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THE ROLE OF SOCIAL POLICY IN MITIGATING ENERGY POVERTY AND ITS SOCIO-ECONOMIC CONSEQUENCES

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Abstract. This paper examines the multifaceted phenomenon of energy poverty, with a particular focus on its alarming expansion in Romania within the broader European and global contexts. Adopting a multidimensional theoretical perspective, it analyses energy poverty not merely as an economic issue, but as a complex challenge with profound socio-economic, health, and environmental implications. Drawing upon a synthesis of recent quantitative data from official sources (e.g., Eurostat, World Bank) and qualitative analysis of specialized academic literature and policy documents, the article demonstrates how energy poverty now affects not only traditionally vulnerable categories but also increasingly middle-income households. The main conclusion advocates for the urgent development and implementation of integrated social policies that combine social protection measures with investments in energy efficiency and the transition to renewable energy sources, arguing that this comprehensive approach is essential for a fair and sustainable energy transition. Furthermore, the synthetic nature of this review itself underscores the critical need for more dedicated empirical research to inform robust policy development in Romania and across the EU.

Keywords: energy poverty, social policies, energy efficiency, energy vulnerability, energy transition, Romania, European Union

Résumé : Cet article examine le phénomène multiforme de la précarité énergétique, en se concentrant particulièrement sur son expansion alarmante en Roumanie, dans un contexte européen et mondial plus large. Adoptant une perspective théorique multidimensionnelle, il analyse la précarité énergétique non seulement comme un problème économique, mais aussi comme un défi complexe aux profondes implications socio-économiques, sanitaires et environnementales. S'appuyant sur une synthèse de données quantitatives récentes issues de sources officielles (par exemple, Eurostat, Banque mondiale) et sur une analyse qualitative de la littérature universitaire spécialisée et des documents politiques, l'article démontre comment la précarité énergétique touche désormais non seulement les catégories traditionnellement vulnérables, mais aussi de plus en plus de ménages à revenu moyen. La principale conclusion plaide en faveur de l'élaboration et de la mise en œuvre urgentes de

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politiques sociales intégrées qui combinent des mesures de protection sociale avec des investissements dans l'efficacité énergétique et la transition vers des sources d'énergie renouvelables, affirmant que cette approche globale est essentielle pour une transition énergétique juste et durable. En outre, la nature synthétique de cette revue souligne la nécessité cruciale de mener davantage de recherches empiriques dédiées à éclairer l'élaboration de politiques solides en Roumanie et dans l'ensemble de l'UE.

Mots-clés : pauvreté énergétique, politiques sociales, efficacité énergétique, vulnérabilité énergétique, transition énergétique, Roumanie, Union européenne

Rezumat. Această lucrare examinează fenomenul multidimensional al sărăciei energetice, concentrându-se în special pe expansiunea sa alarmantă în România în contextul european și global mai larg. Adoptând o perspectivă teoretică multidimensională, analizează sărăcia energetică nu doar ca o problemă economică, ci ca o provocare complexă cu implicații socio-economice, de sănătate și de mediu profunde. Bazându-se pe o sinteză a datelor cantitative recente din surse oficiale (de exemplu, Eurostat, Banca Mondială) și pe o analiză calitativă a literaturii academice de specialitate și a documentelor de politică, articolul demonstrează modul în care sărăcia energetică afectează acum nu numai categoriile vulnerabile în mod tradițional, ci și gospodăriile cu venituri medii. Concluzia principală pledează pentru dezvoltarea și implementarea urgentă a unor politici sociale integrate care combină măsurile de protecție socială cu investițiile în eficiența energetică și tranziția către surse regenerabile de energie, susținând că această abordare cuprinzătoare este esențială pentru o tranziție energetică echitabilă și durabilă. În plus, natura sintetică a acestei analize subliniază nevoia critică de cercetare empirică mai dedicată pentru a informa dezvoltarea politicilor solide în România și în întreaga UE.
Cuvinte cheie: sărăcie energetică, politici sociale, eficiență energetică, vulnerabilitate energetică, tranziție energetică, România, Uniunea Europeană

Introduction: general notions, methodology, and objectives of the article

Energy poverty is a multifaceted issue that affects a significant portion of the global population, with varying definitions and implications depending on regional contexts. Energy poverty, particularly prevalent in developing nations and specific regions within more industrialized countries, refers to the insufficient access to modern and reliable energy services at the household level (Bouzarovski & Petrova, 2015). This issue manifests in the absence of a stable electricity supply and the continued reliance on hazardous and inefficient cooking methods. As of 2022, approximately 759 million individuals worldwide lacked consistent access to electricity, thereby limiting their ability to benefit from essential services such as lighting, refrigeration, and communication. Furthermore, an estimated 2.6 billion people depended on traditional biomass, coal, or other suboptimal fuel sources for cooking, exposing them to serious health risks due to indoor air pollution and contributing to environmental degradation (United Nations, 2023).

Addressing energy poverty is crucial for promoting economic development, enhancing health outcomes, and advancing global sustainability efforts. The Energy Poverty Action initiative of the World Economic Forum emphasizes that access to energy is a fundamental prerequisite for enhancing

overall quality of life and serves as a crucial driver of economic development. Despite significant advancements in global energy infrastructure, even though energy poverty remains a pervasive challenge in many parts of the developing world, it can still be found in the developed world. The persistent lack of reliable and affordable energy services hinders economic growth, restricts educational opportunities, and exacerbates social inequalities.

Energy poverty is a complex concept that can be defined in several ways, but the most widely used definition describes it as the inability of a household to provide the energy services necessary for a decent living at affordable costs (Bouzarovski & Petrova, 2015). This definition encompasses both the dimension of the affordability of energy and that of physical access to energy infrastructure. In the European context, energy poverty is often measured by indicators such as the percentage of income spent on energy, the inability to maintain an adequate temperature in the home, the accumulation of debts on utility bills, and the renunciation of other essential needs to pay energy bills.

The methodology used in this article combines the analysis of quantitative data from official sources (Eurostat, the National Institute of Statistics, the World Bank) with the qualitative analysis of policies and specialized studies. Recent trends (2021-2024) regarding energy poverty in Romania compared to other European Union member states are examined, as well as the structural and behavioural factors influencing this phenomenon. Existing social policies and their potential to reduce energy disparities are also assessed.

The main objectives of this article are: (1) to provide a comprehensive analysis of the phenomenon of energy poverty, with a focus on the situation in Romania; (2) to identify the determinants and socio-economic implications of this phenomenon; (3) assess the effectiveness of existing policies; and (4) to propose integrated solutions for reducing energy poverty, adapted to Romania's specific context.

This article addresses a critical gap in the sociology and social work literature by providing a comprehensive and current analysis of energy poverty, particularly focusing on Romania within a broader European and global context. While existing research often examines energy poverty through economic lenses or in the context of developed versus underdeveloped nations, this paper uniquely highlights the alarming expansion of energy poverty in Romania to include not only traditionally vulnerable groups but also middle-income households. Furthermore, it proposes integrated social policies that combine social protection measures with investments in energy efficiency and renewable energy, offering a holistic approach that moves beyond fragmented, reactive solutions often found in current policy responses. This interdisciplinary perspective, blending sociological insights on vulnerability and inequality with practical policy recommendations for a just energy transition, offers novel contributions to both academic understanding and practical interventions in combating energy poverty.

While this paper primarily serves as a comprehensive narrative literature review with limited original empirical findings, its very nature underscores a significant argument: the pressing need for more in-depth empirical studies on

energy poverty, especially within Romania and the broader EU context. By meticulously synthesizing existing knowledge and compiling up-to-date statistics, this work effectively highlights current gaps in the sociological and social work literature regarding the multifaceted dimensions and policy effectiveness related to energy poverty. Thus, the paper's contribution lies not just in its overview but in demonstrating the critical need for further granular research to inform more robust and tailored social policies in this crucial area.

1. Reviewing the academic literature on energy poverty

Energy poverty is characterized by the inability of households to meet their basic energy needs, often due to high energy costs and reliance on non-renewable energy sources, as seen in countries like the Czech Republic, Poland, and Slovakia (Lisicki *et al.*, 2024). The phenomenon is not only an economic issue but also a social and health concern, as inadequate energy access can lead to severe health problems, including respiratory diseases and mental disorders (Ruiz *et al.*, 2024). Addressing energy poverty requires a comprehensive approach that includes energy justice principles, which advocate for equitable access to clean, safe, and reliable energy sources as part of sustainable development goals (Sampaio & Prolo, 2024). The energy transition presents both challenges and opportunities for alleviating energy poverty, as demonstrated by the differing strategies of Poland and Sweden. Poland faces significant hurdles due to its coal dependency, while Sweden's advanced infrastructure and welfare systems have largely mitigated energy poverty, though challenges remain for low-income rural households (Janikowska *et al.*, 2024).

Innovative financial models, such as Social Impact Bonds (SIBs), have been proposed to fund interventions aimed at reducing energy poverty and improving public health, highlighting the potential for public-private collaborations to address this pressing issue (Ruiz *et al.*, 2024). Furthermore, the literature suggests that improving energy efficiency and integrating renewable energy sources are critical strategies for reducing energy poverty and achieving a fair energy transition (Fabbri, 2024; Janikowska *et al.*, 2024). Overall, a multi-disciplinary approach involving policy interventions, financial innovations, and social support systems is essential to effectively combat energy poverty and promote well-being.

The phenomenon can be studied through diverse research methods, including economic analyses and energy policy evaluations. The literature review highlights the relationship between energy poverty and poor building conditions, thermal comfort, and introduces the concept of cooling poverty as an emerging area for future research.

The academic literature on energy poverty has evolved significantly over the past decade, moving from approaches focused solely on access to energy to multidimensional perspectives that integrate economic, social, health, and environmental aspects. Bouzarovski and Petrova (2015) have fundamentally contributed to this evolution by overcoming the traditional dichotomy between

„energy poverty" and „fuel poverty", proposing a unified conceptual framework that recognizes the complexity of the phenomenon.

Recent research highlights the close link between energy poverty and other forms of social vulnerability. Thomson *et al.* (2023) demonstrate that households affected by energy poverty are at higher risk of suffering from mental health problems, social isolation, and educational difficulties. These findings are supported by Castaño-Rosa *et al.* (2022), who developed a multidimensional energy vulnerability index that integrates factors such as housing quality, household income, and the health status of its members.

In the context of the energy transition, the literature highlights both opportunities and risks for vulnerable households. On the one hand, Sovacool *et al.* (2021) argue that the transition to renewable energy sources can reduce energy costs in the long term and create employment opportunities in emerging sectors. On the other hand, Bouzarovski and Tirado Herrero (2022) warn of the risk that the initial costs of the energy transition will be disproportionately borne by low-income households, exacerbating existing inequalities.

In terms of research methods, there is a diversification of approaches, from economic analyses and energy policy evaluations to ethnographic and participatory studies. Middlemiss *et al.* (2022) stress the importance of integrating the perspectives of people affected by energy poverty into policy-making, proposing innovative participatory research methods.

An emerging area of research is that of „cooling poverty", conceptualized by Thomson *et al.* (2022) as the inability of households to keep their homes at a comfortable temperature during periods of extreme heat. In the context of climate change and the increasing frequency of heatwaves, this dimension of energy poverty is becoming increasingly relevant, especially in the southern regions of Europe.

2. Energy poverty in underdeveloped countries versus developed countries

Energy poverty remains a persistent issue worldwide, disproportionately affecting underdeveloped countries due to limited energy infrastructure, financial constraints, and reliance on traditional biomass fuels (Ashena & Shahpari, 2024). In contrast, developed nations struggle with energy affordability and household energy efficiency rather than absolute access. Studies highlight that energy poverty in underdeveloped countries is driven by economic and demographic factors, where GDP growth alone does not necessarily translate to better energy access (Aqdas *et al.*, 2024). Developed nations, on the other hand, focus on mitigating high energy costs and improving energy efficiency, with multidimensional indices revealing disparities even within high-income regions (Al Kez *et al.*, 2024).

A global assessment found that energy poverty is improving in developing regions post-2008, yet Sub-Saharan Africa and South Asia remain the most affected (Salman *et al.*, 2022). Furthermore, energy poverty significantly impacts health and socio-economic development, with research indicating a strong correlation between household energy poverty and childhood disabilities in low-income

countries (Sen *et al.*, 2023). Policies targeting energy poverty in developed countries focus on subsidies and efficiency programs, whereas underdeveloped nations require significant investment in infrastructure and clean energy solutions. The global energy transition must address these disparities by integrating targeted financial models, digitalization, and sustainable energy investments to ensure equitable energy access worldwide.

Energy poverty manifests itself differently in underdeveloped countries compared to developed countries, reflecting economic, technological, and infrastructural disparities globally. While in underdeveloped countries the main problem is physical access to modern energy services, in developed countries the focus is on energy affordability and energy efficiency of homes.

In underdeveloped regions, especially in sub-Saharan Africa and South Asia, energy poverty is manifested by a lack of access to electricity and a reliance on traditional fuels such as biomass, coal and animal waste for cooking and heating. According to data from the International Energy Agency (2023), approximately 759 million people worldwide do not have access to electricity, and 2.6 billion people do not have access to clean cooking solutions. This situation has serious consequences for health, education and economic development. Indoor air pollution caused by the inefficient combustion of traditional fuels causes an estimated 3.8 million premature deaths annually, disproportionately affecting women and children (WHO, 2023).

Ashena and Shahpari (2024) highlight that energy poverty in underdeveloped countries is driven by structural factors such as limited energy infrastructure, financial constraints, and reliance on traditional fuels. Aqdas *et al.* (2024) stresses that GDP growth does not automatically translate into improved access to energy, and specific policies are needed to ensure the fair distribution of the benefits of economic development.

In contrast, in developed countries, energy poverty is manifested by the inability of households to afford adequate energy services at reasonable costs. Al Kez *et al.* (2024) have developed multidimensional indices that reveal significant disparities even in high-income regions. In Western Europe and North America, the main challenges are related to high energy costs, low energy efficiency of old buildings, and the impact of the energy transition on prices.

Salman *et al.* (2022) carried out a comprehensive assessment of energy poverty, finding an improvement in the situation in developing regions after 2008, although sub-Saharan Africa and South Asia remain the most affected. Sen *et al.* (2023) highlight the strong correlation between household energy poverty and child disabilities in low-income countries, highlighting the profound impact of this phenomenon on human development.

Policies to combat energy poverty differ significantly between the two categories of countries. In developed countries, the focus is on subsidies for vulnerable consumers, energy efficiency programs, and consumer protection regulations. In contrast, underdeveloped countries require significant investment

in energy infrastructure and clean energy solutions, often with international support.

The global energy transition needs to address these disparities by integrating targeted financial models, digitalization, and sustainable energy investments to ensure equitable access to energy worldwide. Initiatives such as „Sustainable Energy for All" (SE4All) and „Global Energy Alliance for People and Planet" (GEAPP) promote public-private partnerships to accelerate access to clean energy in underdeveloped regions, combining the Sustainable Development Goals with those of combating climate change.

3. Energy poverty in the European Union

Energy poverty in the European Union (EU) is a critical issue, affecting millions of households that struggle to afford adequate energy services. Recent studies highlight that energy poverty is particularly severe in Eastern and Southern European countries due to lower income levels and inefficient housing infrastructure (Cyrek *et al.*, 2024). The problem has been exacerbated by rising energy prices, economic instability, and the transition to renewable energy sources (Taušová *et al.*, 2024). The European Commission has implemented various policy measures, including the Clean Energy for All Europeans package, which aims to promote energy efficiency and consumer rights, and the Fit for 55 package, which focuses on reducing greenhouse gas emissions while ensuring a just transition for affected populations (Campagna *et al.*, 2024). Research suggests that both objective and subjective measures of energy poverty vary across the EU, with countries like Hungary and Croatia showing improvement, while France, Germany, and Spain have seen worsening conditions (Wojewódzka-Wiewiórska *et al.*, 2024). Additionally, innovative financial solutions such as Social Impact Bonds (SIBs) are being explored to fund energy efficiency programs and combat the issue (Ruiz *et al.*, 2024). Despite progress, addressing energy poverty requires sustained policy efforts, investment in renewable energy, and targeted financial support for vulnerable households.

Energy poverty is a significant challenge for the European Union, affecting around 50 million people, according to estimates by the European Commission (2023). The phenomenon varies considerably between Member States, being more pronounced in the countries of Eastern and Southern Europe. According to Eurostat data (2023), Bulgaria (23.7%), Greece (17.5%), Cyprus (17.3%), and Romania (14.4%) have the highest percentages of the population that cannot afford to maintain an adequate temperature in the home.

The energy crisis triggered in 2021-2022 exacerbated the problem of energy poverty across Europe. Rising energy prices, driven by factors such as the post-pandemic recovery, the conflict in Ukraine, and disruptions in supply chains, have disproportionately affected vulnerable households. According to an article by Eurostat (2023), electricity prices for household consumers increased significantly in the EU between December 2020 and December 2022, the highest being in

Romania (+112%) and Czechia (97%) and the lowest being in Luxemburg (+3%), Austria and Germany (+4%) while natural gas prices doubled over the same period.

The European Union has responded to this challenge with various policy initiatives. The Clean Energy for All Europeans package includes measures to promote energy efficiency and protect vulnerable consumers. The „Fit for 55" package also proposes to reduce greenhouse gas emissions by at least 55% by 2030, while ensuring a just transition for affected populations (European Commission, 2023).

The EU Energy Poverty Observatory plays a key role in monitoring the phenomenon and facilitating the exchange of best practices between Member States. It uses several primary and secondary indicators to measure the different dimensions of energy poverty, including delays in paying utility bills, inability to maintain an adequate temperature in the home, the percentage of income spent on energy, and the quality of the home (presence of dampness, seepage, or damaged roofs).

Recent research (Campagna *et al.*, 2024) highlights the need for a differentiated approach to energy poverty according to the specific context of each country. While in the Nordic countries the main problem is the financial accessibility of energy, in the southern and eastern countries, there are added challenges related to the quality of housing and access to modern energy infrastructure. This heterogeneity requires policies tailored at the national and regional level, within the framework of a coherent European strategy.

4. Energy poverty in Romania

Energy poverty in Romania remains a significant problem, influenced by climatic, economic, and political factors. According to a recent study, the demand for energy for heating and cooling can serve as an indicator of the risk of energy poverty, and forecasts for the next nine years highlight areas with high vulnerability (Grigorescu *et al.*, 2024). Another study analyses the financing of energy efficiency as a viable solution, showing that there is an imbalance between urban and rural areas in accessing European funds for energy efficiency (Damean & Joița, 2024). In addition, the green transition and energy security are essential for everyday well-being, but high energy prices put pressure on vulnerable consumers (Joița *et al.*, 2022). At the macroeconomic level, Romania and Bulgaria face high energy vulnerability in the European context, which underlines the need for effective policies to reduce energy poverty (Kicsi *et al.*, 2023). Also, in peripheral urban areas, such as Roma communities, lack of infrastructure and inadequate policies exacerbate extreme energy poverty (Teschner *et al.*, 2020).

In Romania, public policies regarding energy poverty lack clear definitions, measurement instructions, and systematic data collection. There are no long-term national strategies to address energy poverty, and policymakers prioritize other challenges over the urgent needs of affected communities (Teschner *et al.*, 2020). Energy poverty in Romania is addressed through the country's commitment to the Paris Agreement and the 2030 Agenda, focusing on green transition strategies to enhance energy accessibility and ensure well-being for vulnerable consumers while balancing macroeconomic and social aspects (Joița *et al.*, 2022).

Romania is facing one of the most difficult situations of energy poverty in the European Union, the phenomenon being amplified by structural factors such as the low quality of housing, dependence on fossil fuels, and low income levels for a significant part of the population. According to recent data from the World Bank (2025), Romania continues to have the highest poverty rate in the European Union, with about a third of the population at risk of poverty or social exclusion. In 2023, about 13.6% of Romania's population faced difficulties in paying utility bills, one of the highest rates in the EU, with the percentage rising to 28.3% among those living in poverty.

The 2023 study by the Romanian Energy Poverty Observatory (ORSE) highlights an alarming increase in energy poverty, including among the middle-income population. According to this study, 21% of households in Romania were in a situation where they gave up other essential needs to ensure their thermal comfort in 2022, double the level of 2021 (10.5%). The analysis by income deciles shows that the phenomenon affects not only traditionally vulnerable categories, but also middle-income households. For example, the energy poverty rate among households in the 5th income decile increased more than fivefold, from 6% in 2021 to 34% in 2022.

A particular aspect of energy poverty in Romania is the urban-rural disparity. In rural areas, about 80% of the population still heats with wood, in homes with low energy efficiency. This situation is aggravated by the limited access to European funds for energy efficiency, with a significant imbalance between urban and rural areas in accessing these funds (Damean & Joița, 2024).

Grigorescu *et al.* (2024) developed a spatiotemporal forecasting model of energy needs for heating and cooling as a measure of energy poverty in Romania. Their results highlight areas of high vulnerability, especially in the northeastern and southwestern regions of the country, where extreme climatic conditions overlap with high levels of monetary poverty.

In terms of public policies, Romania faces the absence of a long-term national strategy to combat energy poverty. Existing policies are fragmented and reactive, focusing on short-term social protection measures (such as heating aid) and less on addressing the structural causes of the phenomenon. Teschner *et al.* (2020) highlight the lack of clear definitions, measurement guidelines, and systematic data collection on energy poverty, which makes it difficult to develop effective policies.

The energy price cap, implemented in response to the 2021-2022 energy crisis, provided temporary protection to consumers but did not solve structural problems. According to data from the National Energy Regulatory Authority (ANRE), the capping measures cost the state budget about 3.5 billion euros in 2022-2023, raising questions about the financial sustainability of this long-term approach.

5. Social policies to combat energy poverty

Effectively tackling energy poverty requires an integrated approach that combines social, economic, and environmental policies. In this section, we will

analyze the main types of policies implemented at the European and international level, assessing their potential for application in the specific context of Romania.

5.1. Short-term measures

Short-term measures aim to immediately protect vulnerable consumers and prevent energy poverty from worsening in times of crisis. These include:

Direct financial aid: Heating subsidies, reductions in energy bills, and social tariffs are essential tools for the protection of vulnerable consumers. In Romania, the current heating aid system covers around 500,000 households (Ministry of Labour, 2023), but restrictive eligibility criteria and complicated bureaucratic procedures limit many vulnerable households' access to these benefits.

Protection against disconnection: The prohibition of disconnection from energy networks during winter periods for vulnerable consumers is a measure implemented in several European countries. In Romania, the Electricity and Natural Gas Law (Law 123/2012, as amended) provides for certain protections, but they are insufficient and inconsistently applied.

Price capping: Although controversial from a market economy perspective, temporarily capping energy prices can protect in times of extreme market volatility. Romania implemented such measures in 2022-2023, but the high budgetary costs (around €3.5 billion) raise questions about the sustainability of this approach.

5.2. Long-term measures

Long-term measures aim to address the structural causes of energy poverty and create a fairer and more sustainable energy system:

Energy efficiency programs: Renovating buildings to improve energy performance is one of the most effective long-term strategies. The EU's Renovation Wave program aims to double the rate of energy renovation of buildings by 2030. In Romania, the National Program for Energy Renovation of Residential Buildings, financed by PNRR, allocates approximately 2.2 billion euros for the energy renovation of multifamily residential buildings, but its implementation encounters difficulties related to administrative capacity and local co-financing.

Promoting renewable energy at the community level: Energy communities are an innovative model that allows citizens to produce, consume, and share renewable energy locally. The EU Renewable Energy Directive (RED II) provides a legal framework for these initiatives. In Romania, the potential of this model is significant, but its development is still in its early stages due to legislative and administrative barriers.

Energy education and advice: Energy education and advice programs can help households optimize their energy consumption and access available support schemes. Experiences in countries such as France (the 'Habiter Mieux' programme) and the UK (Energy Saving Trust) demonstrate the effectiveness of these approaches.

5.3. Case Studies

– „Habiter Mieux" programme (France): Launched in 2010, this programme combines financial assistance for energy renovations with personalized technical advice. By 2020, the program supported the renovation of more than 500,000 homes, reducing energy consumption by 40-45% on average and significantly improving the thermal comfort of beneficiaries (ADEME, 2025).

– Križevci Energy Community (Croatia): This pilot project, launched in 2018, allowed citizens to invest in solar panels installed on the roof of a public building through a crowdfunding model. Investors receive an annual return of 4.5%, and the community benefits from affordable clean energy. The model has been replicated in other Croatian cities and is a successful example for community engagement in the energy transition (Energy Cities, 2022).

– Warm Homes Programme (Ireland): This programme provides free energy efficiency improvements for low-income households, including insulation, efficient heating systems, and energy consultancy. Evaluations show that the programme has reduced beneficiaries' energy costs by 20-25% and significantly improved their health and well-being (Sustainable Energy Authority of Ireland, 2023).

5.4. Recommendations for Romania

Based on the analysis of existing policies and good international practices, we can recommend some basic measures that could contribute positively to combating energy poverty in Romania, and from which we can develop more comprehensive and exhaustive social and public policies:

1. Develop an integrated national strategy on energy poverty, with clear objectives, monitoring indicators, and inter-institutional coordination mechanisms.
2. Reform the heating aid system to simplify administrative procedures, extend eligibility criteria, and ensure better information for potential beneficiaries.
3. Create a national energy renovation program dedicated to vulnerable households, with full or majority public funding and technical assistance.
4. Promoting energy communities by removing legislative and administrative barriers and providing fiscal and financial incentives.
5. Develop a network of energy advisory centers at the local level, providing information, technical assistance, and support for accessing available programs.
6. Integrate energy poverty policies with other social, health, and environmental policies to maximize the impact and effectiveness of interventions.

Conclusions

Energy poverty is a complex and multidimensional challenge that affects millions of households in Romania and across the European Union. This phenomenon is not limited to economic aspects, but has profound implications for health, education, social inclusion, and sustainable development. The analysis

carried out in this article highlights the scale and severity of the problem in Romania, where about a third of the population is at risk of poverty or social exclusion, and 13.6% of the population faces difficulties in paying utility bills.

A worrying aspect revealed by recent research is the extension of energy poverty beyond the traditionally vulnerable categories, increasingly affecting middle-income households as well. The study by the Romanian Observatory of Energy Poverty shows that 21% of households in Romania gave up other essential needs to ensure their thermal comfort in 2022, double the level of 2021. This trend reflects the impact of the recent energy crisis, but also the structural vulnerabilities of the energy and social system in Romania.

Urban-rural disparities represent a specific dimension of energy poverty in Romania, with about 80% of the rural population still heating with wood, in low-energy efficiency housing. This situation is aggravated by limited access to European funds for energy efficiency and underdeveloped energy infrastructure in rural areas. Addressing these disparities requires differentiated policies and targeted investments in rural energy infrastructure.

In the context of the energy transition and the ambitious decarbonization goals assumed by Romania and the European Union, there are both opportunities and risks for vulnerable households. On the one hand, the transition to renewable energy sources can reduce energy costs in the long term and create economic opportunities. On the other hand, the initial costs of this transition may be disproportionately borne by low-income households, exacerbating existing inequalities. Ensuring a 'just transition' is therefore a key priority for energy and social policies over the next decade.

The international experiences analysed in this article offer valuable lessons for Romania. Successful programs in countries such as France, Ireland, and Croatia demonstrate the effectiveness of integrated approaches that combine financial assistance with technical advice, community engagement, and energy efficiency measures. Adapting these models to Romania's specific context could significantly contribute to reducing energy poverty.

The recommendations made in this article aim to develop an integrated national strategy on energy poverty, reform the heating aid system, create a national energy renovation program dedicated to vulnerable households, promote energy communities, develop a network of energy advice centers, and integrate energy poverty policies with other social, health, and environmental policies.

The implementation of these recommendations requires a coordinated and multisectoral approach, involving national and local public authorities, energy companies, civil society organizations, and local communities. It is also essential to make efficient use of the European funds available through the National Recovery and Resilience Plan, the Just Transition Fund, and the 2021-2027 operational programs.

In conclusion, combating energy poverty is not only a moral obligation towards vulnerable citizens but also an essential condition for achieving a fair and sustainable energy transition. By taking a long-term view and implementing

integrated policies, Romania can turn current challenges into opportunities to create a fairer, more efficient, and more sustainable energy system that leaves no one behind.

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