

Energy Citizenship in Europe

EnergyPROSPECTS Factsheet Series

Part 1:

Introduction and Methodology



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Table of Contents

Introduction	4
What is energy citizenship, and how is a case of energy citizenship defined?.....	5
Data collection: overview of the ENCI mapping methodology	8
Data validation.....	10
Data analysis	12
Introducing the database	16
Targeted area of energy-related activity	18
Individual and collective cases	22
Where are the mapped cases active?.....	24
When were the cases mapped initiated, and are they still active?.....	26
References.....	28
EnergyPROSPECTS partners	29

Introduction

This document is Part 1 of the EnergyPROSPECTS Factsheet Series. We have created the Series to publish the results of a mapping of energy citizenship in Europe, along with the first stage of our analysis of the respective data. The EnergyPROSPECTS consortium mapped 596 cases of energy citizenship (ENCI), collecting data on many aspects of the cases. Although the analysis is a work in progress, we believe it is important to share our data and, through doing this, contribute to the understanding of energy citizenship in Europe.

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 aims 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 cross-cutting 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, the selection of nearly 600 initiatives as well as mapping and typology refinement exercises that will demonstrate the depth/breadth of the energy citizenship concept in theory and practice are being undertaken between May 2021 and April 2024.



What is energy citizenship, and how is a case of energy citizenship defined?

As part of the energy citizenship mapping task, 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?
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 in [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. as including individual energy citizens and how they realize 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 associated with the same case (e.g., citizens 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. 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.

Information about the 596 cases of ENCI that were mapped is being made available by the EnergyPROSPECTS team in various ways. In addition to the Factsheet Series, we have already presented details of the former in project partner [country profile reports](#), in a [public deliverable according to their ideal typology type](#), and in a [blog](#) as well as a social media post series. An [interactive database](#) has also been published on the [project website](#), as well as various analytical reports and papers which are currently under preparation.



The Factsheet Series includes the following parts:

1. **Part 1: Introduction and Methodology**
2. [Part 2: Motivations and Objectives](#)
3. [Part 3: Actors and Organisations](#)
4. [Part 4: Funding](#)
5. [Part 5: Aspects of ENCI I.: Hybridity, private/public, passive/active forms](#)
6. [Part 6: Aspects of ENCI II.: Frontrunners and late adopters, pragmatic and transformative ENCI](#)
7. [Part 7: Aspects of ENCI III.: Towards social sustainability: citizen power and equity/justice issues](#)
8. [Part 8: Aspects of ENCI IV.: Towards environmental sustainability: levels of environmental sustainability and recognising ecological limits](#)
9. [Part 9: Aspects of ENCI V.: Contesting the current system](#)

Disclaimer about the EnergyPROSPECTS Factsheet Series

When reading the various parts of the Factsheet Series, please bear in mind the following:

- The mapping of energy citizenship (ENCI) was not conducted to achieve a representative sample of cases in each country, but with the aim of providing an overview of the diversity of cases.
- The analysis that was conducted for the Factsheet Series is rather descriptive in nature, and further highlights diversity.
- Assigning the cases that were mapped into the various categories 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 transformation.
- Since providing details on the conceptual and methodological underpinning of the work presented here would go beyond the scope of the Factsheet Series, the process is not introduced here. Details are available in other project documents, especially in:
 1. methodology for ENCI mapping and data collection: [Vadovics et al., 2022](#)
 2. conceptual framework: [Pel et al., 2021](#)
 3. conceptual typology: [Debourdeau et al., 2021](#)
 4. catalogue of energy citizenship cases and typologies: [Debourdeau et al., 2023](#)

Data collection: overview of the ENCI mapping methodology

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 Deliverable 3.1 (Vadovics et al., 2022); 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 D2.1 / 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, organizations, etc.), **mobility** (with a direct connection to energy issues), or those which 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. These 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,



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 596 cases being mapped. The country-level distribution of mapped cases is shown in Figure 1 (below).

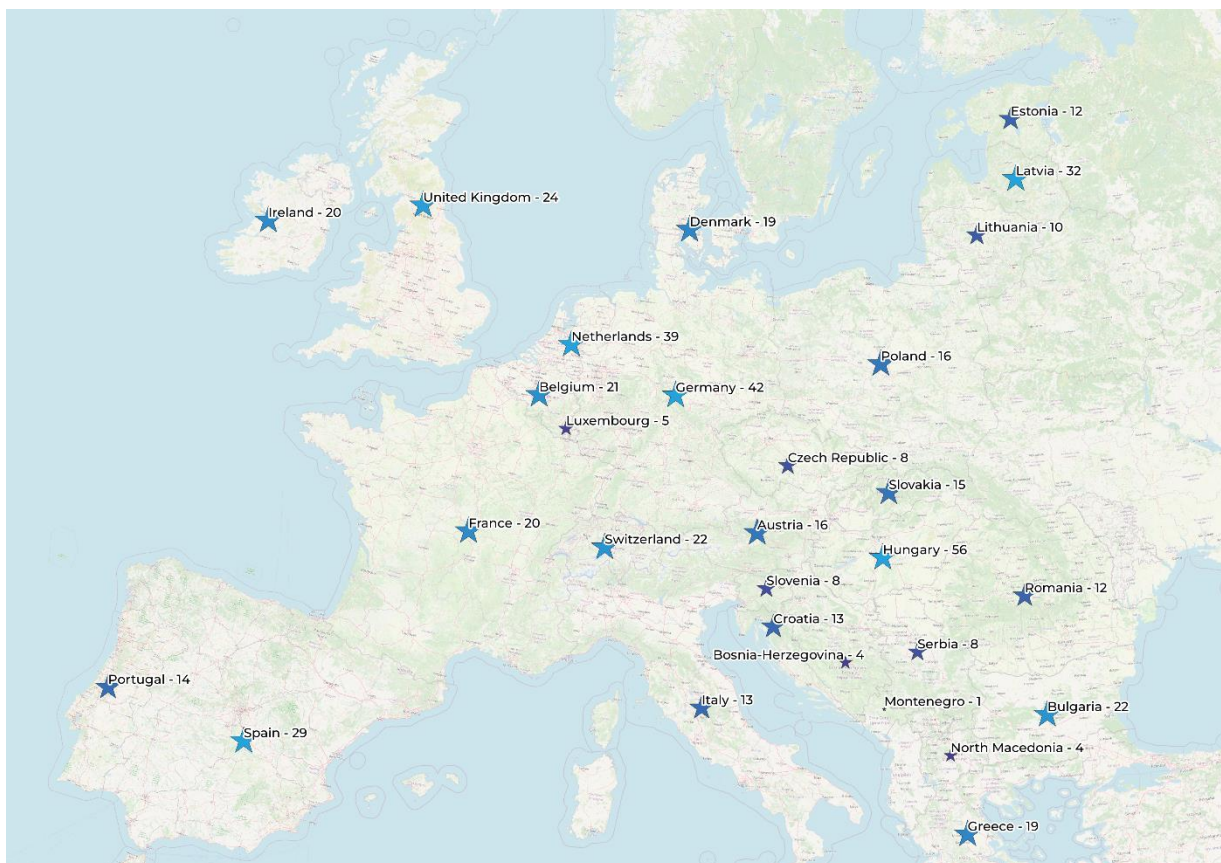


Figure 1: Country-level distribution of mapped ENCI cases

Data validation

The very important first step for ensuring the validity of the data to be collected in the ENCI mapping process was the **testing and standardisation of the mapping survey methodology**. The mapping survey template collaboratively developed for the project (for details, please refer to Vadovics et al., 2022) was first tested by several partners. The training of all case researchers followed on a national basis. After this, partners started using the survey template for a set period; this was followed by a standardisation workshop for all partners. Two well-documented cases, one individual and one collective, were first studied individually and then discussed by the case researchers.

Once the data collection process for the mapping had been completed, the GreenDependent team (hereafter GDI) started the process of **organisation and checking data**, paying particular attention to issues related to the typology and the placement of cases in the typology. During this process, we discovered that researchers had sometimes not selected a main type for their cases or had selected more than one type (which they had been instructed not to do for the main type, although they had the option to choose several secondary ideal types for each case, as relevant). After filtering out these problematic cases, case researchers were asked to reconsider the latter and decide about the case assignment according to the typology. They were also asked to review unproblematic cases to confirm their initial decisions. Based on their responses, the database was updated.

Before starting the analysis, GDI believed it would be worthwhile for a single researcher to review all the cases and check their classification to obtain an adequately standardised dataset. However, having reviewed the Hungarian cases in this way, we concluded that researchers had put varying emphasis on elements of the typology, potentially leading to divergent results. This was especially true of those cases (approximately two-thirds of all cases) that had characteristics of two of the ideal types, or more). The assignment to one of the main ideal types and the secondary ideal type(s) thus depended on the weight applied to the characteristics of the cases by the researchers. We also recognised that the different country contexts in which the cases are embedded played



an important role in their classification (e.g., in whether a case was considered “reformative” or “transformative”). Thus, we note that the results of typologizing the cases were at least partly driven by the researchers’ approach. The mapping process took account of this subjectivity by posing the question, “Why do you think this case is an example of ENCI?”. In addition to the brief description of the case required in the mapping survey, the researchers’ explanations of why they thought each case represented ENCI was also included. Reading the responses to this question helped with understanding their perspectives.

We concluded that since the researchers were consistently reflecting on the mapping process – which we double-checked by asking about less well-clarified cases (see above) – further reassessment was not necessary.

Finally, it should be noted that the mapping of ENCI was **a desk-based research process**; consequently, no interviews were conducted, and nor were cases observed *in situ*. For this reason, the information we collected is based on data that is publicly available in documents, on websites, and in various research papers. This is one limitation of the mapping process. For many mapping questions in the mapping survey, researchers had the option to choose “I don’t know, not enough information is available on this aspect”. In the subsequent phase of the research, 40 cases out of the 596 were selected for detailed study (Pel et al., 2022), thus more detailed information will be collected on these and some of their characteristics (e.g., their placement in the typology) will be reviewed and re-assessed. Based on the analysis of the 40 cases, the EnergyPROSPECTS team will be able to draw further conclusions.



Data analysis

After completing the various data validation processes, data downloaded from Survey Monkey was converted into a database in SPSS. The relevant survey questions have already been thematically reviewed in the [country reports](#). In the Factsheet Series, we present the outcomes of a similar analysis conducted for the whole database, as well as different statistical disaggregations/breakdowns of the data.

First, we used the 10 ENCI ideal (typology) types (Figure 2) as the breakdown/decomposition variables. One of the objectives of the analysis was to look at the different ways of disaggregating responses to the questions according to the ideal types of ENCI, both in terms of the basic characteristics of cases (e.g. when they started, what the purpose is, who finances them) and more specifically, in terms of the aspects that define the typology (e.g. environmental sustainability, equity and justice, citizen power, etc.). However, as the number of elements per cell in the statistical disaggregation/breakdown according to the ten ENCI types was often very small (Figure 3), it proved difficult to detect significant differences.

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	

Figure 2: The ENCI typology developed within the EnergyPROSPECTS project (Source: Debourdeau et al., 2021:35)

	Individual			Collective		Other
	Private	Organizationally embedded	Public	Citizen-based and Hybrid	Social movements	
Reformative	79 (13,3%)	31 (5,2%)	39 (6,5%)	115 (19,3%)	33 (5,5%)	19 (3,2%)
Transformative	33 (5,5%)	27 (4,5%)	8 (1,3%)	136 (22,8%)	76 (12,8%)	

Figure 3: Distribution of cases according to ENCI ideal type

Recognising this, we created a variable based on a typology that distinguishes cases according to whether they have a **reformative or transformative** dimension (five cells each in the reformative and transformative dimension, as shown in Figure 2). This helped categorise cases into two groups instead of using the previously defined ten-cell disaggregation process. We believe that this part of the analysis significantly supported the refinement and development of the typology by highlighting the differences between reformative and transformative cases and showing their different characteristics, specifically in connection with the aspects of energy citizenship.

Furthermore, we also examined the database in terms of **regional distribution** and compared the different European regions in terms of how many ENCI characteristics the respective cases have.

Our analysis, as described below and in the different parts of the Factsheet Series, presents the outcomes according to these different variables in the database, highlighting the most relevant findings.

In the analysis, the differences between the different disaggregations were tested using the Bonferroni-adjusted significance test in SPSS. Significant differences highlighted in the analysis are indicated by arrows in the figures and are also mentioned in the text. It is important to note that this test compares the distribution within two groups. For disaggregations where the dataset is split into two parts, the difference is clear (e.g., the reformative - transformative disaggregation). Where there are more than two groups (e.g.,

regions, or ENCI types), this is highlighted in the text to clarify which two specific groups are significantly different.

In parallel with the analysis undertaken according to the various forms of data disaggregation, we also started to investigate where each case may be positioned using a coordinate system (Figure 4) according to different aspects of ENCI in relation to the typology (e.g. citizen power/control vs. equity and justice, and environmental sustainability vs. recognition of the carbon limit; see Parts [7](#), [8](#) and [9](#) of the Factsheet Series). In this review, it became clear that some cases were allocated to cells that we assume should be empty (for example, when a case is rated “High” for environmental sustainability, it should be impossible for it to be rated “Does not consider” in terms of addressing carbon limits). We believe that this part of the analysis can help identify any discrepancies associated with the description of the main typology variables and types through the further examination of such ‘problematic’ cases.

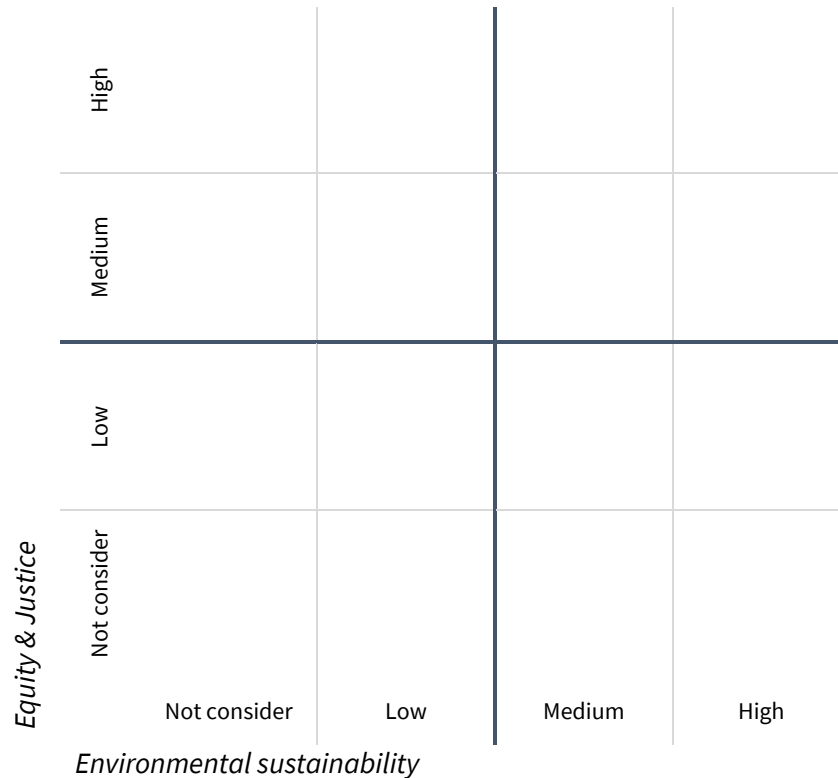


Figure 4: Example of a coordinate system used in the analysis

To further reflect on this issue, we created **another disaggregation variable with the options “High/Medium” and “Low/Not considered”**. Using this form of disaggregation, cases categorised as “high” or “medium” for all four selected aspects (i.e., citizen power/control, equity/justice, environmental sustainability, and the recognition of carbon limit) formed one group with 106 cases, while cases classified otherwise created the other group, containing 269 cases. However, it is important to note that cases for which any of these aspects were evaluated as “not relevant” or “I don’t know” were not included in this categorisation. This disaggregation/breakdown helps confirm whether cases were consistently classified according to each aspect and may highlight important differences between the two groups.

Introducing the database

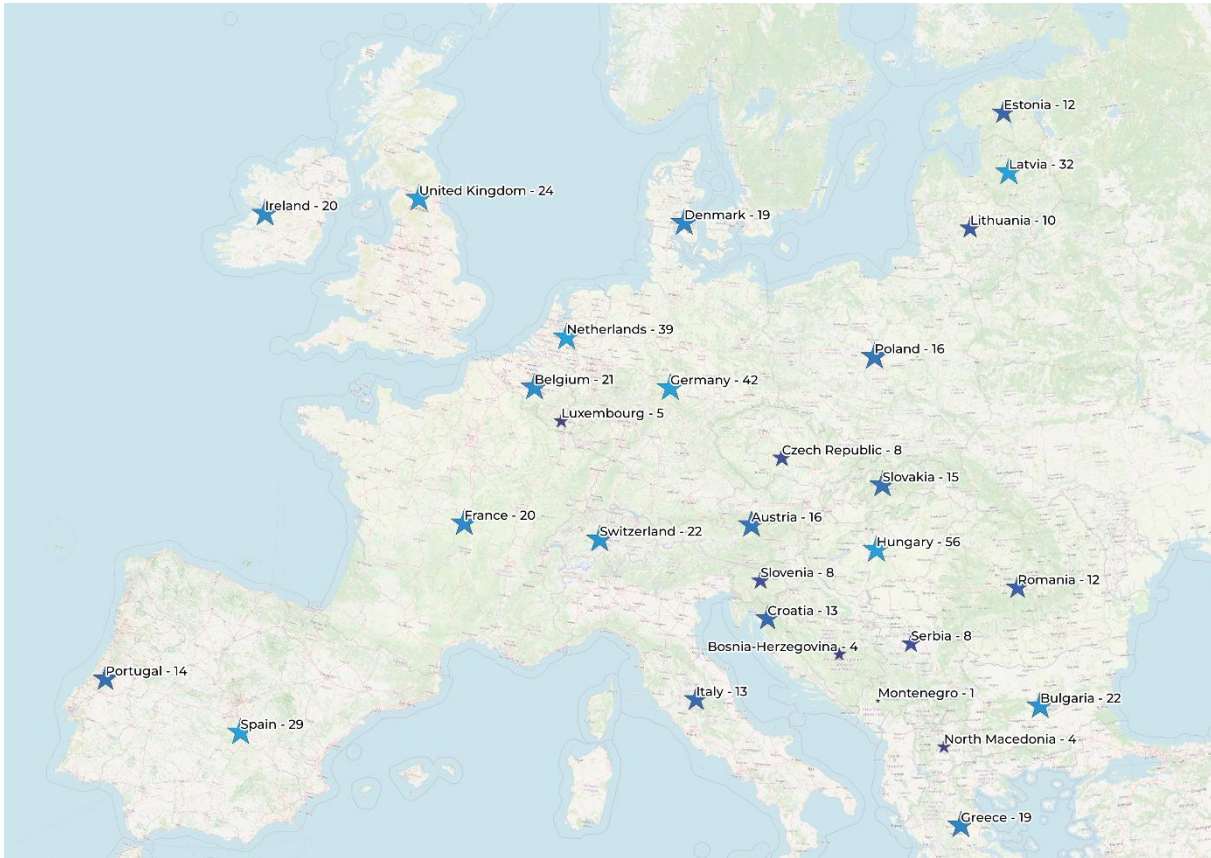


Figure 5: Distribution of the mapped ENCI cases among countries

A total of **596 ENCI cases** were entered into the database. Their distribution among the project participant countries is shown above. It is important to note that the number of cases by country is not indicative of the extent of or support for energy citizenship activities in the country.

Figure 6 provides an overview of the number of cases mapped per European region¹. Again, these numbers are intended to describe the mapping activity undertaken by the consortium and are not intended to refer to stronger/weaker energy citizenship activity (see Vadovics et al., 2022, for details of the mapping process and methodology).

¹ For the assignment of countries into regions we relied on the system used by the Publications Office of the European Union available at the following link: <https://op.europa.eu/en/web/eu-vocabularies/concept-scheme/-/resource?uri=http://eurovoc.europa.eu/100277> (last visited 13 July, 2023).

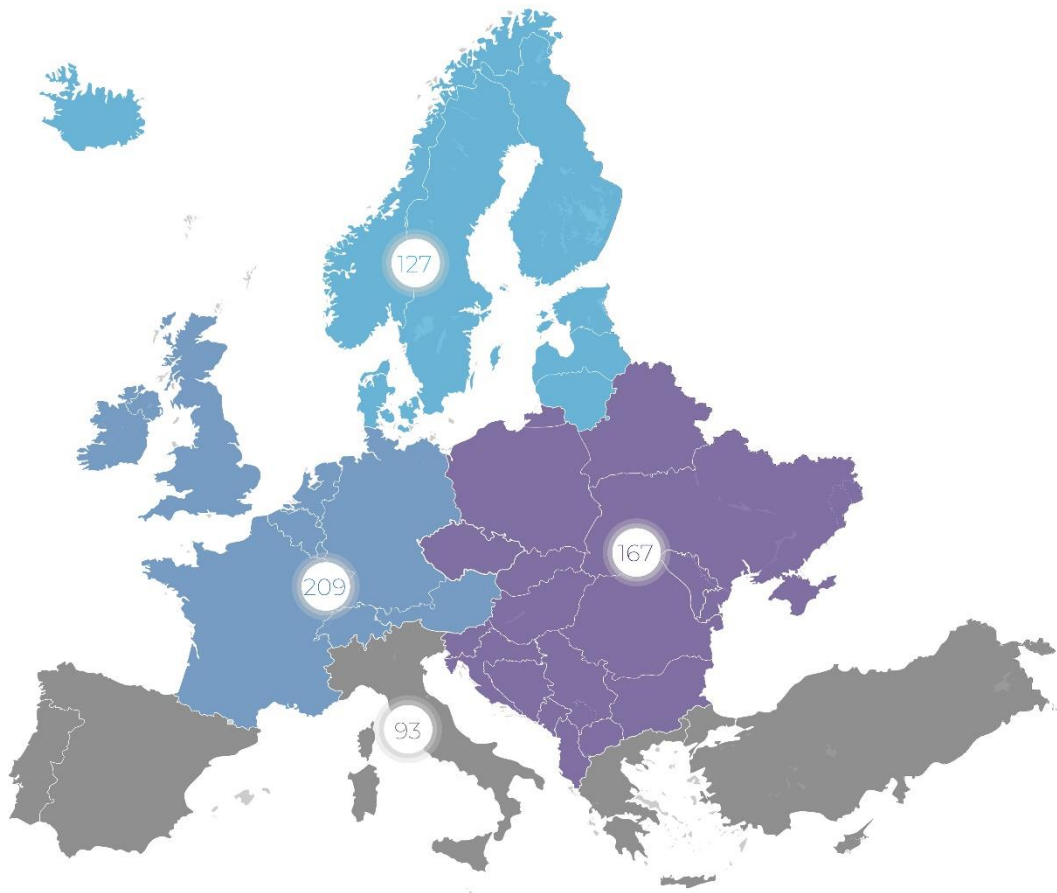


Figure 6: Distribution of mapped ENCI cases among European regions

Targeted area of energy-related activity

In line with the definition of ENCI for this research project and the sampling strategy of the consortium (Vadovics et al., 2022), the cases selected for inclusion in the mapping focus on three main areas, two of which are better defined than the third. They are the following: 45.3% of cases focus on direct energy production and/or consumption, 45.3% have a more holistic focus and/or wish to achieve broader change and 9.2% concentrate on mobility. Table 1 provides an overview of what kinds of cases are associated with these three categories.

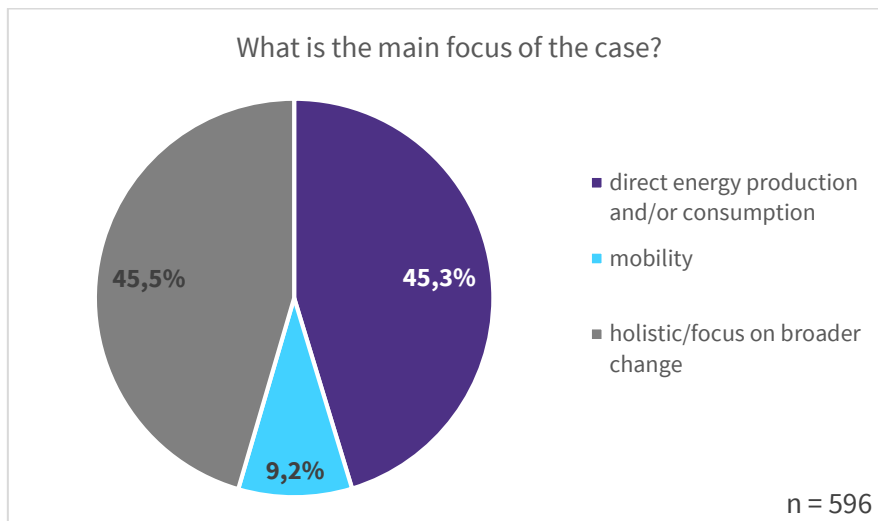


Figure 7: Distribution of mapped ENCI cases based on their main focus

Main focus	ENCI type examples
Direct energy consumption and/or production	<ul style="list-style-type: none"> • Renovation • Active/passive/autonomous houses • Target behaviour/practice change • Metering, smart metering • Equipment replacement for greater energy efficiency • Equipment sharing • Renewable energy • Prosumer oriented • etc.

Main focus	ENCI type examples
Mobility	<ul style="list-style-type: none"> • Car-free living, car-free districts • Cycling-related cases • Travel less • No-flight initiatives • Sharing cars • Walk (or cycle) to school initiatives (e.g. ‘walking bus’) • 15/20-minute cities • etc.
Holistic cases	<ul style="list-style-type: none"> • Carbon footprint reduction-based cases • Communities, e.g., eco villages • Sufficiency-oriented cases • Movements: Fridays for Future, Extinction Rebellion • Transition towns • Low-carbon settlements/regions • Citizen assemblies • etc.

Table 1: Examples of ENCI cases in terms of their main focus (Source: Vadovics et al., 2022, p. 14)

As may be expected, more cases identified as “transformative” have a holistic focus than those categorized as “reformative”.

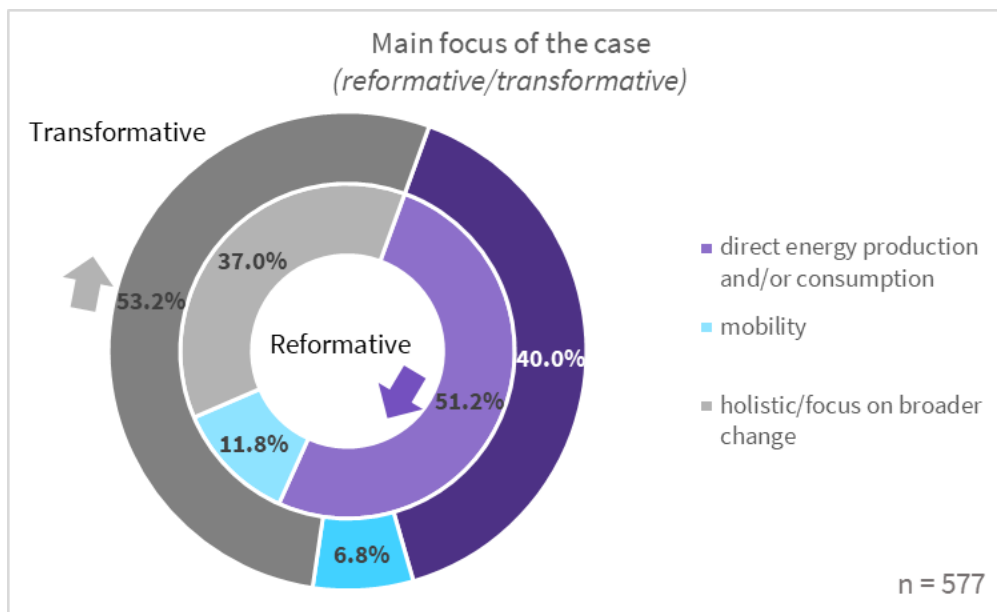


Figure 8: Distribution of mapped ENCI cases based on their main focus according to their designation as reformative/transformative

Looking at the distribution of cases by focal area, we find that (following the objective of the mapping) cases associated with the three focal areas were mapped in all

regions of Europe. Regarding a focus on direct energy production and/or consumption as well as having a more holistic focus, there was no significant difference between the regions. However, in Eastern and Northern Europe the consortium mapped a significantly higher number of cases than in Southern Europe.

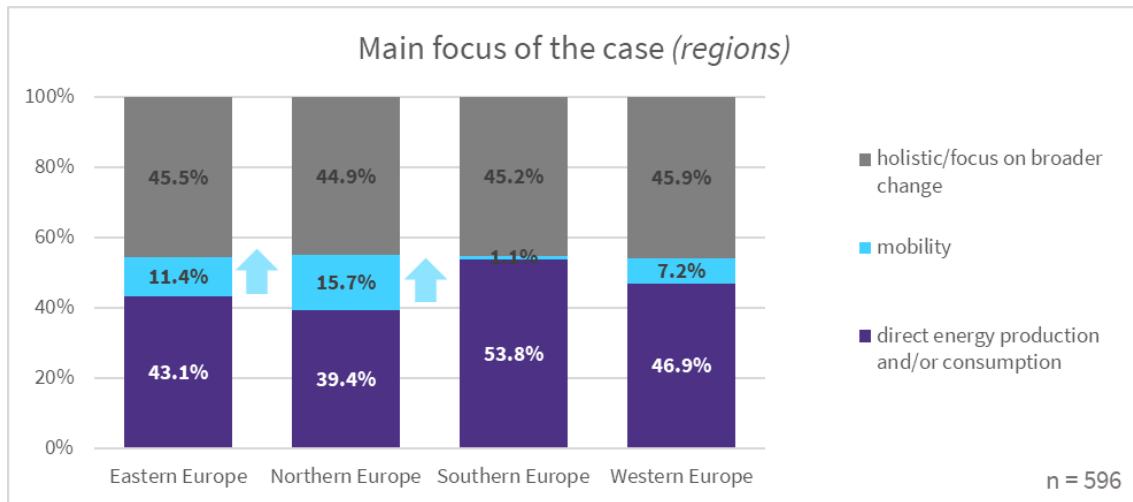


Figure 9: Distribution of mapped ENCI cases based on their main focus according to a regional breakdown

In addition to the main focus of the cases or their targeted area of energy-related activity, for the purposes of diversity, the consortium also aimed at including cases that focus on disadvantaged groups and gender issues. We managed to include both types of cases in our work, including in all European regions.

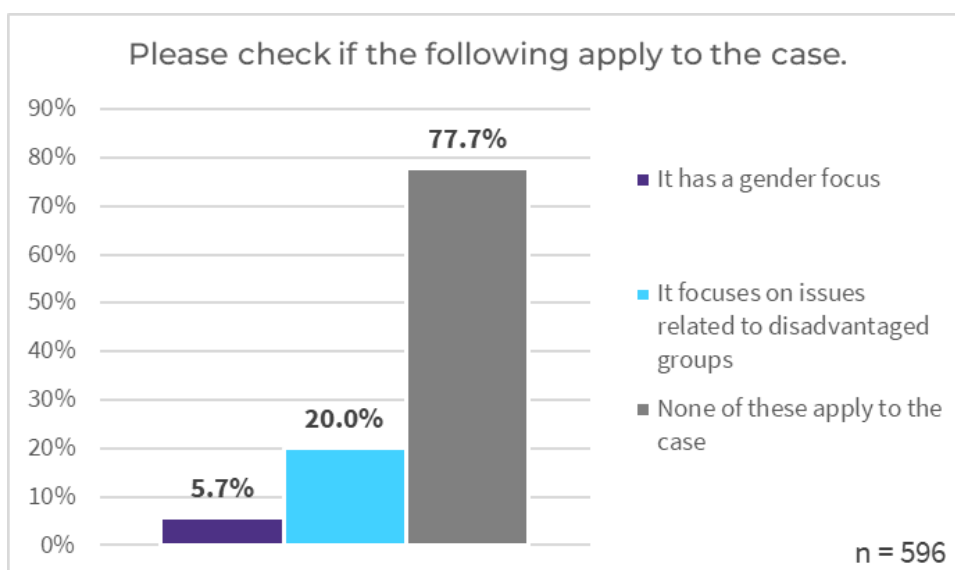


Figure 10: Distribution of mapped ENCI cases according to presence of focus on disadvantaged groups and gender issues

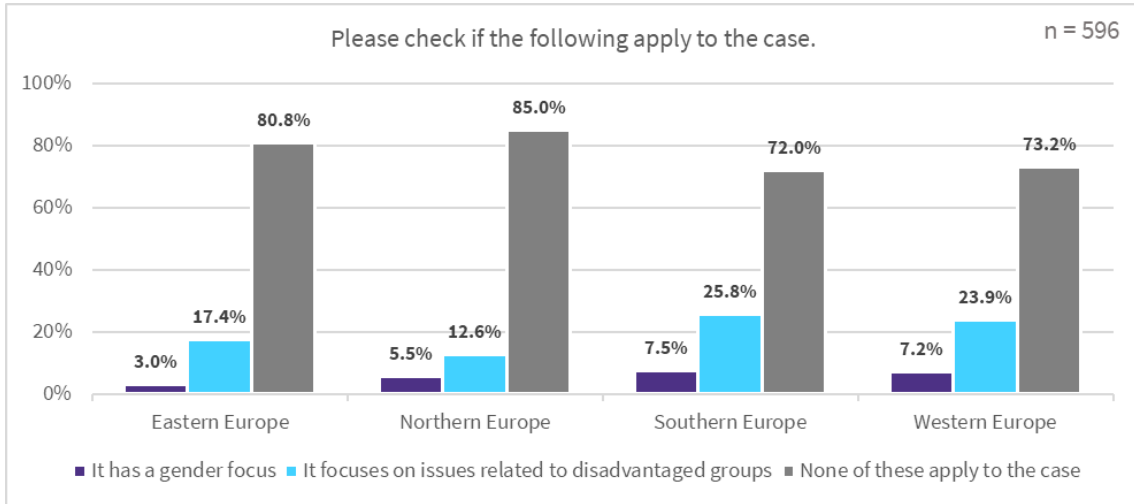


Figure 11: Distribution of mapped ENCI cases according to presence of focus on disadvantaged groups and gender issues, (regional breakdown)

Individual and collective cases

Our sampling strategy required that 10-20% of the mapped cases should be regarded as “individual” ones – i.e., started and often implemented by an individual. The consortium managed to carry out the mapping accordingly in relation to the whole database and in terms of the categorization into reformative/transformational cases. Only when we look at the numbers by region (Figure 14) do we notice that in Western Europe the proportion of individual cases is significantly higher than in the three other regions.

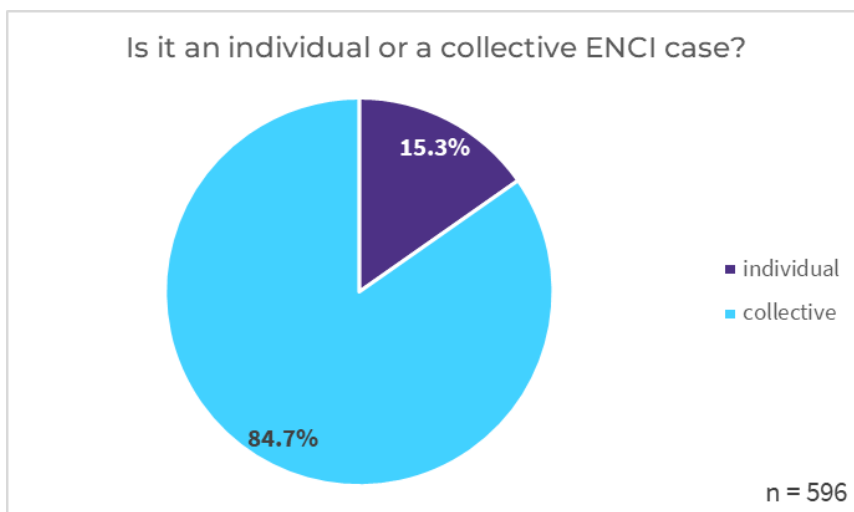


Figure 12: Distribution of mapped ENCI cases according to whether they are individual or collective

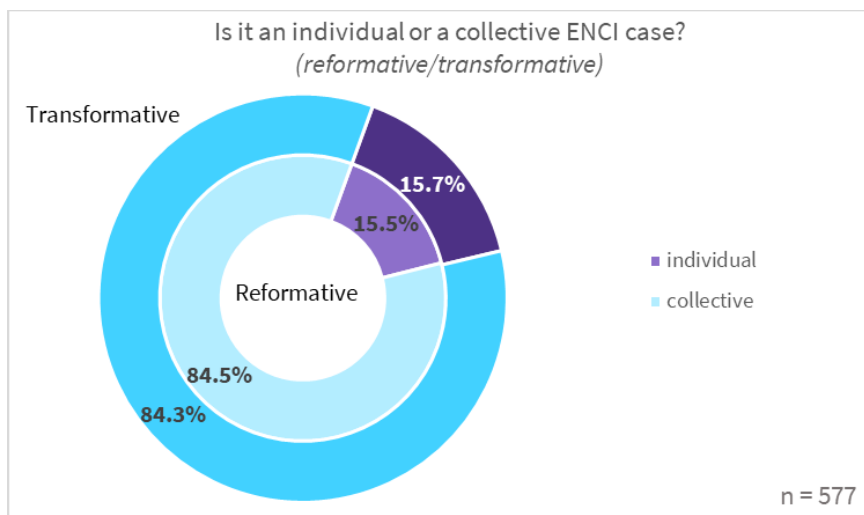


Figure 13: Distribution of mapped ENCI cases according to whether they are individual or collective (reformative/transformational breakdown)

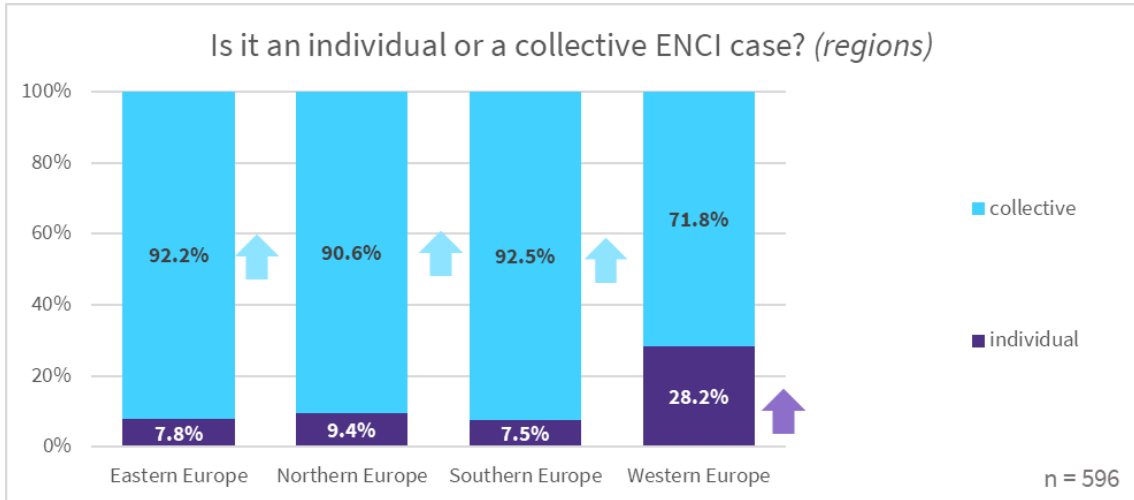


Figure 14: Distribution of mapped ENCI cases according to whether they are individual or collective (regional breakdown)

Where are the mapped cases active?

Regarding where the mapped cases are based, the consortium managed to achieve diversity. The largest proportion of mapped cases operate in various types of areas (i.e., urban, rural, peri-urban) simultaneously. Those that operate specifically in urban areas make up 28.7% of the cases, and those in rural areas comprise 15.8%. For some cases (7.2%), this distinction is not relevant – for example, because they are virtual cases. Concerning the 3.5% of cases categorised as “Other”, the target area is typically not defined or is non-specific (e.g., “it is intended to promote energy-efficiency, targeting consumers, manufacturers, consumer associations and other key actors” or “It is an educational project”). Alternatively, some cases operate in multiple contexts but in particular ways. For example, one response was, “The pilots [pilot projects] have been implemented in urban areas. At the same time, the use of smart tools in buildings can be [achieved] in any building independently [of] the location”.

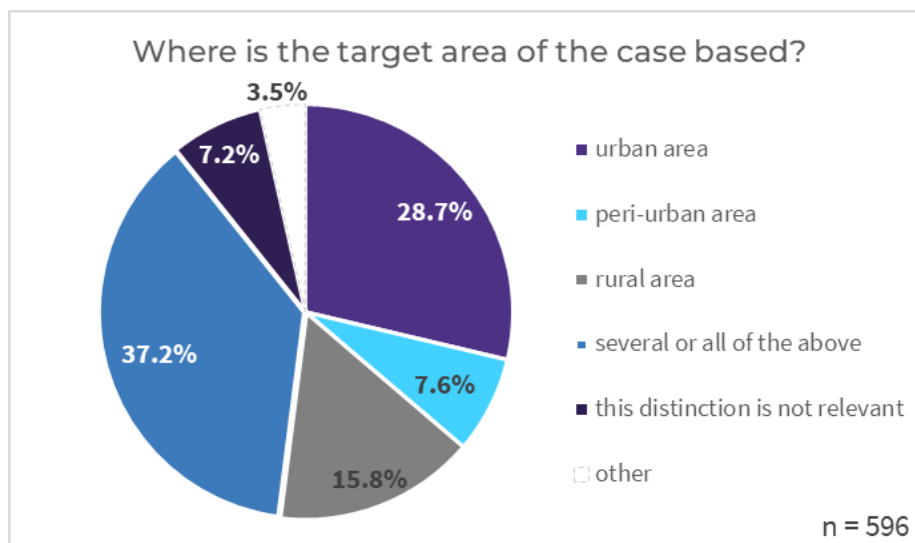


Figure 15: Distribution of mapped ENCI cases according to where they are active

Looking at a similar distribution of cases by region, it can be seen that similar diversity was achieved. It is interesting to note that in Eastern Europe, a statistically significant number of cases were mapped in urban areas compared to the South and also the West, while in Western Europe, the same was true in peri-urban areas compared but only compared to the East.

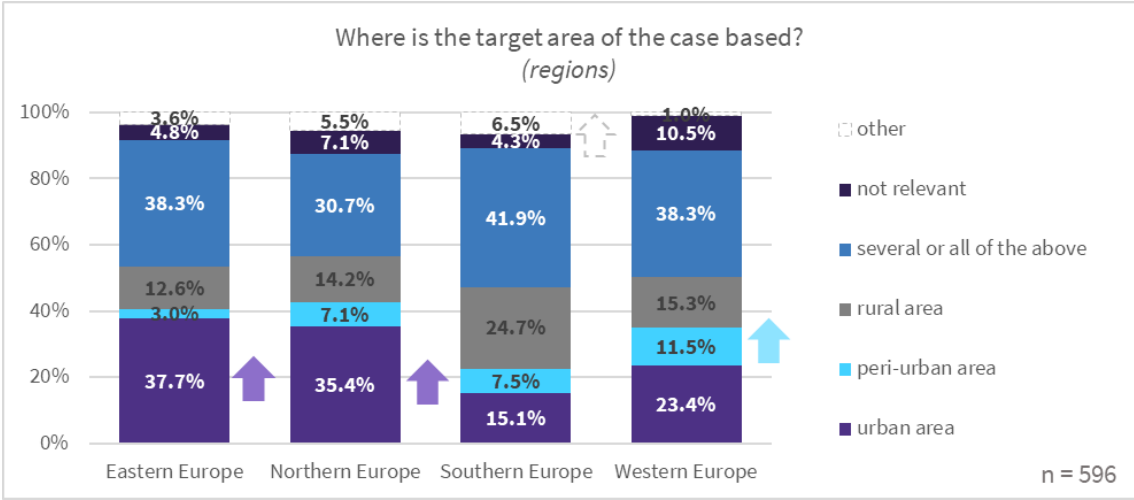


Figure 16: Distribution of mapped ENCI cases according to where they are active (regional breakdown)

When were the cases mapped initiated, and are they still active?

The overwhelming majority of mapped cases started after 2006, most of them between 2016 and 2020 (39.1%). This is true of most European regions, with the South having an equal number of cases started between 2011 and 2015.

The database also contains cases dating back to earlier than 1992 (3.4%), most of which were mapped in Southern and Western Europe.

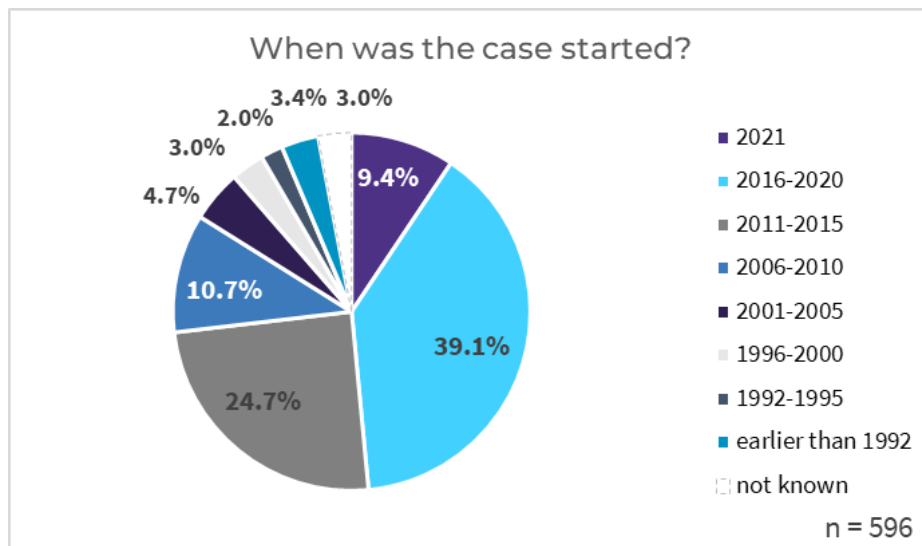


Figure 17: Distribution of mapped ENCI cases according to when they started their activity

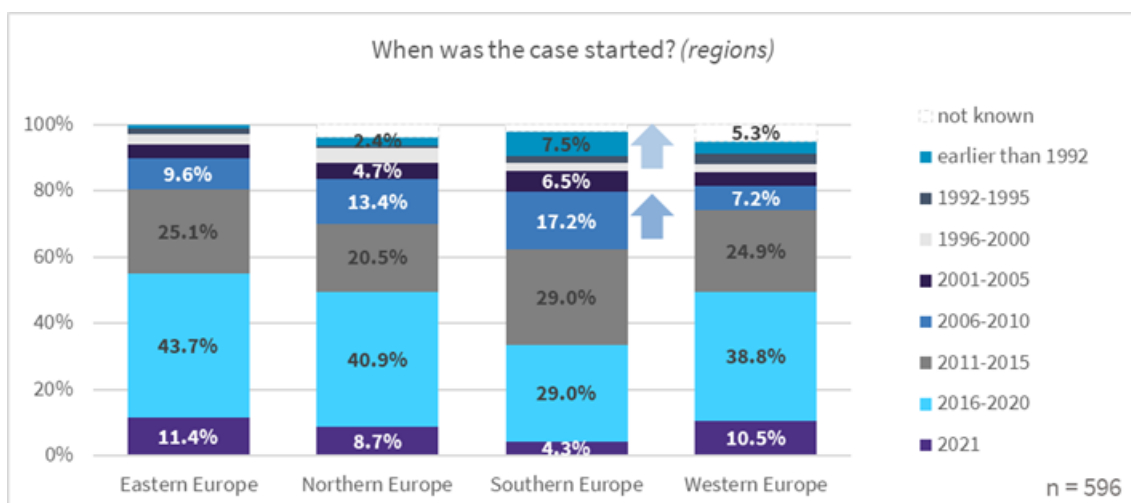


Figure 18: Distribution of mapped ENCI cases according to when they started their activity (regional breakdown)

Close to 85% of the mapped cases (84.7%) were active at the time of mapping. This proportion is slightly smaller in Eastern Europe (79%) and somewhat larger (88%) in Western Europe.

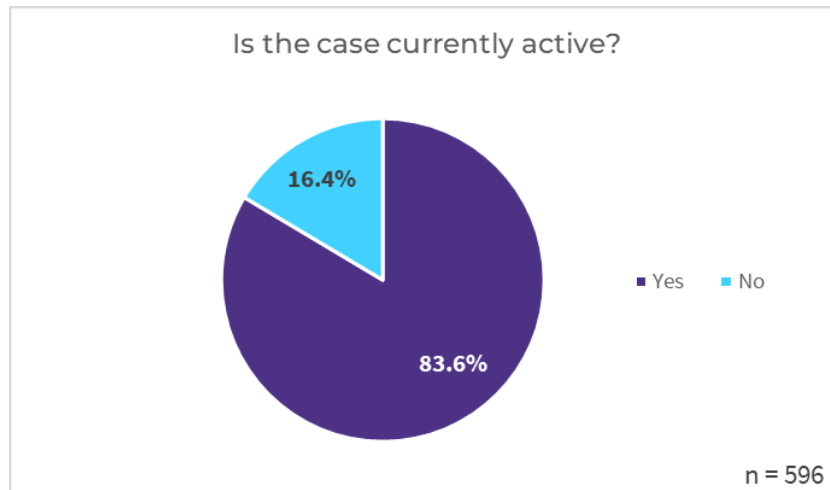


Figure 19: Distribution of mapped ENCI cases according to whether they were active at the time of mapping

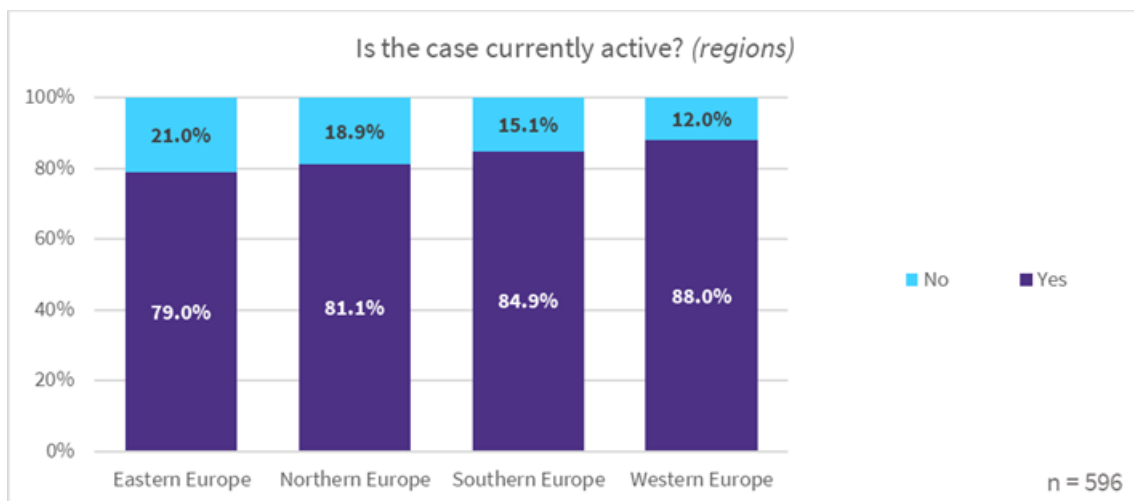


Figure 20: Distribution of mapped ENCI cases according to whether they were active at the time of mapping (regional breakdown)

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