, or type of energy citizenship. They include both efforts to promote and advance this idea further or a more critical analysis of these labels (sometimes both). Smart citizenship and demand side management are strong themes associated with households and speak of aspects of flexibility and efficiency associated with household energy use in the context of renewable energy sources. Energy poverty, ownership and activism are also relevant themes.

Moving on, Table 2 below details articles relevant energy citizenship in the context of cities. Energy collectives, active citizenship and activism/protest are relevant themes in this cities cluster. Contrary to the household site, articles focused on cities tend to highlight collective forms of citizenship and agency as opposed to individualised actions and behaviours. Although some of these also appear within discussions at the household level they are more prominent within cities as a site of citizenship.

Table 2: **'Cities' relevant articles and energy citizenship labels explored in each (n=14)**

CITIES ARTICLES	LABELS EXPLORED
Allan *et al.,* 2022	lived citizenship, national identity, activism
Ambrose, 2020	environmental citizenship, engaged, responsible citizenship, energy literacy
Campos & Marín-González, 2020	active citizens, prosumer, social movement
De Filippo *et al.,* 2020	citizen science, active public engagement
Drożdż *et al.,* 2022	active participant, spectrum of agencies, critical citizen, environmental citizen, energy literacy
Gunderson & Yun, 2021	citizen participation, energy democracy, civic ownership, prosumer, right to energy
Mihailova *et al.,* 2022	active citizens, prosumers, value creation, energy communities
Moles-Grueso & Stojilovska, 2021	citizen alienation, energy poverty, engaged citizen
Reymers *et al.,* 2008	protest, resistance, coalition, citizen action groups, social movements
Ringholm, 2022	government-led deliberative consultation, technological trial linked to domestic energy practices, environmental social movement, local grassroots innovation
Roversi *et al.,* 2022	active citizens, political actors, users, producers, consumers, owners
Tcholtchev & Schieferdecker, 2021	smart citizen, user-oriented, innovation
van Wees *et al.,* 2022	energy community, energy districts, citizen-oriented city
Wylie, 2018	energy collectives, citizen alliance, citizen monitoring, citizen-consumer

The municipality as a site of citizenship as shown in Table 3 is distinct from cities and incorporates additional articles. Although there some parallels between the two sites, as indeed there between the other sites we are exploring, municipalities also include concerns for administrative elements within cities or towns and they involve lower density and lower population places. We see an emerging discussion of citizens as passive recipients of energy, citizens as service users of municipal utilities, citizens holding special positions and citizens in reach of large energy infrastructure.

Table 3: **Municipality relevant articles and energy citizenship labels explored in each (n=6)**

MUNICIPALITY ARTICLES	LABELS EXPLORED
Beauchampet & Walsh, 2021	ownership, active citizenship, prosumerism, local democracy
Drożdż *et al.,* 2022	active participant, spectrum of agencies, critical citizen, environmental citizen, energy literacy
Mihailova *et al.,* 2022	active citizens, prosumers, value creation, energy communities
Roversi *et al.,* 2022	active citizens, political actors, users, producers, consumers, and owners
Schwarz, 2020	residents, financial participants, citizens in reach, special positions, associations
Thomas *et al.,* 2020	domestic users, vulnerable groups, passive recipients

Moving to Table 4 we look at articles delving into the Rural area as a site of energy citizenship. The idea of collectives, shared ownership and energy communities is strong within this site cluster. Opportunities for deployment of new renewable technologies are more abundant in rural areas. This creates both more prospects to benefit from joining an energy community or cooperative, but it also exposes rural communities to the growth of this infrastructure in ways not seen in urban centres. Notably smart solutions are weaker within the rural areas as a site of citizenship.

Table 4: **Rural Area relevant articles and energy citizenship labels explored in each (n=5)**

RURAL ARTICLES	ENERGY CITIZENSHIP LABELS EXPLORED
Campos & Marín-González, 2020	active citizens, prosumer, social movement
Reymers *et al.,* 2008	protest, resistance, coalition, citizen action groups, social movements
Slee, 2015	environmental citizenship, community ownership, shared equity
Szulecki & Overland, 2020	prosumerism, individual household involvement, energy communities
Wylie, 2018	energy collectives, citizen alliance, citizen monitoring, citizen-consumer

Finally, Table 5 lists articles that focus on energy storage as a site of energy citizenship. This site is strongly associated with energy community as both producers of energy but also sharing energy storage capabilities. New concepts such as '*energy storage communities'* are proposed which are located closer to consumption points and which have added value in terms of demand side management.

Table 5: **Storage relevant articles and energy citizenship labels explored in each (n=5)**

STORAGE ARTICLES	LABELS EXPLORED
Bauwens *et al.,* 2022	active citizen, energy communities, grassroots, energy cooperatives, energy storage communities
Moncecchi *et al.,* 2020	European citizen, active citizen
Nouri *et al.,* 2022	engaged citizen, prosumer, customer
Thomas *et al.,* 2020	domestic users, vulnerable groups, passive recipients
Wylie, 2018	energy collectives, citizen alliance, citizen monitoring, citizen-consumer

Figure 36 on page 54 provides a combined illustration of key sites of citizenship. We note that the household is a key site of energy citizenship within this literature with twenty-one articles focused on the household as a focal site to explore, develop and relate various energy citizenship relevant themes. Gender features very strongly in the household as a site of citizenship. It underlines findings from the previous section on the lack of gender relevant citizenship manifestations and debates across the wider energy supply chain.

The predominance of the household as a key site of energy citizenship signals a trend toward individualised energy citizenship practices. In terms of energy justice, the consequences of more individualised approaches raise concerns on whether energy citizens become a sort of shareholder in the energy system with obvious uneven patterns of agency and control associated with ability to invest, own, and economically participate within the energy the energy system. A deeper dive analysis of this issue is provided in *section 3.5.2.*

3.5.1 Prevalence of energy citizenship debates at different scales

A final form of site analysis relates to issues of scale. We performed a content analysis using NVivo and SPSS to explore dominant and peripheral scales of energy citizenship. Figure 35 created through SPSS provides a visual representation of the different variables, their category counts, and the connections between different scales, with thicker link lines representing stronger connections. The local scale is by far the most prevalent scale for expressing energy citizenship with 70% of articles (n=44) linked to this scale. This is followed by the national scale with 56% articles (n=35) connected to this scale. The global scale is linked to 24% (n= 15) of the papers and the regional

scale is linked to 17% (n=11) of the papers. The stronger link between scales occurs between the local and national scale and the local and global scale.

The distinctions between different scales are starker if we consider numbers of mentions across all articles retrieved. The total number of references include local (1,459 references), national (668 references), global (285 references), and regional (252 references). Combining these references and comparing their relative weight we can establish that the local scale includes 55% of all references, the national scale includes 25% of all references, the global scale includes 11% of all references and the regional scale includes 9% of all references.

The connections between scales also express articles that actively investigate two or more scalar dimensions of energy citizenship.

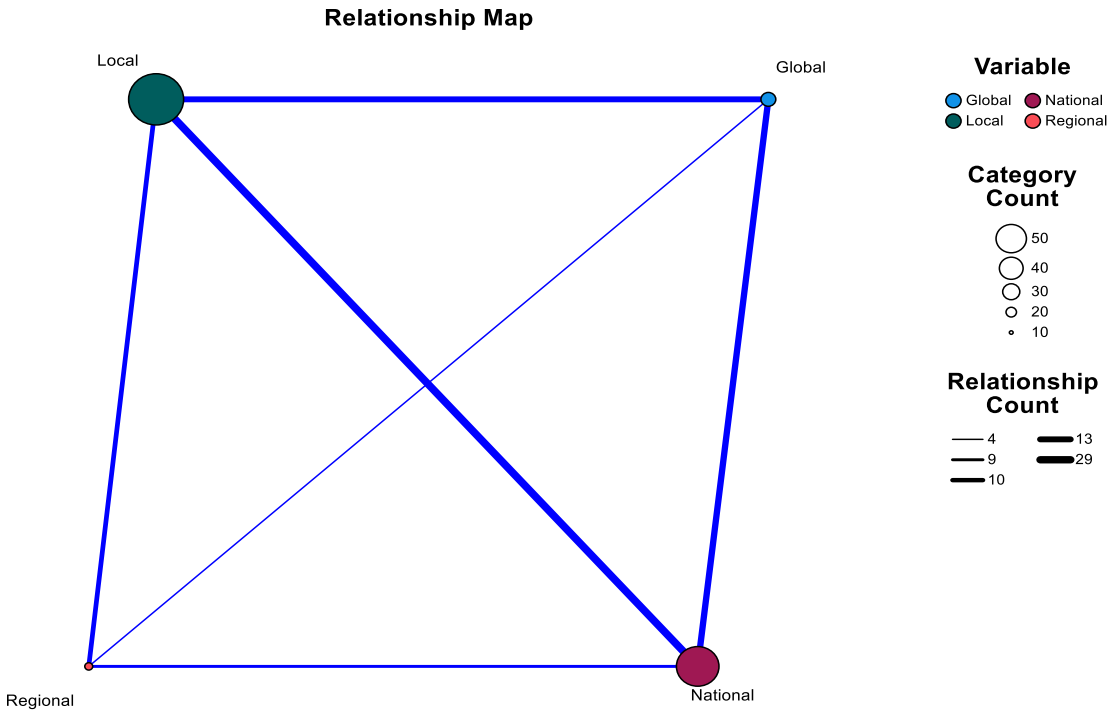

Figure 35: Relationship map to energy citizenship references in the retrieved articles

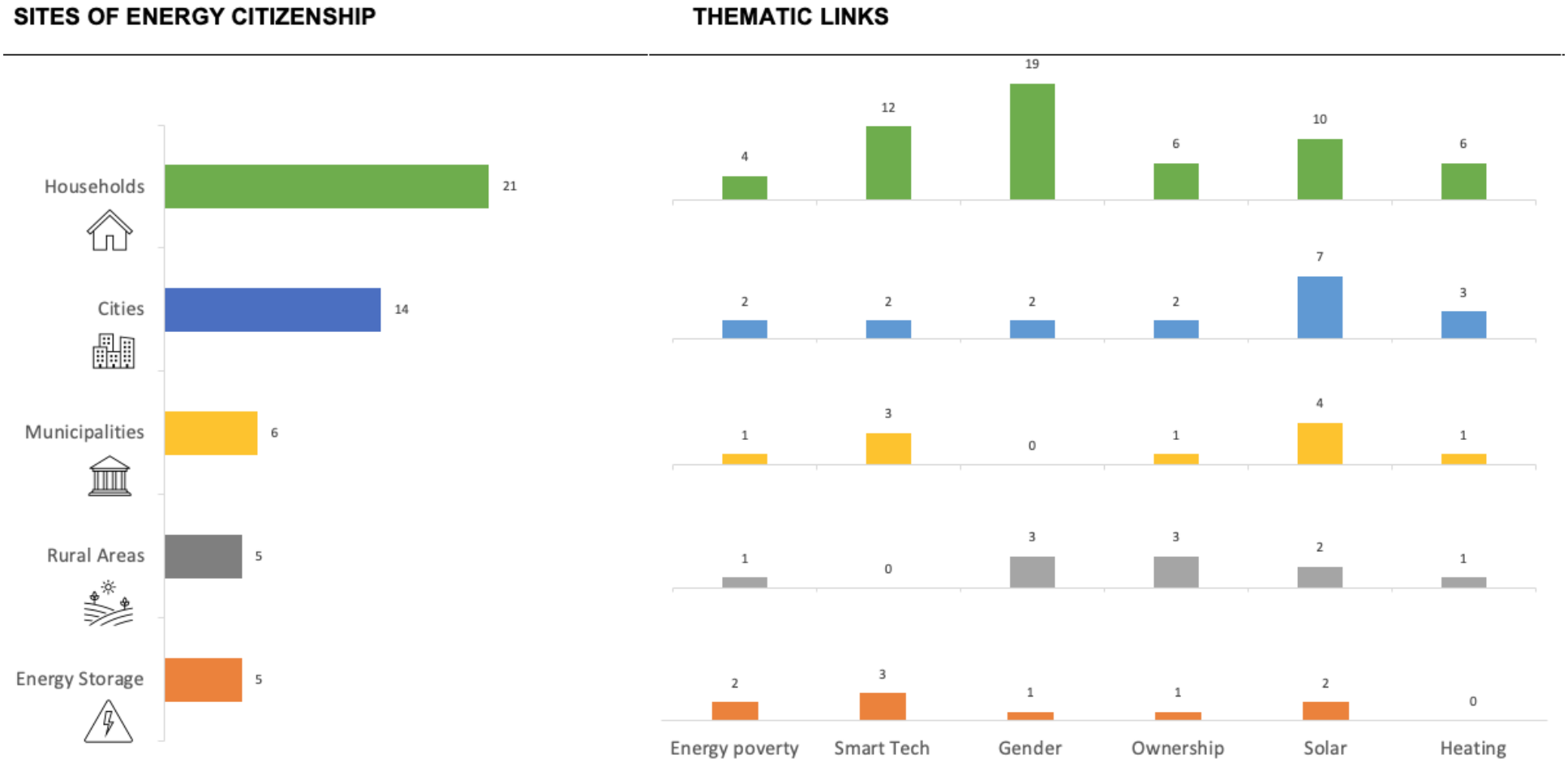

Figure 36: Number of articles retrieved linked to key sites of energy citizenship and their relevance across key thematic areas.

4.5.2 Household & the private sphere of energy citizenship, a deep dive analysis

Developments in the energy system associated with micro-energy generation, prosumerism, ownership of the means of energy production and the integration of smart systems in the home represent a substantial shift in the way that energy is traditionally produced, distributed, and consumed. This is often expressed as a move from a centralised energy system to a decentralised form of energy provision. The household or home appears central to this shift. One of the ways in which it changes relationships of place is through an increased immersion of energy citizenship activities within the home and more specifically a blurring of the demarcating lines between the private sphere and the public sphere[65] (Pet *et al.,* 2020). Indeed, we could argue there has been an upturning in citizenship debates as they refer to energy, seeing that the home (the private sphere) has become a central focus of much action, productivity, and political concern.

This blurring or shifting pattern associated with energy citizenship in the home versus public spaces can help us better conceptualise such emergent energy citizenship relationships and understand its wider implications concerning principles of inclusion, justice, and participation. While private and public spaces are interconnected there are legal, cultural, and experiential differences between these spaces. The private sphere is commonly associated with the home and is often seen as the most valued, stable, and safe place a person might live in. Homes are also commonly private places, that are protected by specific laws (Koops & Galic, 2017). By contrast public spaces are more dynamic, they are shared spaces that materialise through influences stemming from wider groups in society and where almost everyone has free access (*ibid*.).

Lee (2019) argues that under energy citizenship, people who are concerned about the consequences of energy production and consumption increasingly demand the creation of a decentralised energy system. This however affects both the public and private spheres. Energy production and ownership suggests a degree of independence, empowerment through ownership of the means of production, energy security and material engagement with the energy system. In the process it substantially reshapes the home as a site that is detached from wider systems and the public sphere of influence.

Many questions remain unanswered on how energy provision through private sphere production practices may enhance or ensure energy resilience and energy justice. For instance, in the event of extreme weather events we know very little on how decentralised, home-based localised energy systems will behave and how or who resolves any emerging issues. Equally during blackouts, caused by extreme weather for instance, power systems must remain down until the distribution grid is operational, so energy independence and resilience in this context is not a given. Furthermore, in terms of diffusing ownership models there are critical disparities associated with citizens who do not own a house, lack resources, or have no access to a roof in a house (for Solar PV for instance). The fact that you need to own your own home and have a roof, space available and/or resources to get involved is for many a reminder of non-belonging, which caged in a frame of energy citizenship turns into negating citizens a role, diminishing their status and reproducing divides in society. The shareholder concept rather than the citizenship concept seems more fitting in this context.

[65] A significant departure from the public-facing nature of traditional understandings of citizenship and the role of the citizen

Lennon *et al.* (2019) remind us that the construction of energy citizenship as an individual actor that is motivated primarily by financial considerations is limiting. It invites private-sphere energy citizens to exercise civic responsibility through changes in economic behaviour and purchasing decisions in the home. The result is that it reinforces a market-driven paradigm of the energy system, where the state occupies a centralised regulatory role that largely removes any real agency from its citizens through a system of 'knowing and not knowing' the contradictions of economic growth and low carbon transitions (Webb, 2012).

Pel *et al.* (2020) and Van Veelen (2018) highlight the fact that the boundaries between the private sphere and the public sphere are becoming more porous. The increased relevance of this trend is often expressed in political ideas by policymakers and EU institutions (Pel *et al.* 2015). While these can be countered by alternative expressions of energy citizenship for instance at work, in school or in the street our review shows that the focus in the home prevails in the academic & grey literature. There are obvious limitations to establishing their relevance to wider practices and spaces and a deeper scoping of materials at grassroots level could provide further insights.

Stern (2000) outlines three significant spheres linked to environmental behaviour: the private sphere (the home), the public sphere (spaces of activism and political behaviour) and the corporate or institutional sphere (professional and technical spaces). Devine-Wright (2012) considers these spheres while discussing the idea of energy citizenship and stresses the need to encompass policies in the energy sector that involve the private sphere (*i.e.,* adoption of new technologies in the home) but also the public sector (*i.e.*, to establish the political parameters of technology adoption) and the corporate/institutional sphere (*i.e.*, ensuring technological design is user-oriented and inclusive). Acknowledging that engagement and even participation across all these spheres is hugely advantageous, the present dominance of the private sphere as a key site of energy citizenship can be read as problematic and leading to limited opportunities to influence the energy transition.

4.6 Summary

The principal aim underpinning this review of the literature pertaining to energy citizenship was to enhance and broaden our collective 'civic imagination' (Mullaly *et al.,* 2022). That is, we strived to develop a critical analysis of existing work in way that can encourage us to consider evolving ways of understanding the roles we may occupy as energy citizens in relation to the energy transition. We retrieved sixty-six articles for in-depth review, and we carried a content and thematic analysis using both NVivo and SPSS[66].

To support our analysis, we engaged with the wider literature on citizenship, and we found that many contemporary notions of citizenship such as environmental citizenship, cosmopolitan citizenship and inclusive citizenship look for recognition and are often centred around contestation of institutions of power, often signalling activism, rather than active engagement as a key characteristic for which to account (Isin, 2009).

We then moved to provide a descriptive synthesis if the sixty-six articles retrieved. The analysis showed that there has been an accelerated rate of engagement with energy citizenship debates

[66] As mentioned earlier NVivo is a software package, which facilitates and assists in qualitative data analysis, while SPSS (originally named Statistical Package for the Social Sciences) is a statistical analysis package used for quantitative analysis.

and within the 2000-2022 range we explored we found that over 70% of all articles and materials have been published between 2018 and 2022. A geographical breakdown of the articles showed that the literature is based on the European context and further to this that desk studies and literatures review abound in this space.

We subsequently looked at finding answers to two questions. Firstly, we queried emerging energy citizenship in reference to gender within the literature. Our review shows that gender is still an overlooked dimension of the energy citizenship debate. It further revealed that current conceptions of energy democracy and citizenship should consider larger parts of the energy system and the energy supply chain while being mindful of gender and other factors. This includes design of new technologies, investment, and decision-making.

The second key question we looked at focused on new sites of citizenship and their relevance as a platform for emerging energy citizens to articulate their interests, concerns, and stakes in the energy transition. We identified five key sites of citizenship that include households, cities, municipalities, rural areas, and energy storage. Smart citizenship and demand side management were strong themes associated with households and speak of aspects of flexibility and efficiency associated with household energy use in the context of renewable energy sources. Gender also featured very strongly in the household as a site of citizenship. Further underlining our previous findings on the lack of gender relevant citizenship manifestations across the wider energy supply chain. Contrary to the household site, we found that articles focused on cities tend to highlight collective forms of citizenship and agency as opposed to individualised actions and behaviours.

In terms of sites citizenship, we also looked at issues of scale and we found a prevalence of energy citizenship debates at different scales, The local scale is by far the most prevalent scale for expressing energy citizenship with 70% of articles (n=44) linked to this scale. Close links to national scale and global scale in some instances. We suggest that to avoid the 'local trap' further analysis would be useful in terms of engaging with the 'local' in a more critical manner examining both the context and the multi-scalar interplay between national, global scales (if any) that these manifestations suggest (Becker & Naumann, 2017).

The predominance of the household as a key site of citizenship and the way in which it is currently framed leads us to conclude that while it represents and supports a shift to a more decentralised energy regime, it nevertheless still reproduces traditional market-drive approaches to energy provision and behaviour. The transformative influence of such an approach is limiting.

5 Typology of energy citizenship

> "*All forms of participation – whether invited or uninvited, insider or outsider – are always orchestrated and framed in powerful and highly partial ways, and are thus subject to exclusions*"
>
> (Pallet *et al.* 2017, 607).

While the terms "energy citizenship" and "energy citizen" have increasing currency in the energy transition discourse they remain underdefined and rather nebulous concepts. Energy citizenship can be understood as a social construct, a sociotechnical imaginary "*conceptualised by activists, academics, and increasingly, policymakers of the potential roles that citizens could, or perhaps*

should, play in the energy system" (Dunphy & Lennon 2022). The concept speaks to elements of both of the main citizenship traditions (liberal and civic republican) but depending on the context also draws from post-cosmopolitan citizenship ideas as forwarded by Dobson (2003). While forwarded initially as perhaps a contrast to the passive role traditionally held by citizens, energy citizenship remains a somewhat nebulous idea and as Lennon *et al.* (2020, p. 184) observe, what it "might involve in practice remains open to interpretation".

There have multiple efforts to define the concept and describe what it may look like. In much of this work there has been a tendency to focus on active participation, wherein citizens as construed as economic actors. This is of course quite exclusory ignoring "*issues of unequal access to energy, limited financial resources, educational privilege and expertise, or differential levels of control over one's environment and practices*" Lennon *et al.* (2020, 189)[67]. As Dunphy & Lennon (2022, p. 440) posit "*if energy citizenship remains predominately focused on economic modes of participation, those with less economic privilege will at best be quasi-citizens in the energy future*." Moreover, we suggest that rather than one singular energy citizenship, there are in fact multiple expressions of citizenship in the energy domain, which can and often do overlap. These expressions of energy citizenship are reflective of socio-economic privilege and life experience and may change depending on changing circumstance.

In a previous report arising from this work (Dunphy *et al.,* 2023) we described several expressions of energy citizenship. These were based upon four modes of participation and/or non-participation, namely: (i) access; (ii) consumption; (iii) production; and (iv) politics. This chapter builds upon the presented descriptions[68] and work presented earlier, to forward a typology of energy citizenship. The aim of this typology is not to document every possible manifestation of the energy citizen as to do so is neither possible not desirable. Rather by documenting archetype expressions of each category of energy citizenship – we aim to provide an appreciation of the multiple ways in which energy citizenship can manifest, while capturing key expressions.

5.1 Energy Access

The first category is one perhaps often overlooked in discussions on energy citizenship, it concerns those on the margins. It relates to access to energy, and it is fundamentally linked to the framing of energy as a resource and as a source of wealth. These expressions of energy citizenship are marginalised by the energy system (and likely also by wider socioeconomic system). They operate outside of, or are negatively impacted by, the existing energy system structures.

Expression	Characteristics
Excluded	Those who are prevented from connecting to energy grids due to socio-political and/or economic reasons or in terms of geographical location (Lennon & Dunphy, 2023b).

[67] Indeed, we note that citizenship itself can be seen as a container for apportioning privilege (Gee et al. 2016).
[68] In effect, Chapter 5 of D2.1 (*Emerging examples of energy citizenship*) constituted a preliminary presentation of the typology.

Expression	Characteristics
Dispossessed	Indigenous peoples and other marginalized groups from whom energy resources have been unjustly taken *e.g.,* tar sands production on Canadian First Nations land (Parson & Ray 2018) and/or extraction schemes which have resulted in their displacement, *e.g.,* Three Gorges Dam in China (Jackson & Sleigh, 2000).
Energy Poor	Householders unable to afford the energy needed to for essential energy services. Income is important, but there is not a direct link. Not all those who suffer from monetary poverty are necessarily energy poor. Also, not all those in energy poverty are income poor (Palmer *et al.,* 2008), A complex multidimensional issue that encompasses a broad range of factors including energy services provision, the quality of the service being provided, reliability of supply, and affordability (Bouzarovski, 2014).

5.2 Energy Consumption

The traditional role for citizen in the energy system is that of consumer. In previous years this was a very passive role, with the citizen-consumer (supposed to be) grateful for the energy supplied from (an assumed benevolent) utility – in most cases a state-owned and/or highly regulated entity.

Expression	Characteristics
Active consumer	An energy literate consumer who understands the energy market and express power by influencing the market through consumer 'choice'. Sometimes linked in public information campaigns to the 'good citizen', wherein they are encouraged to use their market power to help meet public policy objectives. Active user of a product or service, feeding information back to the provider who in turn adapts their service to meet the needs of the user (Schweiger *et al.,* 2020)
Digital native	A consumer who is 'native' to the digital lifestyle, connected to the internet, and confident about adapting to new technologies. Often times can be what marketeers would call an early adopter. Brown & Czerniewicz (2010) note the risk of what they term digital apartheid. They can quickly adapt to change energy market and technologies *e.g.,* smart meters, dynamic pricing *etc*. where it is expected that they will use digital skills to better manage consumption patterns (reducing their costs while help demand response).

Expression	Characteristics
Energy champion	An energy literate consumer able and willing to provide peer support to other consumers around energy savings. Typically, they will be environmentally conscious and technically minded. They may be thrifty, but their motivation for reducing energy consumption is not just about money. They energy conservator role often seems to result from an anti-consumerism philosophy (Clancy & O'Loughlin 2002), which may have it origins in their environmentalism.
Collectivist-consumer	Groups of consumers who come together to form buyers' clubs or join similar initiatives whereby they use their collective bargaining power to get better terms from suppliers (see *e.g.,* 'One Big Switch' in Ireland). Most examples are commercially run programmes and so they do not often any agency to the consumers, as they only decision is whether to join or not. Bottom-up consumer-led buyers' clubs would overcome this issue.

5.3 Energy Production

This third category focuses on energy production. These expressions of citizenship facilitate citizens in breaking out of their previous limited role as consumers of energy. The expressions of energy citizenship described capture both individual and collective organisation for production. Hybrid configurations, like presumption, provide opportunities to achieve greater personal energy security.

Table 6: energy production expression of energy citizenship

Expression	Characteristics
Prosumer	A production-consumer, one who both produces and consumes energy. In the domestic sphere, there is most typically (but not only) realised through the installation of solar photovoltaic array on their property. Prosumers use much of their energy when it is produced with excess production being sold (where that is permitted, other 'donated') to the grid or stored in batteries for future use.
Self-Consumer	The self-consumer consumes the electricity they produce and minimize if not cease transactions with the grid. There are a variety of technologies available for storage and management of the surplus. As its most extreme the self-consumer becomes an almost takes on the role of the "off-grider" – cutting they connection with the centralised grids.

Expression	Characteristics
Collectivist-producer	These are energy producers who combined in collective undertakings – with the best-known configuration being the energy co-operative, but it may also take the form of a social enterprise or a for profit company. This form of production involves communities (geographical or otherwise) coming together to develop and run their own energy production facility. As self-consumption grows, a shift to micro-grid arrangements could emerge amongst clusters of self-consumers – potentially allowing a federated form of collectivist-production of energy.
Citizen-investor	This is where the citizen invests their own money in an energy company or energy project. At one extreme it may involve investing in a small local community-orientated energy project, while at the other it could mean the purchase of shares in a large publicly quoted company. While there may be multiple motivations for getting involved, it is fundamentally a financial investment. There are several barriers to increasing this type of investment including regulation, market structures access to finance, *etc.* Invariably and unexpectedly those who can afford to invest come from high-income households (Curtin *et al.,* 2019).

5.4 Political & Governance

This fourth category of energy citizenship lies within the political and governance arena. In these expressions of energy citizenship, the objective is to affect change in decision-making processes (at multiple scales). We outline four expressions of energy citizenship, which can be thought of as a continuum from proceduralism on one extreme, through ever decreasing links to the formal processes, to a complete sense of alienation and disenfranchisement on the other.

Table 7: Political and Governance expression of energy citizenship

Expression	Characteristics
Citizen-litigator	This energy citizen is focused on procedural and administrative correctness. They work through established processes and aim to ensure that laws about environmental information provision, public consultation, and permitting of facilities are strictly followed. In doing this, they contribute to better energy policy development and regulation. This form of citizen participation very much within the 'constitutionalist' perspective articulated by Mullally *et al.* (2018) where concerns regarding legal rights and use of the law to accommodate change are priorities. Notably, public engagement is formal and expressed through established regulatory mechanisms

Expression	Characteristics
Citizen-challenger	The citizen-challenger is active in political processes and sees the energy transition as an implementation challenge. They combine with others to challenge the status quo and enact change through the political system "*by means of public awareness, political campaigning, lobbying, electoral politics, and the like"* (Dunphy & Lennon 2022, p. 439). They are usually motivated, well-informed, and well organised. However, while not necessarily welcomed by governments (and other incumbent stakeholders), citizen-challengers arguably play an important role in democracy by questioning accepted wisdoms – following John Barry's (2019, p. 728) advice that in times of non-violent disagreement "*contestation is more important than consensus*."
Citizen-activist	This form of energy citizenship is somewhat similar to the citizen-challenger, but the citizen-activist works more on the political margins. They do not trust the political system to deliver change and so they are involved in radical action such as protest movements and other forms of agitation. In many respects they aim not achieve change through the system but to change the system itself. Activists would typically purport to be working on the side of the public good, as Martin (2007, p. 27) observes they are "*… challengers to policies and practices, trying to achieve a social goal, not to obtain power themselves*".
Disenfranchised	These are the energy citizen who, or socio-political, economic, and/or geographical reasons, do not have a voice in the energy discourse. Accordingly, their perspectives are not reflected in policy development or implementation. They are in effect at the margins of the already marginalised. Many who experience this form of energy citizenship will also likely experience other marginalised forms in relation to access to energy, affordability of energy *etc*. There are other citizens who perhaps not as evident are also disenfranchised in relation to energy. For instance, householders who are not named on energy account[69] cannot engage with energy suppliers.

6 Summary and conclusions

This was the second of two related outputs from research focused on understanding the concept

[69] This applies to many renters where landlord may be named on the account; it is also an issue for many women, whose husband may be the sole name on the account)

of energy citizenship[70]. As outlined in Chapter 2, the study reported in this report is the epitome of a social study, concerned with developing an understanding of people's relationship with energy. We viewed the world as a social construction that needs to be interpreted and accordingly adopted a social-constructivist epistemology. In realising the work, we employed a mixed-method research design using a combination of qualitative and quantitative methods: literature review; surveys; asynchronous structured dialogues; in-depth interviews; with thematic analysis of the resultant transcripts and records. This approach enabled us to capture key insights from the literature and combine with an appreciation of the human understandings, perceptions, attitudes, and practices around energy and the energy system.

We note that the consideration of gender is quite pervasive in the reviewed literature and contrast this with the observed lack of gender relevant descriptions of energy citizenship. The energy citizenship expressions forwarded above aimed to address this by explicitly considering gender in their formulation. The review of the literature around the five examples of 'sites of energy citizenship'[71] proved quite informative. An analysis of the labels used by the literature around these different sites shows both a large diversity of terms used for similar concepts, and a good deal of cross use of terms in the five sites. The prevalence of household as a site of citizenship in the reviewed literature aligns with the perceived reemphasis of the private sphere in the wider energy citizenship discourse and supports the proposition forwarded that the home has become a focus of a lot of action, productivity, and political concern around energy.

Arguing that energy citizenship should not be something that is earned (Joppk, 2021), we reaffirm our point from the preceding deliverable that "*an energy citizenship that is won or earned is good imagery for an energy system that remains unjust*" (Dunphy *et al.,* 2023). We outlined a typology that groups expressions of energy citizenship into four key categories based around access to energy, consumption, production, and politics and governance. Fifteen expressions of energy citizenship were described, three under the 'access to energy' category, and four in each of the others. Significantly, these expressions include those who are at the margins of society (and the energy system) including the excluded, a group usually ignored in such discussions.

We suggest the typology provides a basis for conceptualizing the relationship between the different ways in which citizens act in, or on the energy system and the governance structures that condition their actions. The typology, the appreciation of an inclusive multifaceted energy citizenship that will underpin it, and the understanding of the different manifestations of citizenship around energy described in it will contribute to both understanding and mobilising the decarbonization potential of the energy citizenry elsewhere in ENCLUDE[72]. This typology (and companion report D2.1) will also contribute to the ongoing discourse (including with peer projects) on the role of citizenship in the energy transition and the meaning and value of energy citizenship[73].

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[70] This report is best read with its companion report from this research: Dunphy, N. P., Lennon, B., Quinlivan, L., Revez, A., Brenner-Fließer, M. (2023). *Report on intersectional analysis of emerging examples of energy citizenship* (D2.1). A research report arising from the ENCLUDE Horizon 2020 project, grant agreement no. 101022791. https://doi.org/10.5281/zenodo.7598736.

[71] The example sites of energy citizenship explored in the literature comprised households, cities, municipalities, rural areas, and energy storage.

[72] Particularly in WP5 'The impact of energy citizenship in decarbonization pathways'

[73] It will also be relevant to scholarship on related conceptualizations of citizenships with post-cosmopolitan attributes *e.g.,* environmental citizenship, water citizenship, *etc*.

Building on the work presented here, future work within ENCLUDE will involve the documentation of individual expressions of citizenship in blog posts, discussion papers, book chapters and journal articles[74].

[74] The actual communication channel used for each will depend on needs for communicating specific expressions of citizenship, and the target audience.

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7 Appendix 1: Survey

ENCLUDE

Energy Citizens for Inclusive Decarbonization

Survey Questionnaire

Version: 1.0

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ENCLUDE
Energy Citizens for Inclusive Decarbonization

Survey Questionnaire

Participant ID (e.g. COR001)	
Date:	

1. Personal Details

a. Place of residence			
b. Gender	☐ Male ☐ Female ☐ Other	c. Age	
d. Which of the following is your highest level of education?	☐ Less than primary ☐ Primary ☐ Lower secondary ☐ Upper secondary ☐ Post-secondary, non-tertiary ☐ Tertiary ☐ Post-graduate ☐ Other_____	e. Which of the following describes your current occupational situation?	☐ Paid employed ☐ Self employed ☐ Unpaid work ☐ Seeking employment ☐ Retired/pensioned ☐ Full time student ☐ illness / disability ☐ Other_____
f. Household income in comparison with average in your country?	☐ Much higher ☐ A bit higher ☐ Similar to the average ☐ A bit lower ☐ Much lower		

2. Personal Relationship to Energy

(a) Where does energy become a visible part of your daily life?

(b) To which well-being dimensions does energy contributes?
Health ☐ Education ☐ Safety ☐ Financial ☐ Relationships ☐ Other ☐ _____

(c) What does the term energy transition mean to you?

The ENCLUDE project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement no. 101022791.

(d) The current path of the energy transition is inclusive and equal for all citizens.

Strongly Disagree	1	2	3	4	5	Strongly agree

(e) The fact that the energy transition will result in both winners and losers is not acknowledged is the discourse on the energy transition.

Strongly Disagree	1	2	3	4	5	Strongly agree

3. Participation and decision-making in the energy system

(a) It is easy to engage with decision-makers regarding energy infrastructure projects.

Strongly Disagree	1	2	3	4	5	Strongly agree

(b) I am confident that I would be invited and encouraged to participate fully in the decision-making process.

Strongly Disagree	1	2	3	4	5	Strongly agree

(c) When I have participated in the decision-making process, I have felt heard and considered.

Strongly Disagree	1	2	3	4	5	Strongly agree

(d) The decision-making process of most energy infrastructure projects is fair and just.

Strongly Disagree	1	2	3	4	5	Strongly agree

(e) My efforts to participate in the energy system have been intentionally/unintentionally limited by current governance structures/decision-makers.

Strongly Disagree	1	2	3	4	5	Strongly agree

(f) I feel that those in power do not want citizens to engage with the decision-making process.

Strongly Disagree	1	2	3	4	5	Strongly agree

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(g) The concept of citizen participation in the energy system/decision-making processes remains mostly theoretical and lacks substance in practice.

Strongly Disagree	1	2	3	4	5	Strongly agree

4. Energy Citizenship

(a) What does energy citizenship mean to you?

(b) The concept of energy citizenship is new to me.

Strongly Disagree	1	2	3	4	5	Strongly agree

(c) The fact that many times citizens are asked to react to plans and measures developed by experts implies information and power imbalances from the start of a project process.

Strongly Disagree	1	2	3	4	5	Strongly agree

The ENCLUDE project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement no. 101022791.

8 Appendix 2: Interview Schedule

Interview Schedule

Version: 1.0

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Interview Notes

- Interviewees should be assured of the confidentiality of the project.
- Informed consent should be obtained from all interviewees.
- Interviews should be recorded, where interviewee gives permission, otherwise detailed notes should be taken.
- Interviewees should be assured there are no right answers, in all cases you are looking for their experiences and/or their personal opinions.
- Questions to be asked are numbered.
- These are semi-structured interviews, the interview schedule is designed as a guide for conversation, not a questionnaire. The interviewer should make sure they elicit a response to all questions below, especially the key topics listed in the checklist at the end. However, an effort should be made to maintain the natural flow of the conversation.
- Allow the interviewee scope to expand upon topics that are of interest to them, while possibly spending less time on others. You may also find that in answering one question, the interviewee will also give a response to another which you have not yet asked. In this case, there is no need to formally address this topic again.

Semi-Structured Interview guide

Participant profile

1) Can you tell be a little about yourself?

Prompts: Area of residence; Age range; Gender; Occupation

Personal relationship to energy

2) How do you use energy in a typical day?
3) Do you think energy contribute to your well-being?
    a. How so?
4) Have you any concerns around energy?
5) Are you familiar with the term energy transition?
    a. What does it mean to you?

Participation and decision-making in the energy system

6) How do you see people participating in the energy system?
7) How would you describe your own participation in the energy system?
8) Are there other ways would you like to participate in the energy system?
    a. What are the barriers to your participating more?
9) What does a fair decision-making process around energy look like to you?
    a. Inclusive?
10) What are the barriers to having fair and inclusive participation in the energy system?
    a. How can these barriers be addressed?
11) Are citizens encouraged to become involved in the decisions around energy and the energy system?
    a. Are they even permitted?
12) Are citizens permitted /encourage to join together on energy projects?
    a. or on energy decision making?

Understandings of energy citizenship

13) How would a people's centred energy system look like to you?
14) What does the term "energy citizenship" mean to you?
15) Do you consider yourself an energy citizen?
    a. Why or why not?

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