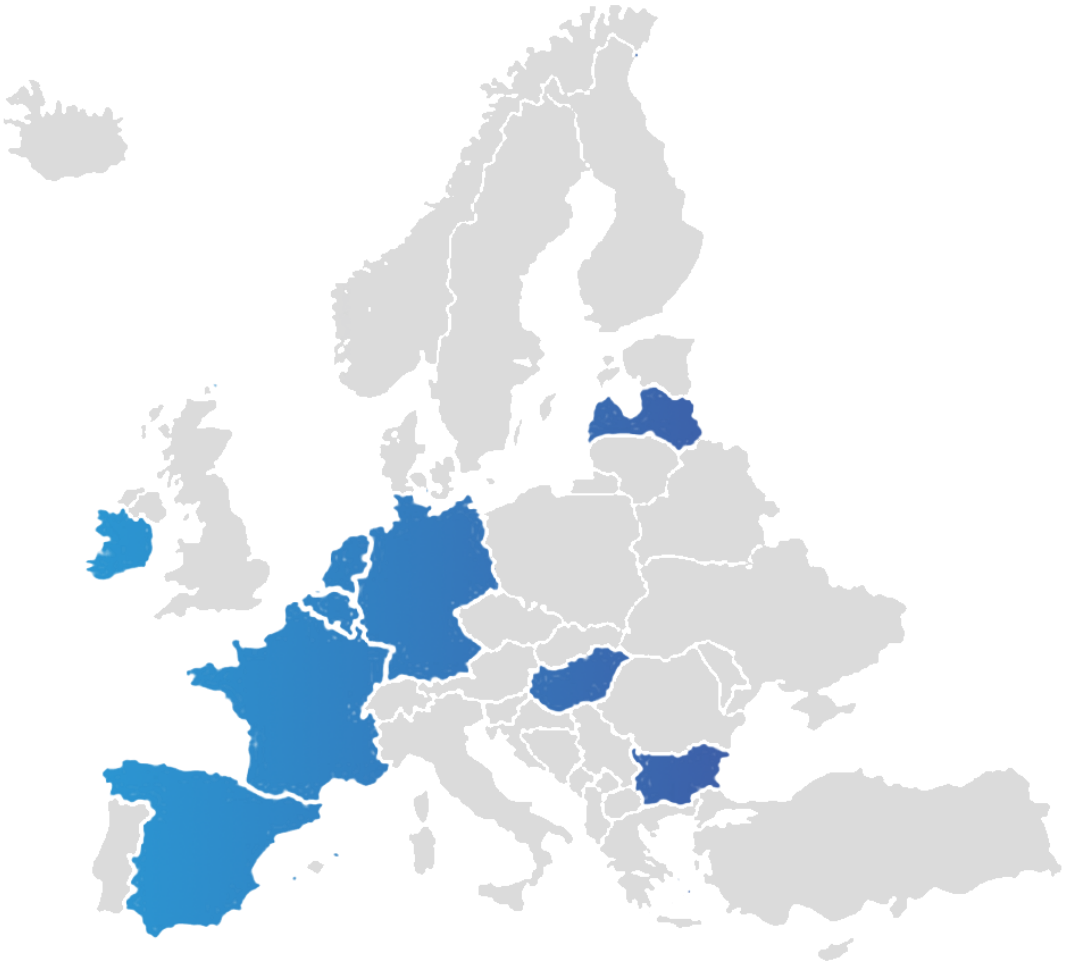
grEIndependent Institute

ENERGY PROSPECTS

Energy Citizenship in Europe

EnergyPROSPECTS Detailed Case Summary Reports

Introduction and Methodology



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Case researchers are listed separately for each case.

Proofreading by Simon Milton

For further information about the detailed cases, please contact GreenDependent Institute at info@greendependent.org.

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INTRODUCTION

This document provides a description of the methodology used to select and survey the 40 cases of energy citizenship studied in detail in the EnergyPROSPECTS project. Furthermore, it also explains the structure of the 40 case summary reports prepared as one of the outcomes of this task.

EnergyPROSPECTS (PROactive Strategies and Policies for Energy Citizenship Transformation) works with a critical understanding of energy citizenship that is grounded in state-of-the-art social sciences and humanities (SSH) insights. The project aimed to develop a broad understanding of energy citizenship as a policy concept, a sociotechnical imaginary, and a knowing-of-governance – i.e., a social construction of desirable/normal civic agency in future energy systems. The project set out to identify and examine a range of crosscutting issues in energy citizenship, which informed the iterative typology development and criteria for case selection. Drawing on pre-existing databases and a search for new cases, nearly 600 energy citizenship initiatives were mapped, and typology refinement exercises were undertaken that demonstrated the depth/breadth of the energy citizenship concept in theory and practice. The project is being implemented between May 2021 and April 2024.

1. WHAT IS ENERGY CITIZENSHIP, AND HOW IS A CASE OF ENERGY CITIZENSHIP DEFINED?

As part of the energy citizenship mapping exercise, methodology was developed for pursuing the overall project aim of identifying the diversity of types and empirical manifestations of energy citizenship. The methodology was created to help answer the main research questions the EnergyPROSPECTS project team intends to respond to by undertaking the mapping activity, which are as follows:

1. Which forms of energy citizenship (henceforth referred to as ENCI) can be found in Europe today? How can we account for their diversity?
2. Do we find the same forms in different regions/countries of Europe?

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3. In what contexts do different forms of ENCI emerge and develop?

For the **definition of energy citizenship**, we turn to the conceptual framework of the EnergyPROSPECTS project presented by Pel et al. (2021):

> *Energy citizenship refers to forms of civic involvement that pertain to the development of a more sustainable and democratic energy system. Beyond its manifest forms, ENCI also comprises various latent forms: it is an ideal that can be lived up to and realised to varying degrees according to different framework conditions and states of empowerment. (Pel et al., 2021:64)*

Building on this definition of energy citizenship, a case of ENCI in the EnergyPROSPECTS project is understood as…

1. a constellation of actors (in a context) and how it
   enables/supports citizens to become active private and/or public energy citizens;
   acts as a collective energy citizen by contributing to change in the energy system
   or,
2. including individual energy citizens and how they realise their potential in a private, public or organisational setting.

As indicated by these definitions and underlined by the agency dimension of the conceptual typology presented in Debourdeau et al. (2021), a case can be centred around an individual or realised in a multitude of collective forms. During the mapping of the ENCI landscape, the focus was on collecting data about both types of cases.

Furthermore, as Pel et al. (2021) indicate, we also recognise that even within the boundaries defined for ENCI mapping in EnergyPROPECTS, "enabling" and "supporting" citizens to become active private and/or public energy citizens can take many different forms. Similarly, energy citizenship itself can have many different forms. In reality, many types of cases can enable or support several different forms of energy citizenship in parallel – often less as well as more active forms may be associated with the same case (e.g., citizens

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voluntarily organising carbon reduction groups as a more *active* form of citizenship, and citizens participating in these groups as a *less active* form).

As a result, a very diverse collection of ENCI cases emerged as an output of the mapping process (Debourdeau et al., 2023).[1] Indeed, it is important to note that although the term "energy citizenship" is often associated with energy communities or community energy projects, the objective of the EnergyPROSPECTS project has been to uncover other forms of energy citizenship as well.

Disclaimer about this document

When reading the case summary reports, please bear in mind the following:

- The assignment of the cases into the various categories (cf. in the spider chart) in our analysis is not intended to reflect a value judgement but rather to indicate their diversity. All types of cases are needed for the sustainable energy transition.
- Since providing details on the conceptual and methodological underpinning of the work presented here would go beyond the scope of this document, the process is only summarised here. Details are available in other project deliverables, especially in:
  1. methodology for ENCI mapping and data collection: Vadovics et al., 2022a
  2. conceptual framework and defining energy citizenship: Pel et al., 2021
  3. conceptual typology: Debourdeau et al., 2021
  4. catalogue of energy citizenship cases and typologies: Debourdeau et al., 2023
  5. selection of cases for detailed study and main research topics and questions: Pel et al., 2022
  6. methodology for detailed case collection: Vadovics et al., 2022b

[1] Information about the 596 cases of ENCI that were mapped has been made available in various ways:

- in an online database, available at data.energyprospects.eu/;
- in a public deliverable according to their ideal typology type (Debourdeau et al., 2023)
- in a descriptive analysis of the data associated with the cases mapped in the Energy Citizenship Factsheet Series, available at www.energyprospects.eu/results/energy-citizenship-factsheets/,
- in the form of country profile reports, available at https://www.energyprospects.eu/results/country-profiles/.

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Overview of the data collection and analysis process

The data collection process can be summarised as follows:

Map energy citizenship in Europe

- Mapping methodolgy, **Chpt. 1**
- Outcomes: database of 596 cases and other resources

Select cases for detailed study

- Case selection methodology, **Chpt. 2.**
- List of 40 cases selected, **Annex I.**

Collect data on 40 selected cases

- Detailed case study data collection methodology, **Chpt. 3.**

Analyse and present data on 40 cases

- Case summary reports, focus of current document: **Chpt. 4.**
- Meta-analysis of the 40 cases, Part 1 of D3.5
- Thematically focused analytical studies, available on the EnergyPROSPECTS website

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1. THE METHODOLOGY USED FOR MAPPING ENERGY CITIZENSHIP

The data this document builds on come from the ENCI mapping process that the EnergyPROSPECTS consortium completed between November 2020 and May 2021. The methodology for the desk-based mapping is described in detail in Vadovics et al. (2022a); here, we provide a very brief summary.

The objective of the mapping process was to capture the diversity of ENCIs in Europe rather than to map each and every ENCI that exists. The definition of ENCI that was adopted in the project is intentionally broad (see Pel et al., 2021) to ensure that as many cases of ENCI as possible, including latent forms, were incorporated. Since a huge variety of cases and initiatives exist that would fit our definition, and mapping all of them would be beyond the scope and resources of the project, there was a need to further define which cases should be included within the research focus of the EnergyPROSPECTS project. The consortium decided that the ENCI mapping activity would cover cases that:

- are **based in European countries** (including EU, EEA and accession countries);
- are **currently active or were concluded no earlier than 2015** when the Energy Union Strategy was published;
- are **focused on direct energy production and/or consumption** (e.g., involving households, organisations, etc.), **mobility** (with a direct connection to energy issues), or have a **more holistic focus on sustainable and just energy.**

Furthermore, to ensure that the greatest diversity of ENCIs was captured according to this scope, a sampling strategy that specified five categories of diversity that should be covered was developed. The latter included:

1. Geographical diversity;
2. Diversity in terms of the main focus of the cases (i.e., covering direct energy production/consumption, mobility and holistic cases);
3. Diversity in terms of mapping both individual and collective cases of ENCI;
4. Diversity associated with the ideal types described in the conceptual typology; and finally,

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5. Diversity in terms of cases of ENCI that include a variety of additional foci (such as gender, disadvantaged groups, low-tech/high-tech/behaviour change-based solutions, and rural/urban settings).

With this methodological guidance, the ENCI mapping process resulted in the mapping of 596 cases[2] (Debourdeau et al., 2023). The country-level distribution of mapped cases is shown in Figure 1.

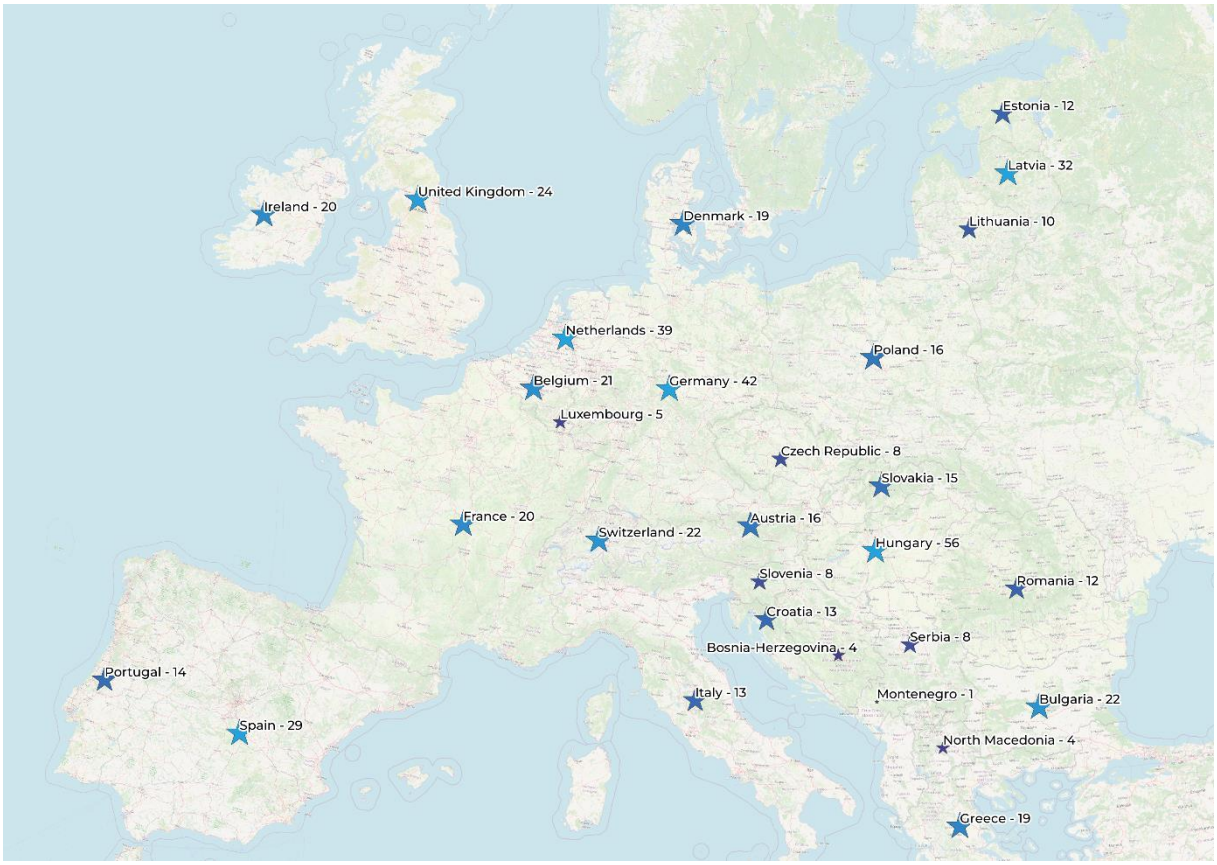

Figure 1: Country-level distribution of mapped ENCI cases

[2] An interactive online database of all cases can be found at https://data.energyprospects.eu/

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2. SELECTION OF THE 40 CASES FOR DETAILED STUDY

The cases for detailed study were selected from the 596 cases identified and studied at the empirical mapping stage. These cases (n=40) constitute less than 10% of the whole database and were selected using a very detailed and specific methodology to ensure they were suitable for further research on energy citizenship related to various topics, including intermediation (Markantoni et al., 2023), social innovation and business models (Debourdeau and Markantoni, 2023), transformative agency (Kemp et al., 2023), and very importantly, as part of a QCA (qualitative comparative analysis) (Schmid et al., 2023). Thus, it is important to bear in mind that **they are not representative of energy citizenship in any way**. They are simply a diverse selection of cases the EnergyPROSPECTS research team chose for detailed study.

The methodology for selecting the cases is detailed elsewhere (see Pel et al., 2022). However, to summarise, the set of 40 cases was chosen through a three-step process primarily designed to support the systematic comparison of (greater and lesser) achievements and conditioning factors of energy citizenship. The steps were as follows:

Step 1: Pre-selection of cases: suitable cases were filtered out from the database of 596 cases with the use of the following criteria:

- nomination by a partner for further study;
- location in a partner country to ensure ease of access to information and interview subjects as well as relevance to other project tasks;
- data availability: sufficient amount of information about the case potentially available, and/or the partner in question is already in contact with the case.

Additionally, since we planned to analyse 20 of the selected cases through QCA methodology, additional filters were applied:

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- typologisation as ENCI ideal-types 7 and 8[3] (categorisation as "citizen-based and hybrid" during the mapping stage);
- diversity in evaluation as "high", "medium", or "low" (but not "n/a", etc.) regarding 'achievements' related to citizen power during the mapping stage;
- currently active cases that started operating and engaging in activities no later than 2020.

Step 2: Selection by case researchers: Following the filtering process, the list of suitable cases was presented to project partners along with instructions to select the most appropriate cases for study in their countries, considering factors such as the accessibility of the case (e.g., in relation to conducting interviews), diversity among cases, relevance to research objectives, etc.

Step 3: Verification: once partners had made their selection of cases, members of the research topics lead team completed a final review.

The map in Figure 2 summarises the final number of cases by partner country, while Annex I includes a list of all cases of energy citizenship that were studied, organised by country.

[3] See Debourdeau et al., 2022 for details on the ideal types of energy citizenship.

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Figure 2: Number of cases selected for detailed study in each of the project partner countries

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3. METHODS USED FOR STUDYING THE 40 CASES

A survey questionnaire with the research questions was collaboratively developed by the various research topic leads (see Pel et al., 2022 and Vadovics et al., 2022b for a description of the main research topics, questions, and the final research questionnaire). The 40 cases were studied using a mixed-methods approach consisting of document research and case participant interviews, with the following research steps proposed to case researchers:

Step 1: Review case data about the case from the mapping stage of the research. This material already included references and links to additional materials.

Step 2: Further document research on selected cases (e.g., the website of the case, founding document(s), other programmatic materials, evaluation reports, annual reports, research reports, media articles, academic papers, etc.).

Step 3: Based on already available information and document research, fill in as much information as possible in the survey questionnaire while identifying pertinent questions for case actor interviews.

Step 4: Conduct interviews with case actors to fill in the missing information as well as expand on and verify what was learned through the documents.

Step 5: Review data and information and submit case information to the research team through the online version of the research survey questionnaire.

In order to standardise the research approach as much as possible, all case researchers were invited to an online training session prior to the case research (Vadovics et al., 2022b). Furthermore, due to the complexity of the research approach due to the many research topics being covered, case researchers were invited to participate in five check-in meetings during the detailed case study process. These were organised to focus on the main research topics and increase alignment and understanding of the research concepts, framings, and methods.

Data collection took place between August 2022 and May 2023.

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4. THE CASE SUMMARY REPORTS

In the case summary reports, our objective was to summarise and present the most important information about the 40 cases in relation to how they contribute to the sustainable energy transition. Thus, in these short reports, not all information that was collected is presented. At the same time, our intention was to present the cases using a framework built on the main conceptual elements of the EnergyPROSPECTS research, partly in the hope of translating and introducing them to a wider audience. These are as follows:

- the specific and highly inclusive framing of energy citizenship we adopted (as summarised in the introduction to this document and in detail in Pel et al., 2021);
- the conceptual typology of ideal types of energy citizenship we developed (see more in section 4.2 below and in detail in Debourdeau et al., 2021 and 2023); and
- the main aspects of energy citizenship that characterise the reformative and transformative dimension of the conceptual typology (see section 4.3).

Furthermore, the case reports are intended for a more general audience, including all stakeholders working in or with energy citizenship, such as CSOs, policymakers, smaller and larger businesses, social enterprises, people involved in or interested in getting involved in energy citizenship cases, the media, etc. in addition to academics and experts.

Finally, to facilitate comparison between cases and provide an accessible overview, the case summary reports follow the same structure and format as introduced in the sections below.

4.1. CASE DESCRIPTION, MAIN CHARACTERISTICS, WHY A CASE IS AN ENCI AND GOALS

In the first part of the report, partly building on the mapping stage of data collection, we present

- a short summary of the case;
- followed by an explanation of why the EnergyPROSPECTS research team believes the case is a good example of energy citizenship (ENCI) and

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- we then introduce, in the form of a list, the main goals of the case.

In addition, using icons, we provide information as to how the case was categorised in the project concerning

- its main focus;
- whether it is an individual or collective case; and
- what its main area of operation is.

As for the focus, in EnergyPROSPECTS, we decided to focus on collecting cases with three main foci:

Direct energy consumption and/or production	Mobility	Holistic
DIRECT ENERGY PRODUCTION / CONSUMPTION	MOBILITY	HOLISTIC

As mentioned in the introductory chapter on defining energy citizenship, we felt it necessary to collect both individual and collective cases. In the case reports, these are identified by the following icons:

Individual	Collective
INDIVIDUAL	COLLECTIVE

Finally, we used icons to define where the case operates, including in the countryside, periurban, or urban area. If a case is not associated with a specific area of operation (e.g., if it is virtual or its operations are not targeted at a particular area), no symbol is used in the case report.

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Urban	Periurban	Rural
URBAN	PERI-URBAN	RURAL

4.2. CASE HISTORIES AND TYPOLOGY

Following the introduction and basic characterisation of the case, we present its "story", or in other words, developmental history, focusing on changes in the energy citizenship typology characteristic of the various developmental phases of the case as well as the major changes in the case concerning its main form of operation, widening or narrowing of focus, etc., that do not necessarily correspond to a change in the typology.

In this part, we first present a summary of the development or evolution of a case together with a figure representing the process (see example in Figure 3). In the figure, we identify the main developmental phases (indicated by the arrows) and the corresponding main (**in colour**) and secondary (**in grey**) energy citizenship ideal type(s) characteristic of the case in each phase of its development. The icons in the figure refer to the main typology dimensions of the ideal types (the first icon refers to the outcome orientation dimension, and the second the agency, as summarised in Tables 1 and 2 below).

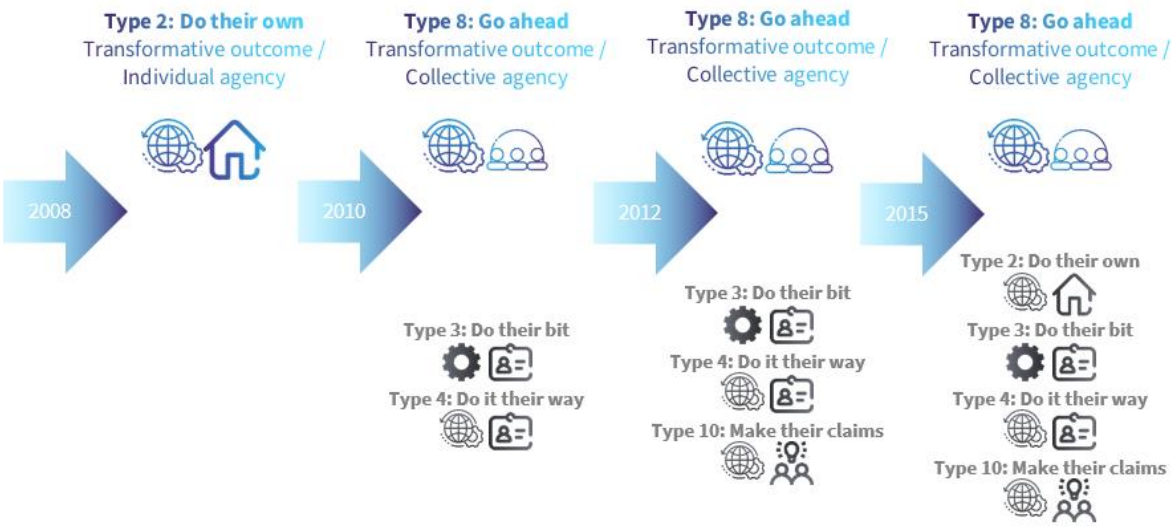

Figure 3: Example of a case history figure

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Table 1 provides an overview of the ideal energy citizenship types the EnergyPROSPECTS team identified, and Table 2 shows how this typology is depicted in a simplified form in the case summary reports. For a more detailed description of the conceptualisation of the typology, please refer to Debourdeau et al. (2021), and for an elaboration of the typology following the mapping stage of the research, please see Debourdeau et al. (2023).

Table 1: The EnergyPROSPECTS typology (source: Debourdeau et al., 2021)

AGENCY	INDIVIDUAL			COLLECTIVE	
OUTCOME ORIENTATION	PRIVATE (HOUSEHOLD)	ORGANISATIONALLY EMBEDDED (E.G., WORKPLACE)	PUBLIC	CITIZEN-BASED AND HYBRID	SOCIAL MOVEMENTS
REFORMATIVE	1. DO THEIR BIT (in the household) Complying with the green energy transition	3. DO THEIR BIT (within organisations) Energy citizenship within organisations	5. MAKE THEIR VOICE HEARD Participating in societal energy discussions	7. DO THEIR SHARE Joining green energy projects	9. DO THE JOB Facilitating the energy transition through alignment activities
TRANSFORMATIVE	2. DO THEIR OWN (in the household) The change-making energy citizen	4. DO IT THEIR WAY (within organisations) The energy-related change maker in organisations	6. MAKE THEIR VOTE COUNT Mobilising votes for energy transition	8. GO AHEAD Building, expanding and linking citizen-based organisational forms	10. MAKE THEIR CLAIM Protesting against the current energy system

Table 2: Typology table used in the case summary reports

	Individual			Collective	
Reformative	1. Do their bit (in the household)	3. Do their bit (within organisations)	5. Make their voice heard	**7. Do their share**	9. Do the job
Transformative	2. Do their own (in the household)	4. Do it their way (within organisations)	6. Make their vote count	**8. Go ahead**	10. Make their claims

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In the typology tables included in the case reports, the main type of energy citizenship case typology is indicated by **coloured highlighting**, while secondary citizenship types are marked using **bold** characters and icons. As highlighted in the introduction, cases of energy citizenship often enable several types of energy citizenship in parallel. In agreement with the case researcher team, we identified one main form or type of energy citizenship for each case and then, if relevant, indicated one or more secondary types also supported by the case. For example, citizens voluntarily organising carbon reduction groups as a *collective and more active* form of citizenship, citizens participating in these groups as a *less active* form, and the same citizens also undertaking various climate and energy-related activities in their homes (e.g., installing solar panels, reducing indoor temperature, etc.) as a result of being part of the group as *individual forms* of citizenship.

In the typology tables, we also indicated changes in the main and secondary energy citizenship types by using arrows: **coloured arrows** for change in the main type and **grey** arrows for change in the secondary types.

4.3. ASPECTS OF ENERGY CITIZENSHIP: THE SPIDER CHARTS

In the last content-focused part of the case summaries, we present the main aspects of energy citizenship related to contesting the current energy system and contributing to the transition to a more sustainable one. In our research, we placed special emphasis on studying three aspects in particular that are related to social sustainability[4]:

- How does the case contribute to the democratisation of the energy system? Is it one of the objectives, and if so, how important an objective is it?

- Does the case exhibit strong elements of effective citizen control?

[4] You can find more background information on the conceptualisation of these aspects in Debourdeau et al., 2021.

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- How important are the goals of equity and justice to the case? To what extent are they pursued?

We also wanted to identify aspects related to environmental sustainability, in particular:

- How important are the goals of environmental sustainability to the case? To what extent are they pursued?
- How important are goals related to meeting the maximum 1.5 °C target of the Paris Agreement and observing the carbon limit to the case? To what extent are they pursued?

Each of these five aspects was evaluated by case researchers on a numerical scale (see Annex II), followed by a more detailed explanation of how exactly the case approaches each of them. These are summarised in the spider chart for each case, next to the individual figures.

To describe the equity/justice aspect, we also used icons to indicate a specific focus on disadvantaged groups and/or gender-related issues.

It should be noted that in addition to these five aspects selected for inclusion in the case summary reports, we studied others related to both social and environmental sustainability – please refer to Pel et al. (2022) and Vadovics et al. (2022b) for details and Vadovics and Szőllőssy (2024) for a more detailed analysis of these aspects.

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4.4. Contact information and references

At the end of each case summary report, we provide details of where more information about the case can be found and how the representatives of the case can be contacted. We also provide a list of references for the data and information included in each report. We finish by listing all the researchers and reviewers involved in the preparation of the case reports.

4.5. Review process for case summary reports

Case summary reports were prepared by members of the research team at GreenDependent Institute based on information gathered by case researchers. Once the draft reports were ready, they were reviewed by case researchers. Following the review, cases were modified as necessary and proofread and edited. In the final stage, where possible, they were also shared with case owners, and case participants were invited to share comments and raise any concerns about factual mistakes or if something about the case had been misrepresented. Following this final review stage, cases were finalised and published.

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ANNEX I: LIST OF THE 40 CASES STUDIED IN DETAIL

Case no.	Title of case in English	Country	Main focus **As in mapping survey:** **Energy** (i.e. Direct energy production and/or consumption) **Mobility** **Holistic**
1	Hydro Electricity Ourthe and Sambre (HOSe)	BE	Energy
2	Extinction Rebellion Etterbeek	BE	Holistic
3	BBL's Home renovation project	BE	Energy
4	Energy Efficiency Mission ULB	BE	Energy
5	Bike Evolution	BG	Mobility
6	Energy Transition of City of Burgas: Going Smart and Sustainable	BG	Holistic
7	Student Switch Off campaigns in Bulgaria	BG	Energy
8	Student Energy Teams	BG	Energy
9	Solocal Energy	DE	Holistic
10	LAVIDAVERDE	DE	Holistic
11	Berlin Citizen Energy (BEB)	DE	Energy
12	NATURSTROM AG	DE	Energy
13	Tregor Energ'ethic	FR	Energy
14	Energie Partagée	FR	Energy
15	Railcoop	FR	Mobility
16	Hauts de France Pass Renovation	FR	Energy
17	Biobriquettes for the energy poor	HU	Energy
18	Nagypáli, the renewable energy village	HU	Holistic
19	TreeDependent	HU	Holistic
20	Zsuzsanna Hojtsy-Keresztény - EnergyNeighbourhoods energy master, local change maker	HU	Holistic
21	Cargonomia	HU	Holistic
22	From the Community Energy Programme to Community Energy Service	HU	Energy
23	Energy Community Tipperary Cooperative ECTC	IE	Energy
24	Aran Islands Energy Cooperative	IE	Holistic
25	Galway Energy Co-operative	IE	Energy
26	Citizens' Assembly on "How the state can make Ireland a leader in tackling climate change"	IE	Holistic
27	Public Consultation: Shaping Our Electricity Future	IE	Energy
28	Installation of solar heat panels in multi-apartment buildings, with energy efficiency improvement of the building	LV	Energy
29	Association "city for people"	LV	Mobility
30	OFF-GRID: Renewable energy DIY (do it yourself) for rural development	LV	Energy
31	Social media influencer Edgar Fresh	LV	Holistic
32	Weert Energy	NL	Energy
33	Reindonk Energy & Co: Energy from your own region	NL	Energy
34	The Drechtsteden cooperative	NL	Energy
35	Loenen Energy	NL	Energy
36	National Association of Active Residents - Landelijk Samenwerkingsverband Actieve bewoners (LSA)	NL	Holistic
37	GoiEner	ES	Energy
38	Couso's Project	ES	holistic
39	La Borda. Housing cooperative in transfer of use	ES	Holistic
40	SomEnergia	ES	Energy

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ANNEX II: CATEGORIES USED TO DESCRIBE THE MAIN SUSTAINABILITY ASPECTS OF THE CASES

1. Democratic energy future

Do/did the actors envision and pursue a more democratic energy future?

Shortened, used in case summary reports	Full description used in the case study survey questionnaire
Energy democracy has not been among the goals	1. **Not a goal:** energy democracy has not been among the aims of the case.
Energy democracy is considered as a positive value, but the vision does not really address it	2. **It is not so important:** energy democracy is considered a positive value as such, yet the case activities and visions do not really address issues related to energy democracy (whether in terms of democratic participation, inclusive, deliberative and transparent decision-making processes, compulsory and effective decisions).
Energy democracy is considered a positive value, but it remains limited to formal energy democracy	3. **It is important but limited to formal issues:** energy democracy is considered a positive value that the case intends to support by increasing the democratic participation of citizens and improving inclusiveness. Yet, the democratic energy future envisioned remains limited to formal energy democracy (democratic procedures or declarations regarding energy justice).
A more democratic energy future is a core concern of the case and is part of the vision	4. **It is a core concern:** a more democratic energy future is a core concern of the case and parts of its vision. The case aims to promote an effective democratisation of the energy system by putting it in citizens' hands and intends to implement concrete actions to improve access and inclusivity to self-governance.

2. Equity and justice

In terms of equity and justice, please indicate the level of equity/justice pursued, as they are defined in Debourdeau et al., 2021 (pg. 31.):

Shortened, used in case summary reports	Full description used in the case study survey questionnaire
Equity and justice issues are not relevant/not addressed by goals	1. Equity and justice issues are **not relevant** to this case in the sense that they are not addressed by case goals or activities.
Justice or equity are essentially out of scope or restricted to access to market	2. Justice or equity are essentially out of scope or restricted to equal access to markets
Equal access is granted but limited by various criteria	3. Equal access is granted to all concerned citizens, but the framings tend to limit them to a particular geographical area or amount of financial contribution, which does not guarantee "real" equity.
Involvement is fully open	4. Involvement is fully open, without specific belonging conditions. Issues such as energy poverty, gender and inclusivity are taken into account and foster adaptive measures to guarantee more equity.

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3. Citizen power/control

Does (did) the case exhibit strong elements of effective citizen control?

Shortened, used in case summary reports	Full description used in the case study survey questionnaire
No effective citizen power/control	**1.** **No** effective voice citizen power/control
Citizens' voices remain hardly heard or taken into account	**2.** **Low level:** when expressed (e.g., within "invited" deliberative processes), citizens' voices remain hardly heard or taken into account. Being a minority, citizens' voices do not really count, or in a voting process, the framings tend to limit the possibility of expressing an opinion.
Citizens can express their views, but their views are not necessarily taken into account	**3.** **Medium level:** citizens can express their views, but their voices are not compulsory (within deliberative, representative or consultative processes). Within organised / participative structures, citizens remain a minority group, i.e., unable to impose their views on other groups.
Citizens exert effective control, and their votes have to be taken into account	**4.** **High level:** citizens exert effective control, and their votes are mandatory. This governance takes place mainly in an "invented" process (as opposed to "invited" ones by Radtke et al., 2020). Citizens represent a majority group, empowered enough to control the process and thus make their voices predominant.

4. Environmental sustainability

In terms of environmental sustainability, please indicate the importance thereof based on the definition of various levels of environmental sustainability in Debourdeau et al., 2021 (pg. 31.):

Shortened, used in case summary reports	Full description used in the case study survey questionnaire
Environmental sustainability issues are not relevant/not addressed by goals	**1.** Environmental sustainability issues are **not relevant** to this case in the sense that they are not addressed by case goals or related activities.
Environmental sustainability issues are not explicitly taken into account	**2.** Environmental sustainability issues are mostly seen as self-evident and not explicitly taken into account. In the lowest forms, environmental sustainability tends to be dealt with as a positive or negative externality.
Environmental sustainability is part of the process; energy remains the main focus	**3.** Environmental sustainability is part of the process or case, but this concern is addressed in a superficial (non-radical) way (focus on efficiency strategies) and without dedicated assessment. Energy remains the main focus.
Environmental sustainability is a core issue and is considered in goal-setting	**4.** Environmental sustainability is a core issue, and it is even considered in goal setting, which is followed with a holistic strategy (mix of efficiency, consistency and sufficiency measures). Its assessment through indicators is seen as desirable.

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5. Carbon limit

Does the case recognise environmental limits and openly talk about a sustainable carbon footprint that is necessary to reach the 1.5 °C target?

Shortened, used in case summary reports	Full description used in the case study survey questionnaire
There is no recognition or mention of the carbon limit related to the case goals	**1.** Related to the case concerning case goals and activities, there is **no recognition** or mention of the ecological limit of atmospheric carbon emissions and/or reaching the sustainable carbon footprint.
Implicit recognition of the carbon limit	**2. Implicit recognition:** there is no explicit mention of the ecological limit of atmospheric carbon emissions and/or sustainable carbon footprint. But despite the lack of formal references to either of them, the case is involved in activities to reduce carbon consumption and/or emission.
Explicit recognition of the carbon limit	**3. Explicit recognition:** the ecological limit of atmospheric carbon emissions and/or sustainable carbon footprint is mentioned in core case documents, and the actors involved in the case are clearly engaged in attempts to reduce consumption and/or emission of carbon.
Explicit recognition with mention/objective of reaching the max. carbon footprint	**4. Explicit recognition with mention/objective of reaching the max. carbon footprint:** in addition to mentioning the ecological limit of atmospheric carbon emissions and/or sustainable carbon footprint, the maximum sustainable carbon footprint and/or emissions are also defined.

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