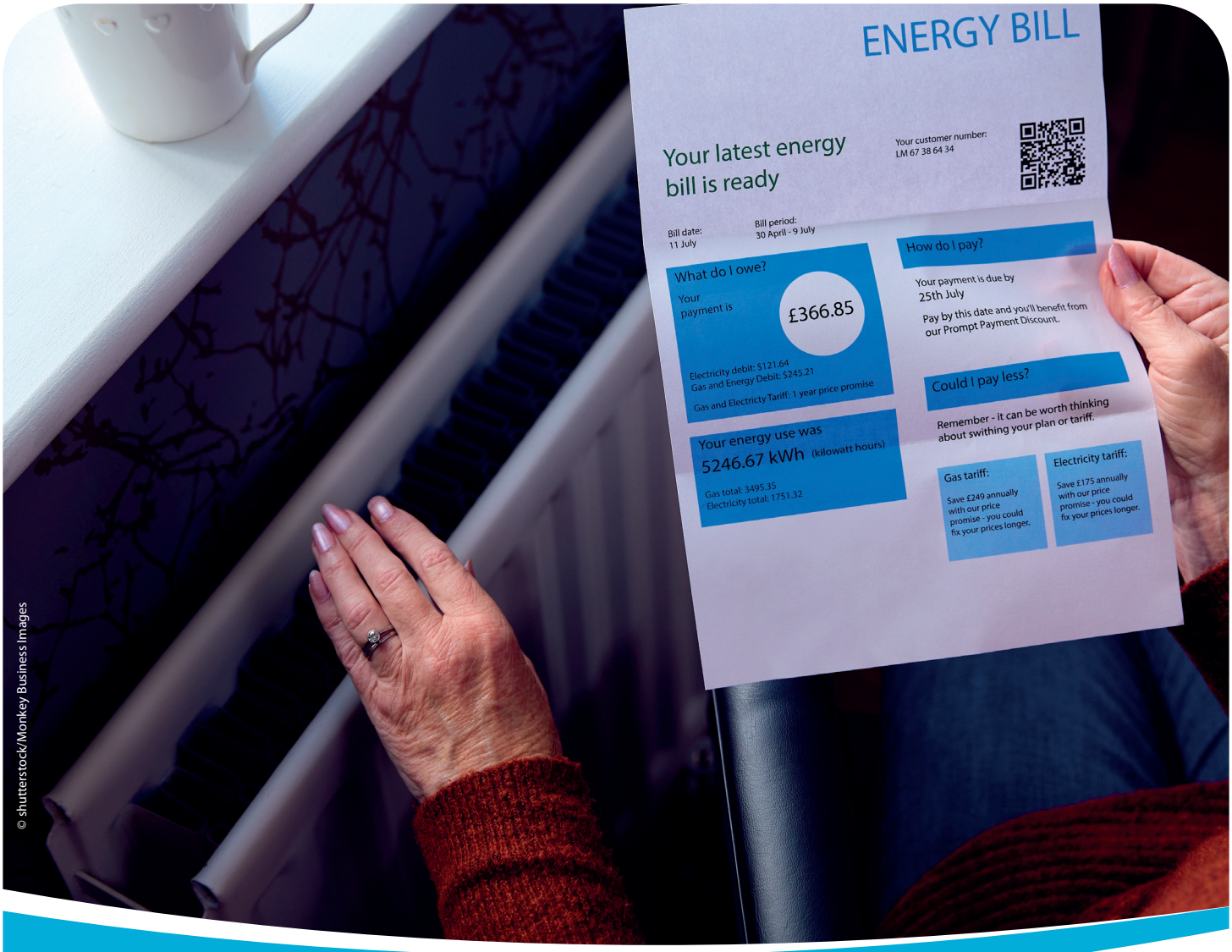


Gender-disaggregated data on energy poverty

STUDY

European Economic and Social Committee

Study on gender-disaggregated data on energy poverty

Final Study Report

General information

STUDY FOR	*The European Economic and Social Committee (EESC)*
REQUESTING SERVICE	*Section for Transport, Energy, Infrastructure and the Information Society (TEN)*
STUDY MANAGING SERVICE	*Foresight, Studies and Policy Assessment Unit*
DATE	*26.02.2024*
MAIN CONTRACTOR	*WECF e.V.*
AUTHORS	*Katharina Habersbrunner* *Marcela Noreña Ospina* *Pia Wieser* *Marika Kuschan* *Franziska Reichmann*
CONTACTS	*Katharina.habersbrunner@wecf.org*

IDENTIFIERS

		ISBN	doi
STUDY			
print	*QE-09-24-210-EN-C*	*978-92-830-6477-0*	*10.2864/352529*
PDF	*QE-09-24-210-EN-N*	*978-92-830-6478-7*	*10.2864/44780*

Table of Contents

List of tables

List of figures

List of acronyms

Beijing Platform for Action (BPfA)

Civil society organisations (CSOs)

Committee on Women's Rights and Gender Equality (FEMM)

Do it yourself (DIY)

Energy Efficiency Directive (EED)

Energy Poverty Advisory Hub (EPAH)

EU Statistics on Income and Living Conditions (EU-SILC)

European Economic and Social Committee (EESC)

European Institute for Gender Equality (EIGE)

European Union (EU)

Gender-disaggregated data (GDD)

Household budget surveys (HBS)

Life-long gender equality culture (LLGEC)

National Energy and Climate Plans (NECP)

Non-governmental organisations (NGOs)

Renewable Energy Directive (RED)

Small and medium enterprises (SMEs)

Abstract

Recent economic shocks from the COVID-19 pandemic and the energy crisis in Europe following Russia's invasion of Ukraine have brought energy poverty to the forefront of social and political debate. While EU policies increasingly address energy poverty, gender considerations remain overlooked. This study addresses this gap and aims to increase the understanding of the gender-energy poverty nexus, analysing existing literature and EU and national policies. It further analyses original qualitative data from seven EU Member States: Lithuania, Croatia, the Republic of Cyprus, Bulgaria, the Republic of Ireland, Spain, and Germany. By identifying the links between gender and energy poverty and the causes that contribute to women being more likely to be affected and affected differently by energy poverty, the study highlights critical factors, including age, the interplay of paid labour and care work, household structure, housing quality, and health status. The case study countries, which are diverse in terms of geography, climate and level of research and integration of the gender-energy poverty nexus into legislation and programmes, shed light on existing good practices as well as policy and implementation gaps. Ultimately, the study underscores the imperative for holistic, intersectional approaches in combating energy poverty at both EU and national levels.

Executive summary

This study, commissioned by the European Economic and Social Committee, aims to identify and understand the structural roots of energy poverty, to highlight the gender axis of energy poverty and the lack of gender-disaggregated data at EU and Member State level. Achieving these objectives will allow for a more inclusive and effective response to the main groups at risk of energy poverty.

The study adopts an intersectional approach, in which gender is neither a category of analysis nor a pseudonym for women, but an analytical tool used in relation to its intersections with other identities. Gender is also understood as a social construct that is not fixed but constantly renegotiated according to the given context. This systematic analysis at the intersection of gender and energy poverty recognises energy poverty as a manifestation of existing gender inequalities and roles and the gendered division of responsibilities within a household, and therefore calls for policies to go beyond the so-called feminisation of energy poverty.

Its objectives are achieved through a combination of methods: firstly, academic literature and policy analysis at EU and Member State level; and secondly, original research, 33 semi-structured interviews and three field visits in the research countries of Lithuania, Germany, the Republic of Ireland, Spain, Croatia, the Republic of Cyprus and Bulgaria.

The policy and literature analysis shows that energy poverty is being integrated more and more consistently into the **European Commission's policy documents**. Concerning the inclusion of energy poverty as an aspect addressed in policy documents two categories were identified. The first includes documents that superficially define or refer to the issue, with limited targeted measures to address it (*Renewable Energy Directive* (RED), *Directive on Energy Performance of Buildings, REPowerEU Plan and European Green Deal).* The second includes documents with more detail, definitions and more concrete measures (*Energy Efficiency Directive (EED), the proposal for the social climate fund*). Energy poverty has also gained more attention **in the academic debate**, calling for the integration of qualitative

methods and gender as a horizontal axis of analysis, while integrating both expenditure-based and consent-based indicators. Despite persistent efforts by various EU committees and institutions (including the European Economic and Social Committee (EESC), the European Institute for Gender Equality (EIGE) and the Committee on Women's Rights and Gender Equality (FEMM) of the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs) to emphasise the importance of an intersectional approach to tackling energy poverty and the relevance of gender in the field of energy policy, this gender awareness is not fully translated into actionable policies. The characterisation and disaggregation of populations affected by energy poverty in policy remains very limited. Usually referring to 'vulnerable consumers' or low-income households, policy documents ignore important social and relational dimensions that contribute to the risk and impact of energy poverty, and the resulting policies and measures may not fully address the root causes of energy poverty. Only the *Social Climate Fund*, the *EED and the Renovation Wave for Europe* include varying degrees of gender mainstreaming or intersectionality content, while no gender mainstreaming can be identified in the *RED*, *the Energy Performance of Buildings Directive*, the *REPowerEU Plan* and the *European Green Deal*.

Regarding the inclusion of energy poverty and gender in **national policies**, the study analyses the National Energy and Climate Plans (NECPs) and reports on their diversity in defining energy poverty and attributing importance to it. Even though the Regulation on the Governance of the Energy Union and Climate Action (2018) stipulates that NECPs must include human rights and gender equality dimensions, the NECPs of Bulgaria (Republic of Bulgaria, 2019), Croatia (Ministry of Environment and Energy- Republic of Croatia, 2019), Germany (Federal Ministry for Economic Affairs and Climate Protection-Germany, 2019), Lithuania (Republic of Lithuania, 2019), and the Republic of Cyprus (Republic of Cyprus, 2021) do not contain any paragraphs that could be interpreted as gender mainstreaming. In the case of Lithuania, Germany, the Republic of Cyprus and Croatia, this omission has not been corrected in the updated draft of the NECP recently submitted to the Commission. An updated draft for Bulgaria was not publicly available at the time of submission of this report. Conversely, Ireland's NECP provides some information about the interlinkages between gender equality policies and climate adaptation and about national pilot initiatives to incorporate gender budgeting in the budgetary processes (Republic of Irland, 2019). For Spain, the final NECP submitted in 2019 pointed out the commitment of the national government to include a gender perspective in the plan, especially considering women's participation in the renewable energy sector (MITECO, 2020), including targeted actions in this regard in its updated version submitted in June 2023. Further, Spain and the Republic of Ireland have issued specific strategies to combat energy poverty. Whilst the Republic of Ireland defines structurally excluded groups from a health and age axis, the strategy is formulated in a gender-neutral way (Government of Ireland, 2022). The Spanish strategy presents a good integration of a gender and intersectional perspective in a variety of aspects (MITECO, 2019).

There is a growing consensus on the **factors that determine the risk of energy poverty** and should therefore be considered in addressing it. The work of the Energy Poverty Advisory Hub (EPAH) has been fundamental in building a common understanding of energy poverty, while focusing its guidance on the local context. EPAH acknowledges that combined and interlinked factors determine vulnerability to energy poverty, referring to five main categories: socio-demographic characteristics, household composition, health, energy literacy, and cultural factors. While these factors show the multiple intersections that an individual may have with respect to risk of energy poverty, the document does not mention gender as a socio-demographic factor to be considered, nor does it suggest a gender-responsive approach to diagnosis, planning and implementation of interventions (EPAH, 2022a). The definition of

and approach to energy poverty in the EU still has some shortcomings. On the one hand, the data available to measure energy poverty are insufficient and, in most cases, rely almost exclusively on income and expenditure statistics. The over-reliance on analysis of these indicators has been a source of criticism as they can conceal the experiences of those who are considered most susceptible and fail to integrate their actual needs into policies and strategies (Clancy, et al., 2022). In addition, the lack of consistency in the criteria across the EU hinders comparison and overarching approaches. On the other hand, the lack of intersectional and gendered approaches leaves little room for consideration of aspects such as intra-household dynamics, the impact of paid and unpaid work distribution, and the potential increase in inequalities that the green transition entails.

Assessing the extent to which the selected EU Member States are responding to the Commission's call to implement **gender equality** through various initiatives in their national context, the study is looking at cornerstones and measures (legal and policy framework, established structures, methods and instruments) in all seven countries studied (EIGE, 2022a). Whilst the commitment to gender equality is underpinned by constitutional principles in all countries, they show different approaches to gender equality structures, with a wide range of strategies. In the landscape of gender equality initiatives across the EU Member States in this study, Bulgaria, Lithuania, Spain and Germany stand out as notable role models that demonstrate effective resource allocation, particularly as evidenced by their strong support for independent gender equality bodies. However, when it comes to the implementation of area H of the Beijing Platform for Action (BPfA), which refers to the strength of national mechanisms to promote gender equality and gender mainstreaming, there are still varying degrees of challenges (EIGE, 2022a).

Our study further identifies factors involved in the gender-energy poverty nexus in the EU through considering two main axes of analysis. First, from a **risk perspective**, our study navigates the intersecting characteristics and inequalities that put certain population groups at higher risk of energy poverty. By considering the interplay of social, economic, and physiological factors. This includes (1) the intersection of gender with age and income disparity, (2) household structure, and especially energy poverty in single-parent households, (3) the quality of housing and its intersections with further socio-demographic factors (4) health status and disability. The study further alludes to unexplored groups at risk by moving beyond a binary concept of gender as well as approaching the characteristic of sexual orientation and recognising the often-overlooked dimensions of energy poverty in LGBTQIA+ communities that face an increased risk due to the reproduction of other forms of discrimination and marginalisation that prevent them from accessing services and rights.

Second, our research delves into **the lived experiences** of individuals struggling with energy poverty to identify how gender inequalities and their intersections with other identity categories influence the ways in which people experience energy poverty and cope with it. The impact of **traditional gender norms** on the experience of energy poverty permeates several aspects of daily life. On the one hand, women are often taking primary responsibility for care and household management, spending more time at home, facing conditions of energy deprivation that lead to uncomfortable temperatures and responsibility for their family's well-being. On the other hand, men are often under the societal pressure to fulfil the role of the economic provider of the family and are therefore heavily affected in their mental health, by alcoholism, and self-isolation when unable to meet their families or their own energy needs. These gender roles further result in a gendered differentiation in the interplay of **(un)paid care work and paid labour**, with women predominantly bearing the double burden of care work and labour, especially in heterosexual relationships with children. Additionally, it is highlighted that differential

health impacts for women in energy poverty (respiratory and cardiovascular diseases, such as chronic bronchitis or strokes) and for men in energy poverty (higher incidence of home injuries and poor mental health) are reported compared to both genders not living in energy poverty (Oliveras, et al., 2020). The study additionally brings forward some cases of **domestic abuse** in connection to energy poverty, where economic constraints, exacerbated by energy poverty, can intensify tensions and contribute to an environment where abuse, both psychological and physical, may thrive and the threat of withholding access to energy amenities, such as heating or cooling, becomes a potent means of asserting control.

The **case studies** emphasise the Member States national contexts and their energy poverty related challenges as well as the main groups affected by energy poverty on the national level. They continue to highlight best practices regarding the gender-energy poverty nexus and other social dimensions based on the main stakeholders' experiences in their country contexts. The Republic of Ireland and Spain can be said to have delivered the most detailed information on the gender-energy poverty nexus and are good practice examples to follow. On the other hand, countries like Germany and Lithuania fail to address the nexus at all whilst Croatia, the Republic of Cyprus and Bulgaria show a limited recognition of the gender dimension of energy poverty through civil society organisations and energy agencies.

Based on the collected data, **recommendations** for policies and policy makers encompass ideas for increasing the general awareness and understanding of energy poverty and its gender dimension and specific gender recommendations. In the former part we advise:

- to address inclusivity in the definition and measurement of energy poverty
- to review energy policies from an intersectional perspective considering gender and other axes of discrimination,
- to improve legislation and coordination and coherence among policy sectors at all levels,
- to attribute importance to public consultation and involvement of civil society,
- to remove barriers to financial support for structurally excluded groups, and
- to create structural solutions that foster social justice in the green transition.

Specific gender recommendations aim to strengthen Members States capacities to address the gender dimension of energy poverty and include establishing national gender training programmes to enhance gender awareness, to improve the collection of gender-disaggregated and intersectional data on energy poverty and to introduce targeted gender financing mechanisms.

1. Introduction: objectives and scope of the study

Energy poverty remains a pressing issue in the European Union (EU), affecting millions of people and households, especially considering recent energy price rises in almost all EU countries. It is estimated that in 2022, 9.3% of the population was unable to keep their homes adequately warm in winter and 6.9% of EU households experienced arrears in utility bills (Eurostat, 2023e). Furthermore, a substantial 14.8% of all households faced renovation needs in 2020 (e.g., due to leaking roofs, damp walls, floors or foundation, or rot in window frames or floor) (Eurostat, 2024), underscoring the prevalence of energy-inefficient housing. Although the quantity and quality of data available on energy poverty has increased considerably in recent years, it rarely includes gender-disaggregated data that would allow a thorough understanding of how structural gender inequalities (e.g., related to the gender pay gap and care work) affect the risk and impacts of living in energy poverty. Seeking to address this information gap, the EESC requested a study that seeks to collect gender-disaggregated data (GDD) on energy poverty in order to better understand the structural causes that tend to affect women and gender-diverse groups more.[1]

This study aims to fill the existing data gap in selected EU Member States by conducting a systematic analysis at the intersection of gender and energy poverty. Building on previous research in this area, the main objective of this study is to identify and understand the structural roots of energy poverty. Particular emphasis is placed on unpacking the gendered impacts of energy poverty and identifying the underlying structures that disproportionately put women and gender-diverse groups at greater risk than men. Integral to this effort is a commitment to advocate for coherent, gender-responsive and transformative policy solutions. The study unfolds through a combination of desk research and qualitative primary data collection. The former includes an assessment of national and supranational policies aimed at tackling energy poverty as well as academic literature, with a particular focus on identifying gendered factors that increase the risk of experiencing energy poverty. At the same time, the analysis of primary data highlights the multiple ways in which energy poverty manifests itself as a gendered everyday reality as well as the mechanisms used to overcome it and the (un)intended gendered impacts of these measures. The study additionally provides an in-depth analysis of the current situation in seven Member States (Lithuania, Croatia, Cyprus, Bulgaria, Ireland, Spain, and Germany) through the analysis of case studies.

This report is divided into six sections. The *background information* section provides the reader with a contextual foundation by examining the progress in addressing energy poverty in the EU legislation. Furthermore, it gives an insight into the feminist academic debate surrounding energy poverty across diverse disciplines.

Chapter 3 contains a policy analysis to evaluate the integration of energy poverty and gender mainstreaming in policies and strategies at both the EU and national level. At the EU level, the chapter examines communications, directives and proposals of the European Commission for energy poverty, gender, and intersectionality. For each case study, it inspects the National Energy and Climate Plans (NECPs), the national strategies to combat energy poverty and the national gender policies and

[1] Throughout this report and all the study deliverables the term "women and gender diverse groups" will be used to refer to groups that have historically been oppressed by the patriarchal structures of society, and include women, intersex, nonbinary, trans and agender people.

strategies. The chapter closes with a characterisation of energy poverty and structurally disadvantaged consumers to elucidate a common understanding of energy poverty.

Chapter 4 is dedicated to the key factors contributing to the gender-energy poverty nexus from both a risk and impact perspective, identified through desk research and in-depth interviews with stakeholders in the selected countries. Building on this, *Chapter 5* presents a comprehensive summary of the results in the case study countries, including specific energy poverty challenges, the main groups affected by energy poverty and the identified good practices to combat it.

The study concludes with active policy recommendations, synthesising the extensive research into actionable strategies for policymakers to address the gender-energy poverty nexus and close the policy gaps within the EU.

1.1 Methodological approach

In this study, we seek to go beyond the so-called feminisation of energy poverty by recognising it as another manifestation of gender inequality (Heredia, et al., 2022, p. 298). Our focus instead acknowledges existing gender roles and a gendered distribution of responsibilities whilst prioritising people and their unique experiences. A particular challenge in the debate on energy poverty in the Global North is that policies and strategies mostly ignore gender, as they claim to be gender-neutral (Robinson, 2019). Therefore, in our study, we concentrate on the aspects of energy poverty that are most likely to be gendered, without assuming that one gender identity (e.g., women) is the most susceptible to energy poverty in all aspects (Robinson, 2019).

In order to identify the different factors contributing to gendered disparities in the risk to energy poverty and experiences within this context, we adhere to the outlined research objectives, questions, data collection methods, and data sources specified in *Table* 1.

Table 1: Research pillars

Research Objective	Question	Data collection methods	Main data sources
RO1: Identification of specific factors contributing to women, girls and gender-diverse groups being more affected by energy poverty.	RQ1: Which data exists, and which is lacking on the nexus between gender and energy poverty?	Literature and policy analysis.	National and EU policies; National statistics; grey and peer-reviewed literature.
	RQ2: What kind of structural intersectional inequalities increase the risk of experiencing energy poverty?	Literature and policy analysis; semi-structured interviews; fact-finding visits.	Grey and peer-reviewed literature (2017-2023); key informants?
RO2: Tracking of existing gender-sensitive legislation/measures to tackle energy poverty.	RQ3: How are (supra)national policies addressing gender and intersectionality within frameworks to fight energy poverty?	Literature and policy analysis; semi-structured interviews.	National and EU policies; key informants; grey and peer-

			reviewed literature.
RO3: Tracking the existing societal awareness and knowledge networks dealing with energy poverty and gender.	RQ4: How do the different identified stakeholders interact and share knowledge to tackle energy poverty and address its gender dimension?	Stakeholder mapping; semi-structured interviews; fact-finding visits.	Key informants.
RO4: Identification of policy gaps, best practices and create policy recommendations.	RQ5: What kind of gender-responsive instruments (e.g., funding schemes, gender budgeting) are in place to overcome energy poverty in a targeted way?	Semi-structured interviews; fact-finding visits.	Key informants.

1.1.1 Selection of case study countries

The EU Member States were selected by us for analysis in this study to ensure geographic and climatic diversity as well as a variety in the incidence and main issues of energy poverty. Our approach allows us to cover various realities and aspects that determine energy poverty. Furthermore, the existence of a clear local definition of energy poverty and research on this topic also varies widely across countries, which helps to identify gaps as well as pioneering good practices. *Figure 1* indicates the chosen countries.

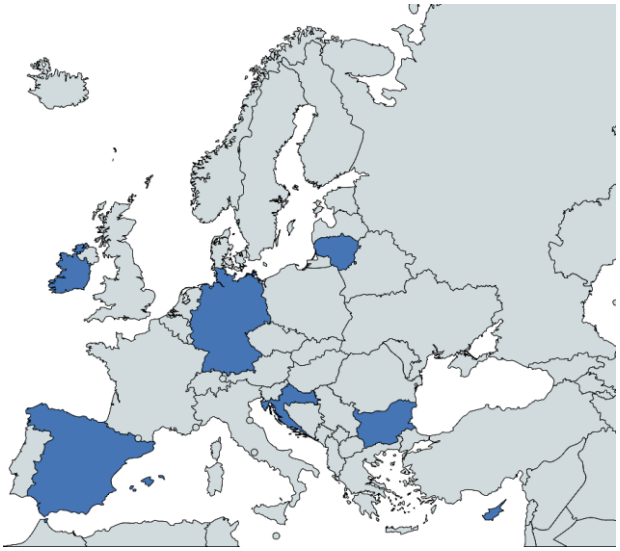


Figure 1:Map of Europe with the highlighted selected EU-Member States

1.1.2 Literature and policy analysis

The desk research objectives have been fulfilled by conducting a systematic review of existing literature and policies at the European and national levels for the case study countries, including EU policy documents, reports, papers, and available statistics that inform the state-of-the-art analysis of gender integration in energy poverty analysis policy and measures.

The identification and inclusion of literature was based on the background documents indicated by the EESC. Nonetheless, a search string based on the central terms of “energy poverty” and “gender” was

developed to compile additional evidence on the gender-energy poverty nexus. The policy documents reviewed fall into three main groups:

- **EU gender-related policy documents**: the review and analysis of these documents identifies and outlines gender equality objectives and guidelines for gender mainstreaming into EU sectoral policies.
- **EU energy and renovation policy documents**: Documents in this category include EC communications (including action plans, plans and strategies) and directives such as the *Renewable Energy Directive (RED) III*, the *Renovation Wave Strategy* and the resulting *Energy Efficiency Directive (EED)*, and the *Fit for 55 Package*. The review and analysis allow us to determine how these documents address energy poverty and its gender and intersectionality dimension.
- **National policies** (for the case study countries): this category includes the NECPs and other energy and renovation-related policies, as well as national gender policies and strategies. In this case, the review assesses the national response to EU directives and the integration of definitions of energy poverty and (gender-responsive) measures to address it.

We additionally used desk research to conduct stakeholder mapping in the selected case study countries. The actors identified subsequently formed our target audience in the primary data collection.
In our research, we refer to stakeholders as individuals and organisations with a vested interest and concern about gender and/or energy poverty, including:

- Political decision-makers, policymakers (government agencies on national and regional levels, individual politicians);
- Non-governmental organisations (NGOs), civil society organisations (CSOs), energy communities, trade unions, energy agencies;
- Academic and research institutions, professors, as well as graduate, post-graduate, and PhD students;
- The private energy sector, energy technology companies, industries, energy utilities, small and medium-sized enterprises (SMEs);
- And, actors working on women´s rights, LGBTQIA+ rights, and gender issues.

Conducting a stakeholder analysis helped us to identify the behaviour, intentions, and interrelations of stakeholders regarding the nexus of energy poverty and intersectional inequalities – with a focus on gender – and to evaluate their influence on decision-making and implementation processes (Brugha & Varvasovszky, 2000).

1.1.3 Primary research

Primary data collection in our study was based primarily on semi-structured interviews conducted virtually and in person during field visits to the case study countries. Semi-structured interviews are one of the main pillars of social science research, guaranteeing an in-depth understanding of an issue and the reasons behind existing structural inequalities by giving attention to the interlocutor's perception of certain situations and topics. Semi-structured interviews aim to talk about topic-specific experiences of subjects and local knowledge, following a semi-structured questionnaire combining deductive and inductive procedures. The advantages of this research method were utilised in our study to gain a deeper understanding of the realities of energy poverty in the context of the selected case study countries

through the knowledge and observations of key informants. A total of 33 interviews were conducted as part of the study.

Additionally, fact-finding field visits to Bulgaria, Spain and Germany were scheduled to conduct semi-structured interviews, meet up with relevant stakeholders and conduct (participatory) observation of targeted communities and persons. The three selected countries provided highly diversified data on energy poverty and its intersections as they represent:

1) varying awareness levels around energy poverty as a societal challenge;

2) diverging levels of policy inclusion of energy poverty as such and its gendered characteristics in specific;

3) the differing extent of energy poverty;

4) and, diverging kinds of energy poverty as well as climatic differences.

1.2 Limitations

While our study of gender and energy poverty provides valuable insights, it is important to acknowledge several limitations that may affect the generalisability of our findings. Firstly, the study faces limitations in its scope, largely attributed to resource intensiveness and time constraints imposed on the research. These limitations prevented the selection of a broader sample of countries or even an EU-wide analysis as well as the inclusion of a larger number of stakeholders as key informants. Our focus on qualitative research methods, such as semi-structured interviews, allowed for a nuanced exploration of experts' experiences and reflections on everyday struggles of people affected by energy poverty. Nonetheless, forgoing original quantitative data collection has prevented us from including a robust statistical analysis of the prevalence and energy poverty and its gender dimension. Moreover, collecting information directly from groups affected by energy poverty was beyond the scope of the study and this hindered comprehensive representation of their perspectives. A longer timeframe could facilitate a broader methodological approach, including quantitative data collection, and thus provide a more holistic understanding of the complex links between gender and energy poverty.

Second, the lack of existing data on the gender-energy poverty nexus at the national level was a challenge. Despite the contributions of feminist scholars in highlighting the social inequalities associated with energy poverty, the lack of statistical studies and the scarcity of experts in the field means that there is little scientific basis on which to build. In addition, in some countries we were confronted with the reluctance of the stakeholders we contacted to participate in the study, which in most cases was attributed to a lack of expertise in either gender or energy poverty issues, or to time constraints. This led us to constantly adapt our approach to allow both fields of interest to inform each other to describe the current state of the gender-energy poverty nexus in the EU and its Member States. In the future, we very much hope that national scientific databases will expand their datasets through more comprehensive and targeted data collection, and that energy experts will prioritise the social dimensions that are developing in their field, for example by analysing energy poverty through an intersectional lens.

2. The evolution of the integration of the gender-energy poverty nexus in research and policy

In this chapter, we will discuss the gender-energy poverty nexus from various angles. The chapter begins with a general overview of the consideration of energy poverty in the EU and national legislation.

Subsequently, the feminist debate on energy poverty is introduced to frame the theoretical background and approach towards bringing in a gender analysis of energy poverty in the presented study.

2.1 Integrating energy poverty in EU and national legislations

Over the last decade, significant progress has been made in integrating energy poverty into European energy policy. From being almost non-existent in policy until the late 2000s, energy poverty has been addressed – albeit to very different degrees – in the Union's various energy policy instruments (Bouzarovski, 2018), including the *Clean Energy for All Europeans package*, the *European Green Deal* and, more recently, the set of initiatives proposed in the *Fit for 55 package*. However, when it comes to considering gender issues and other social dimensions of energy policy, integration is much more limited and policies do not systematically mainstream gender, as proposed in the *Gender Equality Strategy 2020-2025* of the European Commission (European Commission, 2020). The debate on energy poverty has also broadened at the academic level and there is now a considerable body of literature on the subject, which has contributed to a more coordinated and cross-sectoral approach to tackling energy poverty.

Since the publication of a statement on the importance of a multi-sectoral approach to energy poverty in 2011, the EESC has played a key role in mainstreaming the social dimension of energy poverty in European policies, calling member countries to take action to combat energy poverty, and in establishing monitoring mechanisms (EESC, 2011). In particular, the Transport, Energy, Infrastructure and Information Society (TEN) Section of the Committee has issued several opinions in recent years, emphasising the need for social and holistic measures to combat energy poverty. A recent example of this is the *Opinion on the Communication A renovation wave for Europe* (EESC, 2021), in which the Committee recognises the positive impacts that renovation of buildings can have on alleviating energy poverty and calls for ensuring affordable housing for structurally excluded groups. Similarly, in its *Opinion on energy policy and the labour market* (EESC, 2022a), the Committee reaffirms the fundamental role of companies and small and medium-sized enterprises (SMEs) in ensuring access to energy services and thereby contributing to the prevention of energy poverty.

Also in 2022, the committee issued an opinion exclusively on the challenges of energy poverty from a social and economic perspective (EESC, 2022b), which defines energy poverty as a phenomenon where different factors come together, including low income, inefficient buildings and appliances, and lack of information on and access to incentives to reduce energy consumption. This document is also an important call for an intersectional approach to policies and measures to combat energy poverty as it recognises that the impact of energy poverty varies widely among different population groups, including aspects related to income (e.g., the poorest workers, low-income pensioners), age (e.g., students, young adults or older people), household composition (e.g., large families or single parents), ethnicity (e.g., Roma minorities), migration history, disability, and gender (recognising that women are at higher risk of energy poverty due to gender pay gaps and caring responsibilities) (EESC, 2022b). The Committee's position on the urgency of achieving gender equality in all economic and social sectors was further underlined in the opinion paper on gender equality (EESC, 2022c), which argues that there is a need to create and nurture a lifelong gender equality culture (LLGEC) in both public and private spheres. Despite making little mention of the links between energy poverty and gender, the paper provides a good overview of existing gender gaps which in some cases, may also influence the risk of facing poverty, such as labour market segregation and the gender pay gap.

The three annual conferences on energy poverty organised by the EESC have also produced important conclusions and policy recommendations for the European Commission and national governments. By

reiterating the need for overarching and coordinated approaches, the events have broadened the debate on the complexity of energy poverty and made visible the knowledge and work of different civil society actors. The integration of gender and intersectional aspects in the analysis and fight against poverty was rather limited in the 2021 and 2022 events. However, the 2023 conference, with its focus on a just transition, had a dedicated session on gender. This highlighted the urgency of a gender-responsive approach, recognising that there are gendered risks to and impacts of energy poverty and that existing definitions and indicators are generally not gender-sensitive.

Other European bodies have also advocated for gender mainstreaming in energy and climate policies and measures and have paid special attention to the issue of energy poverty. For example, as part of its mainstreaming programme, EIGE published a report in 2016 on the relevance of gender in the field of energy policy, highlighting that gender inequalities lead to a higher risk of energy poverty for certain population groups composed of mainly women, such as single-person households, one-person households and older women (EIGE, 2016a). Likewise, the Gender Equality Index 2023 included a thematic focus on the *European Green Deal* implications for gender equality. In a chapter dedicated to gender equity in the green energy transition, EIGE recognises that certain groups made up predominantly of women, such as single-parent households and older adults, are most affected by energy poverty (EIGE, 2023a).

In a similar vein, the Committee on Women's Rights and Gender Equality (FEMM) of the European Parliament´s Policy Department for Citizens' Rights and Constitutional Affairs has commissioned three studies on the energy-gender nexus and its relevance for policy formulation. As the three most prominent studies on the subject, they constitute a fundamental background to this study. The first is a study on the gender dimension in energy access in the EU (Clancy, et al., 2017), which can be seen as an urgent call to action for the further research that is required on energy poverty. The authors provided the first comprehensive review of the gender-energy poverty nexus in the context of the EU, stressing the need to transform energy poverty measures, definitions, and indicators in a gender-sensitive and responsive way rather than the gender ignorant approaches that have been the status quo in research and policy. The study also highlights how the lack of access to energy can be directly connected to rising gender inequalities in the EU. The second study not only focuses on energy poverty, but also broadens the perspective towards gender equality in the energy transition, shedding light on how energy access, participation in the energy labour market and decision-making are gendered and need to be thoughtfully addressed as such in policy (Clancy & Feenstra, 2019). The most recent and third study on this topic assesses the extent to which gender has been mainstreamed into the initiatives of the *Fit for 55 Package* (Clancy, et al., 2022). The study shows that although some progress has been made in mainstreaming gender into the initiatives of the package, it remains limited, and policies typically do not include an analysis of potential differential impacts. In addition, the authors find that the lack of gender-disaggregated data continues to be a barrier to gender-responsive policy design, research and practice, as also suggested by Bouzarovski et al (2021).

2.2 Feminist academic debate of energy poverty

As in the political sphere, energy poverty has increasingly gained the attention of researchers from different disciplines. Considering that an agreed definition of energy poverty was seen as a crucial foundation for addressing it through collaborative regulatory frameworks and concerted action, the initial emphasis on energy poverty research primarily centred around the imperative for conceptual frameworks that could comprehensively capture the multifaceted dimensions of the phenomenon.

However, even though some nuances and needs for adjustment remain, the term energy poverty is nowadays used in a more or less consensual way, which reflects the way in which energy efficiency, household income and energy prices interact and prevent a household from meeting its energy needs. The current debate focuses more on detection and effective intervention, i.e., identifying different affected groups and incorporating more precise characterisation and monitoring criteria across the EU Member States (Kyprianou, et al., 2019).

In this line, the call for incorporating gender as a variable of analysis has emerged as a crucial issue. Researchers advocate new methodologies that reflect gender gaps and differential impacts, through indicators that reflect gendered inequality situations "such as dependants, time spent at home or devoted to caring tasks" (Heredia, et al., 2022, p. 298). To comprehensively explore the intersection of energy poverty and gender, a holistic methodological approach is essential. In this sense, examining both expenditure-based and consent-based indicators is crucial, as relying solely on either may fail to capture the entirety of this multifaceted issue. Solely focusing on expenditure, for instance, poses the risk of overlooking hidden energy poverty, as it does not account for actual and gender-specific energy needs and may disregard households and individuals who deliberately under-consume and self-ration energy as a cost-saving measure. Relying on a singular type of indicator, as cautioned by Drescher and Janzen (2021), may result in a misallocation of necessary support resources. Consequently, an imperative emerges for the integration of social science methodology, particularly qualitative methods, into the study of energy poverty. This facilitates a nuanced understanding of the lived experiences, emotions, and perceptions of those impacted by energy poverty, as well as those actively engaged in addressing the issue. Acknowledging the significance of deep ethnographic research becomes vital for understanding intra-household dynamics and shedding light on decision-making power (im)balances (Heredia, et al., 2022).

Critical reflections on energy and gender also emerge from the field of feminist international development. Feminist scholars highlight a widespread concern with approaches that ostensibly address gender without adapting the conceptual framework; instead limiting their scope to the collection of sex-disaggregated statistics, and focusing initiatives on women without reflecting on structural causes of disparity or on the lived realities of women, men and gender diverse persons in particular contexts (Listo, 2018, p. 10). This tendency suppresses the disruptive potential of feminist methodologies and may in some cases, exacerbates intra-household conflicts (Mazzone, 2022, p. 17). This problem stems from a misunderstanding of gender as a category for analysis in both academic and political debates. Gender is more than a simplistic collection of differences between women and men, but a key aspect of power, access to resources and (unequal) distribution (Mazzone, 2022, p. 18). Within the realm of international development, Mazzone further identifies the misuse of gender as a "Trojan Horse for neo-liberal projects," (2022, p. 25) perpetuating binary and disempowering gender discourses (Listo, 2018; Robinson, 2019). This overarching approach tends to generalise women as uniformly at risk of (energy) poverty, inadvertently feminising the discourse, when, in fact, the gender-energy poverty nexus demands a focus on the critical evidence-base illustrating how energy is intricately interwoven with social practices and structures that perpetuate inequality. Consequently, it becomes imperative to refrain from mythologising or problematising women in the context of energy poverty (Mazzone, 2022).

Additionally, despite increasing recognition of the diversity of gender identities, there is still a lack of acknowledgement of queer and transgender lives as well as gendered differences between women (or between men) in the study of energy poverty (Listo, 2018). In this sense, to equate gender with women actively ignores diverse gender identities. Therefore, a crucial aspect of any approach to the issue is to

define the concept of gender used. We refer to gender as a social construct rather than a biological category.[2] Gender therefore is "the social, economic, and political construction of 'femininity' and 'masculinity', a fundamental axis of social power that shapes social relations in an unequal way" (Robinson, 2019, p. 222). Emphasising that gender is not a fixed entity but a constantly renegotiated aspect subject to contextual variations (Clancy & Roehr, 2003), it becomes imperative to employ the gender axis as an analytical tool that highlights different circumstances and behaviours resulting from socially learned, expected, and accepted conditions (Listo, 2018). Moreover, rethinking gender as an analytical variable implies questioning the way in which 'homogenous' structurally excluded groups are labelled based on a particular dimension of identity. While categories of exclusion based on gender or age, for example, may help to raise awareness about differential risk and impacts, it can simultaneously lead to unintended consequences reinforcing unequal dynamics and the binarity of the concept of gender. For these reasons, in this report, we rely on and apply the concept of intersectionality (Crenshaw, 1989) which is concerned with the intersection of different identity categories – resulting in divergent inequalities and power dynamics – to come closer to the heterogeneity of social groups and define their varieties as a "form of social power" (Robinson, 2019).

In academic research, grey literature and legal documents, the concept of *vulnerability* is widely used to explain the differential impact of stressors on different groups or regions by explaining which characteristics make them more likely to suffer from risky and harmful situations (Adger, 2006; Cutter, et al., 2003). In this context, the concept of vulnerability needs to be discussed critically for several reasons. Firstly, vulnerability is not a static or universally defined condition, and its interpretation might vary based on individual characteristics and situational factors, but it is often understood as a homogenous character trait. "The vulnerable subject is regarded as lacking in power and is thought to be incapable of protecting her own interests. Those identified as vulnerable are believed incapable of transforming their situation or exercising agency." (Cunniff Gilson, 2016, p. 74). Secondly, the term vulnerability can carry connotations of inherent weakness and dependency potentially leading to stigmatisation and negative effects. This is in many ways linked to the imagined association of femininity and inherent weakness and subordination, whereas "the bodies of women and sexual minorities have historically been subject to systemic violation, exploitation, objectification, and commodification." (Cunniff Gilson, 2016, p. 75). It is therefore necessary to write against this narrow understanding of vulnerability as an inherent form of weakness, which we address below in terms of structural inequalities, particularly those arising from patriarchy. Regarding energy poverty, although popular representations of people in energy poverty most often feature older women (Petrova, et al., 2013), gender considerations are absent from much of the analysis on energy poverty and vulnerability in the Global North. This widespread understanding of energy poverty as gender-neutral prevails despite increasing evidence that women in particular are currently more likely to experience energy poverty than men, as the problem is linked to gender inequality more generally and as such is embedded in structural issues such as the gender pay gap, the gender pension gap, the gender care gap, and the male dominance in Science Technology Engineering Mathematics (STEM) professions and in decision-making positions (Robinson, 2019; Matzinger & Berger, 2021; Feenstra & Clancy, 2020).

An additional opportunity for advancing research, utilising gender as an analytical tool, lies in focusing on diverse behaviours shaped by experiences of energy poverty and the ways in which these conditions manifest along gender lines. A study conducted by Petrova and Simcock (2021) exemplifies this

[2] However, we do attend to different physiologies in cis women and men, leading to diverging body temperature and consequently heat- and cold sensitiveness (Iyoho, et al., 2017; Clancy, et al., 2017).

approach remarkably. The researchers conducted qualitative research with households in energy poverty, examining varied responses and behaviours with attention to gender dynamics in Poland, Greece, and Czechia. The study elucidated that within heterosexual couples gendered perceptions and divisions of labour concerning energy-related activities within the household persist, where certain energy-saving behaviours are linked to femininity (a form of home 'reproduction'), while larger-scale energy efficiency efforts are linked to masculinity (or forms of home 'maintenance') (Petrova & Simcock, 2021, p. 857). Nevertheless, the persistent experience of living with and resisting energy poverty prompted a renegotiation of gendered roles among some participants, such as certain women acquiring extensive knowledge of energy efficiency or engaging in do-it-yourself (DIY) retrofits. The routine tasks of navigating energy poverty can be emotionally draining for all household members. Yet, owing to societal norms of femininity and masculinity and the associated expectations, distinct genders may perceive and feel the impact of energy poverty differently (ibid.).

The above-mentioned possible gendered differences within heterosexual couples living in one household underscore the need to critically examine the use of the household as the predominant unit of analysis for research and policy formulation in the realm of energy poverty (Matzinger & Berger, 2021). While the household unit is pragmatic for certain technical or geographical indicators that can impact the whole household entity – such as urban-rural distinctions – it might overlook the complexity of energy use and conservation shaped by gender roles, access to resources and information, and the intersectionality of inequalities in income and care work. In this regard, the focus on the household unit obscures crucial aspects of intra-household dynamics, decision-making power, and the divergent roles individuals play in energy-related responsibilities (Robinson, 2019; Petrova & Simcock, 2021; Matzinger & Berger, 2021). Currently, statistical methods only allow for the identification of gendered issues related to energy poverty among individuals living alone, leading to the classification of single parents (predominantly composed of women) and women over 65 living alone as living in vulnerable situations (Matzinger & Berger, 2021; Heredia, et al., 2022). While this allows for necessary resources to be directed towards the most affected groups, it simultaneously conceals the marginalised position of women within households, diverging from the "lived realities of women and men in particular situations and contexts, and directs resources away from those most marginalised." (Listo, 2018, p. 10). Therefore, it is essential to increase gender-disaggregated data on the intra-household level (Heredia, et al., 2022, p. 292), whilst parallelly considering different scales (e.g., location) (Robinson, 2019).

3. Policy analysis

In the following chapter, we explore and analyse the evolution of the integration of energy poverty and gender mainstreaming in policy documents and strategies at both the EU and national level of the selected case study countries.

3.1 The gender-energy poverty nexus in the EU

To identify gender-sensitive legislation and measures, we conducted a review of the primary EU energy-related policy documents that assesses the extent to which these documents integrate measures to tackle energy poverty, present perspectives on gender and intersectionality issues, and propose interventions that explicitly target gender equality. The documents we selected for analysis consist of EC communications, directives and proposals for regulation as depicted in *Table 2*.

Table 2: EU energy-related policy documents reviewed

Policy document	Document type	Document number
Energy performance of buildings Directive	Directive	(EU) 2018/844
Energy Efficiency Directive (EED)	Directive (recast)	(EU) 2023/1791
Renewable Energy Directive (RED)	Directive (recast)	(EU) 2023/2413
A Renovation Wave for Europe	EC Communication	COM (2020) 662 final
'Fit for 55': delivering the EU's 2030 Climate Target on the way to climate neutrality	EC Communication	COM (2021) 550 final
REPowerEU Plan	EC Communication	COM (2022) 230 final
European Green Deal	EC Communication	COM (2019) 640 final
Social Climate Fund	Proposal for regulation	2021/0206 (COD)

We identified two categories concerning the inclusion of energy poverty as an aspect addressed in policy documents. The first includes documents that **define or refer to the issue superficially, with limited targeted measures to address it**. This is the case of the *Renewable Energy Directive* (RED), which points to the potential role of renewable energy communities in addressing energy poverty through reduced consumption and lower supply tariffs and promoting the participation of "vulnerable consumers" in self-consumption and energy communities (European Commission, 2023c).[3] From a social perspective, some of the suggested measures give special consideration to structurally disadvantaged consumers, but they do not clearly define or characterise this category. Similarly, the *Directive on Energy Performance of Buildings* states that the measures aimed at achieving a highly efficient and decarbonised building stock should consider affordability and provide financial mechanisms for consumers experiencing energy poverty and living in poorly performing buildings. Moreover, the directive stipulates that based on the national context, Member States should include an outline of relevant national actions to alleviate energy poverty in their long-term renovation strategies (European Commission, 2018). The directive does not contain any additional references or measures. This category also includes the *REPowerEU Plan*, which recognises the potential negative impact of volatile energy prices and urges Member States to protect citizens at risk of energy poverty and to generate measures to cushion the social and distributional effects of energy saving and energy efficiency initiatives (European Commission, 2022). Finally, the communication that sets out the *European Green Deal* states the urgency of considering the risk of energy poverty in the transition to a clean, affordable and secure energy system, which should include measures concerning access, carbon pricing and energy efficiency (European Commission, 2019).

[3] The EU officially refers to vulnerable consumers. This usage of the term 'vulnerable' has to be critically rethought as no one is inherently vulnerable, but structures of discrimination create vulnerable situations. Defining someone or a group as vulnerable can be used as a domination technique and diminish people's feeling of agency. In order to write against this we refer to structurally disadvantaged consumers in the following.

The second category contains documents **with more detail, definitions and more concrete measures**. Firstly, since its 2018 amending, the *EED* refers explicitly to the central role of energy efficiency in any strategy to tackle energy poverty and the need for Member States to include social aims in energy-saving measures, energy efficiency obligation schemes, and alternative policy measures. Nonetheless, the recent recast of the *EED* (European Commission, 2023a) includes new and more comprehensive interpretations with a cross-cutting approach that integrates, for example, the impacts of economic and health crises into the understanding of energy poverty. The directive defines energy poverty as

> a household's lack of access to essential energy services, where such services provide basic levels and decent standards of living and health, including adequate heating, hot water, cooling, lighting, and energy to power appliances, in the relevant national context, existing national social policy and other relevant national policies, caused by a combination of factors, including at least non-affordability, insufficient disposable income, high energy expenditure and poor energy efficiency of homes (article 1(52)) (European Commission, 2023a).

Furthermore, the directive takes a step forward in including intersectionality by acknowledging the differential impacts and risks of the transition on groups such as women, people with disabilities, older persons, children and racialised people (Clancy, et al., 2022).

Also related to energy efficiency and renovation, although there is no definition of energy poverty, the Communication on a renovation wave identifies energy poverty as a major challenge in which renovation plays a fundamental role. This makes it one of the focus areas of the renovation measures. According to the communication, the development of tailor-made financial measures, especially for low-income and structurally excluded households, is crucial to speed up the process and increase the scale of renovation.

The proposal for the social climate fund also recognises the extent of energy poverty in Europe and reflects on the disproportionate impacts of increasing energy prices on structurally excluded households, micro-enterprises and transport users. Therefore, the proposal indicates that the fund should support these groups, in particular by measures to promote energy efficiency, energy saving and the development of new and renewable forms of energy (European Commission, 2021). In the same vein, the proposal urges the adoption of structural and long-term measures, such as the renovation of buildings to tackle energy poverty, as despite providing relief, purely financial measures are not long-lasting. According to the proposal, the Social Climate Plans sent by Member States to access the fund should contain estimates of the incidence of energy poverty and identify structurally excluded households in a regionally disaggregated way. The document defines energy poverty as "a situation in which households are unable to access essential energy services such as cooling, as temperatures rise, and heating." (European Commission, 2021, p. 15).

Overall, energy poverty is being integrated more and more consistently into the European Commission's policy documents. However, the characterisation and disaggregation of the population groups affected by energy poverty remain very limited. Usually referring to the "vulnerable consumer" or low-income household, policy documents ignore important social and relational dimensions that contribute to the risk and impact of energy poverty, and thus, resulting policies and measures might fail to tackle the root causes of energy poverty fully. As stated by Clancy et al.,

> An analysis that does not disaggregate across groups fails to identify unequal power relations at all societal levels, influencing different groups' capacity to respond to specific policy interventions. Without disaggregated data, it is difficult to identify the nature of the problem (which might be more than income poverty), to estimate the scale of the problem and to develop appropriate interventions both in terms of what is addressed and its mechanisms of delivery. (2022, p. 14)

The lack of disaggregation is particularly evident when it comes to gender. Generally, the analysed policies have little to no mention of the gender dimension of energy policies. In the following *table 3* we summarise the status of gender mainstreaming in the primary energy poverty-related EU policy documents.

Table 3: Gender mainstreaming in energy poverty-related EU policy documents

Policy document	Gender or intersectionality-related contents
Social climate fund	Gender equality is to be considered and promoted in implementing the fund. Recognition of differential impacts of carbon pricing and poverty, particularly for single-parent households (mainly women) and people with disabilities.
Energy efficiency directive	Acknowledgement of gender-differentiated impacts of the green transition. Acknowledgement of higher energy poverty risk for certain groups (women, persons with disabilities, older persons, children, and racialised people)
A renovation wave for Europe - greening our buildings, creating jobs, improving lives	Mentioning the importance of increasing women's participation in the construction sector
REPowerEU Plan	No gender mainstreaming identified
The European green deal	No gender mainstreaming identified
Directive on energy performance of buildings	No gender mainstreaming identified
Renewable energy directive	No gender mainstreaming identified

The lack of gender mainstreaming was also present in the Commission's recommendations on energy poverty (2020). Nevertheless, the latest set of recommendations (European Commission, 2023b) includes gender as one of the characteristics that might influence energy poverty and recognises that "[w]omen, and in particular those who are single parents and older women, are also particularly affected by energy poverty due to structural inequalities in income distribution, socioeconomic status and the gender care gap" (European Commission, 2023b, p. 1). The document contains a set of 25 recommendations to Member States in the realms of implementation of the legal framework; structural measures, affordability and access to energy; governance, trust, engagement and communication; energy efficiency, access to renewables; skills development; and financing. However, it contains no suggestions of gender specific indicators or measures such as gender budgeting.

3.2 National policy

In the following sections, we analyse several national policy documents and strategies to determine whether they integrate gender equality into national energy and climate plans (NECPs) and national strategies to combat energy poverty. The general integration of gender equality and mainstreaming at national level is then assessed in the final part of the chapter.

3.2.1 National Energy and Climate Plans

To assess how Member States are incorporating the European Commission's guidance on integrating energy poverty and gender mainstreaming into their national policies, we reviewed and analysed the National Energy and Climate plans (NECPs) of the case study countries in their 2019 and 2023 versions. . For the analysis we also consider any specific strategies these countries have developed to tackle energy poverty. According to the Regulation 2018/1999 on the Governance of the Energy Union and Climate Action, the NECPs should include quantitative data, indicators, measures and, if applicable, objectives to reduce energy poverty (2018).

The extent to which NECPs define energy poverty and the considerations regarding structurally disadvantaged consumers varies widely across the selected case studies. *Table 4* provides an overview of the integration of energy poverty issues in the NECPs and the 2023 drafts of the updated plan.

Table 4: Energy poverty definition in selected NECPs

Member state	Energy poverty definition in Final NECP (2019)	Incorporated changes in the Draft of the updated NECP
Bulgaria	Energy poverty is not formally defined. Definitions are rather oriented towards the energy vulnerability category, which describes a "vulnerable consumer" as "household consumers in a state of energy poverty due to a combination of low-income, high-energy costs and low energy efficiency of the homes they live in" (p. 62)	Draft not available.
Croatia	No formal definition is included in the plan.	Despite not providing a national definition of energy poverty, the draft incorporates reflections on the causes of energy poverty, including low income, low energy efficiency and higher-than-average energy needs.
The Republic of Cyprus	The NECP states that "Energy poverty may relate to the situation of customers who may be in a difficult position because of their low income as indicated by their tax statements in conjunction with their professional status, marital status and specific health conditions and, therefore, are unable to respond to the costs for the reasonable needs of the supply of electricity, as these costs represent a significant proportion of their disposable income."	The definition is not updated, but the draft includes a comment on the limitations of the current definition being based solely on income aspects and not considering energy efficiency. A group of consultants will update the definition and national indicators according to the EU legislation.

Germany	Energy poverty is not formally defined but considered a dimension of overall poverty and as such addressed by national social policy. Energy poverty-related aspects are framed under the affordability principle of the national energy transition goals.	No updates in the definitions/considerations.
The Republic of Ireland	Defined as per the National Policy on Alleviating Energy Poverty (2022), energy poverty is an inability to heat or power a home adequately.	No updates in the definition. Recognition of the limitations of current methodologies to measure energy poverty (energy expenditure over 10% of the household income), which implies the need to consider the intensity of energy poverty and its correlation to energy efficiency.
Lithuania	Energy poverty is defined as a situation in which "it is difficult or impossible for residents to enjoy adequate heating of their homes or access to essential energy services such as lighting or transport." The causes of energy poverty are categorised into four groups: energy inefficiency, high energy prices, low household incomes, and lack of consumer awareness. Five population groups are described as more suceptible to energy poverty: older persons, children, people with chronic diseases, single parents, and the unemployed.	No updates in the definitions.
Spain	Energy poverty is defined as "the situation in which a household cannot meet its basic needs for energy supplies, as a result of insufficient income, and which, where appropriate, may be aggravated by having an energy-inefficient dwelling."	No updates in the definitions.

The *Regulation on the Governance of the Energy Union and Climate Action* (2018) also stipulates that NECPs must include human rights and gender equality dimensions. Nevertheless, the NECPs of Bulgaria (Republic of Bulgaria, 2019), Croatia (Ministry of Environment and Energy- Republic of Croatia, 2019), Germany (Federal Ministry for Economic Affairs and Climate Protection-Germany, 2019), Lithuania (Republic of Lithuania, 2019), and the Republic of Cyprus (Republic of Cyprus, 2021) do not contain any paragraphs that could be interpreted as gender mainstreaming. In the case of Lithuania, Germany, the Republic of Cyprus and Croatia, this omission has not been corrected in the updated draft of the NECP recently submitted to the Commission. An updated draft for Bulgaria was not publicly available at the time of submission of this report. Conversely, Ireland's NECP provides some information about the interlinkages between gender equality policies (and other sectoral plans and strategies) and climate adaptation and about national pilot initiatives to incorporate gender budgeting in the budgetary processes, thereby enhancing decision-making (Republic of Irland, 2019).

For Spain, the final NECP submitted in 2019 pointed out the commitment of the national government to include a gender perspective in the plan, especially considering women's participation in the renewable energy sector (MITECO, 2020). However, the plan did not include targeted actions in this regard. This was improved in the draft of the updated NECP submitted in June 2023, which the draft broadens the scope of gender mainstreaming in all the NECP measures that "have a direct or indirect impact on people". These especially include measures related to achieving a just transition, enhancing participation mechanisms, promoting training and education measures with the potential to close the gender gap in the energy sector.

3.2.2 National strategies against energy poverty

Among the countries we selected as case studies in this study, only Spain and the Republic of Ireland have issued specific strategies to combat energy poverty. Along with the UK, the Republic of Ireland is considered a pioneer in both research and policy design related to energy poverty (fuel poverty in the British and Irish context) (Bouzarovski, 2018). Therefore, it is not surprising that the Republic of Ireland has a national strategy to combat energy poverty that predates EU-level regulations. Published in 2016, the strategy outlined the country's main drivers of energy poverty and the government's actions to combat it. Recognising changes in the state of the energy poverty debate and the need for a broader approach – including renovation as a key measure – the strategy was evaluated, and a new action plan was issued in 2022. Overall, the action plan establishes a set of measures in the short term, mainly financial and social protection, and in the medium term, which focus on energy efficiency and renovation. Special consideration is given to structurally excluded groups, which are mainly defined concerning health situation or age in the Irish context. It is positive that the plan pinpoints the current gaps in the measurement of energy poverty, e.g., the reliance on only expenditure indicators or the difficulties that models such as "pay as you go" impose on the identification of energy poverty (hidden energy poverty) and attempts to improve the ways to measure energy poverty (Government of Ireland, 2022). However, from a gender perspective, the plan is formulated in a gender-neutral way, which might mask the complexity of the experiences of those living in poverty.

In Spain, The National Strategy against Energy Poverty 2019-2024 (MITECO, 2019) was approved in April 2019 and established the national definition of energy poverty and structurally disadvantaged consumers. It also presents a comprehensive diagnosis of energy poverty, including a description of the impact on the different geographical areas of the country, mentions of the state of housing and statistical data collected through expenditure indicators. The strategy envisages action measures along four thematic lines focusing on knowledge of energy poverty, short-term responses to energy poverty, creating structural changes for energy poverty reduction, and consumer protection and awareness-raising measures. From a gender lens, the strategy presents a good integration of a gender and intersectional perspective in aspects such as

- the recognition of a greater need for protection against energy poverty for specific population groups, including women (due to the higher incidence of precarious employment and pay gaps), single-parent households, older people, people with illnesses, people with disabilities, and migrants;
- the inclusion of the collection of gender-disaggregated data, also aiming to identify intrahousehold disparities within the measures to establish a system for the calculation of energy poverty indicators;
- evidence of good gender practices in local measures to tackle energy poverty;

- And the requirement to include a gender perspective in building renovation measures.

3.3 Characteristics of energy poverty and structurally disadvantaged consumers

Since energy poverty has become a more central policy issue at the EU level, the debate on the need for a common EU-wide definition of energy poverty have become more pertinent. While it is necessary to consider the highly variable situations and risk factors for energy poverty across the EU (which restricts the possibilities of such a definition), the lack of definition (or at least of common criteria) is seen as one of the causes of insufficient and uncoordinated action in tackling energy poverty and the difficulty of cross-national comparisons (Bouzarovski, 2018; Clancy, et al., 2017). According to Thomson and Bouzarovski (2019), one of the most widely accepted definitions of energy poverty in the EU context is provided by Pye et al., who define it as a set of conditions "where individuals are not able to adequately heat (or provide necessary energy services) in their homes at affordable cost" (2015, p. 1). This definition was adapted in 2019 by Thomson and Bouzarovski to include adequate cooling. As aforementioned, the shift towards a broader understanding of energy poverty is also reflected in policy documents such as the reviewed *EED.*

There is a growing consensus on the factors that determine the risk of energy poverty and should therefore be considered in addressing it. The work of the Energy Poverty Advisory Hub (EPAH) (formerly EU Energy Poverty Observatory) has been fundamental in building a common understanding of energy poverty, while focusing its guidance on the local context. In the introduction to its handbooks on addressing energy poverty, the EPAH broadly defines it as a complex and multifaceted issue that represents the inability of households to ensure their energy needs and is linked to several factors (EPAH, 2022a). Acknowledging that combined and interlinked factors determine susceptibility to energy poverty, EPAH refers to five main categories: socio-demographic characteristics, household composition, health, energy literacy, and cultural factors. While these factors show the multiple intersections that an individual may have with respect to risk of energy poverty, the document does not mention gender as a socio-demographic factor to be considered, nor does it suggest a gender-responsive approach to diagnosis, planning and implementation of interventions.

In addition to the input produced by the EPAH, much of the literature analysed by us in this study focuses on risk factors related to energy poverty. Even though low income and energy prices remain the predominant factors, other aspects are emerging more consistently in the debate. For instance, the impact of housing quality on energy poverty, particularly the effects of poor thermal efficiency, dampness and mould, is becoming central to the design of long-term renovation or energy efficiency measures. Other aspects related to the dwelling that are being considered are the location, the year of construction, and the type of fuel used for heating. Likewise, there is growing awareness of how the ownership situation (tenant/owner) can restrict the capacity to cope with energy poverty. Some attention has also been given to the phenomenon of hidden energy poverty, which occurs in situations where a household is not meeting its energy needs, but income is slightly above the established measurement thresholds, where people do not perceive themselves as energy-poor and might reject help or sacrifice comfort to reduce energy use. When it comes to the personal characteristics of those experiencing energy poverty, age, disability, the existence of health conditions, and family composition emerge as the main categories of analysis. Analysis of the intersection of these categories with gender is relatively scarce.

Overall, despite significant progress, the definition of and approach to energy poverty in the EU still has some shortcomings. On the one hand, the data available to measure energy poverty are insufficient and,

in most cases, rely almost exclusively on income and expenditure statistics. The over-reliance on analysis of these indicators has been a source of criticism as they can conceal the experiences of those who are considered most susceptible to energy poverty and fail to integrate their actual needs into policies and strategies (Clancy, et al., 2022). In addition, the lack of consistency in the criteria across the EU hinders comparison and overarching approaches. On the other hand, the lack of intersectional and gendered approaches leaves little room for consideration of aspects such as intra-household dynamics, the impact of paid and unpaid work distribution, and the potential increase in inequalities that the green transition entails.

3.4 National gender policies and strategies

To assess the extent to which the selected EU Member States are responding to the Commission's call to implement gender equality through various initiatives in their national context, we draw on information on the legislative and policy framework, established structures, methods and tools in the respective countries, all of which are monitored and provided by EIGE (2022a). This analysis is not intended to be exhaustive but outlines the most established national cornerstones and measures.

Looking at these cornerstones and measures (legal and policy framework, established structures, methods and instruments) in all seven countries studied, the commitment to gender equality is underpinned by constitutional principles. All countries show different approaches to gender equality structures, with a wide range of strategies. Some prioritise the implementation of gender equality in government bodies such as ministries and councils, while others involve independent agencies, parliamentary committees and active civil society participation. Each country's tailored approach reveals unique strengths and areas for improvement, revealing a nuanced landscape of gender equality with different challenges. There is a wide range of approaches to gender equality methods and tools in all countries. While commonalities include the use of gender impact assessments, differences emerge in the emphasis on gender mainstreaming, gender budgeting, and comprehensive gender statistics. Some countries, such as Germany and Spain, demonstrate a robust and multifaceted approach, including legal mandates for gender impact assessments, gender mainstreaming principles and comprehensive data collection. Others, such as Bulgaria and Cyprus, face challenges in areas such as gender budgeting and comprehensive gender statistics (EIGE, 2022a). *Table 5* presents an overview of the national cornerstones and measures discussed above, to easily compare the seven case study countries in these gender equality areas. Furthermore, a more detailed description of the existing national commitments and gaps in the case study countries can be found in Annex 1.

Table 5: Overview of national cornerstones and measures [authors, based on (EIGE, 2022a)]

		Bulgaria	Croatia	Cyprus	Germany	Ireland	Lithuania	Spain
Legislative and Policy framework	Constitutional Basis	✓	✓	✓	✓	✓	✓	✓
	Gender Equality Law	✓	✓	✓	✓	✓	✓	✓
	Anti-Discrimination Law	✓	✓	✓	✓	✓	✓	✓
	National Strategy	✓	✓	✗	✗	✓	✓	✓

Structures	Gov. Equality Bodies	✓	✓	✓	✓	✓	✓	✓
	Independent Equality Bodies		✓	✓	✓	✓	✓	✓
	Parliamentary Body	✗	✓	✓	✓	✓	✓	✓
	Regional Structures		✓		✓			
	Consultation w/ civil society		✓	✓	✓	✓	✓	✓
Methods and Tools	Gender Impact Assessment	✓	✓	✗	✓	✓	✗	✓
	Gender Budgeting	✗	✗	✗	✗	✓	✓	✓
	Gender Statistics	✗	✓	✗	✓	✗	✓	✓

Bulgaria, Lithuania, Spain and Germany stand out as notable role models within the gender equality initiatives encompassed in this study, due to inter alia effective resource allocation in their strong support for independent gender equality bodies. However, when it comes to the implementation of area H of the Beijing Platform for Action (BPfA), which refers to the strength of national mechanisms to promote gender equality and gender mainstreaming, there are still varying degrees of challenges in the countries surveyed:

- Bulgaria is characterised by solid support for independent gender equality bodies but struggles with the implementation of gender mainstreaming.
- Lithuania is characterised by government commitment and statistical competence but struggles with diluted mandates and limited consultations that affect gender mainstreaming.
- Germany shows strengths in the human resources of the government agency and the effective production and dissemination of gender disaggregated statistics. However, challenges arise from the lack of government commitment, including the absence of a national action plan and gender mainstreaming, particularly in consultation and engagement.
- The Republic of Cyprus has commendable strengths in terms of government commitment, but faces challenges in terms of accountability, allocation of resources to gender equality bodies, gender mainstreaming practices and the production of gender disaggregated statistics.
- Spain is leading the way with a dedicated ministry and a specific mandate for the independent body. The country is a leader in the areas of human resources, gender mainstreaming and gender-disaggregated statistics and faces only a small challenge when it comes to regular gender equality training.
- Croatia shows strengths in a strong mandate for the independent body and relatively high staffing levels within it. Challenges lie in governmental commitment, consultation processes, and the production and dissemination of gender-disaggregated statistics, requiring increased attention and improvement for a more comprehensive gender mainstreaming approach.
- The Republic of Ireland's strengths lie in policy integration and strategic foundations, as demonstrated by the *National Strategy for Women and Girls 2017-2020*. However,

constitutional constraints, slow progress in implementing the strategy, and gaps in the provision of gender-disaggregated data present challenges (EIGE, 2022a).

4. Identified factors involved in the gender-energy poverty nexus in the EU

There have been several contributions to the nexus of gender and energy poverty in the EU from researchers in the fields of political science (Feenstra & Özerol, 2021; Clancy & Roehr, 2003; Bouzarovski, et al., 2021), socioeconomic and cultural studies (Petrova & Simcock, 2021), and feminist studies (Listo, 2018). These academic works underscore the gendered dimension of energy poverty by revealing that (1) households headed by women are disproportionately affected by energy poverty (Bouzarovski & Tirado Herrero, 2017); (2) women face more difficulties when seeking infrastructural services (Bouzarovski, 2015); (3) women are more likely to experience thermal discomfort at home due to diverging perceptions of thermal comfort along gender lines (Petrova, et al., 2013); and (4) especially retired women are at risk of being energy poor (Healy & Clinch, 2004). Various research approaches emphasise the disparate impact of energy poverty on women, attributing it to entrenched gender roles and responsibilities, thereby framing gendered aspects of energy poverty as symptomatic of broader gender inequalities in society. This framing positions energy poverty as an extension of patriarchal structures influencing energy needs, consumption and saving. To prevent research outcomes failing to translate into actual political outcomes (Robinson, 2019; Listo, 2018), it is essential to understand and approach energy poverty as the manifestation of structural intersectional gender inequalities.

Starting from these categories commonly analysed in the academic debate, our analysis considers two main axes. First, from a risk perspective, our study navigates the intersecting characteristics and inequalities that put certain population groups at higher risk of energy poverty. By considering the interplay of social, economic, and physiological factors, we aim to identify the multiple layers of disadvantage that contribute to the increased risk experienced by specific groups, thereby providing the basis for targeted interventions and policy recommendations. Second, our research delves into the lived experiences of individuals struggling with energy poverty to identify the (gendered) differential impacts and coping mechanisms that emerge in response to the challenges posed by energy poverty.

4.1 Gendered dimensions of the risk of energy poverty

A comprehensive examination of gender disparities within the complex energy poverty landscape offers significant benefits. By looking in depth at the links between gender and a variety of intersecting factors such as age, ability, health, income, living conditions and social structures, we gain a nuanced understanding of the multiple dimensions at play. In the subsequent sections, we will further explore selected narratives that illuminate the connections between gender identities and other social characteristics and structures in relation to energy poverty. Through this, we shed light on the increased risks faced by certain groups in energy poverty, which illuminates the fact that energy poverty is not a singular experience. Recognising the multiple identities and circumstances that increase the risk of energy poverty helps to formulate targeted intervention that embrace the complexity of individuals' lives and include everyone in a just transition.

4.1.1 The intersection of age, gender, and income disparity

A substantial body of research highlights a consistent focus on age within the energy poverty and gender debate, analysing how age and gender intersect with physiological, social and economic factors to

increase the risk of experiencing energy poverty. This risk is driven by the combination of lower income (and limited access to social protection), higher life expectancy, and a greater likelihood of living alone or heading a household. Since retired women are more likely to live alone, the burden of paying bills to heat or cool their homes is not shared between different household members and this is particularly problematic in older, energy inefficient and under-occupied buildings (Robinson, 2019). Additionally, older people are more likely to have underlying health conditions, stay indoors for longer periods than younger people, and tend to have less body fat, making them more susceptible to thermal discomfort and therefore increasing their energy needs (Thomson, et al., 2017).

In the countries analysed in this study, according to Eurostat data, women live on average 5.9 years longer than men, estimated at birth (Eurostat, 2024a) and have also more years of healthy life (Eurostat, 2023a). However, the data also reveals that older women face a disproportionate risk of financial precarity, as indicated by the prevalence of poverty amongst this demographic. While in general the risk of poverty is higher for women than for men due to income gaps, these gender-based disparities in poverty risk becoming even more pronounced among individuals aged 65 and over, as visually depicted in *figure 2* below. In 2022, the poverty risk for older women was particularly high in Lithuania (46.9%), Bulgaria (43.5%) and Croatia (36.5%), with the difference between men and women being close to 20 percentage points in Bulgaria and Lithuania (Eurostat, 2024b).

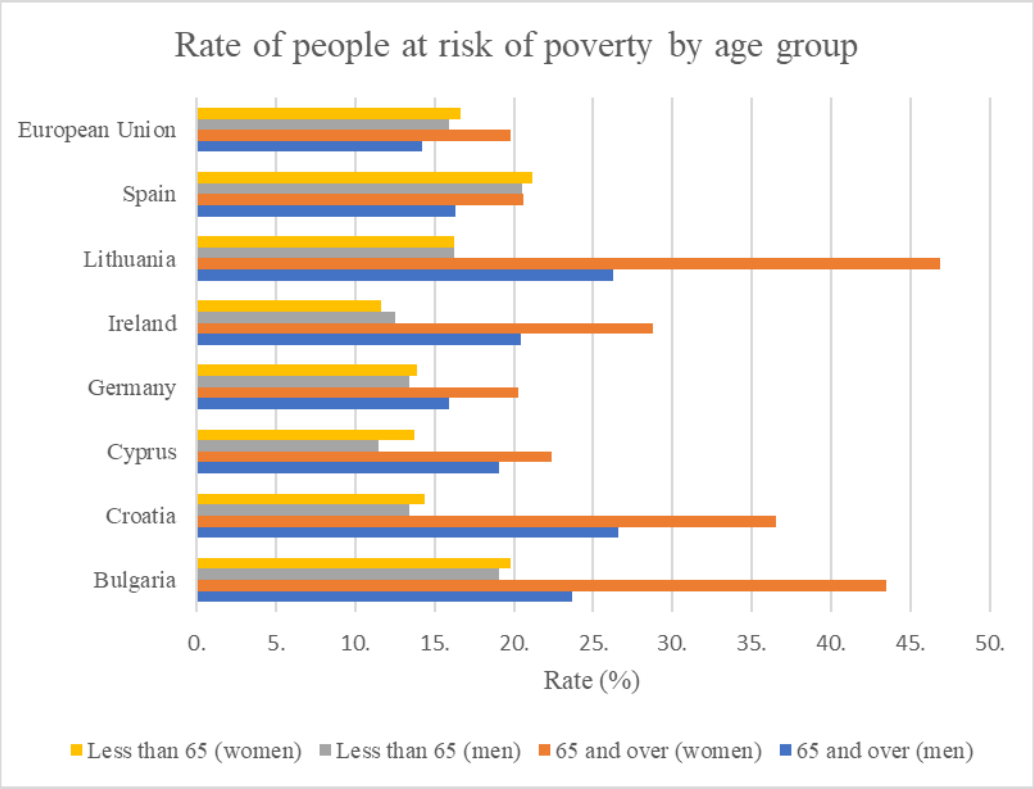


Figure 2: Rate of people at risk of poverty by age group. Source: (WECF based on Eurostat, 2024b)

Similarly, a review of available indicators of energy poverty by EIGE in its latest *Gender Equality Index Report* shows that, except for the Republic of Ireland and Germany, women over 65 are more likely to be unable to keep their homes adequately warm in winter.

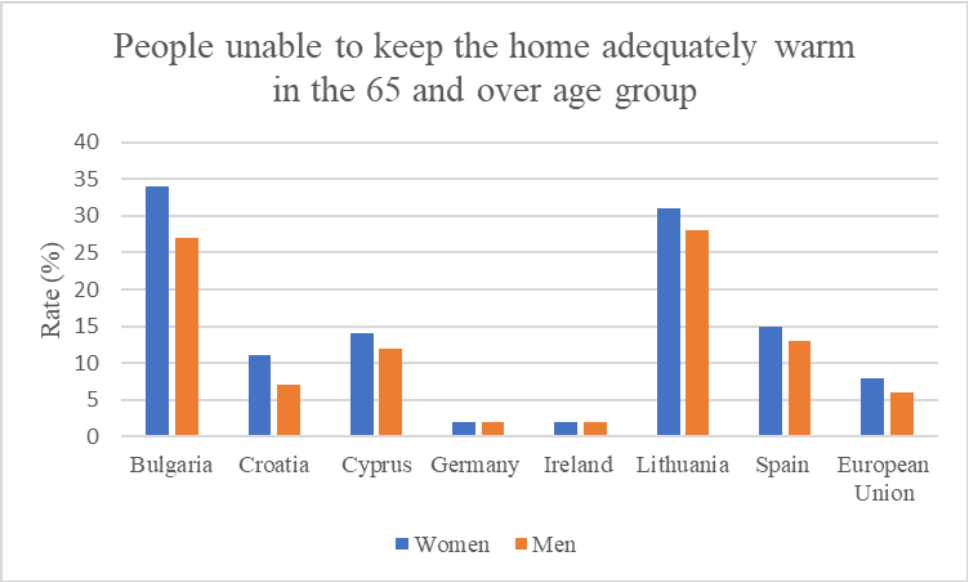


Figure 3: People unable to keep their home adequately warm in the 65 and over age group. Source: (WECF based on EIGE, 2023b)

The linkages between gender, age, and the risk of energy poverty were a recurring theme in the interviews we conducted in the case study countries. The interviewed stakeholders emphasised that the experience of older women living alone and widows is of particular concern. With life expectancy favouring women, they often find themselves as the sole occupants of homes, with lower pensions due to historic gender pay gaps and interrupted careers. In many cases, widows are left to navigate the financial complexity of home ownership on their own, often unable to afford the costs of maintaining their homes. The interlocking challenges faced by older women are exacerbated by additional factors, such as coping with (chronic) health problems and the energy demands of necessary equipment. An additional layer is added when these women, especially in rural areas, still rely on firewood and are unable to collect and/or pay for it.

4.1.2 Household structure: energy poverty in single-parent households

In 2020, about 7.8 million households in the EU consisted of lone parents, representing around 4% of total households. Regardless of the gender of the head of household, single-parent households face unique economic and social challenges resulting from the tangled interplay between paid work and care work. This is demonstrated, for example, by the high proportion of one-adult households with dependent children at risk of poverty and social exclusion, which in 2022 reached 43.5% in the EU (Eurostat, 2023b), and which in the countries in our study ranged between 30.4% in Croatia and 53.9% in Bulgaria. Similarly, an analysis across all EU Member States underscores a disproportionate impact of energy poverty on these households as reflected in a significantly high inability to keep the home adequately warm and a high share of households with arrears on utility bills (EIGE, 2023a).

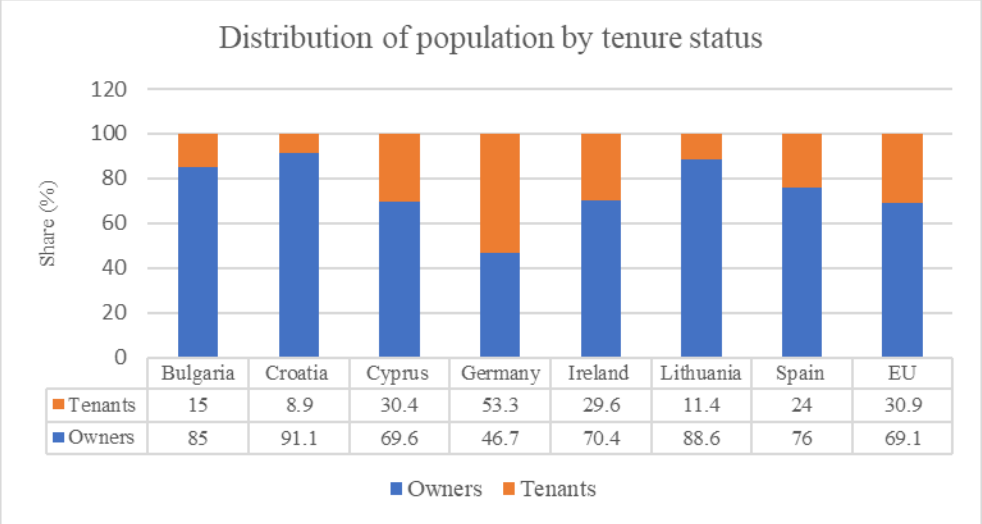
However, there is an undeniable gender disparity in single-parent households as these are not exclusively, but predominantly, headed by women. According to EIGE, women make up almost 85% of all one-parent families (EIGE, 2016b). The latest Eurostat statistics show that in 2022, 5.5% of women aged 25-54 were single mothers with children, while single fathers accounted for 1.1% of men in the same age range (Eurostat, 2023c). This gender disparity in single parenthood is further exemplified in Germany by the fact that, there were about 2.3 million single mothers in 2022, compared to 487,000 single fathers (Destatis, 2023). As a result, women-headed households do not merely struggle with

having one income instead of two, but this is exacerbated by the gender pay gap. This lack of income is compounded by a lack of time due to the double burden of caring and working, and the limited career opportunities that come with being the primary carer of children. Additionally, social structures often fail to provide sufficient support, particularly in regions where there are no family-oriented policies.

4.1.3 The quality of housing and its intersections with socio-demographic factors

Housing quality and low energy efficiency are increasingly recognised as some of the main drivers of energy poverty and therefore a key area for policy action. Socio-economic factors influence the ability to access good quality housing, with the result that older, low energy performing buildings are often concentrated in lower income neighbourhoods and are therefore predominantly occupied by groups facing intersecting forms of structural exclusion. While conditions can vary by region and country, some common groups facing housing challenges include single-parent households, migrants and refugees, older people, people with disabilities, informal settlement dwellers, racialised and marginalised ethnic groups and rural communities.

In addition, housing structures are influenced by historical trends, such as the prevailing ownership structure as opposed to the tenant structure and often underlie the rural-urban divide. In general, owners represent most of the EU population in terms of tenure status. Among the countries analysed, only Germany shows an inverse relationship with a higher proportion of tenants than owners, as depicted in *Figure 4*. According to the data collected, in our case study countries where the majority of people own their homes (e.g. Bulgaria, Lithuania, and Croatia), a reluctance or inability to downsize or move can lead to energy poverty for those unable to adequately maintain large properties. This is consistent with the data obtained by Karpinska and Smiech (2023) in a study that focuses on the profile of energy-poor households in 11 Central and Eastern European countries and concludes that single-person households owning medium to large houses are a representative group of those experiencing energy poverty because of the mismatch between the size of the house and the capacity to meet energy needs.



	Bulgaria	Croatia	Cyprus	Germany	Ireland	Lithuania	Spain	EU
Tenants	15	8.9	30.4	53.3	29.6	11.4	24	30.9
Owners	85	91.1	69.6	46.7	70.4	88.6	76	69.1

Figure 4: Distribution of population by tenure status (figure by WECF based on Eurostat data)

Nonetheless, a closer examination of tenure structures reveals a reality where power imbalances between landlords and tenants tend to exacerbate financial burdens and insecurities for the latter. In the context of energy poverty, housing tenure can impact vulnerability, as tenants may have less decision-making

power over energy supply and energy efficiency measures, and loan schemes and market incentives may not focus on energy-poor households. Therefore, there is growing concern about the risk of tenants facing eviction in the event of renovation or energy efficiency improvements – the so called *renoviction*. This issue becomes even more pronounced when we consider the intersections of migration history and ethnicity. Migrant populations often face greater difficulties in finding rental accommodation, live in substandard conditions, sometimes in the shadow of official statistics, and find themselves disenfranchised from political action and retrofitting initiatives. Language barriers, insecure employment opportunities and a lack of familiarity with local systems make them more susceptible to energy poverty. Even though the gender composition of immigrant populations widely varies across the EU countries, in general, the annual share of migrant men is moderately higher than that of migrant women in the EU (55% of the immigrant population in 2021). While both migrant women and men face a range of challenges, gender-specific dynamics contribute to distinct experiences. This aspect was highlighted by the stakeholders interviewed by us, who explained that in most of the countries analysed, men tend to migrate alone and may face challenges related to fulfilling the role of provider from a distance, often facing great difficulties in securing stable and affordable housing. It is not surprising then, that in the EU the proportion of migrant men from non-EU countries unable to keep the home adequately warm is moderately higher than the proportion of women in this category (13% of men compared to 12% of women) (EIGE, 2023b).

In addition, structurally marginalised ethnic groups, such as Roma communities in Bulgaria, Lithuania and Croatia and Traveller communities in Ireland, face both social discrimination and inadequate, sometimes even illegal housing conditions. For the latter group, living mostly in mobile homes and caravans sharing living spaces with various families, the burden of reproductive work (e.g., management of households, caretaking, etc.) falls on a high proportion on women staying at home full time, whilst not every household member is eligible for social protection due to unofficial household member numbers.

4.1.4 Health status, dis/ability and energy poverty risk

A fragile physical and mental health condition is considered both a potential driver and a consequence of energy poverty. On the one hand, several studies have found that energy poverty is associated with significantly worse physical and mental health conditions compared to non-energy poor households (see 4.2.3). On the other hand, individuals with pre-existing health conditions are at a higher risk of energy poverty due to various factors such as increased energy needs for medical equipment and temperature regulation, longer periods spent at home, and barriers to accessing the labour market.

Similarly, amidst these discussions, the experiences of people with disabilities come to the fore. Depending on country contexts, social welfare systems, with their rules on working hours and entitlements, pose challenges for people with disabilities, who may be forced into early retirement and face increasing economic hardship due to the daily use of medication and/or specific equipment to manage their disability and general health. In an EU level study, Ivanova and Middlemiss (2021) concluded that despite having higher energy needs than other households, households with an economically inactive disabled persons consume 10% less energy and are more likely to experience energy poverty. In addition, Eurostat data shows that in 2022, across the EU, people with disabilities were more likely to live in dwellings with substandard conditions, such as a leaky roof, damp walls, floors or foundations, or rot in the window frames or floor of their home (18.6% compared to 13.5% for people without disabilities), and to be unable to keep their home warm (13.8% compared to 8% for

people without disabilities) (Eurostat, 2023d). Across the EU, women were more likely than men to report disability in 2022: overall, 29.5% of women and 24.4% of men reported long-term limitations in usual activities due to health problems (Eurostat, 2023e).

4.1.5 Hidden struggles: groups that do not appear in the statistics

Hidden energy poverty often eludes traditional assessments that focus primarily on tangible indicators such as building conditions and income- and expenditure-based measures. Whilst these are undeniably important, the often-overlooked behavioural dimension plays a significant role. Many households, especially those living alone or just above the poverty line, overcome energy poverty by changing their consumption habits, e.g., by strategically choosing when to use it, a facet not easily captured by traditional statistics. This self-regulation to avoid high energy bills and resulting debts introduces a nuanced layer to the extent and impact of energy poverty. For this reason, there is a growing call for the inclusion of additional energy poverty indicators to capture a broader range of experiences of energy poverty, including people that despite meeting their energy needs face financial strains as well as those that sacrifice energy consumption to prevent financial strain (Eisfeld & Seebauer, 2022; Cong, et al., 2022).

4.1.6 The unexplored groups at risk

To broaden gendered narratives of energy poverty by moving beyond the binary of gender, we deem it important to recognise the often-overlooked dimensions of energy poverty in LGBTQIA+ communities. Here, the intersection of gender outside of the binary model meets the dimension of sexual orientation and shows that the price of energy coupled with the precarious housing market and non-renovated, energy-inefficient dwellings is a pressing issue for many people in these communities (e.g., in the Republic of Ireland and Germany). However, this perspective is the one that is most lacking in data collection, as in many Member States gender is still not reflected outside of its biological context and people who do not fit into this binary understanding of gender are systematically ignored. In relation to energy poverty, it can be said that LGBTQIA+ communities face an increased risk due to the reproduction of other forms of discrimination and marginalisation that prevent them from accessing services and rights. Socio-economic exclusion resulting in housing instability and limited job opportunities, or workplace discrimination compound this structural exclusion. Figures presented by the European Federation of National Organisations Working with the Homeless (FEANTSA), LGBTQIA+ people are disproportionately likely to experience insecure employment, which often leads to housing insecurity, with trans and intersex people experiencing even higher rates of socio-economic exclusion (Finnegan, 2023). Furthermore, it is important to consider that LGBTQIA+ people are not a monolithic group and face intersecting forms of structural discrimination and exclusion. An intersectional lens that considers various forms of suppression, can highlight this amplified risk of energy poverty, as multiple layers of structural discrimination intersect.

4.2 Living in energy poverty: the differential impacts

Just as existing gender inequalities and their intersections with other identity categories determine the likelihood of experiencing energy poverty, they can also influence the ways in which people experience energy poverty and cope with it. This section focuses on those differential impacts.

4.2.1 Gender norm and roles shaping energy poverty experiences

As has been highlighted by us so far, energy poverty extends beyond mere insufficient access to energy resources. A deeper exploration into this multifaceted issue reveals a complex interplay of gender dynamics that both influence and are influenced by energy poverty. Within this web, traditional gender norms (based on heteronormative understandings of masculinity and femininity) play a key role in shaping distinct roles related to care work, both unpaid and paid, as well as household responsibilities. In addition, gender-specific patterns can be seen in the distribution of knowledge and in the physical and mental health status of individuals. By focusing on living conditions within the precarious and dangerous realm of energy poverty, inherently gendered power dynamics become visible.

The impact of gender norms on the experience of energy poverty permeates several aspects of daily life, such as the management of household tasks or expectations within male-breadwinner societies. Traditional, heteronormative expectations of masculinity and femininity intersect with the challenges of energy poverty, creating different challenges for different genders. A critical aspect lies in the dynamics of sharing household responsibilities. Traditional norms of femininity result in a gendered division of care responsibilities in heteronormative families, with women often taking primary responsibility for care and household management. The burden of care responsibilities, coupled with the struggle to manage energy resources, creates a multifaceted predicament for women. Simultaneously, masculinity norms, e.g., being the economic provider of the family, lead to increased societal pressure if men are unable to meet their family's energy needs and resulting mental health predicaments. Further, heteronormative masculinity often influences living conditions for men living alone. In certain rural areas, where men may have either never married or have experienced the loss of a partner, a unique phenomenon emerges. Described by one of our stakeholders from Croatia as 'homeless in their own homes', these men adopt a lifestyle that reflects a sense of neglect within their own homes. Living in a single room, lacking proper heating and cooking facilities, neglecting personal hygiene, often avoiding their social networks and resorting to increased alcohol consumption, they embody a form of self-imposed homelessness, with energy poverty playing a key role in shaping their living conditions. This is in part due to a presupposed connotation of weakness in asking for help, that is often opposed to traditionally masculine norms of "strength" and "endurance". The confluence of societal expectations of masculinity and the manifestation of energy poverty highlights the need for a nuanced understanding of the psychological impact of energy poverty on individuals of different genders.

4.2.2 The interplay between (un)paid care work and paid labour

A recurring theme in most of our stakeholder consultations was related to the field of care work, both unpaid and professional, including care for family members, children, friends, neighbours and professional roles in care. The gendered nature of care work positions women as central to the well-being of individuals and communities. Women involved in care work, particularly in professional roles such as nursing and home care, are often in direct contact with individuals and families experiencing energy poverty. On the one hand, this proximity provides them with unique insights into the intersection of care responsibilities with the challenges posed by inadequate energy access and makes them key actors in understanding and monitoring energy poverty. On the other hand, it also places them in one of the most precarious sectors of the economy in most EU countries, receiving little financial remuneration under the most arduous and precarious working conditions (EIGE, 2020b).

In households living in energy poverty, women mothers typically assume primary caregiving roles and therefore tend to spend more time at home, facing conditions of energy deprivation that lead to uncomfortable temperatures, lack of lighting, and daily energy-saving tasks (Mohan, 2022; Talaverano,

2019; Petrova & Simcock, 2021). This further encompasses more frequent dealing with the complexity of utility bills, making daily decisions about heating the home, cooking, cleaning, or generally ensuring the well-being of family members. In the context of energy poverty, the burden on women becomes twofold: in addition to managing daily tasks, they face the challenge of maintaining a habitable living environment with limited access to energy, and the dilemma of allocating limited resources between basic needs and energy needs. It is important to remember that tasks related to energy consumption are interlinked with many other aspects of daily life, for example, the ability to cook nutritious meals and maintain hygiene. As a result, women often adapt the heating or cooling times to the time where their family comes together at home and restrain from doing so whilst their children are in school or other family members are at work, neglecting the importance of their quality of life.

Furthermore, care responsibilities, depending on their intensity, limit the economic and professional opportunities of caregivers, reinforcing the cycle of precariousness and energy insecurity. To understand how paid work relates to gender inequalities in relation to energy poverty, it is crucial to look beyond the obvious gender pay gap (although this is highly influential). Research has identified a link between the high burden of care work and the exclusion of marginalised women from the 'productive economy'. This is less often manifested in unemployment, but rather in working part-time, being trapped in low-paid and precarious working conditions (Robinson, 2019) and having less access to sustainable and promising jobs, such as in the renewable energy sector. In Poland, Greece, and Czechia, for example, women's paid work has increased in recent decades and heterosexual couples without children spend an equal amount of time at home. However, the situation often changes when children are considered, with mothers spending more time at home by taking time out of the labour market - a phenomenon that is highly institutionalised through divergent rights to 'maternity pay' or paid parental leave, often covering only or predominantly mothers (Petrova & Simcock, 2021, p. 859) and exorbitant childcare costs. The main body of research on paid work, gender and energy poverty concentrates on the characteristics of the main breadwinner of the household in question (Aristondo & Onaindia, 2018, p. 432), as disaggregating gendered data within one household is still difficult. In Spain, for example, the households most affected by energy poverty are those in which the main breadwinner is a “women, separated, from outside Spain, with no studies, with very bad health and with no work or working a partial time.” (ibid., p. 432).

4.2.3 The differential health impacts of energy poverty

The relationship between physical and mental health and energy poverty was a frequently discussed topic in our interviews. A comprehensive study on energy poverty and health in southern Europe has highlighted that the health outcomes of energy poverty differ greatly along gender lines (Oliveras, et al., 2020). The sex-disaggregated statistical study provides evidence that women living in winter and summer energy poverty suffer more extensively from respiratory and cardiovascular diseases compared to women not living in energy poverty. These include ailments such as chronic bronchitis or strokes. Men living in energy poverty had the highest incidence of home injuries and poor mental health compared to men not living in energy poverty. Therefore, living in energy poverty is associated with health inequalities as disparities in access to energy services are influenced by various axes of inequality such as gender, age, social class or geographic location and can limit the opportunities for good health (Oliveras, et al., 2020, p. 6). Moreover, both studied genders (women and men) living in energy poverty used social work services significantly more, resulting in a significant burden on health services, as well as increased medication use (allergy and asthma medication and psychotropic drugs). Another

interesting finding was the link between energy poverty and food insecurity. There are many reasons for this, including difficulties in accessing resources and in preserving or cooking food, as well as increased consumption of "cheap calorific foods", that can lead to overweight or type 2 diabetes among the people living in energy poverty (Oliveras, et al., 2020, p. 6).

In terms of mental health, both studied genders frequently experienced problems, as well as headaches and migraines (Oliveras, et al., 2020, p. 6). As we mention above, the stress of managing a household with inadequate energy resources and the resulting inability to provide a comfortable living environment can contribute to feelings of inadequacy and frustration. Recent studies have shown that the perceived failure to achieve comfortable living conditions for their families leads to a high increase in parental depression (Mohan, 2022) and, as reported in a study on maternal well-being in New Zealand, a higher risk of postnatal depression (Petrova & Simcock, 2021).The general evidence base typically focuses on "anxiety, stress and depression associated with living in poor housing, balancing bills, heating needs and debt" (Thomson, et al., 2017, p. 2). There has been a strong focus on age (both young and older persons) and ability, as these have been identified as the main factors that increase the risk of experiencing mental health problems while living in energy poverty. However, additional risk factors have been identified, for example for pregnant women and low-income groups (ibid.).

4.2.4 Hidden gendered impacts: domestic abuse and energy poverty

As we note above, a major difficulty in collecting more comprehensive data on the extent of energy poverty is the inability of indicators to capture differences in access to and control over energy and in the satisfaction of energy needs within households, so-called intra-household differences. While there is some, albeit limited, evidence of inequalities in the allocation of household resources, leading to an underestimation of overall poverty levels, specific analysis linking this with energy poverty is very weak. However, the research we carried out in this study has allowed us to explore the often-overlooked everyday experiences and struggles of those living in energy poverty and bring neglected issues to the debate. In this context, the conducted interviews revealed that social organisations and advisory centres have observed complex interplays of power dynamics within households, resulting in forms of domestic abuse. Economic constraints, exacerbated by energy poverty, can intensify tensions and contribute to an environment where abuse, both psychological and physical, may thrive. The threat of withholding access to energy amenities, such as heating or cooling, becomes a potent means of asserting control. This manipulation not only jeopardizes the physical and psychological well-being of individuals but also creates an atmosphere of fear and dependency.

A hidden dimension of domestic abuse related to energy poverty is the deliberate hiding or control of essential utilities. For example, during interviews with our key informants in Spain, stories emerged of partners deliberately hiding the remote control of the air conditioning during the summer, which affected women's ability to cool their home and expose them to unhealthy indoor temperatures. Similarly, in Germany, one of the interviewees referred to an economically well-established woman whose husband wanted to punish her by not paying the energy bills when he went on holiday alone. As she was in arrears and had no control over the contracts, she had to seek external support in securing energy supplies for herself and her two children. These forms of control and the deliberate infliction of discomfort through temperature and energy access control become subtle but powerful methods of asserting dominance and perpetuating a cycle of gendered abuse within intimate relationships. In Ireland, our stakeholder tells us about the complete lack of data on what the restricted household income is spent on. She asks: "So is the last 10 euros going to pay the electricity meter or is it going to [be used to] send the man to the pub

to get him out of the house because of threats of violence?". A major challenge in addressing the link between domestic abuse and energy poverty is the lack of data. The hidden nature of domestic abuse, coupled with the private sphere of domestic energy use, makes it difficult to measure these experiences. However, by recognising the potential for abuse in this context, responsible governments can develop targeted interventions that not only address the immediate economic challenges of energy poverty, but also work towards dismantling its interrelations with structures of power and abuse.

4.3 Revealing the complexities of energy poverty through an intersectional feminist lens

Adopting an intersectional feminist lens becomes imperative to understanding the complexities of energy poverty as it helps to truly recognise and address the diverse challenges faced by different communities. The observations of our stakeholders emphasise that despite evidence that the risk of energy poverty is particularly high for women and is exacerbated when it intersects with other forms of oppression and discrimination, comprehensive national databases to shed light on the various inequalities are scarce and targeted solutions remain elusive. The narratives examined further highlighted that this complexity goes beyond a single experience and manifests itself in different challenges faced by different groups, such as older women, single parent households, marginalised ethnic groups and people with disabilities. In addition, this feminist perspective also involves assessing and challenging issues related to power dynamics and decision-making. The lack of representation of women in decision-making on energy and related issues is likely to marginalise women's experiences and needs and lead to policies that are not gender responsive. The representation of women and the acknowledgement of their experiences in the development of public policy is therefore key as it can contribute to a more comprehensive understanding and resolution of issues. It is vital to recognise that structural gender and social inequalities are at the root of energy poverty across the EU.

Membership of the EU has brought with it rules for its Member States on gender mainstreaming and gender proofing of policies (see 3.4), and the EU is seen as a model for gender legislation and strategies. Despite this progress, many gender inequalities persist, but their recognition at the societal level is overshadowed by the assumption that many gender equality issues, especially in the economic sphere, have been resolved. Despite efforts to mainstream gender into national policies, legislative processes sometimes resist gender mainstreaming, reflecting a gap between recognising the need for gender considerations and translating them into implementable policies. We recognise that one of the main obstacles to addressing this issue is the still inadequate understanding of gender inequality as a systemic and structural problem. The prevailing misconception that gender issues are a passing trend, or an easy fix exacerbates the challenge of making an impact. Furthermore, the economic framework built on gender stereotypes perpetuates the reproduction of inequalities.

5. Case studies

In the following sections, we will describe and analyse the national contexts and identified energy poverty challenges, the main group affected by energy poverty, and best practices of our seven selected EU Member States in detail.

Bulgaria

National context and identified energy poverty challenges	Bulgaria, located in Southeast Europe, is home to over 6.4 million people (Destatis, 2023). It joined the EU in 2007 (European Union, 2023). The country experiences a temperate-continental climate in the north with temperatures ranging from -1°C to 22°C, and a Mediterranean climate in the south with milder winters and pleasant summers and temperatures reaching up to 25-30°C (The Climate Change Knowledge Portal, 2024). Data from the Energy Poverty Advisory Hub shows that 18.8% of the Bulgarian population was in arrears with their utility bills in 2022 and that a remarkable 22.5% reported an inability to keep their homes adequately warm in winter (EPAH, 2022c). Winter energy poverty was the prevalent form of energy poverty, but in the past years, issue of summer energy poverty emerged, especially in large cities, where 76.36% of Bulgaria's population lived in 2022 (The Global Economy, 2022). Disparagingly, the funding available as heating allowance has not changed since 1995, meaning that energy poverty support systems and schemes are still focusing on wintertime, causing a lack of support during the summer months. Even in 2012, only 47.6% of the population reported to be living in a comfortably cool dwelling in the summer (EPAH, 2022c). It can be strongly assumed that this number increased significantly in the last decade due to the impact of climate change and the rising issue of summer energy poverty. According to Karpinska and Smiech, using the median after-housing-costs equivalised disposable income, 29.64% of the population are estimated to face energy poverty, the highest incidence among 11 Central and Eastern European countries surveyed (2023). Our stakeholders note that a considerable proportion of the housing stock in Bulgaria is in a poor state of renovation, with apartment buildings and social housing being disproportionately affected. Renovation progress has slowed considerably due to various circumstances, such as the lack of funding and individual financial resources to tackle the retrofit. These financial constraints contribute to low interest and participation in retrofitting initiatives and exclude households in need from vital support programs. Moreover, municipalities in Bulgaria are not mandated to provide social housing for structurally excluded families, leaving tens of thousands waiting for accommodation. Paradoxically, there's a notable surplus of unoccupied apartments within multi-family buildings, creating a further impediment to effective building renovation programmes. There is only minimal support for the installation of renewable energy systems like PV systems. The absence of net metering systems and the fact that surplus energy generated by these systems is fed back into the network without any compensation, discourages further investments in renewable energy initiatives. Moreover, there is an absence of regulations for common properties. Energy communities are not popular in Bulgaria yet. There is no definition for the concept itself, nor for the term prosumer. As observed by a stakeholder, there is a lack of understanding and education on energy bills and tariffs and a lack of experts on energy efficiency, climate change, and environmental protection. Moreover, rural areas are disadvantaged in research and innovation because of the low number of universities. In addition, the municipalities of rural areas lack capacity for specific strategies and programmes, causing a higher risk of poverty, especially for older people. Consequently, many people leave those areas behind and move into the cities. All the stakeholders acknowledged the missing definition of energy poverty and the lack of a competent government body to identify and support energy poor households as the most pressing challenges. Neither the Ministry of Energy nor the Social Ministry see themselves in charge of energy poverty and generally, there seems to be a lack of political willingness to address the topic of energy poverty in depth. The national

	energy law has been amended, but there are administrative issues and gaps in the legal framework that are criticised for not protecting households. Another challenge is the liberalisation of the currently centralised energy market and the bad condition of the district heating system. A stakeholder describes the mentality of the Bulgarian population as quite individualistic, which might be another reason for the low recognition of such collective concepts. Furthermore, due to bureaucratic hurdles, such as the use of complicated language and procedures, citizens have difficulty accessing existing measures, leading to a lack of trust in the government and people being unaware of existing support programmes. The country also lacks funding for long-term measures to combat energy poverty and has failed to apply for the Modernisation Fund.
Main groups affected by energy poverty	In Bulgaria, income as a factor was mentioned by all stakeholders as main driver of energy poverty. However, besides this, other points were also raised: • Single mothers were mentioned, as they cannot apply for all the types of programmes, and Bulgaria has no tax relief for children, as well as no regular social monthly support for children. • Roma people living in illegal buildings were mentioned, having no documentation of their ownership or of having a tenant contract. • People, especially older women in rural areas, as they are not able to collect firewood on their own anymore and are often not able to communicate their needs with public authorities due to social isolation, as well as the barriers that the official language poses etc.
Good practices regarding energy poverty-gender nexus	The COOLTORISE project in particular, which raises awareness of summer energy poverty, can be seen as a good practice in combating energy poverty whilst taking the gender dimension into account. As part of the project, workshops for citizens are organised, especially for women and mothers with children, to inform them about energy poverty in summer, energy consumption and billing. As part of the project, trees have been planted to protect the city's climate, and digital alerts are sent out to warn people of hot days and give them the opportunity to prepare for them. Another measure of the project is the distribution of indoor installable kits to people who aim to reduce their energy consumption. These kits contain tools such as a smart meter, energy-saving light bulbs, fans for the summer, etc. In order to understand the reality of energy-poor households, home visits and bilateral and qualitative exchanges are important components of the project.
Good practices including other social dimensions	Energy audits, such as those carried out as part of the FIESTA project and the advice provided by energy agencies, are another tried and tested method of counteracting energy poverty in Bulgaria. Moreover, some non-governmental organisations have established one-stop shops, where people can easily access information and tools on how to reduce energy consumption, guided by consultants. However, the gender analysis is still missing from energy audits as well as from one-stop shop concepts. Energy Agencies and other actors are starting to integrate more qualitative criteria into their research, taking social aspects and inequalities into account and with that improving the data base to conceptualise effective measures against energy poverty.

Croatia

National context and identified energy poverty challenges	Croatia is located in Southeast Europe with a population of 3.9 million inhabitants (Destatis, 2023) of which the majority of almost 60% live in urban areas (The Global Economy, 2022). The country's capital, Zagreb, accounts for 19% of the country's population (Croatian Bureau of Statistics, 2021). Croatia entered the EU in 2013 and joined the Eurozone in January 2023 (European Union, 2023). Croatia has a diverse climate, with a Mediterranean climate in the coastal areas, characterised by hot, dry summers with average temperatures ranging from 26 to 30°C and cool, rainy winters with temperatures ranging from 5 to 10°C. Inland, , a continental climate prevails, with

	hot summers and cold, snowy winters, and temperatures often reaching the mid to high 30s °C in summer and falling below 0°C in winter (The Climate Change Knowledge Portal, 2024). Energy poverty is a growing concern in Croatia. Overall, awareness of energy poverty has increased over the past decade, but there is still room for improvement. The work of researchers, energy agencies, and civil society organisations has been instrumental in bringing the issue into the public debate and calling for measures to mitigate it. According to recent EPAH data, 14.5% of the Croatian population faced arrears on utility bills in 2022, and about 7% reported an inability to keep their homes adequately warm in winter (EPAH, 2022c). Summer energy poverty is also becoming a significant issue, especially along the country's coastal areas. Existing indicators on energy poverty show that in 2012, only 74.5% of the population reported living in a comfortably cool dwelling in the summer (EPAH, 2022c). Using the national median after-housing-costs equivalised disposable income, Karpinska and Smiech (2023) estimated that 27.1% of the population faces energy poverty, the third highest incidence among 11 Central and Eastern European countries surveyed. Our stakeholders also identified geographical differences and varying levels of development among regions as essential aspects to consider. Despite the implications of these indicators, the country lacks comprehensive policies and strategies to tackle energy poverty that "clearly and systematically look at the problem, propose effective and long-term solutions and monitor the impact of the measures set on the vulnerable groups", as expressed by the interviewed stakeholders. This is particularly evident in the lack of a definition of energy poverty that applies to the national context, leading to discrepancies and challenges in targeting affected people. In the regulatory framework, energy poverty is generally associated with the definition of structurally disadvantaged consumers, which applies to recipients of guaranteed minimal support or disability support (beneficiaries of the welfare system) and gives them a deduction on their electricity bills. This definition, however, leaves different groups at risk of living in energy poverty, such as those who live just above the poverty threshold and cannot fully meet their energy needs or might be unable to carry out renovation and energy efficiency measures without social support. Although the NECP envisaged adopting and implementing an energy poverty alleviation programme, this measure has not materialised and remained a potential measure in the new draft plan (Ministry of Environment and Energy- Republic of Croatia, 2019). Furthermore, stakeholders note that until now, energy poverty is not considered a priority for energy or social policy. This then translates into what stakeholders describe as a lack of ownership and coordination among ministries and other public entities. Three ministries deal with different aspects of energy poverty, but information exchange and collaboration are somewhat limited, and there is no clear definition of priorities and solutions. Stakeholders also expressed some concern about hidden energy poverty and energy under-consumption, as the available data does not allow the identification of cases where, for example, paying for electricity drastically reduces the disposable income available for food and other basic needs. In general, stakeholders perceive that there is a significant information gap regarding the extent of energy poverty and the characteristics of the groups affected by it. This information gap also includes the absence of data (and even awareness) on the gender dimension of energy poverty. Some practical data has been collected in this field by organisations such as DOOR that are part of EU-funded projects, but it is still limited. Further gaps were identified regarding knowledge and assistance to request available social services support. Specific situations such as the poor condition of buildings affected by the earthquake in Zagreb in 2020, and the economic effects (higher prices) of introducing the euro as currency in January 2023 also constitute risk factors for energy poverty in the Croatian context.

Main groups affected by energy poverty	When discussing the principal groups affected by energy poverty in Croatia, our stakeholders agree that income is the most critical factor in identifying and designing potential solutions. In this regard, three main groups are mentioned: • Groups that, due to permanent unemployment or disability, receive social welfare support. This support, however, is often not enough to cover the total energy costs. • Low-income groups who are not eligible to apply for support from social services and energy poverty alleviation measures and, in this sense, are not recognised by the policy framework. • Groups with average (or minimum) wages who cannot fully meet their energy needs, particularly if they face unexpected financial burdens or if housing conditions are not energy efficient. Within these groups, households composed of people aged 65 and over and single-parent households (especially women-headed households) are particularly at risk of energy poverty. According to data collected by local stakeholders, the risk of facing energy poverty by the older generation is significantly higher. Research conducted in the Croatian context highlights that (mental) health outcomes and living conditions are directly influenced by energy poverty. For instance, health practitioners have identified that people requiring complex medical care and their caregivers often face difficulties related to the space they live in (extreme temperatures) or must compromise the use of essential electric appliances such as a refrigerator to cover the costs of medical equipment. Moreover, the most structurally excluded groups often face stigmatisation and isolation. Moreover, members of disadvantaged groups express disappointment and low trust in institutions that address energy poverty, feeling underserved or overlooked.
Good Practices regarding gender-energy poverty nexus	As mentioned above, the availability of concrete data on energy poverty in Croatia, particularly gender-disaggregated data, is very limited. According to our stakeholders, no national database allows for disaggregation of data, characterisation of affected groups and identification of potential intersections between categories of marginalisation. Nonetheless, some civil society organisations have collected some data and adopted gender-responsive approaches in the implementation of projects. For example, the case of DOOR with the EMPOWERMED project, in which data collected during project activities allowed for gender analysis and the formulation of gender-sensitive policy recommendations.
Good practices including other social dimensions	The Community Energy for Energy Solidarity (CEES) project is addressing energy poverty in the EU's transition to clean energy and assuring that energy communities and citizen energy initiatives in the EU incorporate energy justice as their fundamental principle. This is locally implemented by the green energy community (ZEZ).

Cyprus

National context and identified energy poverty challenges	The eastern Mediterranean the Republic of Cyprus holds a population of 0.9 million people, predominantly composed of Greek and Turkish Cypriots (Destatis, 2023; European Union, 2023). In 2022, a share of 66.91% of Cyprus' population lived in urban areas (The Global Economy, 2022). The nation gained independence from British colonial rule in 1960 and became a member of the EU in 2004 (European Union, 2023). An intense Mediterranean climate prevails, with long dry summers and temperatures exceeding 30 °C, and mild winters, with the temperature dropping to an average of 17 °C (The Climate Change Knowledge Portal, 2024). According to the EPAH, in 2022, 8.1% of the population of the Republic of Cyprus were behind on paying their energy bills, and a significant share of 19.2% reported an inability to

	adequately heat their homes during winter (EPAH, 2022c). Data from 2012 shows that 71.2% of the population were living in comfortably cool dwellings during the summer (EPAH, 2022c). It can be strongly assumed that this percentage has increased over the last decade due to climate change and higher temperatures in summer. Reinforced through climate change and an increase in extreme weather events, the Republic of Cyprus experiences both, summer and winter energy poverty. As a researcher of the the Republic of Cyprus Institute explains, winter energy poverty remains the greater challenge, which can be seen in a higher energy consumption during the cold months and a higher winter mortality. Cyprus' latest NECP draft from 2023 acknowledges that the Eurostat numbers on energy poverty in the country are solely based on income criteria, leaving energy efficiency and qualitative indicators unconsidered. Therefore, a commission has been formed to collect data and assess and measure energy poverty among the population more accurately (Republic of Cyprus, 2023). The stakeholders all stress that the Republic of Cyprus faces a housing crisis, associated with the invasion of 1974, typified by hastily constructed buildings lacking proper insulation. Although regulatory frameworks stipulate insulation requirements for new constructions, a significant portion of existing buildings remain in their original, energy-inefficient condition. The fact that the subsidies for renovations are paid in retrospect impedes retrofitting efforts, especially for low-income households. The energy landscape in the Republic of Cyprus is monopolised by one provider, posing obstacles to the integration of renewable energy sources due to grid limitations. According to a member of a political party, these constraints are a reason why governmental initiatives promoting renewables, such as photovoltaic installations, rarely hold impact. Consequently, two members of the Cyprus Women's Lobby claim that the Republic of Cyprus keeps relying on traditional fossil fuel-based energy sources despite abundant solar and wind potential. A researcher criticises that misallocated funds prioritise fossil fuel infrastructure over renewable sources, exacerbating the energy crisis. Despite legislative mandates, the stakeholders identify that the Republic of Cyprus struggles with implementing national EU directives like the *Green Deal*, *Fit for 55 Package* and the *RED*, establishing the right of citizens to produce their own energy. Moreover, the lack of policies promoting energy communities, results in untapped potential to tackle the energy transition in a socially just and participative way. According to all stakeholders, there is a general absence of coherent, holistic and cross-departmental approaches to address energy poverty, which impedes effective mitigation strategies. There is a disconnect between departments and ministries and a lack of a coherent narrative and strategies. Instead of being treated by one regulating body, taking control of diagnosis and mitigation of energy poverty, the topic is spread across different government departments and welfare authorities. As energy and social matters are treated separately, there is a shortcoming in horizontal policies that integrate both the energy crisis and poverty. This leads to an incoherent understanding of energy poverty and the criteria for identifying disproportionately affected customers. Noteworthy efforts to combat these challenges often originate from non-governmental and civil society organisations.
Main groups affected by energy poverty	Regarding our stakeholders, the main groups that are at risk of energy poverty can be traced through looking at minimum and low-income groups, such as • single-parent households (that are mostly women-led), which are disadvantaged when it comes to fulfilling their energy needs, • young people, who are not able to rent their own apartment due to high rents and electricity bills and therefore must live with their parents, often until they are 30 to 40 years of age, • and migrants and refugees.

	Our stakeholders mention that these groups will very likely increase in numbers as "there are no specific plans for those people to have an increase in the minimum income scheme based on the increase of the prices of either food or electricity.". Further the groups of people outside of the workforce, e.g., people with disabilities, and therefore fully dependent on state support, was mentioned as often overlooked.
Good Practices regarding gender-energy poverty nexus	Some Cypriot municipalities participate in the Covenant of Mayors, a voluntary EU initiative for local authorities aimed at increasing energy efficiency and the use of renewable energy. Some of the stakeholders involved are working on an appropriate definition of energy poverty through data collection. As one of our stakeholder explained, the analysis will include gender-disaggregated data to include a gender perspective in the definition.
Good practices including other social dimensions	No good practices were identified by our stakeholders from the data collected during the interviews.

Germany

National context and identified energy poverty challenges	Germany has a population exceeding 84 million people (Destatis, 2023). While West Germany has been a member of the EU since its inception in 1958 as the European Economic Community (European Union, 2023), the Federal Republic of Germany became part of the EU after reunification with East Germany in 1990 (Federal Agency for Civic Education, 2020). The climate in Germany varies across regions, generally featuring a temperate seasonal climate with cold winters and mild summers (The Climate Change Knowledge Portal, 2024). Therefore, there is in general a greater concern about winter energy poverty and about the high heating prices, which have risen dramatically in the last two years, influenced especially by the energy crisis resulting from Russia's invasion of Ukraine. While Germany is generally considered a prosperous country, energy poverty still affects structurally excluded populations, such as low-income households or those living in poorly insulated housing. Data from 2022 shows that even before the extreme energy price increase, low-income households (earning less than €1,300 monthly) spent more than 10% of their income on housing energy (DENA, 2022). The proportion of these households increased significantly in 2022, reaching 25.2% of the population (Henger & Stockhousen, 2022). To reduce the impact of price increases, the government introduced a one-off payment of 300 euros in 2022. Considering the indicators of perceived thermal comfort, 6.6% of the population expressed inability to keep the home adequately warm in winter, 4.2% of the population were behind on paying their energy bills, and a share of 86.9% were able to live in comfortably cool dwellings during the summer (EPAH, 2022c). Drescher and Janzen (2021) evaluated the main determinants of energy poverty in Germany and found that especially one person households and single parent households are impacted by energy poverty and these household compositions correlate with educational attainment, employment status, building characteristics and the primary energy source as primary drivers of energy poverty. Given the increase in the extent of energy poverty in recent years, it can be said that there is now greater awareness of energy poverty and that it is being considered in the public debate at both political and societal levels. Nevertheless, our interviewees agree that energy poverty is not fully recognised in the German context, as the German state sees it as one dimension of labour poverty and not decidedly different from income poverty *per se*. Therefore, the government has not developed and included a definition

	of energy poverty in the current legislative mechanisms. As a result, there is a significant information gap on the actual number and characteristics of the people affected. Even though the transfer payments and housing subsidies contemplated in the national Social Code (Sozialgesetzbuch - SBG) have some components that address energy costs, there is still a lack of specific policies to address energy poverty. For this reason, involved actors are claiming for changes in the welfare allowance to include more money dedicated to energy use and to incentivise the adoption of renewables among the beneficiaries of the state support. In general, energy poverty is mainly addressed in its affordability dimension. However, some aspects related to the impact of energy efficiency measures on low-income households have been incorporated into existing legal frameworks. In particular, there exist mechanisms that protect tenants from paying CO_2 prices if the building is poorly insulated and energy inefficient. Measures also aim to incentivise building owners to improve energy efficiency in their properties. To address the social impacts of climate policies, Germany must emphasise tenant protection in energy efficiency policies, ensuring that tenants are not unfairly burdened by e.g., energy-efficient renovation measures. Our stakeholders perceive that Germany faces challenges in advancing its climate policy, and especially in reflecting the links between it and social policy to ensure that structurally excluded groups are not disproportionally impacted by the energy transition. Similarly, while gender mainstreaming is gaining traction in national energy and climate plans, Germany has room for improvement. Generally, gender is not mainstreamed in most energy-related policies. Gender responsive policy is perceived to be more prominent in the field of foreign and development policy (feminist foreign policy) but missing on national climate issues. Further concerns were expressed by our stakeholders in relation to the overburdening and lacking capacities of social services and actors involved in tackling (energy) poverty such as job centres, social welfare offices, and energy providers. This lack of capacity is further influenced by the high level of bureaucracy and complexity in the processes for financing energy-related social initiatives. Furthermore, some of those initiatives are perceived as focusing on short-term solutions and unable to lead to structural change. As in the other countries assessed in this study, in Germany stakeholders report that greater efforts are needed to reach structurally excluded groups, but there are barriers to accessing support due to stigma and shame.
Main groups affected by energy poverty	As mentioned above, academic research shows household composition is one of the main determinants of energy poverty risk in Germany. Our interviewees agree with this statement and indicate that measures should primarily target the following groups: • Households with children, elderly, disable and chronically ill individuals, as these groups often have greater energy needs due to health considerations and less capacity to respond to price changes and to adopt energy efficiency measures. • Low-income families (particularly recipients of social benefits such as unemployment support) as they tend to spend a large part of their income on meeting their energy needs. • Single individuals, particularly those living alone as individuals without shared living expenses are more susceptible to the economic burden of energy costs. However, three intersecting categories are particularly relevant in the German context. Firstly, gender emerges as a key category to consider when talking about single-parent households and energy poverty in old age. Secondly, people with a migration background are particularly at risk due to language barriers that prevent them from accessing and understanding energy-related information and make it difficult for them to negotiate housing and energy provision conditions. Finally, younger populations and especially students often face financial constraints and limited access to affordable energy efficient housing. In addition, these groups are considered “hard to reach” by the social services due to time constraints (e.g. single parents) and barriers in accessing

	information and understanding about available social assistance and the procedures for applying for it. Our stakeholders express that the groups most affected by energy poverty are being excluded from the benefits of the energy transition as their access to renewable energy is often limited. Therefore, understanding the diverse needs of these structurally excluded groups and implementing comprehensive solutions is crucial for creating an inclusive and sustainable approach to tackling energy poverty in Germany.
Good Practices regarding gender-energy poverty nexus	The data collected did not allow for the identification of good practices regarding the gender-energy poverty nexus.
Good practices including other social dimensions	The conversation with our stakeholders has allowed us to identify exemplary practices, which, although they require better integration of the gender perspective, have a significant scope in terms of social inclusion. The "Stromspar-Check" (Energy-saving check) by Caritas is an exemplary initiative that offers free consulting services to low-income households aimed at enhancing water and energy savings. The initiative not only addresses the immediate needs of structurally excluded communities but also provides economic opportunities for the long-term unemployed. Training individuals who face long-term joblessness to become consultants for the Stromspar-Check programme, imparts valuable skills but also leverages the understanding these individuals have of the challenges faced by low-income households. Moreover, acknowledging the potential stigma associated with seeking assistance, the programme employs self-disclosure strategies. Additionally, anonymous phone lines are offered, ensuring that individuals can access support without fear of judgment or embarrassment. To reach the right audience, Caritas strategically advertises the Stromspar-Check programme in environments frequented by the target groups. This includes locations such as food banks, debtor counselling centres, senior citizens' cafés, and social counselling centres. Regarding the topic of prevention of disconnection, the consumer alliance (Verbraucherzentrale) in the state of Hessen has established their anonymous phone line, which directly connects the person in need with a juridical professional to prevent the household's disconnection from the grid. They complemented their programme with the training sessions for administrators at the job centre or social welfare office, debt counselling services etc. and through organising round tables in all municipalities, bringing together all relevant stakeholders, which aims at establishing a mutual understanding of the other's point of view and sharpening communication.

Ireland

National context and identified energy poverty challenges	The population of the Republic of Ireland is around 5.2 million (Destatis, 2023), with 36% of the population living in rural areas (The Global Economy, 2022). It is a member state of the EU since 1973 (European Union, 2023). As an island in the North Atlantic Ocean, the Republic of Ireland has a temperate maritime climate, characterised by mild temperatures, high humidity, and rainfalls. Due to its location and size, there are no significant regional differences in climatic conditions (The Climate Change Knowledge Portal, 2024). Existing data from the Energy Poverty Advisory Hub display that 10.6% of the population was in arrears on their utility bills in 2022 (EPAH, 2022c). Due to the climatic conditions in Ireland, there is a high reliance on heating during the winter and autumn months. However, there is also growing concern about the higher-than-average temperatures in the summer months, which raises the potential need for cooling solutions in the future, particularly for facilities for older persons.

	Energy poverty has been an issue in the Irish context for several decades, making the country one of the pioneers in research and policy formulation to address this phenomenon. In the context of Ireland's energy landscape, the past two years have witnessed an unprecedented surge in energy prices, significantly impacting domestic consumers. The average cost of electricity and gas has risen by approximately 80% from November 2021 to November 2022. Historical factors, such as Ireland's geographical location, small market size, and low population density, have contributed to higher energy prices compared to the European average. However, the recent surge is primarily attributed to soaring wholesale electricity prices. This surge is driven by increased wholesale gas prices and volatility in the gas market, further exacerbated by geopolitical events, particularly the Russian invasion of Ukraine. Coal and oil prices have also seen historic increases (Government of Ireland, 2022). In response to this situation, the Irish government formulated an action plan against energy poverty by 2022, which contains a set of measures to combat energy poverty in four areas: affordability (meeting the cost of energy), research, energy efficiency, and governance and communication. As an island nation, the Republic of Ireland faces challenges in sourcing its own major fuels, particularly fossil fuels, resulting in a heavy reliance on imported oil. Approximately 43% of the population relies on oil for central heating, exposing households to global price fluctuations. The country's growing population, fuelled by both a high birth rate and an influx of immigrants, places additional demands on fuel and electricity. The thriving tech sector, especially data centres, further intensifies energy usage and adds pressure on prices. The Republic of Ireland currently holds the fourth position in terms of the most expensive electricity prices among European countries. In rural areas, where there is no gas network, residents heavily depend on oil, solid fuels, and electricity. Solid fuels, including wood, coal, and traditional turf burning, remain common in these regions despite greater environmental regulations. This reliance on solid fuels particularly affects those living in older, harder-to-heat houses, with a significant portion of their income directed towards heating costs. Notably, Ireland's housing preferences contribute to energy challenges, with a strong inclination toward detached and semi-detached houses. According to one of our interviewees, only 8% of the Irish population lives in apartments. Additionally, self-disconnection through the “pay as you go” systems pose a unique challenge to energy poverty as it makes it difficult to identify and make visible trade-off situations and loss of energy supply to financially precarious households and might shift household dynamics. Understanding the internal household decision-making processes, including trade-offs between food and energy, remains insufficiently explored. In addition, the state of retrofitting, especially in the private rental sector, reflects a challenging landscape. The private rental sector lacks a minimum Building Energy Rating (BER) standard for housing, and crucially, tenants do not have the authority to decide whether a property undergoes retrofitting. This decision lies solely with the property owner. Nevertheless, the current political and policy framework provides little incentive for landlords to prioritise retrofitting, exacerbating the energy efficiency issues in rental properties. Compounding this problem is the ongoing housing crisis, with demand outpacing supply. The potential eviction of tenants during property renovations contributes to a troubling cycle: individuals face high rents and energy bills or, in the worst case, eviction for retrofitting, further aggravating the overarching housing and homelessness crisis. While government grants exist for retrofitting, the complexity of the application process, combined with the current cost of living crisis and inflation rates, renders these resources inaccessible to many, highlighting the need for a more comprehensive and tenant-friendly approach to energy-efficient upgrades in the rental sector.

	From a gender perspective, energy poverty in the Republic of Ireland is confronted by multifaceted challenges, with a significant intersectionality between housing issues, gender dynamics, and decision-making processes within households. One of the primary challenges lies in the dominance of one-parent family households, particularly women, who are disproportionately affected by social housing waiting lists and related issues of housing supply and affordability. The broader housing crisis, particularly in the private rental sector, lacks a gendered lens, hindering a nuanced analysis of its impact on excluded populations. Despite the urgent need for a gendered analysis, there is a notable absence in current practices, limiting the depth of understanding and potential targeted interventions. Our interviewees also brought up some issues regarding the role of renewable energy and energy communities in tackling energy poverty. While there have been positive strides, such as campaigns by local environmental groups like Friends of the Earth advocating for solar panels on every school, the implementation has been slow, raising questions about energy ownership. Although the recent budget included incentives, such as tax waivers for individuals generating energy through photovoltaic systems and feeding it back into the grid, concerns linger regarding the distribution of benefits. This incentive tends to favour middle to high-income earners, potentially leaving excluded communities and low-income groups at a disadvantage.
Main groups affected by energy poverty	Ireland's current Energy Poverty Action Plan uses expenditure-based methods to measure energy poverty, in which a household is considered to be in energy poverty if it is spending more than 10% of its income on energy. However, the plan recognises gaps in this measurement method and states the need to develop more comprehensive and sophisticated methods to overcome data gaps and other socio-demographic, geographic and housing variables (Government of Ireland, 2022). Our stakeholders agree with this statement, as expenditure-based indicators can mask the true extent of energy poverty and leave some affected groups out of the picture. Moreover, discrepancies might arise between existing expenditure-based and self-report methods, revealing contrasting findings regarding which groups are more susceptible to energy poverty. For instance, according to expenditure-based measures, individuals in detached houses experience the highest rates of energy poverty, while those in apartments have the lowest rates. Conversely, self-report measures indicate the opposite trend, with detached dwellings being associated more with high-income individuals, and apartments and terraced houses with structurally excluded populations such as single parents, low-income individuals, and immigrants. Differences also arise regarding the relationship between tenure and the impact of energy poverty. While expenditure-based methods show minimal distinctions between homeowners and tenants, self-report measures highlight that tenants are more likely to cut back on electricity usage or go without heat, indicating higher levels of energy deprivation. For this reason, to provide a better picture of the characteristics of the groups affected by energy poverty, our stakeholders referred to socio-demographic, location and tenure characteristics of the affected groups and indicated the following groups are facing the highest risk of energy poverty: • **Rural residents depending on solid fuel for heating:** Unlike urban areas, many rural locations lack a gas network, leading to a heavy reliance on alternative energy sources such as oil and solid fuels. The predominant use of solid fuels in rural areas, including wood, coal, and traditional turf burning, contributes to the heightened vulnerability of the population. Though a historical practice, traditional turf burning now faces greater scrutiny due to evolving carbon regulations. Despite a willingness to shift to cleaner energy solutions, people in rural settings generally lack affordable options to replace them. The population in rural areas experiencing energy poverty are characterised by lower incomes and residences that are often old and challenging to heat. This combination places a

substantial burden on these individuals as a significant portion of their income is disproportionately allocated to heating costs.

- **Older adults,** including older women: this group is more susceptible to energy poverty due to the inadequacies of the pension scheme. The state pension scheme falls short in providing adequate financial support and in some cases leaves older individuals ineligible for retrofitting schemes aimed at improving energy efficiency in homes. The precarity of older women is exacerbated by two main factors. First, the longevity of women, with a life expectancy of 84 compared to 80 for men, contributes to a substantial number of older women living on their own, often as widows. Second, women face lower pensions due to historical factors such as the gender pay gap and the Marriage Bar in Ireland, where single women were required to leave their jobs in the public sector after marriage up to 1973. Consequently, many older women had limited opportunities to accumulate state credits, resulting in lower pensions.
- **Single-parent households, predominantly headed by women:** This group constitutes a significant portion of the population facing energy poverty. With 86% of single-parent households led by women, these families often struggle economically. In the broader context, the gender pay gap, which sees women earning 11% less than men on average, compounds the financial challenges.
- **Tenants, particularly those in older and poorly insulated housing:** First, the Republic of Ireland is faced with a housing shortage and many individuals often find themselves in substandard conditions, residing in poorly maintained houses, old apartments, or even engaging in inadequate room-sharing arrangements. Damp and mould issues plague many residences, affecting various groups, including lower-income individuals, students, and immigrants. Second, landlords might lack incentives to invest in energy-efficient measures, contributing to the suboptimal condition of these properties. Moreover, the prevalence of poorly maintained rental houses, coupled with potential instances of black-market accommodation, creates a distinctive precarity in the Irish housing market. These characteristics make especially more precarious tenants prone to experiencing energy poverty.
- **Migrants and asylum-seekers:** the combination of overcrowded living conditions and the prevalence of migrants in substandard, often temporary, accommodation creates a scenario where energy needs are not adequately addressed. This situation significantly complicates the management of energy usage and poses challenges in maintaining adequate heating.
- **Traveller community:** the Traveller community in the Republic of Ireland encounters a dual burden of material and social conditions contributing to their heightened susceptibility to energy poverty. This structurally excluded group, living in caravans and mobile homes, experiences unique difficulties in addressing their energy needs and improving their living conditions. Travellers find themselves disenfranchised from political actions that could potentially alleviate their energy poverty. Their limited involvement in initiatives to improve conditions is not only a consequence of worsened energy poverty but also a result of historical social marginalisation. Moreover, Travellers, as an ethnic minority group, are excluded from retrofitting schemes in the country. The trailers, being mostly old and constructed with thin materials, fail to retain heat efficiently, requiring the community to burn rubbish or fossil fuels merely to maintain warmth. Furthermore, Travellers often face challenges associated with communal living on halting sites, where multiple caravans share a single energy source. Despite recent acknowledgment by the government of the issue, specific measures to address this communal energy challenge are yet to be fully outlined.

Good Practices regarding gender-energy poverty nexus	In the Irish context, the interviews allowed us to identify some recent initiatives and practices that seek to adopt a feminist approach to tackling energy poverty. In particular, the Feminist Communities for Climate Justice project, funded by the Department of the Environment, Climate and Communications, has become a beacon of hope for those grappling with the challenges of communicating the climate crisis and implementing strategies to make communities climate resilient. A distinctive feature of the initiative is the Certificate Program, currently in the recruitment stage. The programme aims to equip participants with the knowledge and tools necessary to navigate the complex intersection of gender, energy, and climate issues. As the pilot phase unfolds, the hope is that the programme will not only fill its current spaces but also demonstrate the need for continued support and expansion. Beyond the pilot period, the project envisions a lasting impact on how communities understand and respond to gender and energy poverty, marking a significant step toward a more equitable and sustainable future for Ireland.
Good practices including other social dimensions	Generally, energy communities and cooperatives are a widely applied democratic and participative way of generating renewable energy locally. One best practice example is the setting up of the Aran Islands Energy Co-op (Comharchumann Fuinnimh Oileáin Árann Teo) in 2012 after the island group was cut off from mainland energy for several weeks. Being an energy cooperative that is exclusively open to citizens and businesses located on one of the Aran Islands, the community creates benefits for islanders in the realm of generating green and sustainable energy, investing in retrofitting and electrified mobility. Connecting these initiatives to diversified employment opportunities for islanders as well as taking on the role of being a lighthouse community, guiding other communities in the Republic of Ireland to follow their example.

Lithuania

National context and identified energy poverty challenges	Lithuania is located in northeastern Europe, the largest of the three Baltic states and an EU member state since 2004 (European Union, 2023). The population of Lithuania encompasses around 2.9 million people (Destatis, 2023), with over 68% living in urban areas and almost 550,000 people living in Vilnius, the capital. (The Global Economy, 2022). The country's climate is a transitional climate between the maritime type of Western Europe and the continental type further east. It is characterised by cold and long winters and mild summers. The average temperature in January, the coldest month, is around -5 °C, while July, the warmest month, has an average temperature of around 17 °C (The Climate Change Knowledge Portal, 2024). According to EPAH, 17.5% of Lithuanians struggled to keep their accommodation adequately warm in winter and 5.5% were late on paying their electricity bills. More than 75% reported living in comfortably cool dwellings during the summer (EPAH, 2022c). The focus in Lithuania lies on winter energy poverty, due to the very cold and long winters, where the heating season usually starts early on (September/ October), and can last up to March or April of the next year. However, the relatively new phenomenon of increasingly extreme temperatures in summer highlights the inadequate adaptation of public buildings, such as schools and nurseries, to warmer conditions and emphasises how important it is to address energy poverty in summer. In general, there seems to be a lack of political will in Lithuania to deal with the issue of energy poverty. The problem is spread across different ministries without anyone willing to thoroughly address and solve it. According to one stakeholder, this is the reason why there is no national definition of energy poverty, as a clear definition would require measuring and solving the problem, which creates additional work and costs. Due to the lack of official recognition, there is no national statistical data, only figures and data from the EPAH, which indicate a high rate of energy poverty. However, the ministries mistrust the EPAH data and accuse the datasets of asking "the wrong

	questions" and therefore causing this high figure. Although there is no official definition, one stakeholder cites the lack of one as an advantage in understanding energy poverty not just as a product of income poverty, but as the result of a combination of four factors: low income, low energy efficiency, high energy prices and low energy literacy. In this context, energy literacy is greatly influenced by the fact that people have contacts or networks that help them to find out about energy issues and support programmes. A reccurring topic within the conducted stakeholder interviews has been the high need for energy efficient building renovations in Lithuania and the particular social challenges connected to it. In the Soviet period, a lot of energy-inefficient buildings were constructed and are still in their original, poorly insulated condition. Following its long-term renovation strategy, Lithuania encourages especially multiapartment building renovations through integrating financial incentives for people receiving governmental heating compensation during winter (taking over 100% of their renovation costs) and other apartment owners through establishing loans with monthly payback rates (taking over 30% of the overall costs). But as Lithuania has an ownership rate of 89% (Eurostat, 2021), agreeing on joint renovation measures in multiapartment buildings with up to 150 apartment entities has shown to be the main difficulty. To initiate the renovation process, the homeowners' association must unite 51% of the votes. Once this has been achieved, those who cannot afford the renovation measures but are not eligible for the full state subsidy must sell their flat, including the renovation expenses, to the new owners. In addition to recognising energy poor households in their refurbishment strategy, stakeholders felt that other government subsidies, such as investment in renewable energy, modernisation of heating systems etc., were targeted at higher income earners and therefore misallocated to reach people on the energy poverty spectrum. In general, social acceptance of the issue of energy poverty has changed due to Russia's war in Ukraine and the energy supply problems in most EU countries, which have led to a sharp rise in energy prices. As it became more common to have difficulties paying energy bills, the social stigma associated with energy poverty is fading. However, one stakeholder expressed the concern that as the energy crisis subsides, the issue of energy poverty could lose its urgency and be forgotten. Regarding solutions to integrate a participative approach towards tackling energy poverty, no 'Renewable Energy Communities' have yet been established, but the Department of Energy is currently initiating a programme. Regarding the gender dimension of energy poverty in Lithuania, our stakeholders emphasise that gender inequality is still a notable problem due to the country's fairly traditional and conservative way of life. As one stakeholder shared, there is still a lot of domestic violence that seems to be passed on from generation to generation. The stakeholder also claims that the government is failing to address these uncomfortable issues. In terms of labour participation and working full-time, Lithuania shows almost no gendered difference. One of our stakeholders states "So, basically, we need this two-breadwinners family. So here we have no problem theoretically, but we have problems that we have two breadwinners, but we don't have two caretakers.". In addition, our stakeholders pointed to a visible national trend towards gender-responsive implementation in all areas of European directives. For example, in Lithuania, a new adaptation of parental leave was included in the national legislation in 2023, allowing two additional months of parental leave when both parents perform their caring duties. In all areas categorised as domestic, such as education, there seems to be a stronger influence of conservative political forces and the Catholic Church working against the introduction of gender equality, leading to a loss of awareness among a new generation and the reproduction of traditional gender roles.
Main groups	Generally, our stakeholders in Lithuania agreed upon two main reasons for the people being in energy poverty, (1) energy-inefficient buildings and (2) low income. However,

affected by energy poverty	the Lithuanian Consumer Alliance, Vilnius University and the Antipoverty Network have found women to be disproportionally affected by energy poverty, due to prevailing disparities associated with care work, gender roles, gender pay gap, etc. Additional information cannot be provided due to the severe lack of addressing structurally excluded groups regarding energy poverty and of accurate, gender-disaggregated data.
Good Practices regarding gender-energy poverty nexus	The data collected did not allow for the identification of good practices regarding the gender-energy poverty nexus.
Good practices including other social dimensions	There are several projects to tackle energy poverty, one of which is "Stepped Solutions", which aims to set up an energy counselling network and provide advice to energy-poor households. To this end, social workers are being trained to advise and support the affected group, as they "should be recognised as experts with great experience and as social change agents". As the social workers are already familiar with the circumstances in which energy-poor households live, shame and stigma and thus the inhibition threshold for asking for help are reduced. "ComAct", another project, deals with energy poverty in the Central and Eastern European republics and the countries of the former Soviet Union, dealing with the energy-efficient renovation of buildings. In Lithuania, the project worked with two municipalities and set up energy resource centres where citizens could obtain advice on retrofitting and support programmes. To avoid citizens feeling embarrassed when speaking to members of their communities they may know, experts provided the advice. Consumer organisations and NGOs act as a glue that connects ministries and other stakeholders and brings them together to tackle issues such as energy poverty. It is important, one interviewee emphasises, that good practices go beyond the scope of projects, as projects are financially and temporally limited and therefore have a limited impact. According to our stakeholder, solutions such as the resource centres should be permanent, but there is a lack of understanding of the concept and the subsequent impact.

Spain

National context and identified energy poverty challenges	Spain is located in Southwestern Europe and is the second largest country in the EU (which it joined in 1986), with an area of 505,944 km². (European Union, 2023). The country is also the fourth most populated in the EU, with 48.1 million inhabitants (Destatis, 2023). More than 80% of the population live in urban areas (The Global Economy, 2022). Due to its varied geography and topography, Spain has a marked climatic diversity that include mediterranean, semiarid, continental and subtropical (in the Canary Islands) climate. For that reason, a climatic zone classification for the limitation of the energy demand was included in the current Technical Building Code of the country, giving rise to 16 climatic zones, including 4 in the Canary Islands (MITECO, 2019). The classification provides information about winter and summer climatic severity, showing regions that need high heating or cooling expenditure. In general, Spain has lower energy needs for thermal heating than the EU average but has a unique need for cooling in the summer period (MITECO, 2019). According to the data included in the National Strategy against Energy Poverty and using the 4 main indicators for measurement (disproportionate expenditure, hidden energy poverty, inability to maintain the home at an adequate temperature, and late payment of bills), between 3.5 and 8.1 million people, depending on the indicator used,

	were living in energy poverty in Spain in 2017 (MITECO, 2019). It should be noted that, according to EPAH data, the proportion of households reporting an inability to keep the home adequately warm has increased since the implementation of the strategy, reaching 17.1% of the population in 2022, while 9% were in arrears on energy bills. Despite of this situation, Spain is in an intermediate position within the EU in terms of the incidence of energy poverty.Despite of this situation, Spain is in an intermediate position within the EU in terms of the incidence of energy poverty. According to our stakeholders, energy poverty is widely recognised in the political and societal sphere in Spain, as demonstrated by the fact that Spain is one of the two countries in the EU with a strategy in place to tackle it. Furthermore, there is a consensus on the definition of the concept and an organised network of actors, including citizen movements, dedicated to tackling it. This has allowed for greater availability of data and greater visibility of the issue in the public and media debate. Nonetheless, stakeholders perceive that more efforts still need to be made in the coordinated and comprehensive collection of information that will enable local authorities to grasp the full scope of the issue and tailor interventions accordingly. The difficulty of reaching structurally excluded groups with information and assistance adds to the challenge of energy poverty. These communities often face barriers in understanding complex energy bills and information, limiting their ability to make informed choices about consumption and efficiency exacerbating inequalities. Moreover, it is also estimated that approximately 50% of people entitled to relief measures such as the electricity social voucher (bono social de electricidad) do not do so because they are unaware of this right or because of the complexity of the application process. As a result of the COVID-19 pandemic and the ongoing energy crisis, the Spanish government temporarily extended the scope of the social electricity voucher to provide higher percentages of discount on the electricity bill (from 25% up to 80%) to the most susceptible households and a moratorium that prevents interruption of supply in case of arrears. This increase expired in December 2023. While designed to provide crucial short-term relief, the measure has brought to light a series of challenges that need urgent attention and has sparked debates at the political level, with ongoing negotiations between companies and administrations regarding the assumption of these debts. Unfortunately, the lack of a concrete and permanent regulatory framework leaves families at the mercy of annual negotiations, dependent on the political will and the willingness of companies to assume the generated debt. Our stakeholders agree that these kinds of measures do not address the root causes of energy poverty and long-term improvements are not being adequately addressed. Housing conditions also play a central role in the energy poverty landscape in Spain. In general terms, a large part of the Spanish building stock was built prior to the current regulations (from 2006) for insulation and conditioning of installations to guarantee thermal comfort and health, which means that the country has one of the largest stocks of energy obsolete buildings in Europe. Poor housing conditions not only contribute to higher energy consumption, but also force households to compromise on other basic needs to meet escalating energy bills. In addition, inadequate heating and cooling systems pose health risks, particularly in extreme weather conditions, and disproportionately affect structurally excluded groups. For this reason, public and social organisations are joining forces in the implementation of small-scale energy efficiency measures to increase thermal comfort. Housing concerns are also related to the economic crisis of the late 2000s which has resulted in increased privatisation of the building stock, particularly in Catalonia. Unlike other European countries with a more substantial presence of social housing, in Spain there is little public housing stock. This situation puts considerable pressure on the right to housing, as it is subject to market fluctuations and the profit-making interests of the actors involved. The growing proportion of the population living in rented accommodation is generally more exposed to precarious housing conditions and to an imminent risk of eviction in case

	of renovation, which significantly limits the ability of tenants to influence the efficiency of their homes, exacerbating the risk of energy poverty. Financial barriers compound the problem. Marginalised groups are excluded from energy efficiency subsidies due to tax issues, creating an additional hurdle for those already facing economic challenges. For instance, one challenge that deserves to be addressed at higher levels, possibly even at the European level, is the continued exclusion of the structurally excluded from renovation grants. This problem is clear at present, where, apart from Next Generation funds, subsidies make beneficiaries taxable and expose them to the risk of losing social benefits. The taxation of rehabilitation grants (which could be 6,000 to 10,000 euros per year to improve their homes) creates a significant social problem as the grant is considered as additional income the following year, which could result in the loss of their minimum income. Improving their housing conditions through renovation programmes becomes a dilemma, as the fear of losing essential long-term economic benefits limits their ability to participate in these initiatives. A remarkable case of protection for structurally excluded households is Law 24 of 2015 in Catalonia, which makes it possible to stop power cuts and, through agreements with the supply companies and the administration, to assume the debts that have been accumulating. Stakeholders emphasise its pioneering and necessary character but note that in some cases, the law is not fully adhered to, resulting in ongoing disconnections. In general, in comparison with the other countries we analysed in this study there is a greater awareness in Spain of the gender dimension of energy poverty and the various factors that lead to increased susceptibility of women to energy poverty and the differential ways in which different genders deal with energy poverty.
Main groups affected by energy poverty	The national strategy against energy poverty recognises that there are groups most at risk of facing energy poverty and includes six main categories based on health, access to education, housing conditions, gender, household composition and migration background. Thus, the following population groups are sought as facing a higher susceptibility and therefore needing special protection: • Older adults, minors, pregnant women, people with illnesses and people with disabilities, as they are more susceptible to thermal extremes and therefore to energy poverty. • People with a lower educational level, which makes it more difficult for them to access existing social resources, either because of the complexity of filling in applications or because they are unaware of their existence. • People living in substandard housing, where the lack of thermal comfort can be compounded by insecurity and unhealthy circumstances. • Women and households where women are the sole income earner, due to the higher incidence of precarious employment and wage gaps. • Single-parent households. • Migrant populations. This information was contrasted and complemented by the stakeholders we interviewed in the framework of the field visits in Spain, who indicated that, in many cases, individuals embody several axes of exclusion, which intensifies exposure to energy poverty and marginalisation. In our discussions with those organisations that, mainly through counselling, directly serve people affected by energy poverty, several critical issues were identified. Firstly, among those affected, women constitute a considerable segment, representing approximately 60-70% of those asking for and receiving assistance. This involvement extends even further, as women are more likely to be part of community coordination groups and to participate continuously in initiatives such as assemblies and advocacy activities. Within this broad spectrum, there is significant diversity. Older women, especially those living alone and with low

	pensions, and women heading single-parent families make up an important part of the affected population. The presence of migrant populations is also notable. In many cases, migrant households tend to be in urban locations with lower rents and quality due to their greater precariousness, directly linked to the absence of access to quality jobs, resulting in less favourable working conditions. It is important to note that this vulnerability is not simply limited to economic conditions. There is also an inherent gap in access to information and demand for rights. In many cases, migrants rent housing where landlords systematically fail to meet their maintenance obligations. It is important to note the reluctance of some to access administrative attention out of fear, opting instead to participate in social movements and community settings.
Good Practices regarding gender-energy poverty nexus	The Spanish case study presents several good practices in terms of the collection and analysis of gender-disaggregated data and in the inclusion of gender in the formulation of energy-related public policies and civil society initiatives. Remarkably, in the Spanish context, there are two publications dedicated to analysing gender in energy poverty in the country's two main cities, Madrid and Barcelona. The Catalan association Engineering Without Borders produced a report in 2018 called "Gender inequality and energy poverty - A forgotten risk factor" which analyses the so-called feminisation of energy poverty in the context of Barcelona, highlighting on the one hand, the low availability of data and on the other hand, the intersections in the data on energy poverty (Gonzalez Pijuan, 2018). Similarly, the FEMENMAD project produced a report assessing gender inequalities in households suffering from energy poverty in the city of Madrid (Sánchez-Guevara, et al., 2020), emphasising that in more than half of the households in Madrid classified as particularly affected, a woman is the main income earner, either because they are pensioners or women in single-parent households with dependent children. It, moreover, contains an analysis of the potential differential impacts on health and gender-responsive policy recommendations at the city and district level.
Good practices including other social dimensions	As well as integrating gender data into the analysis of energy poverty, Spanish stakeholders, particularly civil society organisations and in some cases local authorities, have developed approaches that comprehensively integrate different social dimensions of energy poverty. One example is the "No home without energy" programme run by the non-profit organisation ECODES, which includes counselling, training, energy diagnosis and energy efficiency measures and has benefited around 20,000 people. The programme has made it possible to collect data on the living conditions and experiences of those affected to develop tailor-made solutions. Further initiatives include the Energy Poverty Intelligence Unit (EPIU) project “Healthy Homes” in the Getafe municipality.

6. Policy recommendations

Despite important developments in the analysis and understanding of energy poverty and the integration of measures to address it into EU and, in some cases, national energy policy frameworks, some gaps in the recognition of the structural causes of energy poverty, including gender inequalities, persist. It is therefore imperative to formulate policies and implement measures that go beyond the conventional understanding of energy poverty as the result of the intersection among low income, high expenditure, and poor energy efficiency performance, and adopt an intersectional and integrated approach (Empowermed, 2023a) In the framework of this study, we recommend reviews of priority areas concerning two main issues, namely the general understanding and addressing of energy poverty and its gender dimensions and specific gender instruments for targeted actions.

6.1 General awareness and understanding of energy poverty and its gender dimension

Inclusivity in the definition and measurement of energy poverty

Although there is some consensus in the EU on the main causes of energy poverty, its lack of integration into national legal frameworks in some Member States continues to be highlighted as an obstacle to proper identification and tackling of energy poverty. In many cases, Member States do not have clear identification and measurement criteria and lack an interdisciplinary and systematic approach to address energy poverty. While it is true that the definition of energy poverty has been instrumental in raising political and social awareness of the problem, there is now a growing need for a more comprehensive understanding of it, which recognises that there is no single manifestation of energy poverty, but rather that it has many facets, and that solutions and needs can vary widely among those affected. This diversity underlines the importance of identifying sub-types of energy poverty in order to intervene effectively and tackle the structural roots of the problem, which extend beyond energy and climate aspects and encompass a spectrum of social, gender, labour, taxation, welfare, housing, and health issues. The focus should now be on better identifying and characterising the different groups concerned to move towards more specific strategies and concrete actions to address their different needs, which could be integrated into the series of the EPAH handbooks for understanding and addressing energy poverty. In addition to this more comprehensive and inclusive understanding of energy poverty, strategies for the systematic collection and availability of data need to be put in place at the national and local levels. In the framework of this study, the lack of information on the extent and severity of energy poverty and the lived realities of those affected by it was one of the aspects most frequently mentioned as a constraint to tackling it. This is recognised, for example, in the Irish Energy Poverty Action Plan.

A review of energy policies from an intersectional perspective, considering gender and other axes of discrimination

A gender transformative and intersectional approach is still lacking in most energy policies at both EU and national level, as evidenced by the almost non-existent gender mainstreaming in the NECPs of the case study countries (see 3.2). The multiple limitations of gender-neutral energy policies have been repeatedly denounced in the past (see, for example, Clancy & Roehr, 2003), as they tend to make the specific needs of different genders invisible and therefore adopt policies that may reinforce inequalities by failing to address issues such as the under-representation of women in the energy sector or gender gaps in access to and affordability of energy services. This also applies to the intersection of gender with axes of discrimination such as age, disability or racialisation. Therefore, we suggest undergoing a systematic review of energy policies, including the national NECPs, from an intersectional perspective to ensure that those are considering and addressing the different needs and experiences of all genders and distinct social groups. This involves, for instance, incorporating requirements for Gender Action Plans and Gender Impact Assessments as well as integrating a gender and intersectional approach when establishing eligibility criteria for access to support mechanisms and designing specific programmes related to issues such as summer energy poverty and the health impacts of energy poverty.

Specific recommendations on reviewing EU directives (*RED* and *EED*) are available, for example, in the *Policy recommendations for gender-just policies to reduce energy poverty* report of the Empowermed project (Groneweg, et al., 2023).

Improved legislation and coordination and coherence among policy sectors at all levels

Addressing energy poverty at national and local level often seems to create a dilemma as to whether it should be seen as a social protection issue or an energy policy issue. This has meant that in many cases

there is no entity or ministry responsible for designing and implementing prevention and mitigation measures or that there is very little cohesion and coordination between these two sectors. In this context, integration of policy areas and inter-ministerial dialogue are paramount, requiring a collaborative approach that transcends silos and establishes a unified strategy to ensure equitable distribution of resources and benefits and effective use of existing knowledge and budgets. Ways to achieve this might include the coordinated and cross-sector formulation and implementation of national energy poverty strategies or the creation of (centralised) bodies to coordinate energy poverty measures, as has been done in Austria with the creation of a Coordination Centre for Energy Poverty (Koordinierungstelle für Energiearmut) through the Energy Efficiency Act (Republic of Austria, 2023). In addition, adequate and coherent implementation of EU legislation, national financing schemes and reforms of energy efficiency standards are equally important in tackling energy poverty, considering national circumstances.

Public consultation and involvement of civil society

Civil society organisations and grassroots movements are at the forefront of tackling energy poverty and identifying the daily struggles of those affected and are essential in drawing attention to aspects of energy poverty that are usually hidden or overlooked. Their consultancy and support activities have in many cases made it possible to compile comprehensive databases that offer a much broader picture of the issues at stake. Therefore, their involvement in policy making can ensure that policies are informed by local experience and tailored to the specific needs of different groups. However, their presence and influence in decision-making spaces is limited. It is thus essential to design mechanisms for public consultation and stakeholder collaboration at all policy levels to ensure more comprehensive and inclusive solutions. Collaboration should be articulated between the public, private, academic and civil sectors, including for example social services, human or women's rights organisations, energy communities, health professionals, and social housing companies. One example for closing the information and communication gap when it comes to late payments of energy bills and pending power cuts is the establishment of "round tables" by the consumer alliance in Germany (Verbraucherzentrale Hessen), which take place locally and bring together different stakeholders from social services, civil society organisations, energy providers and local politicians. Although this model would be ideally expanded by inviting people most susceptible to energy poverty to the table, it has the potential to be structurally integrated and upscaled to other local contexts. Mechanisms for public participation should be integrated in policy documents such as the *European Green Deal* or the *Fit for 55 package*.

Removing barriers to financial support for structurally excluded groups

In the context of this study, national stakeholders called for more attention to be paid to situations where, despite the existence of measures such as the provision of financial support to cover energy costs or to carry out renovations, barriers to accessing such support persist, especially for the most severely excluded groups. This is the case, for example, with the "bono social eléctrico" in Spain, where, according to social organisations, more than half of the households eligible for it do not receive it due to a lack of information and bureaucratic procedures. Similarly, renovation grants have created a dilemma for many excluded households, as they are considered as taxable income, which in some cases could lead to a loss of access to other social protection mechanisms. In addition, structurally excluded groups often live in rented accommodation in the worst performing buildings in terms of EU energy performance standards but are at risk of eviction if renovation takes place.

Member States should therefore measure the impact and effectiveness of the measures currently in place and establish criteria to ensure that the benefits of these measures actually reach those most in need, including the groups identified in chapter 4.1 of this study as most at risk of energy poverty. Moreover, Member States should prevent landlords from penalising tenants because of the need for energy efficiency improvements.

Create structural solutions that foster social justice in the green transition

The effectiveness of temporary financial aid measures has been criticised by social organisations who consider that, although necessary in many cases, this kind of solutions address a structural problem with strategies that are temporary and do not lift people out of energy poverty. Especially considering the renewable energy transition and energy-efficient renovation, temporary solutions oftentimes solely concentrate on financial support schemes that do not target nor reach structurally marginalised groups most susceptible to energy poverty. Instead, these mechanisms reach groups that already possess the financial means to invest in the remodelling of their homes. Furthermore, people receiving financial state support are mostly excluded from taking place in the green energy transition as the funds available to them are merely covering their basic energy needs and oftentimes force them into a contract with an energy discounter selling them fossil fuels. Although temporary solutions can be seen as a starting point for alleviating the pressure that energy poverty places on people, Member States should develop structural solutions simultaneously, which includes funded renovation programmes that address structurally excluded groups, and adopting measures to close gender gaps such as subsidising affordable childcare services.

6.2 Specific gender recommendations

Establish national gender training programmes to enhance gender awareness

The lack of translation of the EU's gender mainstreaming efforts into actionable national policies and legislation, and the lack of expertise on the gender and energy poverty nexus in the case study countries, highlights the need for gender training. In order to raise the general awareness of gender and intersectionality among people dealing with the structural causes and mitigation efforts of energy poverty, it is essential to establish a baseline that is not an additional task on top of daily responsibilities but is structurally integrated from the beginning. The same applies to researchers, public servants, energy auditors, social workers and health professionals. A major communication campaign, initiated by the EU and translated into the official languages of its Member States and others, is needed to ensure long-term social acceptance of gender equality and its intersection with energy poverty, energy-efficient renovation and other climate issues.

Improve collection of gender-disaggregated and intersectional data on energy poverty

The lack of gender-disaggregated data remains one of the main constraints to developing targeted policies and interventions that recognise and address the gender-energy poverty nexus. Gender-disaggregated and intersectional data can shed light not only on disparities in energy access and use, but also on the structural inequalities that lead to women's increased susceptibility to energy poverty. Therefore, it is essential for the European Commission to issue guidelines to Eurostat and the Member States to develop databases to identify and characterise the reality of the different genders and to include indicators capable of reflecting situations of inequality arising from gender roles, such as those related care work or intrahousehold differences in energy access and use. Besides redefining statistical methods, it is also necessary to increase qualitative studies and integrate their results into policies. As our

stakeholders pointed out, it is possible to use existing support mechanisms (social workers or health care professionals) to gather qualitative data from people living in energy poverty.

Collecting and analysing GDD is also fundamental to raise awareness of gender and intersectional issues in energy poverty and to enhance capacities and expertise in this especially among the policy- and decisionmakers.

Introduce targeted gender financing mechanisms

Recognising and addressing women's increased risk of fuel poverty how the impact of other social dimensions intersecting with gender are exacerbating the situation necessarily involves designing and implementing targeted and tailored measures. Integrating a gender perspective into budgetary and public financing processes is thus key to ensure that economic resource allocation does not reinforce inequalities. Gender-budgeting measures would ensure that funds target especially women in precarity, e.g., by providing targeted financing to low-income households led by women to support them in adopting energy efficiency measures, such as insulation or upgrading to more efficient heating systems. Moreover, gender indicators must be included in financial programmes such as rental acts, on-bill finances, green leases, feed-in tariffs, and social- and climate funds.

7. Conclusions

With the recent energy crisis resulting from Russia's invasion of Ukraine, on the one hand, and the EU's commitments to energy transition on the other, the social dimension of European energy policy has gained prominence, and with it the political and social recognition that energy poverty is a reality for millions of European households. Although energy poverty has been addressed in various energy policy instruments and academic debates over the last decade, it has become a major focus of EU policies, initiatives and legislation in recent years. However, most policies and discourses at Member State level take little account of gender or other intersectional characteristics. Furthermore, although the quantity and quality of available data on energy poverty has increased considerably, it rarely includes gender-disaggregated data that would allow a thorough understanding of how structural gender inequalities (e.g. related to the gender pay and care gaps) affect the risk, impact and coping strategies for those living in energy poverty. By combining literature and policy analysis at EU and national level with original research in seven EU Member States (Lithuania, Croatia, Republic of Cyprus, Bulgaria, Spain, Republic of Ireland and Germany), we answered five guiding research questions related to specific factors contributing to women, girls and gender-diverse groups being more affected by energy poverty and how those factor have been (or could be) integrated into legislation and societal structures.

Regarding existing data on the gender-energy poverty nexus (RQ1), we highlight that a critical examination of gender inequalities is imperative in the discourse on energy poverty and emphasise an intersectional lens to understand the multiple lived realities of different communities. The susceptibility of women in particular is pronounced, yet a comprehensive data base describing the disparities involved remains elusive. Overall, there is a lack of gender-sensitive and gender-disaggregated quantitative and qualitative data on the intersectional risks, responsibilities, knowledge of energy poverty and the adopted and coping strategies from people living in it. This results in insufficient attention to gender and intersectional dimensions in policies, interventions, programmes and projects addressing energy poverty, especially at Member State level. Attending to the type of structural inequalities increasing the risk of energy poverty (RQ2), we have identified 5 main intersections that lead to a higher risk of energy poverty for certain population groups. Firstly, the intersection of gender, age and income inequalities, which puts older women at greater risk. Second, inequalities in income and care, which particularly

affect single-parent households headed by women. Third, the dynamics of inequality that force low-income landlords and tenants from structurally excluded groups (such as migrants) to live in substandard housing. Fourth, the ways in which physical and mental health problems translate into increased energy needs and an inability to meet them adequately. Finally, we reflect on groups whose realities are under-researched, either because their self-regulatory mechanisms mean that they are not included in official statistics, or because their experiences of energy poverty reproduce other forms of marginalisation and exclusion, such as those of LGBTQIA+ communities. Furthermore, we highlight that there is not only a differentiated risk but also differentiated impact and realities of living in energy poverty. These are influenced by prevailing gender norms and roles that have traditionally put care work and household management tasks in the hands of women.

A review of how existing policies address gender and intersectionality in the area of energy poverty (RQ3) showed that the legislative landscape within the EU has ostensibly embraced gender mainstreaming and gender proofing of policies. However, the persistence of traditional gender roles at Member State level creates complexities in translating this into national legislation. One of the main reasons for this is the lack of understanding of gender inequality as a systemic and structural issue, which further hampers the shift towards systemic change. Thus, we stress that understanding and addressing the impact of gendered norms on energy poverty is the first crucial step towards developing effective and targeted interventions on energy poverty. Targeted interventions need to focus on various intersecting characteristics, whilst recognizing and addressing the unique challenges that come along with the double burden of paid and unpaid work and the crucial societal role of caregivers.

Discussions with stakeholders from academia, the public sector and civil society revealed that coordination between different sectors and policy areas (RQ4) remains a major challenge preventing a more comprehensive approach to energy poverty. Despite some successful cases of collaboration between public authorities and civil society organisations, in most of the selected case study countries information is incomplete or fragmented and there is a perceived lack of ownership in tackling energy poverty. Likewise, the existence of targeted gender-responsive instruments to overcome energy poverty (RQ5) is rather limited. Some interesting cases are being developed, particularly through EU-funded projects such as Empowermed, Cooltorise or the EPIU (in Getafe, Spain), or driven by CSOs integrating a gender perspective into their activities, such as the *Feminist Communities for Climate Justice* project in Ireland and the *No Household without Energy* in Spain.

In conclusion, the lack of specific policies and programmes addressing the gender dimensions of energy poverty represents a critical gap in current approaches. By integrating gender-responsive and intersectional considerations into policy development, governments and organizations can pave the way for more effective, equitable, and sustainable solutions that leave no one behind. Further, there is a need for detailed studies of Member States' contexts on how to improve national legislation in terms of targeting groups and individuals at risk of energy poverty and, on this basis, to develop long-term structural mechanisms based on specific national needs. Further research is needed to fill the existing gaps in data, both quantitative and qualitative, and understand the gender-specific impacts of energy poverty at the intra-household level.

References

Adger, W. N., 2006. Vulnerability. *Global Environmental Change,* 16(3), pp. 268-281.

Aristondo, O. & Onaindia, E., 2018. Inequality of energy poverty between groups in Spain.. *Energy,* Volume 153, pp. 431-442.

Bouzarovski, S., 2015. *Retrofitting the city: Residential flexibility, resilience and the built environment.* s.l.:IB Taurus.

Bouzarovski, S., 2018. *Energy Poverty: (Dis) Assembling Europe's Infrastructural Divide.* Manchester: Palgrave macmillan.

Bouzarovski, S., Thomson, H. & Cornelis, M., 2021. Confronting energy poverty in Europe: A research and policy agenda. *Energies,* 14(4 (858)), pp. 1-19.

Bouzarovski, S. & Tirado Herrero, S., 2017. Geographies of injustice: The socio-spatial determinants of energy poverty in Poland, Czechia and Hungary. *Post-Communist Economies,* Volume 29, pp. 27-50.

Brugha, R. & Varvasovszky, Z., 2000. Stakeholder analysis: a review, Health Policy and Planning. pp. 15(3), 239–246..

Clancy, J. et al., 2017. *Gender perspective on access to energy in the EU,* Brussels: European Parliament.

Clancy, J. & Feenstra, M., 2019. *Women, Gender Equality and the Energy Transition in the EU,* Brussels: Policy Department for Citizens' Rights and Constitutional Affairs, European Union.

Clancy, J., Kustova, I., Elkerbout, M. & Michael, K., 2022. *The Gender Dimension and Impact of the Fit for 55 Package,* Brussels: European Union.

Clancy, J. & Roehr, U., 2003. Gender and energy: is there a Northern perspective?. *Energy for Sustainable Development,* pp. 44-49.

Clancy, J., Skutsch, M. & Batchelor, S., 2003. *The Gender-Energy-Poverty Nexus: Finding the energy to address gender concerns in development.,* s.l.: DFID project CNTR998521.

Cong, S., Nock, D., Yueming, L. Q. & Xing, B., 2022. Unveiling hidden energy poverty using the energy. *Nature communications ,* 13(2456), pp. 1-12.

Crenshaw, K., 1989. Demarginalizing the Intersection of Sex and Race. A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics. *University of Chicago Legal Forum,* p. 1.

Croatian Bureau of Statistics, 2021. *Population Estimate of Croatia.* [Online]
Available at: https://podaci.dzs.hr/2022/en/29031
[Accessed 22 01 2024].

Cunniff Gilson, E., 2016. Vulnerability and victimization: Rethinking key concepts in feminist discourses on sexual violence. *Signs: Journal of Women in Culture and Society,* 42(1), pp. 71-98.

Cutter, S., Boruff, B. J. & Shirley, W. L., 2003. Social Vulnerability to Environmental Hazards. *Social Science Quaterly,* 84(2), pp. 242-261.

DENA, 2022. *Energiearmut erkennen und bekämpfen,* Berlin: DENA.

Destatis, 2023. *Europe: Population.* [Online]
Available at: https://www.destatis.de/Europa/EN/Topic/Key-indicators/Population.html
[Accessed 22 01 2024].

Destatis, 2023. *Haushalten und Familien. [Online]*
Available at https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Haushalte-Familien/Tabellen/2-4-lr-familien.html?nn=209096 [Accessed 22 09 2023]

Drescher, K. & Janzen, B., 2021. Determinants, persistence, and dynamics of energy poverty: An empirical assessment using German household survey data. *Energy Economics,* 102(105433), pp. 1-17.

EESC, 2011. *Opinion of the European economic and social committee on 'Energy poverty in the context of liberalisation and the economic crisis' (exploratory opinion).* Brussels: European Economic and Social Committee.

EESC, 2021. *A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives - TEN/723.* Brussels: EESC.

EESC, 2022a. *Energy policy and the labour market: consequences for employment in regions undergoing energy transitions(own-initiative opinion).* Brussels: EESC.

EESC, 2022b. *Tackling energy poverty and the EU's resilience: challenges from an economic and social perspective[Exploratory opinion requested by the Czech Presidency].* Brussels: EESC.

EESC, 2022c. *Gender equality (Exploratory opinion at the request of the Czech presidency) SOC/731.* Brussels: EESC.

EIGE, 2016a. *Gender and Energy,* Vilnius: European Institute for Gender Equality.

EIGE, 2016b. *Poverty, gender and lone parents in the EU.* Vilnius: EIGE.

EIGE, 2020a. *Gender Stakeholder Consultation.* [Online]
Available at: https://eige.europa.eu/gender-mainstreaming/tools-methods/gender-stakeholder-consultation. [Accessed 22 09 2023].

EIGE, 2020b. *Gender inequalities in care and pay in the EU. [Online]*
Available at https://eige.europa.eu/publications-resources/publications/gender-inequalities-care-and-pay-eu [Accessed 12 02 2024]

EIGE, 2022a. *EIGE - Gender mainstreaming - Institutions driving gender equality - Country specific information.* [Online]
Available at: https://eige.europa.eu/gender-mainstreaming/countries
[Accessed 12 02 2024].

EIGE, 2023a. *Gender Equality Index 2023: Towards a green transition in transport and energy,* Vilnius: EIGE.

EIGE, 2023b. *Gender Equality Index.* [Online]
Available at: https://eige.europa.eu/gender-equality-index/thematic-focus/green-deal/country
[Accessed 15 01 2024].

Eisfeld, K. & Seebauer, S., 2022. The energy austerity pitfall: Linking hidden energy poverty with self-restriction in household use in Austria. *Energy Research & Social Science,* 6(102427), pp. 1-12.

Empowermed, 2023a. *Energy poverty recommendations.* Ljubljana: Empowermed.

EPAH, 2022a. *Introduction to the Energy Poverty Advisory Hub (EPAH) Handbooks: A Guide to Understanding and Addresing Energy Poverty,* Brussels: EPAH.

EPAH, 2022b. *Bringing Energy Poverty Research into Local Practice: Exploring Subnational Scale Analyses.* European Commission.

EPAH, 2022c. *Energy Poverty Indicators Dashboard,* s.l.: Directorate-General for Energy. European Commission.

European Commission, 2018. *Directive (EU) 2018/844 of the European Parliament and of the Council amending Directive 2010/31 on the energy performance of the of buildings and Directive 2012/27 on energy efficiency.* Brussels: Official Journal of the European Union.

European Commission, 2019. *The European Green Deal Communication COM(2019)640.* s.l.:s.n.

European Commission, 2020. *A Union of Equality: Gender Equality Strategy 2020-2025. COM(2020) 152 final,* Brussels: European Commision.

European Commission, 2021. *Proposal for a Regulation of the European Paliament and of the Council establishing a Social Climate Fund-COM(2021) 568 final.* Brussels: European Commission.

European Commission, 2022. *Communication REPowerEU Plan- COM(2022) 230 final.* Brussels : European Commission.

European Commission, 2023a. *Directive (EU)2023/1791 of the European Parliament and of the Council on energy efficiency.* Brussels: s.n.

European Commission, 2023b. *Commission Recommendation (EU) 2023/2407 on energy poverty,* Brussels: European Commission.

European Commission, 2023c. *Directive (EU)2023/2413 of the European Parliament and of teh Council on the promotion of the use of energy from renewable sources (recast).* Brussels: Official Journal of the European Union.

European Commission, 2023. *Directive (EU) 2023/1791 on energy efficiency and amending Regulation (EU) 2023/955 (recast).* Brussels: European Commission

European Commission, 2023. *Gender equality strategy. Achievements and key areas for action.*

European Union, 2023. *Facts and figures on the structure of the European Union.* [Online]
Available at: https://european-union.europa.eu/principles-countries-history/key-facts-and-figures/structure_en
[Accessed 22 01 2024].

Eurostat, 2021. *House or flat – owning or renting.* [Online]
Available at: https://ec.europa.eu/eurostat/cache/digpub/housing/bloc-1a.html
[Accessed 23 01 2024].

Eurostat, 2023a. *Healthy life years at birth by sex.* [Online]
Available at:
https://ec.europa.eu/eurostat/databrowser/view/hlth_hlye/default/table?lang=en&category=hlth.hlth_state.hlth_hly
[Accessed 16 01 2024].

Eurostat, 2023b. *Persons at risk of poverty or social exclusion by income quantile and household composition.* [Online]
Available at: https://ec.europa.eu/eurostat/databrowser/product/page/ILC_PEPS03N
[Accessed 17 01 2024].

Eurostat, 2023c. *Household composition statistics.* [Online]
Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Household_composition_statistics
[Accessed 20 12 2023].

Eurostat, 2023d. *Disability statistics - housing conditions.* [Online]
Available at: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Disability_statistics_-_housing_conditions#Overcrowding
[Accessed 17 01 2024].

Eurostat, 2023e. *Key figures on European living conditions,* Luxembourgh: Publications Office of the European Union.

Eurostat, 2024a. *Life expectancy at birth by sex.* [Online]
Available at: https://ec.europa.eu/eurostat/databrowser/product/page/TPS00208
[Accessed 16 01 2024].

Eurostat, 2024b. *People at risk of poverty or social exclusion.* [Online]
Available at: https://ec.europa.eu/eurostat/databrowser/view/ilc_peps01n/default/table?lang=en
[Accessed 17 01 2024].

Eurostat, 2024. *Share of total population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames or floor.* [Online]
Available at https://data.europa.eu/data/datasets/3kkj4wihebhsepyodajewq?locale=en. [Accessed 12 02 2024]

Federal Agency for Civic Education, 2020. *30 Jahre Deutsche Einheit.* [Online]
Available at: https://www.bpb.de/kurz-knapp/hintergrund-aktuell/316069/30-jahre-deutsche-einheit/
[Accessed 22 01 2024].

Federal Ministry for Economic Affairs and Climate Protection-Germany, 2019. *Integrated National Energy and Climate Plan.*

Feenstra, M. & Clancy, J., 2020. A view from the north: Gender and energy poverty in the European Union. In: *Engendering the energy transition.* s.l.:palgrave macmillan, pp. 163-187.

Feenstra, M. & Özerol, G., 2021. Energy justice as a search light for gender-energy nexus: Towards a conceptual framework. *Renewable and Sustainable Energy Reviews,* 138(110668).

Finnegan, B., 2023. Tackling the disproportionate issue of LGBTI homelessness. *Homelessness in Europe*, pp. 5-8.

Gonzalez Pijuan, I., 2018. *Gender inequality and energy poverty: A forgotten risk factor,* Barcelona: Engineering without Borders.

Government of Ireland, 2022. *Energy Poverty Action Plan.* Dublin: Department of the Environment Climate and Communications .

Groneweg, K., Habersbrunner, K. & Stock, A., 2023. *Policy recommendations for gender-just policies to reduce energy poverty.* Munich: Empowermed.

Healy, J. & Clinch, J. P., 2004. Quantifying the severity of fuel poverty, its relationship with poor housing and reasons for non-investment in energy-saving measures in Ireland. *Energy Policy,* 32(2), pp. 207-220.

Henger, R. & Stockhousen, M., 2022. *Gefähr der Energiearmut wächst ,* Berlin: Institut der deutschen Wirtfschaft.

Heredia, M. G. et al., 2022. Mainstreaming a gender perspective into the study of energy poverty in the city of Madrid. *Energy for Sustainable Development,* Volume 70, pp. 290-300.

Ivanova, D. & Middlemiss, L., 2021. Characterizing the energy use of disabled people in the European Union towards inclusion in the energy transition. *nature energy,* Volume 6, pp. 1188-1197.

Iyoho, A. E., Ng, L. J. & MacFadden, L., 2017. Modeling of gender differences in thermoregulation.. *Military medicine,* pp. 295-303.

Karpinska, L. & Smiech, . S., 2023. Multiple faces of poverty. Exploring housing-costs-induced energy poverty in Central and Eastern Europe. *Energy Research & Social Science ,* 105(103273), pp. 1-11.

Karpinska, L. & Smiech, S., 2023. Multiple faces of poverty. Exploring housing-costs-induced energy poverty in Central and Eastern Europe. *Energy Research & Social Science,* 105(103273), pp. 1-11.

Kyprianou, I. et al., 2019. Energy poverty policies and measures in 5 EU countries: A comparative study. *Energy and Buildings,* Volume 196, pp. 46-60.

Kyprianou, I. et al., 2019. Energy poverty policies and measures in 5 EU countries: A comparative study.. *Energy and Buildings,* Volume 196, pp. 46-60.

Listo, R., 2018. Gender myths in energy poverty literature: a critical discourse analysis. *Energy Research & Social Science,* Volume 38, pp. 9-18.

Matzinger, S. & Berger, C., 2021. *The Gender Dimension of Energy Poverty–an underexposed problem. EP-Pedia. ENGAGER COST Action.*

Mazzone, A., 2022. Gender and Energy in International Development: Is There a Return of the 'Feminization'of Poverty Discourse?. *Development,* Volume 65, pp. 17-28.

Ministry of Environment and Energy- Republic of Croatia, 2019. *Integrated National Energy and Climate Plan for the Republic of Croatia for the period 2021-2030.*

MITECO, 2019. *Estrategia nacional contra la pobreza energética 2019-2024.*

MITECO, 2020. *Intergrated National Energy and Climate Plan 2021-2030.*

Mohan, G., 2022. The impact of household energy poverty on the mental health of parents of young children. *Journal of Public Health,* 44(1), p. 121–128.

Official Journal of the European Union, 2018. *Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.*

Official Journal of the European Union, 2020. *Commission Recommendation (EU) 2020/1563 on energy poverty.*

Oliveras, L. et al., 2020. The association of energy poverty with health, health care utilisation and medication use in southern Europe. *SSM- Population Health,* Volume 12(100665).

Petrova, S., Gentile, M., Mäkinen, I. H. & Bouzarovski, S., 2013. Perceptions of thermal disconfort and housing quality: exploring the microgeographies of energy poverty in Stakhanov, Ukraine. *Environment and Planning A: Economy and Space,* 45(5), pp. 1240-1257.

Petrova, S. & Simcock, N., 2021. Gender and energy: domestic inequities reconsidered. *Social & Cultural Geography,* 22(6), pp. 849-867.

Pye, S., Dobbins, A., Baffert, C. & Brajkovic, J., 2015. *Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures,* s.l.: Insight_E.

Republic of Austria, 2023. *Energy Efficiency Act.* Vienna.

Republic of Bulgaria, 2019. *Integrated Energy and Climate Plan of the Republic of Bulgaria 2021-2030.* Sofia.

Republic of Cyprus, 2021. *Cyprus' Integrated National Energy and Climate Plan.* Nicosia.

Republic of Cyprus, 2023. *Preliminary Draft Update: Consolidated Natioal Plan of Cyprus on Energy and Climate.*

Republic of Irland, 2019. *National Energy and Climate Plan 2021-2030.*

Republic of Lithuania, 2019. *National Energy and Climate Action Plan for 2021-2030.*

Robinson, C., 2019. Energy povety and gender in England: A spatial perspective. *Geoforum,* Volume 104, pp. 222-233.

Sánchez-Guevara, C. et al., 2020. *Feminisation of energy poverty in the city of Madrid: exposure to thermal extremes,* Madrid: Universidad Politécnica de Madrid.

Sundermann, I. & Zini, M., 2022. *Energy Poverty in Europe and Germany – A Gender-sensitive Report,* Munich: EMPOWERMED.

Talaverano, P., 2019. Pobreza energética y género. In: *Educación multidisciplinar para la igualdad de género.* s.l.:s.n., pp. 69-91.

The Climate Change Knowledge Portal, 2024. *Country.* [Online]
Available at: https://climateknowledgeportal.worldbank.org/

The Global Economy, 2022a. *Population size - Country rankings.* [Online]
Available at: https://www.theglobaleconomy.com/rankings/Population_size/
[Accessed 22 01 2024].

The Global Economy, 2022. *Percent urban population - Country rankings.* [Online]
Available at: https://www.theglobaleconomy.com/rankings/Percent_urban_population/European-union/
[Accessed 22 01 2024].

Thomson, H. & Bouzarovski, S., 2019. *Addressing Energy Poverty in the European Union: State of Play and Action,* Brussels: EU Energy Poverty Observatory .

Thomson, H., Snell, C. & Bouzarovski, S., 2017. Health, well-being and energy poverty in Europe: A comparative study of 32 European countries.. *International Journal of Environmental Research and Public Health,* 14((6)).

Annex 1: Existing national gender commitments and gaps in case study countries (EIGE, 2022a)

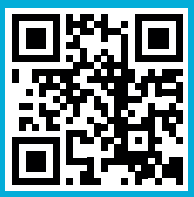
Member state	Existing national commitments	Gaps
Bulgaria	• Constitution of 1991. • Law on Protection from Discrimination (2004) and Law on Equality between Women and Men (2016). • National Strategy for Promoting the Equality of Women and Men (2021-2030). • Governmental structures: Ministry of Labour and Social Policy and the National Council on Gender Equality.	• Absence of a dedicated parliamentary committee. • Gender budgeting. • Comprehensive gender statistics.
Croatia	• Multifaceted approach blending constitutional principles, legislative foundations, and intricate structures aligning with EU directives. • Gender Equality Act anchors legal efforts, emphasising gender mainstreaming and continual policy evolution. • Office for Gender Equality accompanies policy implementation. • Independent ombudsperson. • Parliamentary Gender Equality Committee. • Conduction of gender impact assessments, trainings and gender-neutral language initiatives. • Reporting of gender-disaggregated data.	• Gender budgeting.
the Republic of Cyprus	• Constitutional provision and alignment with EU directives. • Sectoral legislation covers key areas. • Gender mainstreaming through National Action Plan. • Engagement of civil society through National Machinery for the Advancement of Women. • Measures for gender-neutral language exist. • Cyprus Academy for Public Administration provides voluntary gender equality training.	• No comprehensive national law. • Tools like gender impact assessments are underutilised. • Gender budgeting efforts are in early stages. • Absence of legal mandates for sex-disaggregated data collection.
Germany	• Constitutional laws and comprehensive federal legislation. • Multifaceted approach addressing, e.g., pay transparency and women in leadership roles. • Governance structure: Division for Gender Equality, independent Federal Anti-Discrimination Agency, and active parliamentary involvement. • Mandates gender impact assessments. • Promotion of gender mainstreaming, inclusive language and Gender equality training. • Collection of sex-disaggregated data, evident in publications and tools like the Gender Equality. Atlas, showcasing regional disparities and demonstrating a commitment to transparent reporting.	• No explicit mandate for gender budgeting.
The Republic of Ireland	• Constitution (1937), although providing a narrow gender role for women. • Equal Status Acts and Employment Equality Acts. • Integration of gender mainstreaming into the National Development Plan (early 2000s).	• Lack of systematic evidence of training on gender mainstreaming is yet to be demonstrated.

	• National Strategy for Women and Girls (2017-2020) emphasizes gender-proofing policies and inter-departmental coordination. • Important entities: Department of Children, Equality, Disability, Integration, and Youth and the independent Irish Human Rights and Equality Commission. • Mandatory gender impact assessments and equality budgeting.	• Limited gender-disaggregated data reporting is a current challenge addressed in ongoing efforts.
Lithuania	• Constitution (1992) emphasizes equal opportunity. • Law on Equal Opportunities (1998) and the Law on Equal Treatment (2005) combat gender-based discrimination. • Action Plan for 2018-2021 on the National Programme on Equal Opportunities for Women and Men strategically addresses various sectors, with comprehensive assessments every five years. • Governance structures: Ministry of Social Security and Labour, the Equal Opportunities Ombudsperson, the Seimas Human Rights Committee. • Civil society inclusion through the Commission of Equal Opportunities, • Initiatives include a gender budgeting feasibility study and systematic gender statistics.	• Challenges persist in achieving comprehensive gender equality, requiring ongoing efforts for societal transformation.
Spain	• Constitution emphasises equal treatment. • National laws align with EU directives, addressing various domains, e.g. labour, education, and violence prevention. • National Plans and government strategies for gender equality underscore commitment to comprehensive policies. • Key governmental bodies: Institute of Women and Equal Opportunities and independent entities such as the Ombudsman's office. • The Parliament's Gender Equality Committee actively engages in legislative reviews and policy monitoring. • Effective tools include gender impact assessments, budgeting initiatives, and extensive training programs.	

European Economic and Social Committee

Rue Belliard/Belliardstraat 99
1040 Bruxelles/Brussel
BELGIQUE/BELGIË

www.eesc.europa.eu



Printed by the EESC-CoR Printing and Distribution Unit, Belgium
EESC-2024-27-EN

Publications Office of the European Union

Print
QE-09-24-210-EN-C
ISBN 978-92-830-6477-0
doi:10.2864/352529

PDF
QE-09-24-210-EN-N
ISBN 978-92-830-6478-7
doi:10.2864/44780

EN