European Commission

EU
ENERGY POVERTY
Observatory

Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis

Third pan-EU energy poverty report of the EU Energy Poverty Observatory

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Energy

Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis

Douai, France • Bérengère, 35, married, both parents unemployed, four children, renter

"The boiler doesn't work, so we stay under the covers all day. I put fabric rolls under the doors and tape on the windows to block the cold.

"The hardest is when I get up at night and feel my baby frozen right to her feet. We reassure ourselves by saying that 'we have a roof, even if it falls apart'. But I am tired...it rains, and I am drowned."

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BP	Best practices
BSO	EU Bulding Stock Observatory
CEP	Clean Energy for all Europeans Package
EE	Energy efficiency
EESC	European Economic and Social Committee
EP	Energy poverty
EC	European Commission
EP	European Parliament
EPOV	EU Energy Poverty Observatory
HBS	Household Budget Survey
MS	Member States
NECP	National Energy and Climate Plan
SILC	Survey on Income and Living Conditions

Lens, France • Raymonde, 59, unemployed and her husband, René 62, retired, tenants in social housing with their 28-year-old son. Raymonde and René had a few debts and could not keep up with the bills.

"Gaz de France (GDF) cut off the gas supply about two years ago. Now, we have a single electric heater that we move as needed. The washing machine broke down three years ago, so I wash our things by hand. The fridge is empty, like a demonstration fridge at the appliance store.

"We get used to everything...except the idea of being on the street."
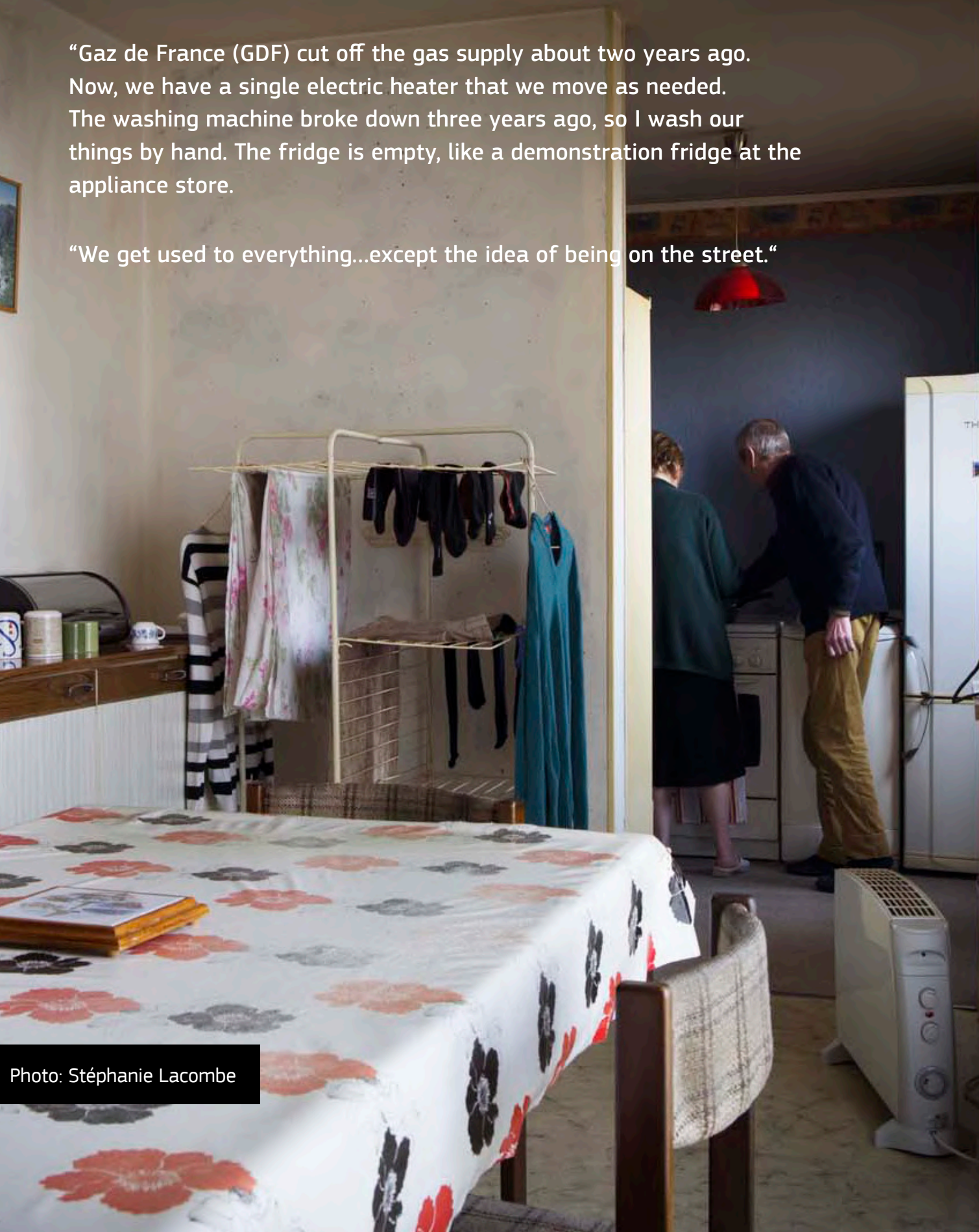
Photo: Stéphanie Lacombe

Executive summary

Energy poverty – often understood as a situation where a household cannot meet its domestic energy needs – is subject to increasing policy attention within the European Union (EU). Alleviating energy poverty is a key precondition for achieving just transitions towards sustainability.

The EU Energy Poverty Observatory (EPOV) is a European Commission (EC) project aiming to measure, monitor and share of knowledge on energy poverty. This is the third of a series of pan-EU reports issued by the Observatory, offering a comprehensive perspective on current and forthcoming measures to address energy poverty across the EU. The report supplements the rich repository of statistics, best practices, training resources and relevant organisations collected by the Observatory since 2016, and presented on the EPOV portal at https://www.energypoverty.eu.

The report consists of two sections, the first of which examines policies and measures to address energy poverty across the EU, while the second presents the latest statistics on energy poverty. Both sections offer state-of-the art knowledge and evidence on ongoing efforts to address the problem, as well as its distribution and character across the EU.

In the policies and measures section, we examine the different energy poverty alleviation and mitigation policies and measures adopted at the EU, Member State (MS), regional and local level. The report contains one of the hitherto most comprehensive and timely reviews of national and local-scale initiatives in this domain. There is also a review of the different approaches taken by various international bodies in response to the energy poverty challenge.

For the first time in the existing literature on the subject, this section also contains an analysis of energy poverty-relevant provisions in the National Energy and Climate Plans (NECPs) issued by EU MS, as well as an investigation of COVID-19 responses across the EU as regards the energy-income nexus. We provide a systemic evaluation of energy poverty relevant provisions in the NECPs as well as COVID-19 policies.

In the statistics section, we provide an up to date overview of energy poverty indicators and trends. overview of headline statistics, and trends over time. Because energy poverty is a multi-dimensional problem, this section of the report also presents a segmented examination of the condition according to income, degree of urbanisation, tenure, and dwelling type.

The report concludes by synthesising the results of these analyses, and emphasising avenues for future action to address the problem. These include need for better data collection, as well as the continued compilation and evaluation of best practices in the context of the Clean Energy Package and the European Green Deal.

1. Introduction

This report presents the results of multiple data analyses and evidence gathering undertaken by the European Union Energy Poverty Observatory (EPOV), a European Commission (EC) supported initiative to help Member States (MS) in their efforts to combat energy poverty and achieve a just and sustainable energy transition. When EPOV commenced its work in late 2016, the energy poverty challenge was associated with a relatively limited amount of policy and action at the European Union (EU) and MS level. Today, however, energy poverty is explicitly integrated in a number of EU directives and Member State policies, while gradually becoming a part of local government programmes. There is an active polity of practitioners, advocates and researchers committed to addressing the issue.

The dramatic shift can be attributed to a variety of factors – from the rising prominence of energy and climate concerns in government policy, to the follow-on consequences of energy market liberalisation across the EU. At the same time, a number of relevant stakeholders – including non-governmental organisations, regional associations and business groups – have argued in favour of integrating of social, housing and infrastructure dimensions in energy-policy making. In concert with the expanding body of experts in the energy poverty domain, EPOV has actively worked towards creating both a knowledge base and targeted decision-support toolkit to address the issue.

The challenges faced by EPOV upon its inception were formidable: there was a lack of agreement on which indicators could be used to address the issue, energy poverty data was specialised and difficult to access, and the multiple initiatives focusing on the project – from the local to the international scale – were disconnected and poorly visible. Having carried out extensive stakeholder and expert consultations, alongside data and information collection activities, EPOV defined a set of indicators that provide a comprehensive, detailed and authoritative overview of the structure and character of energy poverty, as well as the spatial and temporal variation of the problem. On its web portal (https://www.energypoverty.eu), EPOV also compiled and published the world's largest database of energy poverty-relevant publications, measures and training resources. EPOV worked closely with relevant stakeholders (particularly the Covenant of Mayors) to formulate effective urban policies, while offering technical assistance to relevant government authorities and specialist institutions. The Observatory consortium organised a series of conferences and workshops attended by over 1000 participants.

EPOV's expert publications further developed previous work commissioned by the EC[1], which understands energy poverty as a set of conditions where 'individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost'. Importantly, energy services include cooling the home in summer – a challenge that is becoming increasingly recognised for its significant extent and depth[2]. EPOV also showed that living in inadequately heated or cooled homes has detrimental implications on respiratory, circulatory and cardiovascular systems, as well as mental health and well-being. The consequences of energy poverty extend beyond the home to affect macroeconomic development and political processes. It is also evident that energy poverty does not fully overlap with income poverty, although many low-income households are also energy poor.

This report is the final published output produced by the EPOV consortium in its current form. It reflects and traces the progress that the EU has made in addressing energy poverty, starting from EU-level policies and initiatives, and moving onto national and local best practices. A special section is devoted to recent measures developed in response to the COVID-19 crisis. The report also overviews and discusses some of the latest energy poverty statistics provided by EPOV, highlighting significant divides along urban, rural, socio-demographic, and housing lines. The conclusion of the report highlights the need for concerted policy action to address energy poverty, through a combination of measures in the energy, social, housing and health sectors. We highlight the Observatory's continued future role as a key facilitator for policy improvements across different levels of governance.

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1   Pye et al. 2015. https://ec.europa.eu/energy/sites/ener/files/documents/INSIGHT_E_Energy%20Poverty%20-%20Main%20Report_FINAL.pdf
2   Thomson et al. 2019. https://doi.org/10.1016/j.enbuild.2019.05.014

Le Vexin, France • Nadine, 71, widow, 2 children, retired commercial employee, owner.

Nadine was a young bride when she came to this prefabricated home in 1964; there is no foundation under the floor.

"You can feel the mold and humidity that comes from the ground: the smell is unbearable. I keep my clothes in plastic and wipe the mold from inside cabinets, but it keeps coming back.

"I refuse invitations from friends because I cannot invite them back. I am ashamed for people to see this."

Photo: Stéphanie Lacombe

2. Policies and measures to address energy poverty across the EU

In this section, we examine the different energy poverty alleviation and mitigation policies and measures adopted at the EU, MS, regional and local level. We also emphasise the different approaches taken by various international bodies in response to the energy poverty challenge. The section contains an analysis of energy poverty-relevant provisions in the National Energy and Climate Plans (NECPs) as well as an investigation of COVID-19 responses across the EU as regards the energy-income nexus. While not exhaustive due to the evolving situation and the steadfast increase of new initiatives, these reviews provide a general picture of the overall direction of travel and the internal differentiation of MS as far as energy poverty alleviation is concerned.

2.1 Energy poverty integration at different levels of governance

Clean Energy for All Package

The Clean Energy for All Package (CEP), adopted between 2018 and 2019, is composed of eight legislative acts, focusing on energy efficiency, energy performance of buildings, renewable energy, electricity market design, governance rules for the Energy Union, energy security and eco-design. Consumers are put 'at the centre of the energy market'. Energy poverty mitigation objectives are relevant to all the aspects covered.

The Directive on Market Design ((EU) 2019/944) foresees that MS define the concept of 'vulnerable consumers, which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such customers in critical times' (Article 28 on Vulnerable customers). The definition 'may include income levels, the share of energy expenditure of disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria' (Article 28). When assessing the number of households affected by energy poverty for the NECPs under Article 3(3) of the Governance Regulation (EU) 2018/1999, energy poverty shall be defined at the national level using 'a set of criteria, which may include low income, high expenditure of disposable income on energy and poor energy efficiency'(Article 29 on Energy Poverty, Market Design Directive, EU, 2019/944).

If a Member State evaluates that the number of households in energy poverty is 'significant' or applies public interventions in the price setting for vulnerable consumers (Market Design Directive), the NECP shall include a timeframe and a 'national indicative objective' to reduce the phenomenon (Governance Regulation). Any policies and measures addressing energy poverty shall be outlined, 'including social policy measures and other relevant national programmes'. In Article 3 and recital 26 of the Governance Regulation, MS are explicitly asked to 'assess the number of households in energy poverty, taking into account the necessary domestic energy services needed to guarantee basic standards of living in the relevant national context, existing social policy and other relevant policies, as well as Commission indicative guidance on relevant indicators, including geographical dispersion, that are based on a common approach for energy poverty'.

Member States' efforts will be monitored through NECPs progress reports prepared by the EC. This should help EPOV consolidate the data on the number of households affected by energy poverty, and information on available policies and measures (Article 24 of the Governance Regulation). The EC also aims to facilitate the sharing of good practices among Member States by providing guidance on the definition of

energy poverty and the identification of a 'significant number of households in energy poverty' (Market Design Directive). The forthcoming energy poverty guidance, under development by the EC, will provide timely recommendations to assist MS in the transposition of the CEP.

MS strategies should be 'integrated', 'such as in the framework of energy and social policy' (Recital 60 of Market Design Directive, EU 2019/944). Countries need to put their efforts on structural solutions, in particular concerning the energy retrofitting of buildings. Market interventions and short-term measures, such as regulated prices, should be avoided (Recital 22 and Article 5 of Market Design Directive, EU 2019/944). For example, in the Energy Performance of Buildings Directive (EU 2018/844, article 2a), long-term renovation strategies to contribute to the reduction of energy poverty are required. The question remains, however, as to how far such renovation strategies are consistent with policies to address energy poverty in the NECPs.

Likewise, the Energy Efficiency Directive demands MS to orient energy efficiency efforts towards households affected by energy poverty under Article 7(11) of Directive (EU) 2018/2002. The Energy Efficiency Directive also requires MS to provide information on the outcome of energy efficiency and energy-saving measures designed for vulnerable households, whether affected by energy poverty or living in social housing. Those energy efficiency measures may come under the scope of MS energy efficiency obligation schemes, alternative policy measures, or programmes or measures financed under an Energy Efficiency National Fund (Article 7 (11) of the Energy efficiency directive 2018/2002 of 11 December 2018, amending Directive 2012/27/EU).

11th Citizens' Energy Forum and EU Sustainable Energy Week

The 11th Meeting of the Citizens' Energy Forum was held in Dublin on 12 and 13 September 2019. The conclusions[3] welcome the provisions for vulnerable consumers and energy poverty. They place particular emphasis on the need to create a just and fair transition, which takes into account the 'distributional impact [of policies and new infrastructure projects] on different consumer groups, particularly those in vulnerable situations'. They also insist on giving 'real energy choices' for all consumers, 'including those in energy poverty'.

The Annual EU Sustainable Energy Week conference has also provided a key space for the exchange of energy poverty - related insights and knowledge, while opening multiple network-building opportunities among relevant stakeholders. EUSEW has provided a dedicated energy poverty stream since 2019, while energy poverty – themed sessions have been regularly featured at the conference for more than five years.

2.2 The Recovery Plan for Europe and the European Green Deal

In an effort to counter the negative impacts of the COVID-19 pandemic that is hitting Europe hard, the EC has proposed a bold economic response: the Recovery Plan for Europe[4]. On 26 May 2020, it proposed the recovery instrument Next Generation EU (€750 billion) to boost the EU budget with new funds raised on the financial markets for 2021-2024, and a reinforced long-term budget of the EU for 2021-2027 (€1,100 billion). The previously-announced Just Transition Mechanism is among the

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3   European Commission, 11th meeting of the Citizens' Energy Forum Dublin, 2019. https://ec.europa.eu/info/sites/info/files/11th_citizens_energy_forum_consolidated_final_conclusions.pdf

4   European Commission, Communication From The Commission To The European Parliament, The European Council, The Council, The European Economic And Social Committee And The Committee Of The Regions Europe's moment: Repair and Prepare for the Next Generation, 27 May 2020 https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590732521013&uri=COM%3A2020%3A456%3AFIN

policies that will be bulked up with this new strategy. As part of the Mechanism, it is expected that the Just Transition Fund will be topped-up to €40 billion in order to assist Member States in their climate transition. Overall, it is now expected that the Just Transition Mechanism will mobilize at least €150 billion of public and private funds.

The Renovation Wave is presented as a 'massive tool' to upgrade EU's buildings and critical infrastructure, including schools and hospitals. According to the Adjusted Commission Work Programme 2020, the strategy will be presented in September 2020. It should have a strong impact on energy poverty policies linked to housing quality, but also on the creation of jobs in 'construction, renovation and other labour-intensive industries' at the local level. The annual renovation rate of existing building stock is expected to double with this strategy. The Commission announced that the 'sustainable infrastructure window in InvestEU' will be 'doubled in size'. Other funds from the Recovery and Resilience Facility could also be used, in an effort to help household reduce energy bills, live in healthier living conditions and while reducing energy poverty.

It can also be assumed that funds related to combating unemployment and stimulating jobs will also have positive effects on energy poverty. To that aim, the SURE (Support mitigating Unemployment Risks in Emergency) programme is set to provide €100 billion to help workers and business affected by the pandemic.

Previously, the Green Deal strategy[5] presented at the end of 2019 by President von der Leyen offered a continuation of the trends and intentions expressed in the CEP. It sews together economic, environmental and social objectives, to make Europe climate neutral by 2050 and ensure that the climate transition is 'just and inclusive for all'. The Commission urges Member States to enforce and undertake socially fair programmes and strategies. The ambition to build a socially just transition 'must also be reflected in policies at EU and national level. It includes investment to provide affordable solutions to those affected by carbon pricing policies, for example, through public transport, as well as measures to address energy poverty and promote re-skilling'.

In the Green Deal, energy poverty is expected to be addressed, in particular, by housing improvement and retrofitting, as 'effective programmes, such as financing schemes for households to renovate their houses, can reduce energy bills and help the environment'. In line with the provisions of the CEP, the Communication on the European Green Deal (COM/2019/640 final) indicated that to this aim, the EC will issue 'guidance to assist Member States in addressing the issue of energy poverty' in 2020. It will enable actions 'for households that cannot afford key energy services to ensure a basic standard of living'.

The Communication announced a 'renovation wave' of public and private buildings to 'address the twin challenge of energy efficiency and affordability'. According to the EC Work Programme, this initiative was to be presented in the third quarter of 2020. In the framework of this 'new initiative on renovation', the roadmap underlined that 'particular attention will be paid to the renovation of social housing, to help households who struggle to pay their energy bills', and also for tenants and multi-apartment buildings. The Communication recognised that 'while increasing renovation rates is a challenge, renovation lowers energy bills, and can reduce energy poverty. It can also boost the construction sector and is an opportunity to support SMEs and local jobs'. Therefore, cooperation between the various stakeholders of the building and construction sector, technical experts and public authorities was deemed necessary 'to address the barriers to renovation' and stimulate the take-off of 'innovative financing schemes'.

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5   Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on the European Green Deal COM/2019/640 final, 2019. https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640

The Commission was expected to 'rigorously' enforce the legislation related to the energy performance of buildings. This would start with an assessment in 2020 of Member States' national long-term renovation strategies (as part of the requirements under the Energy Performance of Buildings Directive).

The fairness of the climate transition process also translates in Communication's call for 'coherence of climate and environment policies and a holistic approach' and the engagement of all kind of consumers. An integrated approach is perceived as 'a precondition for ensuring [policies] are perceived as fair, as illustrated by the debate on taxation of various modes of transport'. Indeed, 'recent political events show that game-changing policies only work if citizens are fully involved in designing them. People are concerned about jobs, heating their homes and making ends meet. EU institutions should engage with them if the Green Deal is to succeed and deliver lasting change'.

Just Transition Mechanism

The Green Deal Communication acknowledged that 'the transition can only succeed if it is conducted in a fair and inclusive way. The most vulnerable are the most exposed to the harmful effects of climate change and environmental degradation. At the same time, managing the transition will lead to significant structural changes in business models, skill requirements and relative prices. Citizens, depending on their social and geographic circumstances, will be affected in different ways. Not all Member States, regions and cities start the transition from the same point or have the same capacity to respond'.

To demonstrate that the EU is willing to 'leave no one behind' and provide a 'strong policy response at all levels', the Communication on the Green Deal announced a 'Just Transition Mechanism' and its 'Just Transition Fund', which were presented on 14 January 2020[6]. The Just Transition Mechanism and its dedicated fund were part of the European Commission's Sustainable Europe Investment Plan (SEIP), also called European Green Deal Investment Plan (EGDIP). The expectation is that these programmes will trigger Europe's plan to reach carbon neutrality by 2050. Over the next ten years, the Sustainable Europe Investment Plan will unlock a total €1 trillion to support the energy transition across the 27 MS, through the EU budget and associated instruments such as InvestEU. It was initially intended that the Just Transition Fund would receive €7.5 billion of 'fresh' EU finance – as noted above, this has been subsequently increased to €40 billion. The funds are specifically aimed at mitigating the social and economic costs of the energy transition. The fund will mobilise the European Investment Bank group, European public and private resources.

The Just Transition Mechanism focuses on the people, regions and sectors most affected by the climate transition. It will enable the conversion of the local economy, the adaptation of human resources and the inclusion of workers and job seekers in the territories highly dependent on 'fossil fuels or carbon-intensive processes'[7]. Support will be linked to promoting a transition to low-carbon and climate-resilient activities. Re-skilling and training workers and citizens and jobs in new economic sectors, renewable energy or energy-efficient housing are among the tools that will be promoted. As a result, funds will be invested in measures to fight energy poverty and overall have a significant impact on mitigating vulnerability, inadequate housing and mass unemployment.

The Commission will work with the MS and regions to help them put in place territorial transition plans, using the National Energy and Climate Plans (NECPs) as the starting points. These territorial plans will

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6   https://ec.europa.eu/commission/presscorner/detail/en/ip_20_17
7   Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and So-cial Committee and the Committee of the Regions on the European Green Deal COM/2019/640 final, 2019. https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1588580774040&uri=CELEX:52019DC0640

identify the territories, relevant local social, economic and environmental challenges and provide details on the necessary needs and measures for economic development, worker reskilling and ecological rehabilitation. The European Commission will set up a Just Transition Platform with technical assistance to exchange on best practice and stimulate the creation of these projects.

Communication and Annex on a Strong Social Europe for Just Transitions

The European Commission's Communication on a Strong Social Europe for Just Transitions[8] was presented on the same day as the Just Transition Mechanism (14 January 2020). This Communication focuses on building a 'fair, green and prosperous future' and displays the first steps of an Action Plan to implement the European Pillar of Social Rights (2017). The Action Plan should be presented at the beginning of 2021, along with an action plan for the social economy. The Communication acknowledges that 'the social economy provides innovative solutions in education, health care, energy transition, housing and the delivery of social services', which, therefore, impacts energy poverty.

The Communication underlines that 110 million Europeans are at risk of poverty or social exclusion (7 million fewer than 10 years ago). It underscores the need for 'affordable housing and affordable access to essential goods and services, including water, energy, transport and digital communications'. Housing, homelessness and energy poverty are particular concerns, especially in the context of the climate transition: 'real estate prices have increased across the Union making housing and housing costs less affordable for the majority of people. Homelessness, the worst effect of rising housing costs, is increasing in most Member States. Energy poverty and the difficulty in investing in modern cost-saving solutions point to the need to be vigilant on new distributional challenges brought by the transition to a carbon-neutral economy'.

European Climate Pact and European Climate Law

On 4 March 2020, as part of the Green Deal, the Commission launched a European Climate Pact that focuses on engaging with the public on climate action and the measures to balance its negative effects[9]. Citizens, communities and organisations in all sectors shall engage in developing new actions, get inspired, launch grassroots activities and share best practices and solutions beyond borders. The EC aims to use a variety of platforms, channels and tools, including the citizens' dialogues or the Covenant of Mayors for Climate and Energy.

The European Commission is aiming to provide targeted support in different sectors, such as mobility and housing. For buildings, the EC could help through 'stimulating advisory services, facilitating smart financing and assisting local authorities for energy-efficient housing'[10]. This should have an impact on the development of energy poverty mitigation projects.

On 4 March 2020, the Commission also presented its Proposal for a European Climate Law[11], with the aim to enshrine in law the goal to make Europe's economy and society climate-neutral by 2050. Making the transition 'just and socially fair' and keeping energy prices affordable while strengthening 'resilience and reducing vulnerability to climate change' are critical elements of the European Climate Law.

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8   Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions on A Strong Social Europe For Just Transitions COM(2020) 14 final, 2020. https://ec.europa.eu/commission/presscorner/detail/en/fs_20_49

9   European Commission, European Climate Pact, 2020. https://ec.europa.eu/clima/policies/eu-climate-action/pact_en

10   European Commission, European Climate Pact, 2020. https://ec.europa.eu/clima/policies/eu-climate-action/pact_en

11   Proposal for a Regulation of the European Parliament and of the Council establishing the framework for achieving climate neutrality and amending Regulation (EU) 2018/1999 (European Climate Law) (COM/2020/80 final), 2020. https://eur-lex.europa.eu/search.html?qid=1588581905912&text=COM(2020)%2080%20final&scope=EURLEX&type=quick&lang=en

2.3 Other European institutions and bodies

European Parliament

In April 2020, the Committee on Industry, Research and Energy of the European Parliament presented a **draft report on 'Maximising the energy efficiency potential of the EU building stock'**[12]. The rapporteur is MEP Ciarán Cuffe. This report focuses on local and integrated renovation strategies to enable the 'Renovation Wave' and stimulate the retrofitting of the housing stocks, 'with a focus on communities, especially for those in energy poverty'. In particular, the report expresses concerns on the 'rising numbers of citizens in energy poverty' and the 'gentrification and 'renoviction' of neighbourhoods driven by investment capital interests' and asks the European Commission to implement 'safeguards for communities in energy poverty' in integrated renovation programmes and in the 'Renovation Wave'. 'Minimum energy performance standards (MEPS) for worst-performing rented buildings' should particularly benefit 'occupants that are at risk of energy poverty'. The report also underlines the successful actions performed through 'one-stop-shops, capacity building for municipalities, and the active involvement of local actors such as energy communities, consumer organisations and housing cooperatives'.

The Policy Department for Budgetary Affairs published in May 2020 a report on the **Just Transition Fund**[13], highlighted energy poverty as one of the challenges stakeholders would need to address due to the transition. Indeed, many households living in the regions targeted by the Just Transition proposal heavily rely on cheap fossil fuels.

In 2019, the European Parliament's Policy Department for Citizens' Rights and Constitutional Affairs at the request of the FEMM Committee commissioned a **Study on Women, Gender Equality and the Energy Transition in the EU**[14]. This study focuses on the role of women in the energy transition in the European Union and the extent of gender equality, in particular, in the renewable energy sector. The study looks extensively at energy poverty with a gendered perspective. It recommends recognising and addressing the gendered nature of energy poverty, as 'women and men experience energy poverty in different ways and are unequally affected by energy poverty due to the gendered indicators such as income differences, housing conditions, care for depending family members and age'.

The European Parliament's Resolution of 14 March 2019 on climate change 'a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy in accordance with the Paris Agreement'[15] underlines the prevalence of energy poverty in Europe. It warns about the negative effects of the energy transition on 'people with low incomes', with the risk that it 'further increases energy poverty'. Therefore, it 'calls on the Member States to assess the number of households in energy poverty in their integrated national energy and climate plans and to take follow-up actions if necessary, as required by the Governance Regulation; calls on the Member States to take forward-looking action to ensure a just energy transition and access to energy for all EU citizens'.

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12   European Parliament, draft report on 'Maximising the energy efficiency potential of the EU building stock' (2020/0000(INI)), 2020. https://www.euractiv.com/wp-content/uploads/sites/2/2020/04/Cuffe_report.pdf

13   European Parliament, Study on A Just Transition Fund – How the EU budget can best assist in the necessary transition from fossil fuels to sustainable energy, 2020. https://www.europarl.europa.eu/RegData/etudes/STUD/2020/651444/IPOL_STU(2020)651444_EN.pdf

14   European Parliament, Study on Women, Gender Equality and the Energy Transition in the EU, 2019. https://www.europarl.europa.eu/thinktank/en/document.html?reference=IPOL_STU(2019)608867

15   European Parliament Resolution of 14 March 2019 on climate change 'a European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy in accordance with the Paris Agreement' (2019/2582(RSP)), 2019. https://www.europarl.europa.eu/doceo/document/TA-8-2019-0217_EN.html

Council

The Council Conclusions on the Future of Energy Systems in the Energy Union to ensure the energy transition and the achievement of energy and climate objectives towards 2030 and beyond[16], published on 25 June 2019, pay special attention to the issue of energy poverty in the context of a fair transition. In particular, the document 'stresses the importance of citizens and businesses to be at the core of the energy transition process, in order to ensure public support for the EU's energy and climate targets towards 2030 and beyond as well as public acceptance regarding measures, and providing for a just and fair transition that takes into account vulnerable customers, energy poverty and regional social and economic impacts, such as on coal-intensive regions, oil shale and peat regions'.

Committee of the Regions

On 27 June 2019, the ENVE commission of the Committee of the Regions adopted a **Multilevel governance and cross-sectoral cooperation to fight energy poverty**[17]. It calls for bolder ambitions at EU, national and local levels to 'eradicate' energy poverty by 2050, with intermediary objectives by 2030. Renovation policies and energy efficiency are required to 'specifically avoid a delay in the energy upgrading of the homes of the poorest tenants and owners'. Everyone should 'effectively enjoy the right to affordable energy'. In particular, it proposes to enhance targeted investments in energy efficiency and revise the single market that delivers low energy prices for households.

European Economic and Social Committee (EESC)

The EESC Opinion on **Universal access to housing that is decent, sustainable and affordable over the long term**[18] shall be adopted later in 2020. It focuses on the challenges of housing affordability and will provide recommendations for the implementation of the 19th principle of the European Pillar of Social Rights, which indicates that 'access to social housing or housing assistance of good quality shall be provided for those in need'.

On 30 October 2019, the EESC adopted an Opinion on the **integrated national energy, and climate plans**[19], following the assessment of the draft NECPs submitted by the Member States. The Opinion welcomes the fact that a plan to address energy poverty is taken into consideration and recommends a 'human-centric transition towards a more inclusive, sustainable, cost-effective, fair and safe global energy system'.

On 26 of September 2019, the EESC adopted an Opinion on the **New institutional framework for energy and climate policy by 2025**[20] . It aims to complement the fourth report on the State of the Energy Union and proposes modifications on energy-related tax voting processes, by switching from unanimity to qualified majority voting. In particular, the Opinion worries that 'sensitive issues', such as energy poverty, get out of the scope of the types of tax decisions that might be discussed under qualified majority voting. Affordable energy is central, as is income inequality and the costs incurred by the energy

16   Council Conclusions on the Future of energy systems in the Energy Union to ensure the energy transition and the achievement of energy and climate objectives towards 2030 and beyond – 10592/19, 2019. https://www.consilium.europa.eu/media/40028/st10592-en19.pdf

17   CoR, Multilevel governance and cross-sectoral cooperation to fight energy poverty (CDR 5877/2018), 2019. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52018IR5877

18   EESC, Opinion on Universal access to housing that is decent, sustainable and affordable over the long term, 2020 https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/universal-access-housing-decent-sustainable-and-affordable-over-long-term

19   EESC, Opinion on the integrated national energy and climate plans (TEN/700-EESC-2019-03626), 2019. https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/integrated-national-energy-and-climate-plans

20   EESC, New institutional framework for energy and climate policy by 2025 (TEN/694-EESC-2019), 2019. https://www.eesc.europa.eu/en/our-work/opinions-information-reports/opinions/new-institutional-framework-energy-and-climate-policy-2025

transition since they also 'determine the degree to which energy poverty is present in a society'. The Opinion recommends setting up a European action plan aimed at eradicating energy poverty 'by targeting its root causes' and go beyond energy efficiency.

2.4 European stakeholders

A number of successful initiatives and actions are being undertaken by stakeholders active at the European level. The actions listed below are not exhaustive.

At the level of regulators, the **Council of European Regulators** (CEER), underlines in its Recommendations on Dynamic Price Implementation (2020)[21] that vulnerable consumers might not be able to engage in dynamic pricing and that 'should not be disproportionately disadvantaged by the introduction of dynamic price offers'. The 'Monitoring Report on the Performance of European Retail Markets in 2018'[22] shares data on Member States' intervention in price setting and price regulation. Meanwhile, the Agency for the Cooperation of Energy Regulators (ACER) Market Monitoring Report[23] provides valuable figures, definitions and measures implemented by Member States to address energy poverty and help vulnerable consumers. The 'CEER Roadmap to 2025 Well- Functioning Retail Energy Markets 2018 Self-Assessment Status Report'[24] also shares some policy findings and metrics on the percentage of consumers with regulated energy prices in EU countries.

From the social sector and advocacy side, the work of the **Right to Energy Coalition** can be highlighted, and in particular, the Declaration published in June 2019 demanding bold decisions to address energy poverty[25].

The **European Consumer Organisation** (BEUC) is, since 2019, involved in the STEP consortium[26], a Horizon 2020 project covering 11 countries. This project supports BEUC's position in favour of the fight against energy poverty. Regarding the European Green Deal, BEUC welcomes the focus on housing renovation to address energy poverty and further assistance to Member States to tackle energy poverty.[27]

The **Covenant of Mayors** has worked closely with EPOV to support local and regional authorities across Europe in terms of alleviating energy poverty by sharing knowledge and resources to build local capacities[28]. They have published a document that highlights 'energy poverty success' stories from Covenant cities and regions. The best practices examples are grouped in three categories: 1) Reducing energy bills through interventions on buildings; 2) Promoting energy savings and cost-efficient behaviours; and 3) Protecting energy consumers through mediation services[29]. Examples from cities in Spain, Italy, France, Belgium, Austria, and the UK are provided.

There are also several initiatives and collaborations revolving around housing, such as the **Housing Solutions Platform**[30] (the European Federation of National Organisations Working with the Homeless,

21   CEER, 3 March 2020. Ref: C19-IRM-020-03-14. https://www.ceer.eu/documents/104400/-/-/2cc6dfac-8aa7-9460-ac19-4cdf96f8ccd0
22   CEER, C19-MMR-99-02. 4 November 2019. https://www.ceer.eu/documents/104400/-/-/5c492f87-c88f-6c78-5852-43f1f13c89e4
23   ACER Market Monitoring Report (Volume 4: Consumer Protection and Empowerment), 2019. http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202018%20-%20Consumer%20Protection%20and%20Empowerment%20Volume.pdf
24   CEER, C18-RMR-01-03, 30 October 2019. https://www.ceer.eu/documents/104400/-/-/89206356-85ff-9977-1ba9-3a8262fe00e3
25   Right to Energy Coalition, Right to Energy Forum Declaration, 20 June 2019 https://righttoenergy.org/2019/06/20/right-to-energy-forum-declaration/
26   https://www.stepenergy.eu
27   BEUC, Consumers at the centre of the drive to sustainability, BEUC's view on the European Green Deal, 2020. https://www.beuc.eu/publications/beuc-x-2020-012_beuc_position_on_european_green_deal.pdf
28   http://bit.ly/energy_poverty_info
29   http://www.eurocities.eu/eurocities/publications/Covenant-of-Mayors-Leaflet-Energy-Poverty-WSPO-B95NH4
30   https://www.housing-solutions-platform.org

Fondation Abbé Pierre and Housing Europe), which focuses on affordable housing. **Renovate Europe**[31], launched in 2011 on the initiative of European Alliance of Companies for Energy Efficiency in Buildings and involving the business sector, is particularly active within the framework of the Green Deal and the future 'Renovation Wave'. These initiatives systematically recall the links between energy poverty, housing quality and the importance of renovation for low-income households. Of relevance are also the activities of the EU Building Stock Observatory, which provides a detailed understanding of the energy performance of the European building sector through reliable, consistent and comparable data[32].

At the business level, in 2018-2019, the European electricity industry association – **Eurelectric** – undertook a large scale consultation that resulted in a study and commitments[33] to promote the empowerment and participation of consumers, including those affected by energy poverty, notably by making energy efficiency more affordable.

Alongside the aforementioned STEP project, also worth noting are the significant number of **Horizon 2020** funded initiatives on energy poverty, thanks to the existence of a dedicated energy poverty call[34]. They have generated a significant stakeholder community active on multiple levels – from international organisations to local authorities and non-governmental organisations. This includes initiatives such as the REACH project[35], the ASSIST project[36], the STEP IN project[37], EmpowerMed[38] and Social Watt[39]. Also of note is the **ENGAGER COST Action**[40], which draws together scholars and practitioners based both within and outside Europe. ENGAGER uses various networking instruments to advance scientific and practical insights to address the energy poverty challenge, while connecting relevant initiatives. Interreg Europe has also supported energy poverty initiatives. In the 2014-2020 funding cycle, this has included the POWERTY project, which blends the fight against energy poverty with the development of renewable energies. The project includes a number of regional authorities and energy agencies in its framework, while working closely with the EU Energy Poverty Observatory.

A Science for Policy report by the **Joint Research Centre** offers an in-depth analysis of 31 EU-funded research and innovation projects in 30 European countries, highlighting their objectives, content and results, as well as future challenges in the field[41].

2.5 The Member State level

Many initiatives and actions are being undertaken by stakeholders and national and regional authorities in Europe. The projects and policies listed below are not exhaustive. Other examples and policies are also presented in the EPOV's **Member state reports on energy poverty**, published in February 2020[42]. These documents summarises key aspects of the situation on energy poverty and offer a far-reaching overview of the policies and stakeholders in each Member State. The extended MS reports refer to the strategic indicators, policies and publications gathered by the EPOV and are based on data collected by EUROSTAT.

31   https://www.renovate-europe.eu
32   https://ec.europa.eu/energy/topics/energy-efficiency/energy-efficient-buildings/eu-bso_en
33   Eurelectric/Accenture, Seeking shared success Empowering consumers in the energy transition, 2020. https://cdn.eurelectric.org/media/4236/eurelectric-accenture-seeking-shared-success-h-22C4F04C.pdf
34   https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/lc-sc3-ec-2-2018-2019-2020
35   http://reach-energy.eu
36   https://www.assist2gether.eu/
37   https://www.step-in-project.eu
38   https://cordis.europa.eu/project/id/847052
39   https://socialwatt.eu
40   http://www.engager-energy.net
41   Gangale, F., and Mengolini, A.,Energy poverty through the lens of EU research and innovation projects,EUR 29785EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-08676-5, doi:10.2760/972106, JRC113953. Available at https://publications.jrc.ec.europa.eu/repository/bitstream/JRC113953/kjna29785enn.pdf
42   European Commission, Member state reports on energy poverty 2019 (2020) https://op.europa.eu/en/publication-detail/-/publication/b9a25ba4-9ef6-11ea-9d2d-01aa75ed71a1/language-en?WT.mc_id=Searchresult&WT.ria_c=37085&WT.ria_f=3608&WT.ria_ev=search

In **Austria**, the issue of energy poverty has not received any particular political attention in 2019 and the first half of 2020, although several NGOs and newspapers have taken an interest in it, particularly in the context of the energy transition[43]. However, the Green electricity law (*Ökostromgesetz* – 2012), has been expanded in 2019 and contains provisions making that low-income households do not have to pay the green electricity fee[44]. The main civil society stakeholder is Caritas, which has been providing since 2009 the VERBUND electricity aid fund[45] for low-income households. For vulnerable and low-income households, there are also continuous targeted energy advice scheme in Vienna, and energy-efficiency projects in the districts of Braunau, Freistadt and Linz-Land.[46]

In **Belgium**, the King Baudouin Foundation is a key player. It manages the working group behind the Energy Poverty Barometer[47] and the 2020 report on 'Energy F(r)acture: Recommendations for optimising default procedures'[48]. The Combat Poverty, Insecurity and Social Exclusion Service, an initiative involving the three regions and the federal level, is closely monitoring energy poverty (see in particular the working groups involved in writing the 2018-2019 Sustainability and Poverty Report[49]). In a study published in December 2019, the federal regulator – the Federal Commission for Electricity and Gas Regulation (CREG) analysed the weight of the electricity and natural gas bill in the budget of Belgian households,[50] and recommended further action to address energy poverty in the country.

At the local level, initiatives like Papillon, in Flanders, set up by Samenlevingsopbouw, a local NGO in partnership with Bosch[51], have been particularly successful. This project enables vulnerable households to rent (instead of buying) high-performance household appliances, thus limiting their energy expenditures while pursuing a circular economy strategy. The Horizon2020 Aster project stimulates the take-off of in solar technologies for social housing[52]. In Wallonia, the Walloon Network for Sustainable Access to Energy (RWADE)[53] is made up of social, trade union, environmental, consumer, anti-poverty and lifelong learning organisations. It is very active politically and advocates for a right to energy access for all, based on the right of everyone to have access to decent housing. In Brussels, the key actor is the SocialEnergie[54] service which simultaneously mixes actions on the ground and political combat. This network, supported directly by the region, is, for example, leading the Vigilance Network, a consultative group involving social workers from the various social welfare sectors in Brussels on the issue of access to energy.

In **Bulgaria**, the NGO EnEffect seeks to draw more political attention to energy poverty. In particular, in 2019, it published a report and recommendations to encourage the renovation of buildings to reduce energy poverty[55]. At the local level, the Energy Agency of Plovdiv has kept on being particularly active and is involved in different EU projects, including the aforementioned POWERTY initiative. The Agency aims to fight energy poverty and air pollution by training a network of energy advisors and replace old heating equipment.[56]

43   See for example ORF, Soziale Fragen hinter der Energiewende, 24 February 2020 https://orf.at/stories/3155156/
44   SocialWatt, report on the status quo of energy poverty and its mitigation in the EU, 2019. https://socialwatt.eu/sites/default/files/2020-01/D1.1%20Status%20Quo%20of%20Energy%20Poverty.pdf
45   https://www.caritas.at/verbund-stromhilfefonds/
46   Castellazzi L. et al. Assessment of second long-term renovation strategies under the Energy Efficiency Directive, Joint Research Centre, 2019 https://publications.jrc.ec.europa.eu/repository/bitstream/JRC114200/kjna29605enn.pdf
47   Fondation Roi Baudouin, Baromètre de la précarité énergétique (2009-2017), 2019 https://www.kbs-frb.be/fr/Activities/Publications/2019/20180315NT
48   Fondation Roi Baudouin, F(r)acture énergétique : Recommandations pour optimaliser les procédures en cas de défaut de paiement, 2020 https://www.kbs-frb.be/fr/Activities/Publications/2020/20200319NT1
49   Service de lutte contre la pauvreté, la précarité et l'exclusion sociale, Rapport Durabilité et pauvreté, 2019 https://www.luttepauvrete.be/wp-content/uploads/sites/2/2019/12/Durabilite-et-Pauvrete-Rapport-bisannuel.pdf
50   CREG, au moins 400.000 ménages en précarité énergétique, 2019 https://www.creg.be/sites/default/files/assets/Publications/Press/2019/PR191205FR.pdf
51   BOSCH, Circular Economy Meets Social Commitment — The Papillon Project https://www.bosch.com/stories/papillon-project/
52   https://aster.vlaanderen/nl
53   RWADE, http://www.rwade.be/fr
54   SocialEnergie, https://www.socialenergie.be/fr/
55   EnEffect, Energy poverty in light of the local elections, 2019 http://ecoenergy-bg.net/UserFiles/File/NOVINI/Report-EnglishA4_compressed.pdf
56   Fedareme, EAP Plovdiv: Increasing the capacity of local authorities to fight energy poverty and promote clean air policies https://www.fedarene.org/best_practices/eap-plovdiv-increasing-the-capacity-of-local-authorities-to-fight-energy-poverty-and-promote-clean-air-policies

In **Croatia**, it is worth noting the FER Solutions for a Better Community project, which has been implemented from March 2018 to March 2020. It has drawn political attention to the issue of energy poverty and led to policies recommendations for the City of Zagreb. It was funded by the European Social Fund and the Office for Non-Governmental Organisations of the Government of the Republic of Croatia.[57] An investment programme for the renovation of housing, especially the most vulnerable, was also approved by the Government on 14 May 2020[58]. The aforementioned Horizon 2020 EmpowerMed project is also to implement pilot actions in Zadar, thanks to the work of the civil society organisation DOOR, the key stakeholder in the fight against energy poverty in Croatia.[59]

The issue of energy poverty has not received any particular political attention in **Cyprus**, although it is included on the agenda of the Energy Service Unit of the Ministry of Energy Poverty. Pilot (EU-funded) programmes and innovative measures seem to mostly focus on energy-saving measures for households, as suggested by the Horizon 2020 ENERGISE project (2016-2019).[60] The University of Cyprus is a partner in the Erasmus+ project IDEA[61], which aims to develop an educational platform to decrease energy poverty. Additionally, the Cyprus Consumer Association participates in the STEP project, to train personnel on the frontline on how to deliver advice to energy poor consumers and help them improve their quality of life.

In the **Czech Republic**, it is worth noting the projects led by the Municipality of Kněžice[62] on local energy generation and the Association of Civic Counseling Centers[63] to inform and empower consumers, supported by the Ministry of Industry and Trade. Also, the Czech Government is working on energy poverty issues together with the Czech Technical University, as part of the EU Strategy for the Danube Region.

In November 2019, the release of a report on socio-economic potential for energy savings triggered a question from the Parliament to the Minister of Climate, Energy and Supply on the level of energy poverty in **Denmark**. In its official response[64], the Minister, Dan Jørgensen, acknowledged that the energy transition must be socially responsible and that due consideration should be given to vulnerable consumers. Responding to the presentation of the European Green Deal in a formal letter at the beginning of 2020, the *Dansk Byggeri* (the federation of the Danish construction sector) acknowledged the importance of retrofitting to address energy poverty in Europe and in Denmark[65]. However, energy poverty among Danish households remains to date a largely unexplored topic.[66]

In **Estonia**, the Estonian Union of Co-operative Housing Associations (EKYL) tries to bring the attention on energy poverty forward[67]. In Tallinn, the Sõpruse 202 programme[68] (supported by Interreg Europe funding) has been using an innovative financing scheme to reduce energy consumption without increasing rents.

57   DOOR, ciljevi projekta, 2020 http://door.hr/portfolio/fer-rjesenja-za-bolju-zajednicu/
58   Ministarstvo graditeljstva i prostornoga uređenja, Energetska obnova obiteljskih kuća, 2020 https://mgipu.gov.hr/UserDocsImages/8324
59   DOOR, Počeo nam je novi projekt - EmpowerMed! (2019) https://door.hr/poceo-nam-je-novi-projekt-empowermed/
60   Jensen et al. (2018) 30 national summary briefs of national energy supply and demand. ENERGISE – European Network for Research, Good Practice and Innovation for Sustainable Energy, Grant Agreement No. 727642, Deliverable 2.5. http://www.energise-project.eu/sites/default/files/content/D2.5_Cyprus.pdf
61   http://www.project-idea.eu/partners/
62   Obec Kněžice, 2020 http://www.obec-knezice.cz/?fbclid=IwAR0-Z1lHO8kg_PLF1Fb8JNwiZ9r8bgRrm81fFnm5mUmCApB5uD6wE_A5Flo
63   Asociace občanských poraden, Spotřebitelské poradenství , 2020 https://www.obcanskeporadny.cz/cs/aktivity/projekty/spotrebitelske-po-radenstvi
64   Klima-, Energi- og Forsyningsudvalget har i brev af 13. november 2019 stillet mig følgende spørgsmål 88 alm. del, som jeg hermed skal besvare. Spørgsmålet er stillet efter ønske fra Søren Egge Rasmussen (EL), 2019 https://www.ft.dk/samling/20191/almdel/kef/spm/88/svar/1617446/2122273/index.htm
65   https://www.danskbyggeri.dk/media/41742/european-green-deal.pdf
66   Nierop, S.C.A, .Energy poverty in Denmark?, 2014 https://www.energypoverty.eu/publication/energy-poverty-denmark
67   EKYL, EKYL joined the EU Energy Poverty Observatory, 2019 https://ekyl.ee/en/2019/11/19/ekyl-joined-the-eu-energy-poverty-observa-tory/
68   Interreg Europe, Sõpruse 202 - Implementing the KredEx scheme in Tallinn, Estonia https://www.interregeurope.eu/policylearning/good-practices/item/214/sopruse-202-implementing-the-kredex-scheme-in-tallinn-estonia/

In **Finland**, the research and advisory company VaasaETT has published several studies in the past years and worked on raising awareness on energy poverty at the political level, in particular in the context of the aforementioned Horizon 2020 ASSIST project[69]. In particular, throughout the length of the project (2017–2020), they organised 'energy cafés' to reach people and get first-hand insights on energy poverty and housing issues, which helped to underline the role of municipal social welfare organisations.

In **France**, the RAPPEL network[70], founded in 2007 and made up of more than 1,000 members from various backgrounds (social services, energy management, housing renovation, health, etc.), keeps on being the key actor of the fight against energy poverty and for 'decent housing'. Its fieldwork complements that of the French Energy Poverty Observatory[71]. This concerted work allows energy poverty issues to be well integrated into energy and climate policies. This way, the law relating to energy and climate (law n°2019-1147 of 8 November 2019[72]) includes among its priorities the eradication of 'housing with excessive energy consumption' (or 'thermal sieves'). On 2 December 2019, the Minister of Overseas Regions and Territories and the Minister of Cities and Housing signed the Overseas Housing Plan 2019–2022[73], which targets energy poverty in these areas. The *Habiter* Mieux programmes are at the heart of the aid programmes provided by the State via the National Housing Agency and financed by Energy Saving Certificates. An update took place at the beginning of 2020 to accompany better the energy-poor households[74].

Dedicated measures against energy poverty amongst vulnerable households are particularly widespread in France. CLER (*Comité de liaison pour les énergies renouvelables*), which coordinates the RAPPEL network, is for example at the initiative of the SLIME programme[75] (*Service local d'intervention pour la maîtrise de l'énergie*), which aims to organise local actions to combat energy poverty and to systematise the identification of households so as to provide tailor-made solutions. Another example is Eco-Habitat[76] in northern France, which relies on a network of social workers and Caritas volunteers. In the same spirit, the urban area of Roanne (Loire) has been very active since 2019 and is the contracting authority for a Public Interest Programme aimed at activating actions to combat energy poverty and promoting home care[77]. It is also worth mentioning is the *Rénovons!*[78] initiative, a broad alliance of civil society organisation committed to energy efficiency through energy-efficient housing renovation. Another example of interdisciplinary work is that of the HOPE Industrial Chair[79], at the Grenoble Insitute for Technology, which aims to federate actors in the fight against energy poverty by stimulating the creation of innovative solutions.

In **Germany**, the Federal Government pursues a comprehensive approach to poverty reduction in social law that is not sector-specific[80]. The Federal Ministry for Economic Affairs and Energy's position was clarified in April 2019[81] in the response to a list of questions on energy poverty from Members of

69   ASSIST2GETHER, Report of the 3rd Market Actor's Dialogue, 25 March 2020 FINLAND, 2020 https://static1.squarespace.com/static/5607ee17e4b0afe8da3e56f7/t/5e9ec08d13418a090e26bad4/1587462291264/Energypoverty_webinar_Finland20200325_report.pdf

70   RAPPEL https://www.precarite-energie.org

71   ONPE http://www.onpe.org

72   JORF n°0261 du 9 novembre 2019, Loi n° 2019-1147 du 8 novembre 2019 relative à l'énergie et au climat https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000039355955&categorieLien=id#JORFARTI000039355978

73   Ministère de la Cohésion des territoires et des relations avec les collectivités territoriales, plan logement outre-mer 2019-2022, 2019 https://www.cohesion-territoires.gouv.fr/plan-logement-outre-mer-2019-2022

74   ANAH, Du nouveau pour habiter mieux sérénité : un financement plus avantageux, 2020 https://www.anah.fr/actualites/detail/actualite/du-nouveau-pour-habiter-mieux-serenite-un-financement-plus-avantageux/

75   Programme SLIME https://cler.org/association/nos-actions/les-slime/

76   Réseau Eco-Habitat http://www.reseau-ecohabitat.fr

77   SOLIHA Loire, Lutter contre la précarité énergétique et favoriser le maintien à domicile - PIG roannais agglomération (2019), https://loire.auvergnerhonealpes.soliha.fr/operation/mieux-habiter-et-sortir-du-mal-logement/

78   Rénovons http://renovons.org

79   Fondation Grenoble INP, HOPE, la chaire pour lutter contre la précarité énergétique est lancée (2018), https://fondation-grenoble-inp.fr/hope-la-chaire-pour-lutter-contre-la-precarite-energetique/

80   See bne, bne-Stellungnahme zu sozialen Fragen der Energiewirtschaft, 15 January 2020. https://www.bne-online.de/de/news/detail/bne-stellungnahme-energiearmut/

81   Deutscher Bundestag, Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Sven Lehmann, Dr. Julia Verlinden, Dr.

Parliament. In May 2019, the Green party called to stop power cuts in poorest German households and implement targeted support for energy-poor consumers.[82]

The main social actor is Caritas, which keeps providing the Stromspar-Check[83], an energy saving kit, with the support of the Federal Association of Energy and Climate Protection Agencies in Germany (eaD) and the National Climate Initiative of the Federal Ministry for the Environment. The German branch of the ecofeminist NGO WECF (Women Engage for a Common Future) is also a partner in the Horizon 2020 project EmpowerMed, linking women empowerment and energy poverty in Mediterranean countries.[84]

In **Greece**, in 2018, a new law on energy communities set their legal framework and includes support for energy poverty mitigation.[85] An Energy Poverty Observatory was developed by the Centre for Renewable Sources and Energy Saving (CRES) in 2014[86] and aims to inform the public and policy makers about energy poverty in Greece. The Heinrich Boell Stiftung Greece published its report on 'Energy poverty in Greece 2.0'[87] at the end of 2019, to showcase examples and provide policy recommendations. A discussion on energy poverty was also broadcasted on the Hellenic Parliament TV channel in February 2020, when the Horizon 2020 SocialWatt project on energy efficiency for energy-poor households was presented by the project lead – the Institute for European Energy and Climate Policy (IEECP)[88].

In **Hungary**, the city of Budapest is highly proactive on the energy poverty front. For instance, in its 2018 climate strategy[89], the capital aims for the modernisation of its building stock as a way to mitigate energy poverty. Habitat for Humanity and Energiaklub are among the key actors, in particular through the EnPover project[90] or specific research[91]. It is also worth mentioning the Apro'Tech social company, which aims to develop small scale technology solutions to address heating issues among vulnerable households, active in more rural areas[92].

In **Ireland**, the Roadmap for Social Inclusion[93], published in January 2020, presents existing initiatives and policies to combat energy poverty and issues related to housing. The Climate Action Plan[94] (August 2019) includes provisions on energy poverty and monitoring mechanisms. An important actor is Social Justice Ireland, an independent think tank and advocacy group which has developed a growing interest on energy deprivation[95]. Initiatives include the Warmth and Wellbeing pilot scheme in Dublin, developed by the Department of Communications Climate Action and Energy Action and the Sustainable Energy Authority of Ireland[96], which aims to improve the living comfort of vulnerable families living with chronic respiratory problems.

Wolfgang Strengmann-Kuhn, weiterer Abgeordneter und der Fraktion BÜNDNIS 90/DIE GRÜNEN– Drucksache 19/8383, 2019 http://dip21.bundestag.de/dip21/btd/19/088/1908879.pdf

82   Süddeutsche Zeitung, So soll Hartz-IV-Empfängern nicht mehr der Strom abgestellt werden, 14 May 2019 https://www.sueddeutsche.de/wirtschaft/hartz-iv-strom-stromkostenpauschale-gruene-1.4444148

83   https://www.stromspar-check.de

84   WECF International, https://www.wecf.org/empowermed-fighting-energy-poverty/

85   Law 4513/2018

86   CRES,
ΠΑΡΑΤΗΡΗΤΗΡΙΟ ΕΝΕΡΓΕΙΑΚΗΣ ΦΤΩΧΕΙΑΣ, 2020 http://www.cres.gr/energy_poverty/energy_poverty_main.do?jsp=Energy_Poverty_home

87   Heinrich Boell Stiftung Greece, Energy poverty in Greece 2.0, 2019 https://gr.boell.org/en/2020/01/15/energy-poverty-greece-20

88   Social Watt, Hellenic Parliament TV- Energy Poverty, 2020 https://socialwatt.eu/en/newsandevents/hellenic-parliament

89   Budapest klímastratégiá , 2018 https://budapest.hu/Documents/klimastrategia/Bp_Klimastrategi%C3%A1ja_vegleges_KGY%20elfogadott.pdf

90   Energiaklub, EnPover - Önkormányzatoknak szóló alacsony költségű energiahatékonysági intézkedések az energiaszegénység csökkentése érdekében, 2019 https://energiaklub.hu/projekt/enpover-onkormanyzatoknak-szolo-alacsony-koltsegu-energiahatekonysagi-intezkedesek-az-4745

91   See for example, Index, Nyakunkon az áramszegénység, 2020. https://index.hu/belfold/2020/05/25/aramszegenyseg_rezsihatralek_koronavirus/?fbclid=IwAR09qTWB9SGN36HRCbHbO92xm1ZqBDVL-CtmrPnLRB9uWdKbPLZ8T10n3pI

92   Vedegylet, http://védegylet.hu/aprotech_eng

93   Government of Ireland, Minister Doherty publishes Roadmap for Social Inclusion 2020-2025, 2020 https://www.gov.ie/en/news/0b2e3d-minister-doherty-publishes-roadmap-for-social-inclusion-2020-2025/

94   Government of Ireland, Climate action plan 2019 To Tackle Climate Breakdown, 2019 https://www.dccae.gov.ie/en-ie/climate-action/publications/Documents/16/Climate_Action_Plan_2019.pdf

95   Social Justice Ireland, Almost 400,000 people experience fuel deprivation while Ireland is among top 5 for energy price hikes (22nd May 2019) https://www.socialjustice.ie/content/policy-issues/almost-400000-people-experience-fuel-deprivation-while-ireland-among-top-5

96   Warmth and Wellbeing Pilot Scheme https://www.seai.ie/grants/home-energy-grants/free-upgrades-for-eligible-homes/warmth-and-wellbeing/

Initiatives to combat fuel poverty are expanding in **Italy**. For example, the Bank of Italy and the University of Padua have launched an Observatory[97] in 2019 (different from the one announced in the NECP). The consumer association Adiconsum and the online magazine Canale Energia have formed the 'Alleanza contro la povertà energetica'[98] (alliance against energy poverty) in 2019. Overall, the action of the social and associative sector is noteworthy, such as the initiative of Fratello Sole[99] (with Caritas), or with the environmental association Legambiente[100]. The Italian partner of the Horizon 2020 ASSIST project[101] has multiplied awareness-raising events. The HOPPER research and training project[102] of the University of Florence, financed by Erasmus+ funds is also looking closely at the question. It is also worth mentioning the PadovaFIT project, in Padova, which aims to develop and implement of a one-stop-shop to citizens for home renovation integrated services which has received Horizon 2020 funding[103]. Since 2017, the Horizon 2020 ENERSHIFT project has been using innovative financing models to promote the energy refurbishment of public housing in Liguria[104]. Initiatives from the private sector, such as the energy donation supported by the supplier A2A[105], are less common.

In **Latvia**, the Ministry of Economics organised in 2019 fourty-three informative events on energy efficiency and construction quality with different partners in more than twenty cities, in particular on available EU funding for energy retrofitting and improvement of apartment buildings[106].

In **Lithuania**, at the beginning of 2019, an alarming survey by the Department of Statistics led to a discussion on the level of energy poverty in the country and the measures to tackle it.[107] According to the H2020 STEP project, the Government has set up a working group, and discussions are underway to establish a definition of energy poverty.[108] Since 2013, the Ministry of Environment of the Republic of Lithuania has kept on supporting the Housing Energy Efficiency Agency (BETA), which is responsible for the implementation of national programs on energy efficiency projects[109]. There are ten BETA offices, covering the territory.

In **Luxembourg**, the *myenergy* platform[110], financed by the government of the Grand Duchy of Luxembourg, offers support to households living in energy poverty and provides subsidies for the replacement of energy-consuming household appliances. *Votum Klima*, a platform gathering twenty-three non-governmental organisations, seeks to draw attention to energy poverty and, in particular, offers recommendations to policymakers to address its causes and not only its effects.[111] In 2019, the *Chambre des salariés*, a public body defending employees' rights, also expressed broad support for a specific allowance for tenants who have to bear rent increases as a result of energy renovations, or 'energy rent allowance' (*Klimawohngeld*)[112]. The aforementioned STEP IN project is led by the Luxembourg Institute of Science and Technology.

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97   http://oipeosservatorio.it/en/home-en/
98   https://www.povertaenergetica.it
99   Fratello Sole, http://www.fratellosole.org
100   See for example, Legambiente, Fase 2. Ecco le 33 proposte di Legambiente per rilanciare l'Italia in chiave green (5 May 2020), https://www.legambiente.it/fase2-ecco-le-proposte-di-legambiente/
101   https://www.assist2gether.eu
102   HOPPER, Key points, 2019 https://www.energypoverty-jmchair.unifi.it/vp-99-key-points.html
103   PadovaFIT Expanded https://www.padovafit.eu/home.html
104   https://enershift.eu/en/
105   A2A, Banco dell'Energia, https://www.a2a.eu/it/sostenibilita/banco-energia
106   Ekonomikas Ministrija, Energoefektivitātes politika, 2020 https://em.gov.lv/lv/aktuali/energoefektivitates_politika/
107   LRT, Energetinis skurdas apėmęs Lietuvą: prasčiau tik Bulgarijoje, 2019 https://www.lrt.lt/naujienos/verslas/4/243808/energetinis-skur-das-apemes-lietuva-prasciau-tik-bulgarijoje
108   STEP, Targeting energy poor consumers report, 2020 https://www.stepenergy.eu/wp-content/uploads/2020/02/STEP-847080.-Targeting-energy-poor-consumers.-D.2.1.pdf
109   http://www.betalt.lt/en
110   Myenergy, Assistance aux ménages en situation de précarité énergétique https://www.myenergy.lu/fr/particuliers/electricite/assistance-aux-menages-en-situation-de-precarite-energetique
111   Votum Klima https://www.votumklima.lu/fr/bienvenue-3/
112   https://www.csl.lu/bibliotheque/publications/c84f6961af.pdf

In **Malta**, the Malta Energy and Water Agency (EWA) provides free home visits and leads an ongoing programme to replace the energy appliances for vulnerable people.[113] Although the network APF Malta (anti-poverty forum) is active in the EU Right to Energy Coalition,[114] the topic of energy poverty seems hardly discussed in the country.

In the **Netherland**s, a 2019 study on the financial impact of the energy transition[115], highlighting the burden of the transition on low-income families, brought the issue of energy poverty higher on the political agenda.[116] Measures with a concrete impact on households include de *EnergieBank*[117] and *EnergieBox*, a service offered in several municipalities (such as Eindhoven and Utrecht) to reduce residential consumption and address energy poverty by providing energy advice[118]. *EnergieSprong* is also aiming at moderating energy demand, focusing on the retrofitting of social housing, and supported by government funding[119]. In October 2019, the ENGAGER COST Action organised a public workshop on ongoing Dutch energy poverty policy debates, featuring a Member of Parliament, as well as representatives of government, business, academia and NGO. The workshop received widespread media coverage.

In **Poland**, the 'Clean Air' programme, led by the Government, should improve energy efficiency, reduce emissions of dust and other pollutants into the atmosphere and have an impact on energy poverty[120]. In particular, in Silesia, an Interreg Europe project (MOLOC), helps household switch to new, cleaner heating systems[121], indirectly addressing energy poverty. The Institute for Structural Research – partly with funding from the EC – has published a series of reports on energy poverty in the country, including policy recommendations and analyses.[122]

In **Portugal**, two key studies were recently undertaken: 1) '*Ligar – Energy for all*', with FCT-NOVA University of Lisbon, ICS-University of Lisbon, ADENE and other partners and funded by the Energy Services Regulator (ERSE); which aimed to develop inclusive strategies to mitigate energy poverty. It was achieved through the development of a multidimensional energy poverty index for identification of vulnerable regions, household interviews and dynamization of local activities. 2) A study on the Application of the Energy Social Tariff[123] (in place since the beginning of the 2010s) was published in April 2019 by the Energy Observatory and financed by ADENE, the Energy Agency. It concluded that energy poverty in Portugal is a widely overlooked phenomenon. However, recently, several programmes on energy efficiency have been introduced and should have an impact on energy poverty reduction. For example, the programme Casa Eficiente 2020 (Efficient House 2020) should make dwellings more energy-efficient. It was co-financed by the European Investment Bank.[124] ADENE and the University of Porto are partners in the Interreg Sudoe project Energy Push on social housing in the north of Portugal[125]. The consumer organisation DECO is also a partner in the Horizon 2020 STEP project which focuses on behavioural change, awareness-raising and energy efficiency.[126]

113   Malta Energy and water agency, +1MWp Scheme https://www.energywateragency.gov.mt/other-energy-projects/
114   See Right to Energy Coalition, European leaders: end energy poverty now!, 2018 https://www.euractiv.com/wp-content/uploads/sites/2/2018/05/Right-To-Energy-Public-Letter.pdf
115   Ecorys, 2019: De financiële gevolgen van de warmtetransitie, https://www.ecorys.com/sites/default/files/2019-06/20190220%20-%20De%20financiele%20gevolgen%20van%20de%20warmtetransitie%20-%20Eindrapport.pdf
116   Ad.nl, 'Energiearmoede groeit in Nederland', 2019 https://www.ad.nl/binnenland/energiearmoede-groeit-in-nederland~a0a345a1/
117   https://www.energiebanknederland.nl/
118   https://www.info.energiebox.org/impact
119   https://energiesprong.org/about/
120   Ministry of Climate, The Clean Air programme was launched a year ago, 2019 https://www.gov.pl/web/climate/the-clean-air-pro-gramme-was-launched-a-year-ago
121   Interreg Europe, Policies against air pollution in Katowice, https://www.interregeurope.eu/policylearning/good-practices/item/1687/poli-cies-against-air-pollution-in-katowice/
122   https://ibs.org.pl/en/research/energy-poverty/
123   Observatório da Energia, Estudo sobre a aplicação da tarifa social de energia em portugal, 2019 https://www.observatoriodaenergia.pt/wp-content/uploads/2019/04/estudo_tarifa_social.pdf
124   Casa eficiente 2020 https://casaeficiente2020.pt/
125   https://interreg-sudoe.eu/gbr/projects/the-approved-projects/217-sudoe-efficient-energy-for-public-social
126   https://www.stepenergy.eu/partners/

In **Romania**, it is worth mentioning the work of the Bucharest's District 1 City Hall on housing retrofitting.[127] In 2019, the First Light National Programme was proposed to the Romanian parliament. This programme specifically targets the households not connected to the electricity grid, for income or remoteness reasons. Under this programme, households would be entitled to purchase a green electricity generation system, or if possible, get connected to the public electricity distribution grid.[128]

In **Slovakia**, in February 2020, the Office for the Regulation of Network Industries (ÚRSO) submitted to the Government a report on the 'Concept for the Protection of Customers Meeting the Conditions of Energy Poverty'[129], proposing a definition and several solutions. However, the previous Government did not discuss it until the end of its term, and the new Government might come with different solutions. Before the elections, the party of the new Minister for Economy, Richard Sulík, presented several different perspectives on the subject of energy poverty.[130]

In **Slovenia**, the NGO Focus (Association for Sustainable Development) works on raising awareness on the issue of energy poverty at the political level.[131] Despite not having an official definition yet, the Ministry for Infrastructure puts the emphasis on housing renovation.[132] Several programmes and projects aimed at reducing energy poverty are implemented, such as the aforementioned Horizon 2020 EmpowerMed project on women empowerment against energy poverty around the Mediterranean[133] which is to set up a pilot project in the city of Primorska; or the Erasmus+ project IDEA on awareness-raising around energy poverty.[134]

Spain is taking many activities at the national, local and city levels. The National Strategy against Energy Poverty 2019–2024[135] was approved by the Spanish Government in March 2019 and includes extensive provisions to address all the dimensions of energy poverty in an integrated manner. The indicators were updated in October 2019 in a second document.[136] In 2018, the Madrid Comillas University set up a Chair on Energy Poverty (Cátedra de Energía y Pobreza[137]) a research and action network that seeks solutions to energy poverty through multiple research collaborations.

Energy poverty is gaining more and more attention at the local level, in particular, through administration and provincial deputations. For instance, in Barcelona, the *Punts d'Assessorament Energetic* (PAE)[138], managed in partnership with the city council, are open to all citizens seeking information on their energy consumption, and are particularly aimed at vulnerable households or those who have difficulty covering their energy expenditures. The PAEs also widely promote advice on how to reduce energy consumption and have a lower carbon footprint. In 2018, the Municipality of Barcelona created a public utility, Barcelona Energía, as a way to address energy poverty by offering fairer energy prices.[139] The *Aliança contra la Pobresa Energètica[140]* (Alliance against energy poverty), active in Catalonia, keeps on informing

127   Sectorul 1, Prezentarea programului de reabilitare termică, 2020 https://www.primariasector1.ro/prezentare-reabilitare-termica.html
128   SocialWatt, report on the status quo of energy poverty and its mitigation in the EU, 2019. https://socialwatt.eu/sites/default/files/2020-01/D1.1%20Status%20Quo%20of%20Energy%20Poverty.pdf
129   Úrad vlady, Koncepcia na ochranu odberateľov spĺňajúcich podmienky energetickej chudoby – návrh, 2019 https://rokovania.gov.sk/RVL/Material/24496/1
130   EurActiv.sk, Ako chce nová vláda chrániť spotrebiteľov v energetike?, 2020 https://euractiv.sk/section/energetika/news/ako-chce-nova-vlada-chranit-spotrebitelov-v-energetike/
131   Focus, Konferenca Energetska revščina: rešitve na praktični in strukturni ravni, 2. 10. 2019, 2019 https://focus.si/konferenca-energetska-revscina-resitve-na-prakticni-in-strukturni-ravni-sporocilo-za-javnost/
132   Republika Slovenija, Energetska prenova stavb, 2020 https://www.gov.si/teme/energetska-prenova-stavb/
133   Focus, EmpowerMed (2019) https://focus.si/projekti/empowermed/
134   http://www.project-idea.eu
135   Miteco, Estrategia Nacional Contra la Pobreza Energética, 2019 https://www.miteco.gob.es/es/prensa/estrategianacionalcontralapobrezaenergetica2019-2024_tcm30-496282.pdf
136   Miteco, Actualización de indicadores, de la estrategia nacional contra la pobreza energética, Medida 2, 2019 https://www.miteco.gob.es/es/ministerio/planes-estrategias/estrategia-pobreza-energetica/actualizaciondeindicadorespobrezaenergetica2019_tcm30-502983.pdf
137   Cátedra de Energía y Pobreza https://www.comillas.edu/es/catedra-de-energia-y-pobreza
138   Punts d'Assessorament Energetic (PAE) https://ajuntament.barcelona.cat/dretssocials/ca/innovacio-social/pae-punts-dassessorament-energètic
139   Barcelona Energia, operador eléctrico metropolitano, https://energia.barcelona/es/barcelona-energia-la-electrica-publica-metropolitana
140   Aliança contra la Pobresa Energètica, https://pobresaenergetica.es/index.php/ca/

and advocating for better enforcement of energy consumer rights and more ambitious policies. Three Catalan partners are also involved in the Horizon 2020 project EmpowerMed (Universidad Autonoma de Barcelona, Fundacio Institut de Recerca de l'energia de Catalunya and Associacio Catalana d'enginyeria Sense Fronteres), which aims to empower women to take action against energy poverty around the Mediterranean.[141] Meanwhile, the municipality of Olot is involved in the development of the Horizon 2020 EuroPACE project on housing renovation.[142]

There are a number of innovative initiatives and pilot projects in other regions, such as the Energy Poverty Intelligence Unit (EPIU) project in Getafe[143] funded by Urban Innovative Actions (UIA) as part of the Urban Agenda for the EU. Opengela, in the Basque region, focuses on housing renovation and other triggering points.[144] Also noteworthy is the aforementioned POWERTY[145] project, coordinated by the Andalusian Energy Agency. In Malaga, the utility Endesa is also developing a pilot project to detect energy-poor households through a blockchain technology.[146]

2.6 Energy poverty in the NECPs

MS level analysis

In this section, we highlight the different ways in which energy poverty is being addressed in the final drafts of the NECPs, now available for public commentary[147]. The analysis is limited by the lack of two NECPs (for Ireland and Luxembourg, alongside the UK). We conclude by providing a summative assessment of various energy poverty alleviation dimensions across these policy documents.

The NECP of **Austria** describes energy consumer protection measures in place (such as measures to ensure basic electricity supply or measures to limit disconnection). It emphasises on the impact of the energy and climate transitions for energy-poor households, in particular regarding affordability. Austria outlines that a household is energy-poor if its 'income is below the at-risk-of-poverty threshold and, at the same time, it has to cover above-average energy costs'. Besides, energy-poor households have excessive consumption for domestic uses (more than 140% of the average household energy consumption. The NECP indicates that in 2013-14, according to these indicators, about 117,000 households – around 20.3% of households at risk of poverty, or 3.2% of all households – were affected by energy poverty. The phenomenon affects, in particular, households using domestic fuel, those living in older and poorly insulated buildings (dating back before the 1960s) and occupied by isolated people and homeowners. To address energy poverty, Austria's Federal Government and provinces use social policies, alongside targeted and non-targeted measures for energy efficiency in housing. Information and awareness are perceived as key enablers of renovation policies.

The NECP of **Belgium**[148] distinguishes between complementary measures taken at federal and regional level. At the federal level, the focus is on affordability: there is a social tariff for gas and electricity for low-income or vulnerable people, and other financial support that can be mobilised by social services. The

141   Cordis, https://cordis.europa.eu/project/id/847052
142   https://www.europace2020.eu
143   EPIU, https://www.uia-initiative.eu/en/uia-cities/getafe
144   http://opengela.eus/en
145   Agencia Andaluza de la Energía, La Agencia Andaluza de la Energía lidera este proyecto en el que también participa el Observatorio Europeo de la Pobreza Energética (15 May 2019), https://www.agenciaandaluzadelaenergia.es/es/actualidad/andalucia-lidera-el-proyecto-europeo-powerty-para-buscar-soluciones-la-pobreza-energetica-mediante-el-uso-de-renovables
146   Endesa, Endesa finaliza el desarrollo para el uso de blockchain en casos de pobreza energética, May 2020, https://www.endesa.com/content/dam/endesa-com/home/prensa/noticias/documentos/2020/05/nota-proyecto-confia-mayo-2020.pdf
147   https://ec.europa.eu/info/energy-climate-change-environment/overall-targets/national-energy-and-climate-plans-necps_en
148   Own translation

NECP cites a study by the King Baudouin Foundation (2018), which distinguishes three forms of energy poverty: measured energy poverty (14.5% of Belgian households have an energy bill that is too high in relation to their income), hidden energy poverty (4.3% use as little energy as possible to make ends meet) and subjective energy poverty (4.9% indicate that they are unable to heat their home properly). The quoted study concludes that isolated adults, single-parent families, poor housing quality and poor health are risk factors for energy poverty; these challenges are addressed at the regional level. At the level of Flanders, the emphasis is on the smart meter roll-out, access to information and the renovation of dwellings. The Brussels Region suggests different financing options for housing renovation. In Wallonia, targeted social measures and opportunities for renovation are also underlined. The Belgian NECP indicates that a strategy on actions to be taken at the different levels will be carried out.

The NECP of **Bulgaria**[149] stresses the need to support the most vulnerable consumers in the market-opening (liberalisation) process. It will suppose defining criteria to identify these customers as well as financial and non-financial measures for their protection. The mechanism to support vulnerable electricity consumers is intended to ensure year-round coverage of minimum electricity needs other than heating needs. So far, the main instrument is a heating allowance during the winter period, provided today to 250,000 people belonging to seventeen different categories of vulnerable consumers. All kind of energies, including solid fuels, are covered by this winter allowance. Energy efficiency and housing incentives are presented as key elements to address energy poverty, although specific measures for energy-poor households have not been detailed.

The NECP of **Croatia** announces the preparation of a Programme for Elimination of Energy Poverty, which will set up monitoring and measuring indicators and identify the funding mechanisms. The programme should be launched before the beginning of the implementation of the NECP. It will be the third programme with an impact on energy poverty. Policies focus on energy efficiency and housing renovation, in particular those of multi-apartment buildings, capacity-building and information at the local level.

The NECP of **Cyprus** takes up the official definition of energy poverty: '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 protection of vulnerable and energy-poor consumers is made on the basis of their health, income and family status and of the support measures they receive. They benefit from a special electricity tariff, receive incentives to improve energy efficiency and invest in photovoltaic systems, and should not get disconnected if their health is at risk. 5.8% of the population use those measures.

The NECP of the **Czech Republic** acknowledges that it has to define energy poverty and its relevant measuring indicators officially. However, several projects and measures already have an impact on energy poverty, such as specific and non-specific financial support and energy consumer protection measures (such as the prevention against disconnection). A working group related to smart grids (2015) found that the quality and energy performance of a building, the price of energy at the given place, the income of the household, the conditions and the quality of the indoor environment were relevant indicators. Energy efficiency and renovation programmes are implemented at the local level. Quoting the European Energy Poverty Observatory, the NECP indicates that 5% of the population could not sufficiently heat their home in 2016 and 2% of the population had arrears on their energy bills. A research project expected for the end of November 2020 is to provide inputs and recommendations on how to address energy poverty better.

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149   Own translation

Germany sees energy poverty in the overall poverty and affordability policy contexts. The NECP explains that vulnerable citizens are constitutionally entitled to protection that cover the entire humane subsistence needs, which translate into integrated social laws and policies. There are many safeguards to prevent disconnection for non-payments, making them very rare. The NECP also mentions a study published at the end of November 2016 on energy poverty and disconnection, which was commissioned by the Federal Ministry of Economics and Energy. Regarding energy efficiency, the NECP mentions the Stromsparcheck ('energy savings check') and the critical role of the consumer organisation VZBV to inform people on energy savings.

The NECP of **Denmark** recognises energy poverty as a social issue and, therefore, does not provide specific national objectives. However, the NECP indicates that 'in the context of the Electricity Directive Denmark intends to consider vulnerable customers further' and underlines that 3% of the population could not adequately heat their home in 2018 (EU-SILC). Among the generic social support and consumer protection measures that have an impact on energy poverty mitigation, the NECP mentions a heating supplement for vulnerable elderly people and housing benefits for certain categories of households. The NECP also indicates a 'green check' (2010) which aims to compensate people with a relatively low income for the higher green taxes.

Estonia does not perceive energy poverty as a separate issue. However, the NECP explains that the households that have received once in the past six months the subsistence allowance for housing costs (including energy purchase) and under certain income thresholds, as likely to experience energy poverty. In 2018, 1.6% of the Estonian population received this housing allowance through their local administration. Energy efficiency measures that will help people affected by energy poverty, such as support for the reconstruction of apartment buildings and investments to modernise local governments building stock, are also presented.

The NECP of **Finland** indicates that there is not a significant number of households are suffering from energy poverty, i.e. the 'difficulty in maintaining or satisfying basic needs due to high energy costs'. Three different studies on energy poverty are mentioned. They were conducted between 2013 and 2018, one of them under the framework of a Horizon 2020 project (ASSIST). Energy poverty mitigation solutions are brought through general social measures and generic energy consumer protection (such as the prevention of disconnection and advice on energy efficiency).

The NECP of **France**[150] indicates that, according to the National Energy Poverty Observatory (2019), 11.6% of the French population spends more than 8% of its income to pay their housing energy bills, and 15% of French people declared having suffered from the cold during the winter of 2017. The primary support for households is a direct financial aid for the payment of energy bills: '*chèque énergie*'. The NECP describes the existing comprehensive energy efficiency and renovation strategy to mitigate energy poverty, also targeted at social housing, condominium managers, landlords and homeowners. This strategy includes direct aid and fiscal incentives for households. The NECPs explains how funding coming from energy companies' energy efficiency schemes enable to finance programmes for energy-poor households that are managed by the national housing agency (ANAH).

The NECP of **Greece** indicates that about 23% of the total population reports being unable to heat their homes. The NECP announces the launch of targeted policy measures to eliminate energy poverty among vulnerable households, to reduce it by at least 50% by 2025, by 75% compared to 2016, and to bring it to below EU-average by 2030. The Energy Poverty Action Plan will be completed in the first half of 2020. It will define energy-poor households and monitoring indicators and processes. Additional policy measures

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150   Own translation

(such as an 'energy card' to replace other financial support measures for energy-poor consumers; targeted energy efficiency programmes; incentives for suppliers and energy communities) and methods to assess them will be detailed in the action plan.

The NECP of **Hungary**[151] indicates that 9.8% of households were spending more than 25% of their income on energy expenses in 2016. Policies focus on affordability and universal energy service. The NECP indicates that Hungary is developing a programme to help vulnerable consumers and aims to extend energy efficiency programmes, including through information and awareness-raising.

The NECP of **Italy** indicates that about 8.6% of the Italian households were facing energy poverty in 2017. Energy poverty is presented as the 'inability to purchase a minimum energy basket of goods and services or a situation where access to energy services entails a diversion of resources (in terms of expenditure or income) higher than the socially acceptable level', although this is not an official definition. The main policies to support household are social bonuses for electricity, gas and for health issues. These bonuses are not provided automatically yet, therefore they do not reach all the potential beneficiaries. Energy efficiency programmes are not fully targeted at energy-poor households. The NECP indicates several priorities to address energy poverty: setting up a National Observatory of Energy Poverty at the beginning of 2020; reviewing and assessing existing instruments - in particular, extending the reach and scope of the energy bonuses (including attributing them automatically); subsidies for low income families; and energy efficiency improvements in social housing. Energy communities and self-consumption systems are also mentioned as actions to be promoted at the local level.

The NECP of **Latvia** uses several indicators developed by the EU Energy Poverty Observatory and indicates that 9.8% of the households could not afford heating due to lack of money in 2017. Social policies are the main tool to address energy poverty, started by the housing allowances provided through municipalities. The NECP explains that the NRP Energy project on Sustainable energy infrastructure and market (to end in 2021) and Horizon 2020 STEP project will provide useful recommendations for the 2022-2023 update of the NECP. Energy suppliers are to provide information on energy efficiency for households. Different solutions are being considered to address energy poverty, such as direct financial support from the national budget for protected customers. As a result, Latvia aims to have less than 7.5% of households affected by energy poverty.

The NECP of **Lithuania**[152] underlines that 27.9% of Lithuanian households could not appropriately heat their homes due to a lack of funds in 2017. The document takes four indicators into consideration: energy inefficiency, high energy prices, low incomes and a lack of consumer awareness. Lithuania has set the goal to 'Reduce Energy Poverty of the Population' in the 2021-2030 National Progress Programme, by concentrating on those indicators. For instance, there is a heating refund for the most economically deprived households. The Horizon 2020 STEP project is also helping to include additional measures. The NECP calls for policy coherence between the various objectives: energy efficiency efforts are expected from the beneficiaries of the heating refund.

The NECP of **Malta** indicates that the assessment evaluated that the country does not have a significant number of households affected by energy poverty. Therefore, no national objectives have been set. However, it considers that energy poverty reduction is part of the National Strategic Policy for Poverty Reduction and for Social Inclusion 2014-2024. In the context of the NECP, energy poverty is defined as 'whether a household can afford the necessary energy services to meet its basic daily living requirements'. The NECP underlines that 6.6% of the Maltese population has not been able to sufficiently heat in the

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151   Own translation
152   Own translation

winter (from 23.4% in 2013). Several measures have had an impact on the affordability of the bills over the years. For example, the NECP indicates that investments in energy infrastructures have led to lower bills. An Energy Benefit scheme for vulnerable households enables cheaper bills. An 'eco-reduction scheme' qualify energy-efficient households to receive a direct discount of 15-25% of their electricity bills. Professional advice and energy efficiency investments in partnership with social welfare actors are among the key measures.

The NECP of the **Netherlands** indicates that the country has not set up any energy poverty strategy or objectives. Policies focus on social welfare and mitigating poverty in general. Keeping energy affordable in the context of the climate transition is a priority. It leads to a better distribution between households and businesses of the taxes and costs needed for the transition.

For **Poland**[153], the NECP mentions a comprehensive state policy against energy poverty, which will define energy poverty and the relevant indicators to determine the number of households affected. Currently, the main policy is an energy allowance for vulnerable consumers. Energy efficiency for households and investments in infrastructures (district heating networks) are priorities.

The NECP of **Portugal**[154] does not identify specific objectives of targets in this context. Addressing energy poverty is part of the eight national objectives for 2030, under the 8th objective 'ensuring a fair, democratic and inclusive transition'. A comprehensive long-term strategy to address energy poverty, supported by a monitoring system, is under development. Currently, the main poverty to address energy poverty is a social tariff to limit the burden of energy bills in household budgets.

The NECP of **Romania**[155] uses EPOV data to assess the significance of the level of energy poverty in Romania. The country plans to target better and monitor the number of people affected by energy poverty and the policies meant to help them (rather than general help). It also focuses on just transitions and job adaptation in regions dependent on carbon-intensive industries.

The NECP of **Slovakia** describes many indirect support measures, consumer protection, housing renovation and social and economic policies that have an impact on energy poverty levels. It underlines the cooperation of stakeholders (ministries, regulators, suppliers...) and the importance of job policies.

The NECP of **Slovenia**[156] indicates that a definition and a comprehensive action plan against energy poverty will be presented by 2021, although the NECP concludes that the indicators do not suggest significant levels of energy poverty in the country. However, the NECP acknowledges that the energy and climate transition could have negative impacts on energy bills, and therefore, would make a part of population highly vulnerable. Overall, the NECP indicates that Slovenia will accelerate the implementation of social policy measures, generic housing policy measures and pre-existing targeted measures. The plan to be presented by 2021 should enable a regular assessment of the phenomenon and the measures designed at tackling it, as well as a better adaptation of the policy framework.

The NECP of **Spain**[157] presents the very comprehensive National Energy poverty strategy adopted in 2019. This plan includes definitions (energy poverty and vulnerable consumers), objectives and relevant policies, short-term palliative and long-term structural measures (including on energy efficiency) and identifies the relevant stakeholders. Spain defines energy poverty as 'the situation in which a household cannot meet its

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153   Own translation
154   Own translation
155   Own translation
156   Own translation
157   Own translation

basic needs for energy supplies, as a result of insufficient income, and which, where appropriate, may be aggravated by having an energy-inefficient dwelling'. Vulnerable consumers are 'consumers of electrical or thermal energy who are in a situation of energy poverty and who may benefit from support measures established by the administrations'. Cross-references to energy poverty mitigation objectives are included in different parts of the NECP, for instance, on energy communities.

The NECP of **Sweden** indicates that the country makes no distinction between energy poverty and poverty in general, and therefore does not address the issue in the document.

Summative analysis of the NECPs

To summarise, most countries have presented a detailed overview of energy poverty and the measures taken in their national context, even those who do not consider or recognise it as a distinct phenomenon. This is the case, for instance, in **Denmark**, **Estonia**, **Finland, Malta** and the **Netherlands**. Only **Sweden** has assessed that the phenomenon should not be covered in the NECP and has not provided an assessment of the situation.

Most countries do not, or do not yet, provide an explicit definition of energy poverty. Among those who do, the definition is not necessarily official. This is the case in **Italy** and **Malta**, who define energy poverty only for the purpose of the document. **Austria**, **Spain** or **Cyprus**, however, present official definitions. Many countries present detailed indicators to analyse the impact of energy poverty on their territories. Several countries use the primary indicators developed by the European Energy Poverty Observatory, i.e. the inability to keep the home adequately warm, arrears on utility bills, a high share of energy expenditure in income and low absolute energy expenditure. For example, the **Czech Republic**, **Denmark** or **Romania** use these indicators coupled with EU-SILC data to assess the number of households in energy poverty and highlight the priority areas for action. Issues related to summer energy poverty or transport-related concerns are rarely mentioned (however, France does cover this). The issue of affordability is often raised, in particular, in the context of the energy and climate transition. This is the case, for instance, in **Austria**, **Belgium**, **France**, the **Netherlands** or **Denmark**.

Several countries, including **Belgium**, **Croatia**, the **Czech Republic, Greece**, **Hungary**, **Italy**, **Latvia**, **Portugal** and **Slovenia**, announce upcoming studies and strategies relevant to mitigate energy poverty. These studies and strategies should enable the development of indicators and definitions.

The NECPs of **Finland**, **Lithuania** and **Latvia** stress the importance of EU-funded Horizon 2020 projects that are having an impact on energy poverty, whether it be in the form of studies or policy recommendations. The importance of EU funds, regional cooperation and cohesion policies is also underlined in **Belgium** (by the Region of Brussels), in **Bulgaria**, **Croatia**, **Greece**, **Italy** and **Poland**.

Energy efficiency and housing renovation policies, whether targeted explicitly at energy-poor consumers or broader measures, are mentioned in all plans (Austria, Belgium, Bulgaria, Croatia, the Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Slovenia, Slovakia and Spain mention housing renovation objectives and programmes). Not all go into much detail, and for instance, **Cyprus**, **Denmark**, **Estonia**, **Latvia**, **Malta**, **Slovakia**, **the Netherlands** and **Sweden**'s NECPs mention that their 'Long-Term Strategy for Renovation' will be presented in dedicated documents (as required under Article 2a of the Energy Performance of Buildings Directive 2018/844).

Renovation and energy efficiency provisions dedicated at energy-poor and vulnerable consumers are in line with the requirements of Directive 2018/2002 on Energy Efficiency ('Energy efficiency measures must be central to any cost-effective strategy to address energy poverty and consumer vulnerability and are complementary to social security policies at Member State level'). Most countries do not offer a detailed discussion of energy efficiency policies and related objectives dedicated to energy-poor and vulnerable households, but some provide a more widespread review. For instance, **France** extensively describes the energy efficiency and renovation strategy targeted at energy-poor households and social housing, including the relevant stakeholders and innovative financing mechanisms. **Spain** displays renovation objectives dedicated at vulnerable households. **Croatia**, **Estonia** and **Greece** explicitly link up renovation targets and the reduction of energy poverty. In several countries, such as **Belgium** and the **Czech Republic**, energy efficiency and retrofitting policies are implemented at the local level. **Austria** has programmes for social housing actives at the federal and provincial levels. **Italy** acknowledges that more needs to be done and 'there is room for policy measures which, in the mid-term, promote a reduction in energy demand for those properties inhabited by deprived sections of the population, through measures to enhance efficiency and complete renovation of public residential buildings (social housing). These types of measures require investments which households living in poverty, which cannot easily access normal energy efficiency incentives, are not able to make'.

Energy poverty measures involving direct tariff or bill support are present in many countries. For example, **Belgium** and **Portugal** use social tariffs, **Cyprus** or **Italy** a bonus, **France** a voucher to help cover the costs, and **Poland** an energy allowance. Winter or heating allowances exist in **Bulgaria**, **Denmark** and **Lithuania** for certain categories of vulnerable consumers. Forms of regulated prices are present in **Bulgaria** and **Italy** (enhanced protection tariff), although they are not specifically targeted at vulnerable households.

Not all countries outline national, regional or local best practices to address energy poverty. For instance, **Belgium**, **Finland**, **Spain** or **France** do. Effective regional measures are only detailed in **Belgium** (a federal state), the **Czech Republic**, or **Croatia**, for example. The **Czech Republic** mentions a pilot programme for financial assistance for the replacement of old appliances among vulnerable households in the Regions Karlovy Vary, Moravian-Silesian and Ústí nad Labem. In **Belgium**, is because policies and regulations related to the fight against energy poverty are divided between the federal level and the three regions. **Croatia** mentions a 'capacity-building plan' against energy poverty, that will be implemented in fifteen cities with more than 30,000 residents.

Many countries provide an assessment of consumer protection measures, not specifically targeted at energy-poor consumers but more generic and enabling people's overall empowerment. For example, **Austria** mentions as strict reminder procedures or obligation to contract; **Finland** mentions the existence of a winter truce or information on energy efficiency; **Malta** refers to energy efficiency schemes; the **Netherlands** to tax policies; and **Slovakia** refers to the National Reform Programme, a document presenting national policies and measures to sustain growth and employment.

The importance of infrastructure investment to moderate energy prices is particularly well explained in **Malta**, where the NECP indicates that investments in energy infrastructures have led to lower bills for all the population. **Poland** also mentions the development of district heating as a relevant infrastructure investment.

Co-operation between stakeholders and policy coherence is particularly emphasised in **Slovakia**, **France**, **Spain** or **Lithuania**. Meanwhile, **Romania** focuses on the fair transition and job adaptation in regions dependent on carbon-intensive industries.

To provide an integrated perspective, we have assessed the extent to which EU, national and local energy poverty considerations are present in the NECPs. This has been done according to 13 criteria:

1. Whether energy poverty is recognised as a distinct phenomenon in the document;
2. Whether energy poverty is explicitly defined;
3. If explicit energy poverty indicator(s) have been formulated;
4. There are direct policies to address energy poverty;
5. There are energy poverty measures involving direct tariff or bill support;
6. There are energy poverty measures involving energy efficiency investment;
7. There are energy poverty measures involving market regulation;
8. There are energy poverty measures involving infrastructure investment;
9. New financing models to address energy poverty have been proposed;
10. EU funding has been recognised as source for energy poverty alleviation;
11. There are effective national best practices to address energy poverty;
12. There are effective local or regional best practices to address energy poverty;
13. There are effective engagement mechanisms to address energy poverty.

As can be seen in Table 1, the overwhelming majority of NECPs incorporate at least three of these elements.

Table 1: A summative assessment of energy poverty across the NECPs.
Note: Each criterion has been given a score of 2 where it has been fully met, and a score of 1 where it has been only partially met – e.g. through regional or indirect policies. EP = Energy poverty. EE = Energy efficiency. BP = Best practices.

Criterion	BE	ES	FR	LT	BG	GR	IT	MT	HR	CY	PL	RO	AT	HU	FI	PT	SK	CZ	LV	DE	EE	NL	DK	SI	LU	SE
EP recognised	2	2	2	2	2	2	2		2	2	2	2	2	2		2	2	2	2					2		
EP defined		2		2			1	1		2			2		2											
Explicit EP indicator(s)	2	2	2	2			2	2		2		2	2	2				2	2		2	2				
Direct EP policies	2	2	2		2	2	2	2	2	2		2		2						2	1					
Tariff bill EP measures	2	2	2	2	2	2	2	2	2	2		2				2	1						2			
EE for EP	1	2	2	2	2	2	2	2	2	2	2		2	2	1	2	1				1		1			
Market regulation	2			2	2		2					2		2			1					1				
Infra. investment	2	2	2	2	2	2		2				2	2				1					1				
New financing	1		2			2						2														
EU funding for EP	1			2	2	2	1		2		2								2							
National BPs for EP	2	2	2					2							2						2					
Local/regional BPs	2														2			2								
Engagement mechanisms		2	1	1					2			2	2		2	2	2			1						
Summative score	**19**	**18**	**17**	**17**	**14**	**14**	**14**	**13**	**12**	**12**	**12**	**12**	**10**	**10**	**9**	**8**	**8**	**6**	**6**	**5**	**4**	**4**	**3**	**2**	**0**	**0**

2.7 Member State responses to the COVID-19 crisis

The COVID-19 lockdown implemented in most EU MS forced millions of households to stay home, sometimes with decreased income but higher energy bills, thus exacerbating the existing risk of energy poverty or causing new energy vulnerabilities. However, during the period of lockdown, having access to energy was crucial to stay healthy (e.g. washing hands), but also to work and study from home. Aware of this basic need, most governments and utilities in the EU decided on emergency energy poverty relief

measures. A surge in solidarity actions from public and private actors aimed at ensuring service provision for socially vulnerable groups during the state of health emergency.

Analysis of ongoing measures

Based on a mapping of measures[158] introduced in Europe since the outbreak of the health crisis, this overview presents actions taken at national and sometimes at regional level when relevant. Measures collected were introduced by government, utilities, municipalities and NGOs to mitigate the impact of the lockdown on energy vulnerable households. The measures presented here are not exhaustive and have changed during the hectic spread of the pandemic. Through the measures collated at the time of writing this text, we try to show a few general trends in the type of mitigation mechanisms developed[159].

Figure 1: A mapping of COVID-19 response measures across the EU (Source: Map on Energy Poverty Emergency Measures during the COVID-19 pandemic, see note 150).
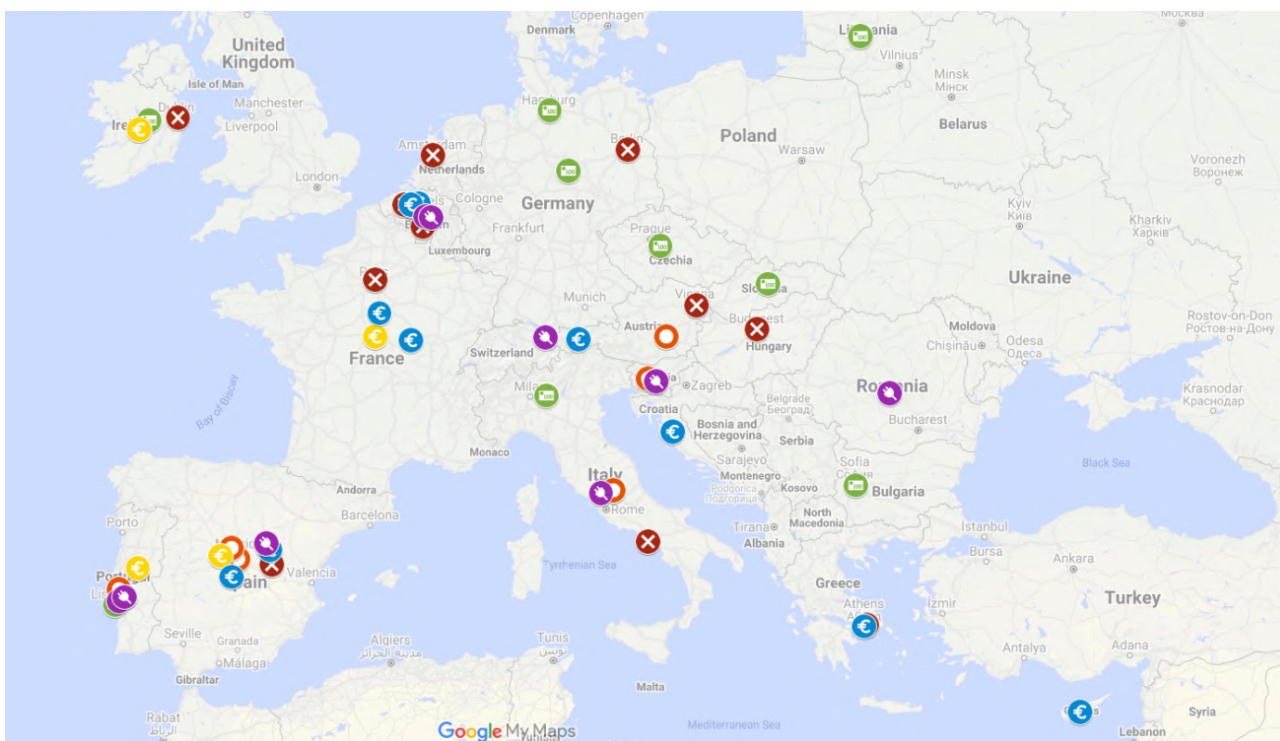
Map Legend: Emergency Measure Categories					
❌	Bans on disconnections	🪙	Personalised payment arrangements	🔍	Tariff adjustments and freezes
🟢100	Delayed payment of bills	€	Subsidies or discounts	🟠	Other measures

Based on the analysis of the measures collected throughout Europe, we can note a spatial divide. While in the Western, Southern and Central Eastern European part of Europe, governments and utilities have put in place a broad variety of measures to protect vulnerable energy consumers, **Scandinavian countries** introduced income support to the population affected by short time or the loss of jobs with no specific attention to energy services. Such decisions are consistent with the representations of energy poverty

158   See https://www.google.com/maps/d/drive?state=%7B%22ids%22%3A%5B%221zQgBMcDKxKErLWys6H2G9rg2fuOUJy4l%22%5D%2C%22action%22%3A%22open%22%2C%22userId%22%3A%22104134827266065932655%22%7D&usp=sharing)
159   The research and mapping of energy poverty relief measures during the lockdown was launched by a group of researchers within the ENGAGER initiative and was enriched by the work carried out by ASSIST project. Be they thanked for their contributions

correlated with income poverty prevailing in Scandinavian countries[160].

Several EU Members States introduced **bans on energy disconnection** at the outbreak of the pandemic for different durations: until the 30 April in Brussels[161] and until the end of the lockdown in Wallonia[162] in **Belgium**, until the end of the state of emergency in **Spain**[163], until 17 May in **Italy**[164], until 16 June in **Ireland**[165]. On 20 March, the **Austrian** government announced the signature of an agreement with energy suppliers to ban disconnection during the lockdown until the 1 May[166]. The **Hungarian** government established a moratorium on electricity and gas disconnections for all consumers who have debts (i.e. bills outstanding for more than 60 days). NKM[167] (the state supplier) and Eon[168] have also been applying this rule since 13 March – until further notice. A law on disconnection bans was introduced in **Poland** on 31 March. For the first time, in **Germany** municipal energy providers agreed not to cut off defaulting customers during the COVID-19 crisis[169]. This announcement was complemented by the sentence 'almost without exception' which makes it worth looking at how this decision is effectively implemented.[170] Moreover, the German legislator decided to defer bill payment until the 30 June 2020, but only if financial difficulties are directly related to the coronavirus crisis[171] . In **France**, on 25 of March 2020, the government first decided to extend the disconnection ban (traditionally protecting customers during the winter season from 1 November to 31 March) until the end of May 2020. A law adopted on 11 May 2020 extended this again until 10 July 2020[172]. These measures show that governments and utilities took emergency decisions to ensure energy supply during the lockdown.

Aside from government-led initiatives, several private utilities (investor-owned as well as energy cooperatives and small community-based utilities) have also deployed emergency measures going beyond government minimum (see Table 2). On 16 April 2020, EDF decided to extend the disconnection ban until 1 September 2020, significantly improving the decision of the government[173].

Table 2: Summary of COVID-19 measures by type of actor.

	Government	Regulator	Private Utilities	Civil Society	Public-Private Agreement
Ban on disconnections	6	4	0	0	3
Personalised payment arrangement	1	2	1	0	0
Subsidies or discounts on energy	3	1	7	0	1
Tariff adjustments and freezes	3	3	3	0	0
Delayed payment of bills	2	4	3	0	0
Other measures	3	1	2	1	0

Although the suspension of disconnections is welcome to ensure energy service provision, it remains to be seen how it is going to be applied in practice, since a lot of utilities keep paying energy debt collectors to recover the debt. Moreover, no information is available on how the debt that is likely to accumulate

160 Bouzarovski S., Thomson H., 2019, Transforming energy poverty policies in the European Union: Second annual report of the European Union Energy Poverty Observatory. https://www.energypoverty.eu/sites/default/files/downloads/observatory-documents/20-01/epov_pan_eu_report_2019_final.pdf
161 https://www.brugel.brussels/publication/document/avis/2020/fr/AVIS-297-PRONLONGATION-PERIODE-HIVERNALE-2019-2020.pdf
162 https://www.cwape.be/?dir=2&news=1069
163 https://www.miteco.gob.es/es/ministerio/medidas-covid19/energia/default.aspx
164 https://www.arera.it/it/com_stam
165 https://www.cru.ie/covid-19-information/
166 https://www.bmk.gv.at/service/presse/corona_energie.html
167 https://www.napi.hu/magyar_vallalatok/felfuggesztik-az-aram--es-gazkikapcsolasokat-is.702076.html
168 https://www.eon.hu/hu/rolunk/sajtoszoba/sajtokozlemenyek/kikapcsolasi-moratorium.html
169 https://www.stadt-und-werk.de/meldung_33635_Zahlungsaufsch%C3%BCbe+abmildern.html
170 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/873960/Supplier_Agreement_19.3.2020.pdf
171 https://www.verbraucherzentrale.de/wissen/geld-versicherungen/kredit-schulden-insolvenz/stromsperre-was-nun-11674
172 https://www.cohesion-territoires.gouv.fr/adoption-par-les-deputes-de-lamendement-reportant-la-prolongation-de-la-treve-hivernale-jusquau-10
173 https://www.edf.fr/groupe-edf/espaces-dedies/journalistes/tous-les-communiques-de-presse/crise-sanitaire-edf-s-engage-sur-des-mesures-inedites-pour-aider-tous-ses-clients

during the disconnection ban is going to be handled at the end of the state of emergency and whether the moratorium on disconnection is only postponing the hard reality of being disconnected. While the lockdown has illustrated the crucial importance of 'keeping the lights on', no mechanism is planned to ease households' efforts during the recovery stage. This is despite the fact that economic hardship affects more and more people who may be trapped in a precarious energy state for a much longer time. Furthermore, little or no information is available on reconnection measures during the lockdown in case households were disconnected before the outbreak of the health crisis. One of the exceptions identified in **Spain** is the exemption on documentation – particularly during the pandemic – to allow vulnerable household squatting, to be legally connected to the energy grid and water network[174].

Closely connected with disconnection bans, **moratorium** or **deferral** of energy bill payments and personalised late payment arrangements have also widely been introduced in Europe during the crisis to alleviate budget pressure on households. In **Ireland** suppliers are required to organise repayment arrangements and take into account the 'customers' circumstances[175]. In **Italy** the energy regulator suspended bill payments until the 30th of April 2020 for all energy consumers living in the 11 municipalities of the 'former red zone' in Lombardy and Veneto. Payment in instalments will automatically be applied[176]. In **Portugal**, disconnection was not banned but the deadlines extended for an additional 30 days[177]. **Bulgaria** extended the period during which the bill can be paid from 10 to 20 days after the bill is released[178]. The **Czech Republic** and **Lithuania** have introduced payment deferrals, up to three months in the Czech Republic. The customers of Ignitis UAB in Lithuania can defer payments during the quarantine and one month after. The **Slovakian** utility SPP allow households to postpone 'their advance payments for electricity and gas supply by 3 months'[179]. In **Poland**, energy companies can offer payment deferrals on a case-by-case basis. Although such payment arrangements are welcome during the time of the crisis, the management of the debt after the moratorium is not yet clear.

Actions on energy prices have also been decided either by the national government and applying to the whole country or by utilities and applying to their customers only. **Romania** introduced a price freeze during the 30-day state of emergency[180]. In **Italy**, an energy tariff decrease (-18,3% for electricity, -13,5% for gas) was announced for customers with a regulated energy tariff[181]. Most energy price freezes introduced are often connected to the global situation on the energy market. Exceptions can be found in price freezes of bottles LPG in **Portugal** and **Spain**[182]. These cases can be explained by the difficulty to identify vulnerable households using such fuels for basic energy services, particularly in low-quality and old buildings.

Some utilities have also introduced discounts. In **France**, Engie decided to reimburse two months of fixed charges (abonnement) of April and May to 600,000 households (€12 million) who are eligible for the '*Chèque Energie*' or the 'FSL' (emergency fund) and who were Engie clients on the 30th of April 2020[183]. Electricity night tariffs were applied to all consumers in April by Lampiris in **Belgium**[184] . In Flanders, a lump sum payment of €202.68 for employees who became 'temporarily unemployed' due to COVID-19 for energy and water bills (equalling one month of consumption) is offered by the Flemish government[185].

174   Housing Offices Network in the province of Girona (April 2020) Personal communication
175   https://www.cru.ie/covid-19-information/
176   https://www.arera.it/it/com_stampa/20/200318ns.htm
177   https://www.erse.pt/media/111bv5wk/regulamentomedidas-excecionais-por-emerg%C3%AAncia-epidemiol%C3%B3gica-covid-19.pdf and the extension: https://www.erse.pt/media/pyyhco23/comunicado-regulamento-covid-ii_vfinal.pdf
178   https://coronavirus.bg/bg/merki/socialni
179   https://erranet.org/regulatory-measures-to-covid19/#regulated-entities
180   https://universul.net/romania-orders-price-freeze-on-energy-fuel-as-emergency-measures-to-respond-to-coronavirus-crisis/
181   https://www.arera.it/it/com_stampa/20/200326agg.htm
182   See relevant measures in Spain (https://www.boe.es/buscar/act.php?id=BOE-A-2020-3824) and Portugal (https://www.erse.pt/media/i1yhc5hi/comunicado-gpl_pre%C3%A7os-m%C3%A1ximos_vf.pdf)
183   https://particuliers.engie.fr/pourquoi-choisir-engie/conseils-actualites-engie/mois-abonnement-offerts.html
184   https://www.lampiris.be/sites/default/files/media/files/Info_et_conditions_STAYHOME_1.pdf
185   https://www.vlaanderen.be/water-en-energievergoeding-bij-tijdelijke-werkloosheid-door-covid-19

In **Greece** the public energy corporation offers discounts to consumers for the next three months (no fixed charges for all), with a special discount for the elderly (8%) and €5 reduction for consumers who are paying online in order to discourage their clients to visit their office during the lockdown[186]. The EAC in **Cyprus** decided on a 10% discount applying on bills in March and April but encourages customers to pay their bills, in case of financial hardship, decisions can be made on a case by case basis[187]. In **Slovenia**, action on energy prices took the form of suspending 'payment of contributions for subsidies for high-efficiency cogeneration and renewables for small business consumers and households'[188] from 1 March 2020 until 31 May 2020, mitigating the energy burden on households' budget but jeopardising their renewable targets. The utility GEN-I reduced their prices **by 15%** from 1 March 2020 until 31 May 2020 in **Slovenia**. An equivalent measure was introduced **by 15%** for household customers under the standard pricelist in **Croatia**[189].

Procedures were eased for specific situations. In **Spain** an automatic extension of the social tariff for electricity was applied to households that were supposed to sign again for this tariff[190]. In **Ireland**, action was taken to increase the emergency credit of households depending on pre-payment meters (from €10 to €100) but it is going to be paid back later[191]. In **France**, the validity period of '*Chèque Energie*' was extended until 23 September 2020 (instead of March[192]).

A summative analysis of the most relevant emergency measures in each country is presented in Table 3. These have been grouped in three main categories: bans and suspension of disconnections; subsidies and discounts on energy bills, as well as tariff adjustments and freezes; and deferral on payments, including any sort of personalised payment arrangement due to the crisis. The fourth column indicates which countries have not developed any specific measures related to energy access during the COVID 19 crisis.

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186   https://www.dei.gr/en/oikiakoi-pelates/xrisimes-plirofories-gia-to-logariasmo-sasFeb6202032108417PM/i-dei-steketai-dipla-stin-ella-da-pou-menei-spiti-eMar242020114919407AM
187   https://www.financialmirror.com/2020/03/24/covid19-eac-moves-services-online/
188   https://www.total-slovenia-news.com/politics/5900-covid-19-slovenia#companies
189   https://www.gen-i.si/en/news-and-media/measures-being-implemented-by-gen-i-during-the-sars-cov-2-covid-19-epidemic/
190   https://www.boe.es/buscar/act.php?id=BOE-A-2020-38244
191   https://www.cru.ie/covid-19-information/
192   https://chequeenergie.gouv.fr/acceptant/faq

Table 3: Summary of COVID-19 measures by country.

	Ban on disconnections	Subsidies on energy bills, tariff adjustments and freezes	Deferral of energy bills payments or personalised payment plans	No specific measures identified
Austria	X	X		
Belgium	X	X		
Bulgaria			X	
Croatia		X		
Cyprus		X		
Czechia			X	
Denmark				X
Estonia				X
Finland				X
France	X	X	X	
Germany	X		X	
Greece	X	X		
Hungary	X			
Ireland	X		X	
Italy	X	X		
Latvia				X
Lithuania			X	
Luxembourg				X
Malta				X
Netherlands	X			
Poland	X		X	
Portugal		X	X	
Romania		X		
Slovakia			X	
Slovenia		X		
Spain	X	X	X	
Sweden				X

Conclusions

The analysis presented in this report should be considered preliminary due to the temporary and contingent character of the measures, as well as the understanding of the mapping exercise as an ongoing process at the time of writing. The surveyed initiatives could rapidly change and be adapted according to the evolution of the crisis situation in each MS. Also, all of them were launched as temporary initiatives and their follow-on effects (such as households' debt creation or mid and long-term consequences) cannot be assessed at this stage.

Most of the measures have targeted traditional or existing groups of vulnerable consumers. This could be explained because in some countries, like Spain or France, the emergency measures are actual expansions of pre-existing energy poverty programs. While this strategy facilitated the policy management during the crisis, since public servants were working from home and, in many cases, with limited resources and movement restrictions, it might have excluded new vulnerable groups emerging from the pandemic. The

scissor effects between the energy consumption increase and the income decrease resulting from the lockdown are likely to have long lasting effects on young people, children, women, freelancers, small entrepreneurs, and workers with atypical work contracts. According to a recently published report on the effects of energy precarity on children in the city of Barcelona, 15% of households with children cannot keep the home at an adequate temperature, and 13% have arrears on utility bills[193]. This particular impact on children has been aggravated by the closure of schools and school canteens due to the crisis, meaning that children have been obliged to stay at home – without any alternative – for a long period of time.

The crisis also showed that the polarisation of the labour market aggravated the economic and financial situation of large shares of the population. The sectors most dramatically affected by the lockdown are the service sector and the 'gig economy'. These sectors mainly provide low paid and low protected jobs to specific social groups such as young people, women and low educated people[194]. The unprecedented crisis has rendered them even more fragile to sustain themselves in the long term. While the general unemployment rate increased by 0.1% in Europe, youth unemployment rose by 0.4% in March 2020 with sharper increases in **Bulgaria**, **Hungary** and **Portugal**[195]. According to a Eurofound survey, the gender employment gap may worsen – with 24% of women (and 22% of men) and 32% of women with children (29% for men with children) reporting financial difficulties due to the crisis[196]. At the same time, freelance workers and small entrepreneurs have been particularly hit, losing their source of income while not being protected. In **France** for example, 74% of small businesses and entrepreneurs report a deterioration of their personal financial situation due to the crisis[197]. Unlike the previous social groups for whom no specific energy relief measures have been introduced, temporal support was granted to freelancers and small businesses mainly in the form of payment deferrals – in **Germany**, **Spain** or **France**. A short and medium-term challenge for the EU and MS lies in building the resilience of welfare, economic and energy systems to prevent European citizens from falling further into energy poverty.

From the rapid and broad response to ensure energy services access from many European countries during this unprecedented health emergency, a narrative shift can be detected towards a stronger role of the public sector, as well as of having a strong community structure in times of crisis. Not only have governments been important in the emergency response, but the emergence of alternative solidarity networks has played an important role in this context (e.g. energy communities supporting vulnerable households or people offering to help people top up the prepayment meters).

Such changes might be decisive in the current defining moment of the upcoming European Green Deal. The COVID-19 crisis has foregrounded the power of public action to address energy poverty challenges.

193   Gonzalez Pijuan, I.,2020, Precarietat energética i infancia a la ciutat de Barcelona. Una mirada des dels drets energètics de la infància. Enginyeria Sense Fronteres. Accessible from: https://esf-cat.org/wp-content/uploads/2020/04/ESFeres27-Precarietat-Energetica-i-infancia-a-la-ciutat-de-Barcelona-ESF-2020.pdf
194   Hassel A., 2020, Deepening of polarisation through Covid19, SciencesPo Webinar, 13 May
195   https://www.eurofound.europa.eu/publications/blog/is-history-repeating-itself-the-impact-of-the-covid-19-crisis-on-youth
196   https://www.eurofound.europa.eu/publications/blog/covid-19-fallout-takes-a-higher-toll-on-women-economically-and-domestically
197   https://www.questiondebudget.fr/wp-content/uploads/2020/06/CP_Cofidis-Barome%CC%80tre-du-pouvoir-dachat-2020-.pdf
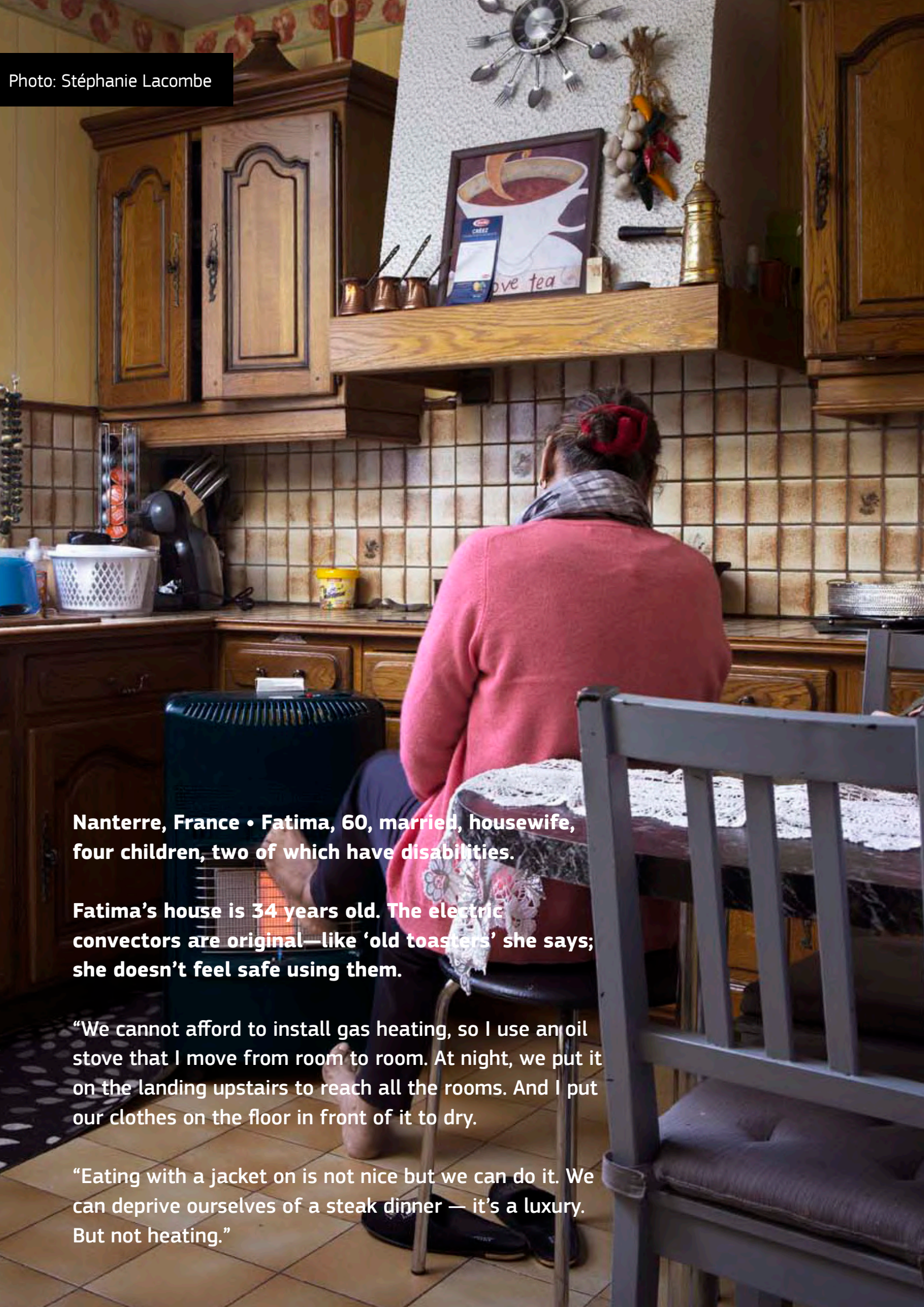
Nanterre, France • Fatima, 60, married, housewife, four children, two of which have disabilities.

Fatima's house is 34 years old. The electric convectors are original—like 'old toasters' she says; she doesn't feel safe using them.

"We cannot afford to install gas heating, so I use an oil stove that I move from room to room. At night, we put it on the landing upstairs to reach all the rooms. And I put our clothes on the floor in front of it to dry.

"Eating with a jacket on is not nice but we can do it. We can deprive ourselves of a steak dinner — it's a luxury. But not heating."

3. EU energy poverty in numbers

One of EPOV's key functions is maintaining a database of reliable and comparable statistics on energy poverty, via a publicly accessible online indicator dashboard[198]. Within this section of the report, the methodological approach is briefly summarised, followed by an overview of headline statistics, and trends over time.

3.1 Methodology

Energy poverty is a culturally sensitive, multi-dimensional concept that varies over time and by place and is thus not easily captured by a single indicator[199]. Accordingly, in practice there is a multitude of indicators currently applied to measure energy poverty in different contexts[200]. The pertinent literature identifies three main methods of measurement:

1. **Expenditure** – where examinations of the energy costs faced by households against absolute or relative thresholds provide a proxy for estimating the extent of domestic energy deprivation;
2. **Consensual approach** – based on self-reported assessments of indoor housing conditions, and the ability to attain certain basic necessities relative to the society in which a household resides;
3. **Direct measurement** – where the level of energy services (such as heating) achieved in the home is compared to a set standard.

EPOV's approach to measuring energy poverty has been to use a suite of consensual and expenditure-based indicators, which should be **viewed and used in combination**. The selection of EPOV indicators is based on a screening of pertinent literature on the measurement of energy poverty[201]. In addition to theoretical considerations, the indicator selection process has also been guided by data availability on a European level resulting in the selection of four primary indicators:

1. **High share of energy expenditure in income (2M)** – part of population with share of energy expenditure in income >2x the national median. Source: HBS[202].
2. **Low share of energy expenditure in income (M/2)** – part of population whose absolute energy expenditure is <1/2 the national median. Source: HBS.
3. **Inability to keep home adequately warm (Keep warm)** – based on self-reported thermal discomfort. Source: EU-SILC[203].
4. **Arrears on utility bills (Arrears)** – based on households' self-reported inability to pay utility bills on time in the last 12 months. Source: EU-SILC.

Detailed information about EPOV's methodology can be found in our Data Documentation, whilst a summary of data sources and temporal coverage is given in Appendix 1.

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198   https://www.energypoverty.eu/indicators-data
199   Simcock et al. 2016. http://dx.doi.org/10.13140/RG.2.1.1663.5286
200   for an overview see Rademaekers et al 2016. https://ec.europa.eu/energy/sites/ener/files/documents/Selecting%20Indicators%20to%20 Measure%20Energy%20Poverty.pdf
201   see e.g. Sareen et al. 2020 https://doi.org/10.1016/j.glt.2020.01.003
202   Household Budget Surveys (HBS): National consumption expenditure surveys that are used to compile weights for Consumer Price Indices https://ec.europa.eu/eurostat/web/microdata/household-budget-survey
203   EU Statistics on Income and Living Conditions (EU-SILC): A widely used pan-EU survey of income distribution and social exclusion https://ec.europa.eu/eurostat/web/microdata/european-union-statistics-on-income-and-living-conditions

3.2 Headline statistics

The following section provides a snapshot of current energy poverty trends across the EU, based on the latest available data for the four primary indicators listed above. It is intended that these results can then be explored in more detail within research and action projects at the national and local levels. Overall, 6.6% of households across EU28 (or 33.8 million[204]) were unable to keep up to date with utility bills in 2018, including energy bill payments, and so were at risk of experiencing disconnection of supply. Meanwhile, 7.3% of EU28 households (equivalent to 37.4 million) experienced cold homes (see Table 4).

Moving to the expenditure-based indicators reveals an intensified situation of energy poverty, with 16.2% of households across the EU28 members (82.3 million[205]) spending more than twice the national median share on energy expenditure in income (2M), meaning they are likely to face budgetary pressures and may need to cut back on other essential spending. On the other hand, an estimated 14.6% of EU households (74.2 million) had energy expenditure below half the national median (M/2), in other words abnormally low. Whilst the latter indicator can be explained in some instances by high energy efficiency standards, which would result in a household consuming low amounts of energy, it could also be indicative of a household dangerously under-consuming energy and failing to meet their basic needs. In both instances, the 2M and M/2 indicators are influenced by the underlying distributions of income and energy expenses within each country, as explained in detail within the EPOV Data Documentation.

In terms of spatial distributions, the two consensual indicators (arrears, and inability to keep warm) are particularly high within Eastern, Central and Southern Europe, with **Bulgaria** and **Greece** exhibiting the highest rates of energy poverty according to these indicators (30.1 and 33.7% and 35.6 and 22.7% respectively). By comparison, we see less spatial variance with the two expenditure indicators (2M and M/2), although in general, the rates of energy poverty are slightly higher within parts of Northern and Western Europe.

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204   Based on an estimated EU28 population of 512.6 million inhabitants on 1 January 2018: http://ec.europa.eu/eurostat/statistics-explained/index.php/Population_and_population_change_statistics. Note: the UK is included in the calculation of the average as it was still a Member State at the point of data collection

205   Based on an estimated EU28 population of 508.2 million inhabitants on 1 January 2015: https://ec.europa.eu/eurostat/documents/2995521/6903510/3-10072015-AP-EN.pdf/d2bfb01f-6ac5-4775-8a7e-7b104c1146d0. Note: the UK is included in the calculation of the average as it was still a Member State at the point of data collection

Table 4: National averages for EPOV's primary indicators of energy poverty. (Source: EU-SILC and HBS)

| Country	Arrears on utility bills (2018)	Unable to keep home warm (2018)	High share of energy expenditure in income (2M) (2015)	Low share of energy expenditure in income (M/2) (2015)
Austria	2.4	1.6	16.0	15.0
Belgium	4.5	5.2	13.0	9.8
Bulgaria	30.1	33.7	11.5	9.4
Croatia	17.5	7.7	12.0	7.5
Cyprus	12.2	21.9	12.0	13.2
Czech Republic	2.1	2.7	10.8	9.2
Denmark	5.1	3.0		
Estonia	6.5	2.3	18.7	18.9
Finland	7.7	1.7	22.3	29.9
France	6.4	5.0	15.0	19.5
Germany	3.0	2.7	17.4	17.4
Greece	35.6	22.7	16.3	12.8
Hungary	11.1	6.1	9.0	9.3
Ireland	8.6	4.4	17.6	14.8
Italy	4.5	14.1		13.6
Latvia	11.6	7.5	12.7	10.7
Lithuania	9.2	27.9	13.9	14.4
Luxembourg	3.6	2.1	11.3	8.9
Malta	6.9	7.6	20.1	16.7
Netherlands	1.5	2.2	10.7	4.4
Poland	6.3	5.1	16.3	19.5
Portugal	4.5	19.4	15.1	6.8
Romania	14.4	9.6	16.9	16.8
Slovakia	7.9	4.8	9.3	7.9
Slovenia	12.5	3.3	13.9	8.9
Spain	7.2	9.1	14.2	13.0
Sweden	2.2	2.3	28.7	24.3
UK	5.4	5.4	18.8	9.2
EU average	**6.6**	**7.3**	**16.2**	**14.6**

Trends over time: Expenditure-based indicators (2010-2015)

Monitoring indicators derived from energy expenditure provide a quantifiable account of the financial burden that energy prices and consumption place on household budgets. Unlike incomes, energy prices do not remain static and so on the one hand, expenditure-based indicators can be subject to fluctuations and create a 'moving target', but on the other hand, they may provide a more accurate picture of relative hardship at the moment of data collection. For expenditure-based assessments of energy poverty, the only available data option is Household Budget Surveys (HBS), which are conducted in all EU countries and contain data on household expenditure on goods and services, including household energy. However, at present the HBS datasets are not harmonised across the EU and there is significant variation in sampling methods, variable design and how often Member States conduct HBS, ranging from annually to every five years (Eurostat, 2014). At the time of publication, only data from 2010 and 2015 were available in scientific use files (micro data) from Eurostat.

Starting with abnormally low energy expenditure, Figure 2 shows the change in values for the proportion of households whose absolute energy expenditure is below half the national median (M/2) for the years 2010 and 2015. The majority of countries (18/28) saw reductions in the rates of households with very low

energy expenditure over the five year period, indicating that expenditure on energy has increased for this group and/or the median threshold has shifted. The largest decreases in energy poverty rates are found in **Bulgaria** (-6.7 percentage points) and **Lithuania** (-6.0 percentage points). By comparison, **Finland** saw the largest increase in the share of households with very low expenditure (+10.7 percentage points), however, there are specific structural differences in energy expenditure within **Finland** that mean this indicator may be less relevant for the Finnish context, as explained further within our extended Member State report. The overall EU average decreases by just 0.3 percentage points in this time.

Figure 2: Share of households with very low energy expenditure (M/2) between 2010 and 2015 (Source: HBS).
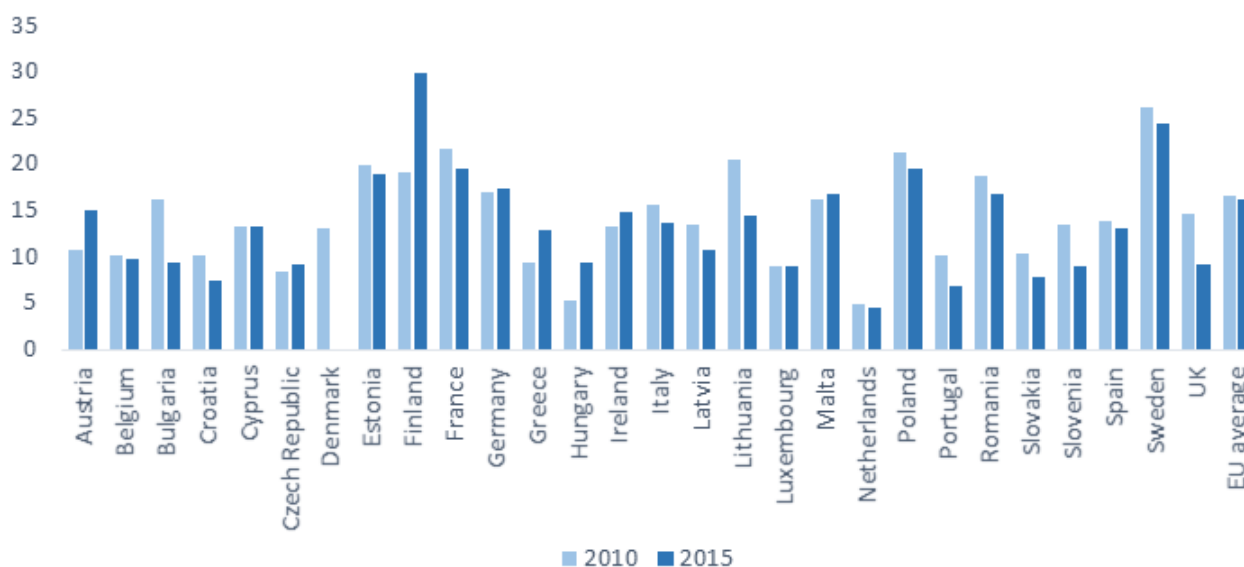
Conversely, Figure 3 shows the rates of households with a high share of energy expenditure in income (2M), for the years 2010 and 2015. Reductions in energy poverty rates according to this indicator are found in 14 countries, most notably again in **Lithuania** (-7.3 points) and **Bulgaria** (-3.0 points), indicating significant shifts in the pricing and consumption of energy in these countries. Indeed, as the extended Member State report for Lithuania notes, electricity prices have been declining since 2013, perhaps as a consequence of new electricity interconnections and power market integration in the region. Similarly, Bulgaria has seen decreased gas prices in 2015 compared to 2010. Increased rates of energy poverty according to this indicator are found in 12 countries, although in most cases these are modest increases. The highest increases between 2010 and 2015 are found in Austria (+4.3%) and Finland (+4.6%). Overall, the EU average only decreases by 0.3 percentage points between 2010 and 2015 (from 16.5 to 16.2%).

Figure 3: Share of households with high energy expenditure (2M) between 2010 and 2015 (Source: HBS).
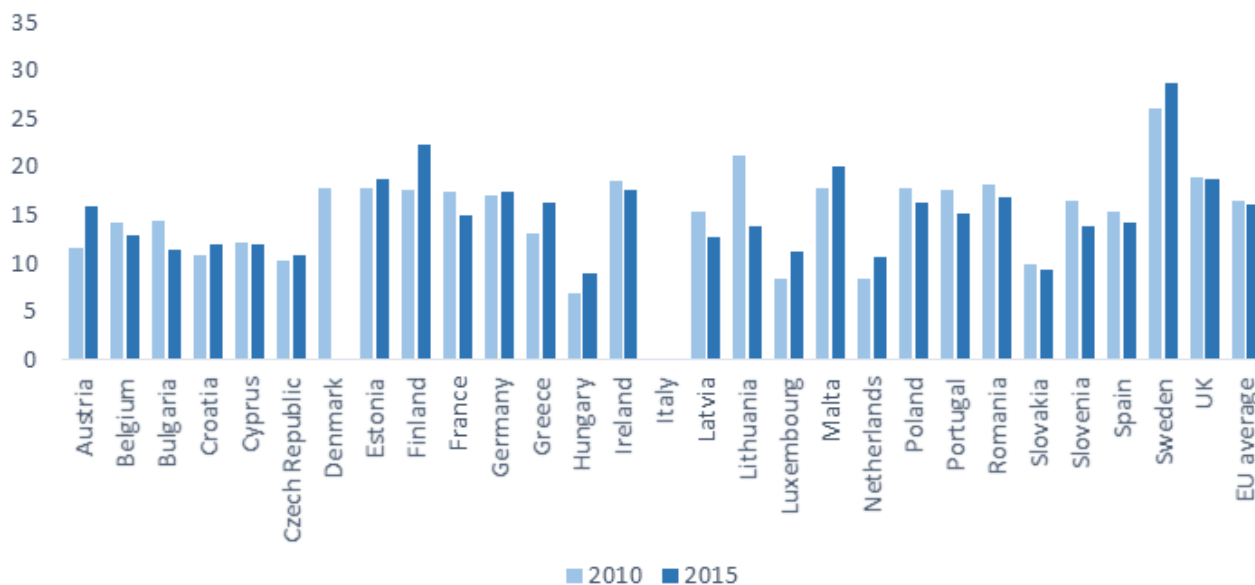
Trends over time: Consensual self-reported indicators (2008-2018)

Due to the greater frequency of data collection for EU-SILC, Tables 5 and 6 show the change in values for the proportion of households with an inability to keep their home adequately warm, and arrears on utility bills between 2008 – 2018. However, it is important to note there have been two breaks to the data time series, in 2014 and 2016.

It can be observed that the overall EU average has decreased for both indicators over the past decade (from 10.1 to 7.3 percentage points for inability to keep home warm, and from 7.9 to 6.6 for arrears on utility bills). However, looking at the EU average alone disguises significant increases for some MS, for example, Table 4 shows that the share of household unable to keep their home adequately warm has increased between 2008 to 2018 in 11 countries, most notably within **Greece** (+7.3%) and **Lithuania** (+5.3%). On the other hand, **Bulgaria** has seen a remarkable halving of energy poverty according to this indicator, reducing from 66.3% in 2008 to 33.7% in 2018, most likely as a result of sustained policies to improve the energy efficiency of dwellings. The rates of energy poverty have also decreased by around 15 percentage points within **Poland**, **Portugal** and **Romania**.

Table 5: Share of households with an inability to keep their home adequately warm 2008 – 2018 (Source: EU-SILC).

Country \ Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	3.9	2.9	3.8	2.7	3.2	2.7	3.2	2.6	2.7	2.4	1.6
Belgium	6.4	5.1	5.6	7.1	6.6	5.8	5.4	5.2	4.8	5.8	5.2
Bulgaria	66.3	64.2	66.5	46.3	46.5	44.9	40.5	39.2	39.2	36.5	33.7
Croatia			8.3	9.8	10.2	9.9	9.7	9.9	9.3	7.4	7.7
Cyprus	29.2	21.7	27.3	26.6	30.7	30.5	27.5	28.3	24.3	22.9	21.9
Czech Republic	6.0	5.2	5.2	6.4	6.7	6.2	6.1	5.0	3.8	3.1	2.7
Denmark	1.7	1.5	1.9	2.3	2.5	3.8	2.9	3.6	2.7	2.7	3.0
Estonia	1.1	1.7	3.1	3.0	4.2	2.9	1.7	2.0	2.7	2.9	2.3
Finland	1.9	1.3	1.4	1.8	1.5	1.2	1.5	1.7	1.7	2.0	1.7
France	5.3	5.5	5.7	6.0	6.0	6.6	5.9	5.5	5.0	4.9	5.0
Germany	5.9	5.5	5.0	5.2	4.7	5.3	4.9	4.1	3.7	3.3	2.7
Greece	15.4	15.7	15.4	18.6	26.1	29.5	32.9	29.2	29.1	25.7	22.7
Hungary	9.7	8.9	10.7	12.2	15.0	14.6	11.6	9.6	9.2	6.8	6.1
Ireland	3.7	4.1	6.8	6.8	8.4	10.0	8.9	9.0	5.9	4.4	4.4
Italy	11.4	10.8	11.6	17.8	21.3	18.8	18.0	17.0	16.1	15.2	14.1
Latvia	16.8	16.4	19.1	22.5	19.9	21.1	16.8	14.5	10.6	9.7	7.5
Lithuania	22.6	24.1	25.2	36.2	34.1	29.2	26.5	31.1	29.3	28.9	27.9
Luxembourg	0.9	0.3	0.5	0.9	0.6	1.6	0.6	0.9	1.7	1.9	2.1
Malta	8.8	11.1	14.3	17.6	22.1	23.9	22.3	14.1	6.6	6.3	7.6
Netherlands	1.8	1.3	2.3	1.6	2.2	2.9	2.6	2.9	2.6	2.4	2.2
Poland	20.1	16.3	14.8	13.6	13.2	11.4	9.0	7.5	7.1	6.0	5.1
Portugal	34.9	28.5	30.1	26.8	27.0	27.9	28.3	23.8	22.5	20.4	19.4
Romania	24.4	22.1	20.1	15.6	15.0	14.7	12.9	13.1	13.8	11.3	9.6
Slovakia	6.0	3.6	4.4	4.3	5.5	5.4	6.1	5.8	5.1	4.3	4.8
Slovenia	5.6	4.6	4.7	5.4	6.1	4.9	5.6	5.6	4.8	3.9	3.3
Spain	5.9	7.2	7.5	6.5	9.1	8.0	11.1	10.6	10.1	8.0	9.1
Sweden	1.6	1.7	2.1	1.9	1.7	0.9	1.1	1.2	2.6	2.1	2.3
UK	6.0	5.8	6.1	6.5	8.1	10.6	9.4	7.8	6.1	5.9	5.4
EU average	10.1	9.3	9.5	9.8	10.8	10.7	10.3	9.4	8.7	7.8	7.3

Across the EU28, 13 countries saw an increase in energy poverty according to the proportion of households that had been in arrears on their utility bill payments in the preceding 12 months, when comparing 2008 to 2018. Whilst this indicator does include some utility expenses beyond energy[206], it is nevertheless an important indicator as households unable to keep up to date with energy bill payments may experience disconnection of supply. The largest increases in rates of energy poverty are again found in **Greece** (+19.7%), followed by **Cyprus** (+4.7%). Conversely, the largest decreases can be found in **Croatia** (–10.5%) and **Italy** (–9.4%). A closer profile of wider changes in energy poverty can be found within the EPOV Member State reports[207].

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206   It excludes housing-related costs (such as mortgage payments) and telephone bills. It includes water, sewage and rubbish costs, where applicable

207   https://www.energypoverty.eu/observatory-documents?observatory_document_section=69

Table 6: Share of households with arrears on utility bills 2008 – 2018 (Source: EU-SILC).

| Country \ Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Austria	3.5	4.0	4.4	4.0	3.8	4.6	3.5	3.5	4.2	3.6	2.4
Belgium	5.1	5.9	5.8	6.0	6.1	5.0	5.8	5.1	5.0	4.1	4.5
Bulgaria	33.4	32.1	31.6	28.6	28.4	34.0	32.9	31.4	31.7	31.1	30.1
Croatia			28.0	27.5	28.9	30.4	29.1	28.7	25.3	21.0	17.5
Cyprus	7.5	13.3	16.3	16.9	18.4	21.9	20.5	20.1	15.4	13.7	12.2
Czech Republic	2.6	4.0	4.2	4.3	4.1	4.0	4.7	3.0	3.0	2.1	2.1
Denmark	2.2	2.6	3.2	3.4	3.5	3.6	4.6	3.4	2.5	3.5	5.1
Estonia	7.4	10.0	11.0	11.8	10.9	10.4	10.0	7.9	7.9	6.3	6.5
Finland	6.6	7.5	6.9	7.8	7.9	8.4	7.9	7.5	7.7	7.8	7.7
France	6.1	7.5	7.1	7.1	6.7	6.2	6.3	5.9	6.1	6.1	6.4
Germany	3.9	3.6	3.5	3.9	3.4	3.6	4.2	4.0	3.0	2.8	3.0
Greece	15.9	18.9	18.8	23.3	31.8	35.2	37.3	42.0	42.2	38.5	35.6
Hungary	14.2	20.7	22.1	22.7	24.4	25.0	22.3	19.4	16.2	13.9	11.1
Ireland	8.3	11.2	12.6	14.8	17.4	17.9	18.2	15.1	11.9	9.9	8.6
Italy	13.9	11.3	11.2	12.0	11.7	11.9	12.2	12.6	8.9	4.8	4.5
Latvia	11.8	17.8	22.5	23.4	22.4	20.7	19.6	16.7	13.2	11.9	11.6
Lithuania	6.2	8.4	10.9	11.8	12.6	13.2	10.4	8.4	9.7	7.9	9.2
Luxembourg	1.1	2.3	2.1	2.2	2.2	3.1	3.2	2.4	4.0	1.7	3.6
Malta	7.3	7.9	6.8	8.6	10.1	11.6	14.6	10.2	9.5	5.6	6.9
Netherlands	2.2	2.1	2.1	2.4	2.3	2.4	3.0	2.7	2.0	2.1	1.5
Poland	10.0	12.5	13.9	12.9	14.1	14.0	14.4	9.2	9.5	8.5	6.3
Portugal	3.7	6.1	6.4	6.7	6.3	8.2	8.5	7.8	7.3	5.6	4.5
Romania	23.5	25.1	26.5	27.3	29.7	29.7	21.5	17.4	18.0	15.9	14.4
Slovakia	3.8	11.3	9.6	6.4	5.8	5.9	6.1	5.7	5.7	5.5	7.9
Slovenia	14.2	16.9	18.0	17.3	19.3	19.7	20.3	17.5	15.9	14.3	12.5
Spain	4.6	6.3	7.5	5.7	7.5	8.3	9.2	8.8	7.8	7.4	7.2
Sweden	6.2	5.4	5.2	4.6	4.3	4.7	3.6	3.2	2.6	2.2	2.2
UK	4.7		5.6	5.0	8.9	8.7	7.2	7.0	5.7	5.0	5.4
EU average	7.9	8.9	9.1	9.0	9.9	10.2	9.9	9.1	8.1	7.0	6.6

3.3 Segmentation analysis

As noted earlier, energy poverty is a multi-dimensional concept, with a diverse range of factors that potentially determine and exacerbate the situation. This section of the report presents a segmented look at energy poverty, according to income, degree of urbanisation, tenure, and dwelling type.

### *Intersections between energy poverty and income*

Whilst energy poverty does not fully overlap with income poverty, many low-income households are also energy poor, as Figure 4 demonstrates across EU28 as a whole. Here we see that irrespective of the primary indicator of energy poverty used, there is an inverse relationship between the income decile that a household belongs to, and the average rate of energy poverty within the group. In general, this trend is repeated across the majority of Member States.

Figure 4: Share of households in energy poverty in EU28, according to income decile and the primary indicator of energy poverty (Source: EU-SILC and HBS).
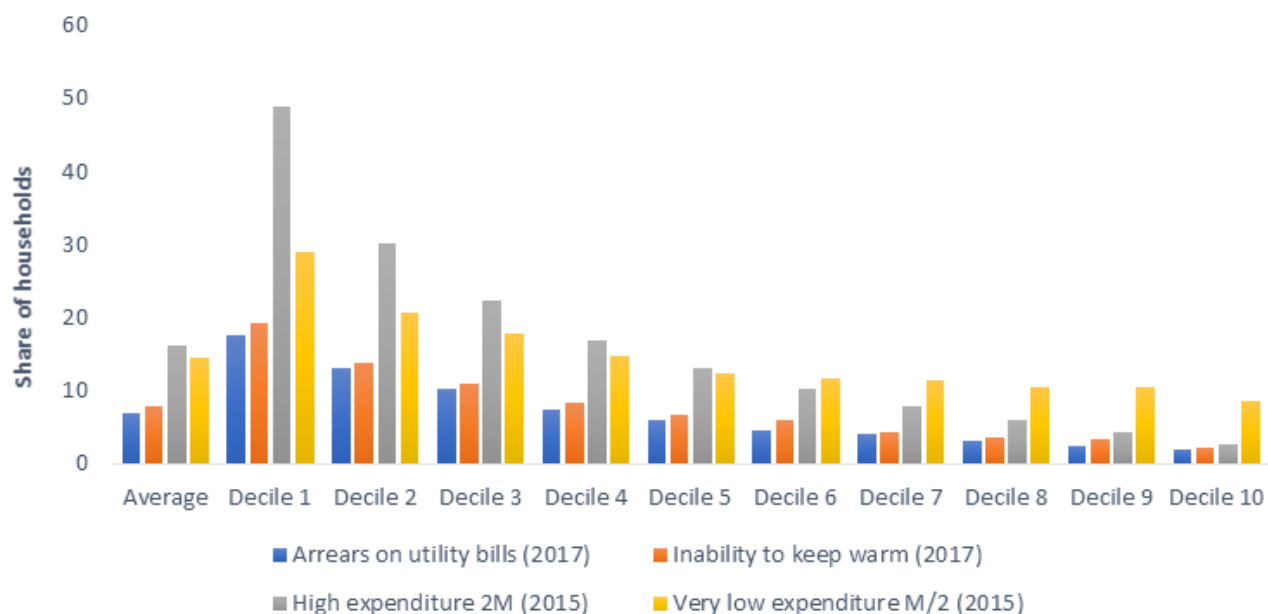
A notable exception to this trend, however, is Nordic countries such as **Sweden**, where an alternative distribution amongst income groups can be observed for the twice-median expenditure (2M) indicator represented in Figure 5. We can see that the lower income deciles are not more likely to have a high share of energy expenditure – in fact, the peak can be observed in the fifth income group. This points to structural differences in the energy bills, where households do not pay separate energy bills, as they are included in rents, which lowers the median share of energy expenditure. In countries that are in such a situation, the expenditure-based indicators may not appropriately reflect energy poverty, as our Data Documentation explains in more detail[208].

Figure 5: Share of households with twice-median energy expenditure (2M) by income decile in Sweden, 2015 (Source: HBS, taken from EPOV portal).

HIGH SHARE OF ENERGY EXPENDITURE IN INCOME (2M) | 2015 | BY INCOME DECILES

208   https://www.energypoverty.eu/indicators-data
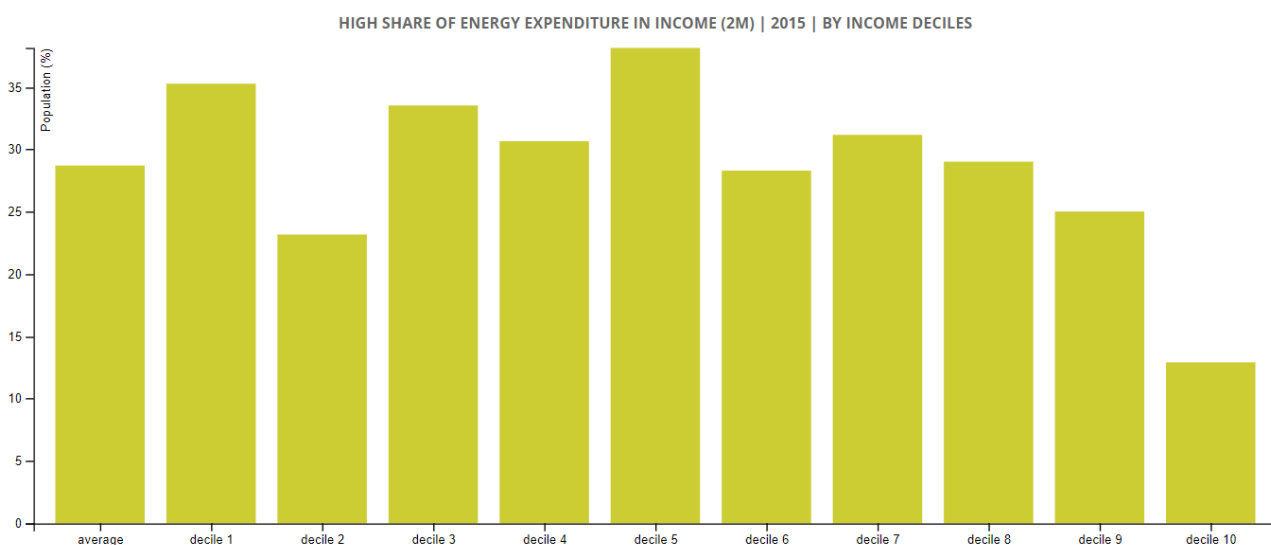
Degree of urbanisation

Turning to rural/urban divides, Figure 6 below disaggregates the primary indicators of energy poverty according to household degree of urbanisation, which is a standardised classification system where:

- A densely populated area has a density of more than 500 inhabitants per square kilometre;
- An intermediate area has a density of more than 100 inhabitants per square kilometre;
- A thinly-populated area belongs to neither the densely populated nor intermediate area[209]

We find that the two consensual self-reported indicators of energy poverty are more or less equally split among urban/rural lines, with only marginal differences observed for the arrears on utility bills and inability to keep warm indicators. By comparison, greater spatial diversity is observed for the twice-median expenditure indicator, demonstrating that on average, households within sparsely populated locations are worst affected by very high rates of energy expenditure (21.1% vs. 16.5% and 13.6% for intermediate and thinly populated areas respectively).

Figure 6: Share of households in energy poverty in EU28 according to primary indicator of energy poverty disaggregated by degree of urbanisation (Source: EU-SILC and HBS).
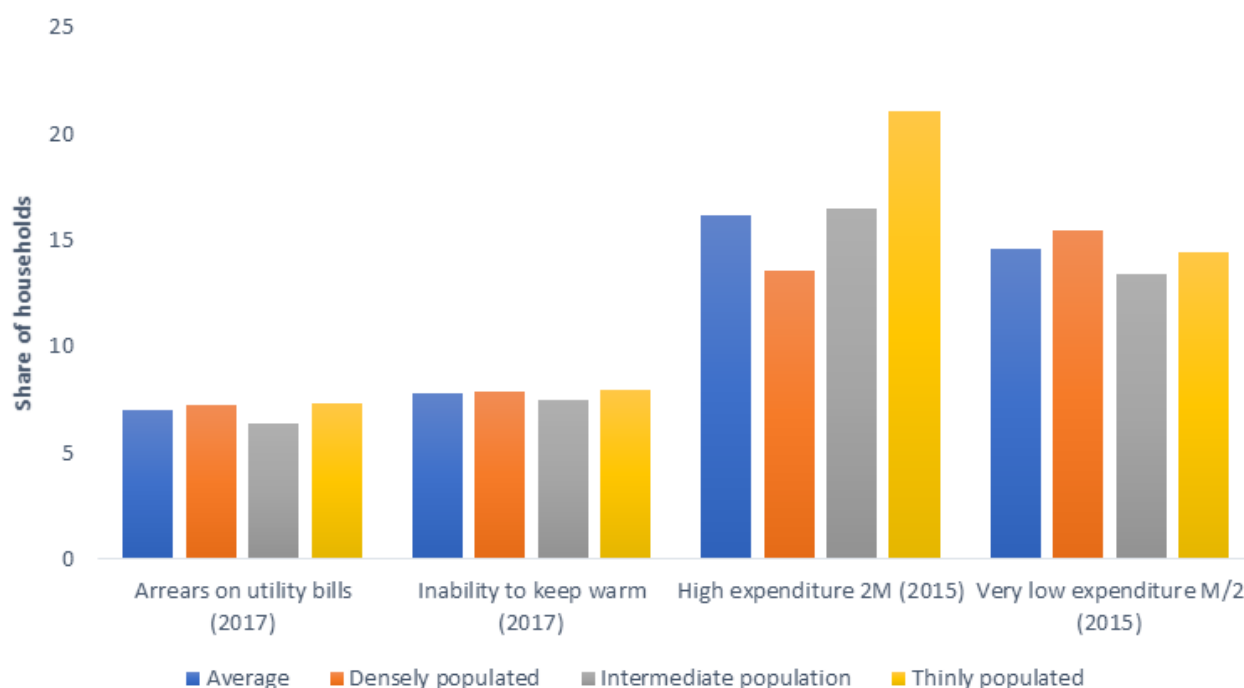
## Tenure groups most impacted

Looking at the available data for energy poverty disaggregated by tenure (Figure 7), we find that energy poverty is highest among households living in free or reduced rate rental properties, which includes social housing and accommodation where the actual rent is fixed by law[210]. Energy poverty rates are second highest among private renters paying full market rates. In combination, over a fifth of tenants (reduced and full market rates combined) experience energy poverty, which aligns with previous work

209   Eurostat (2010). Description of Target Variables: Cross-sectional and Longitudinal. EU-SILC 065/08. Luxembourg: Publications Office of the European Union
210   Eurostat (2010). Description of Target Variables: Cross-sectional and Longitudinal. EU-SILC 065/08. Luxembourg: Publications Office of the European Union

by the European Commission's Vulnerable Consumer Working Group Guidance Document on Vulnerable Consumers, which identified renters as a key risk group[211]. By comparison, owner occupiers have the lowest average rate of energy poverty within EU28, which may in part be attributable to the opportunities owner occupiers have to improve the energy efficiency of their dwelling.

Figure 7: Share of households in energy poverty in the EU28, according to the primary indicator of energy poverty disaggregated by tenure group (Source: EU–SILC).
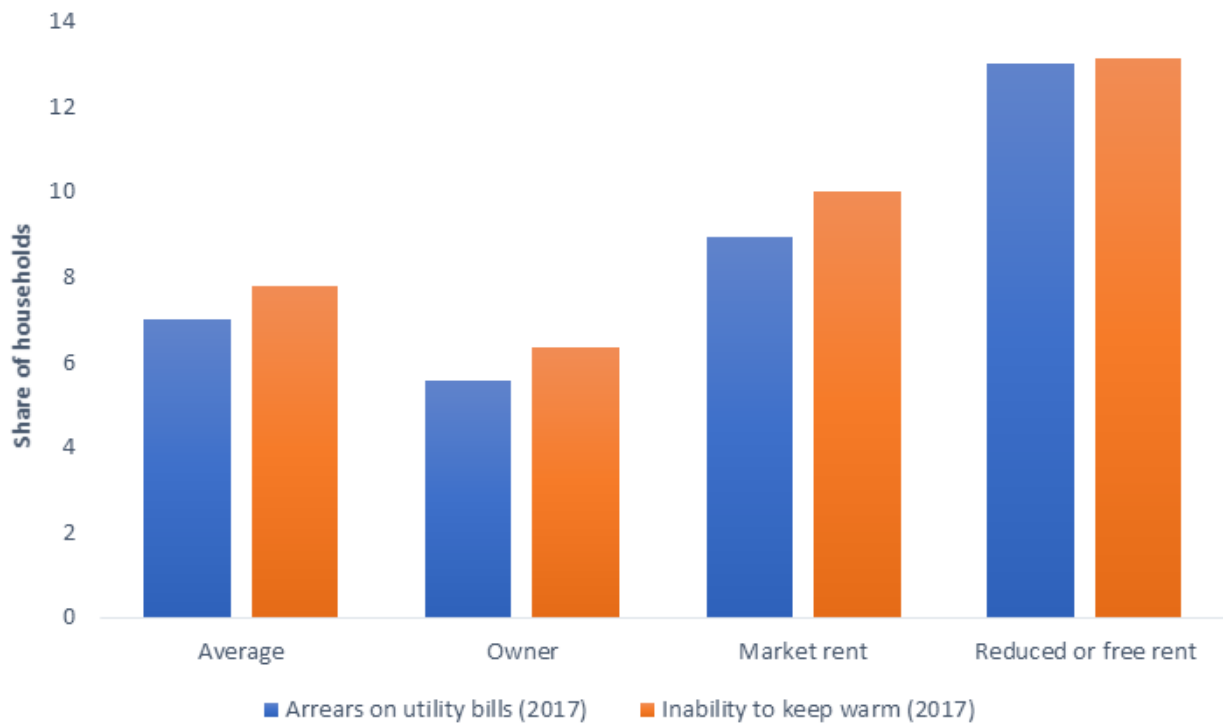
Energy poverty by building type

Across both consensual self-reported indicators, energy poverty is highest among households living in apartment buildings, with 8.0% and 9.0% of apartment dwellers across EU28 experiencing energy poverty (Figure 8). By comparison, households living in detached and semi-detached properties both have below-average rates of energy poverty.

211   https://ec.europa.eu/energy/sites/ener/files/documents/20140106_vulnerable_consumer_report_1_1.pdf

Figure 8: Share of households in energy poverty in the EU28, according to the primary indicator of energy poverty disaggregated by dwelling type (Source: EU–SILC).
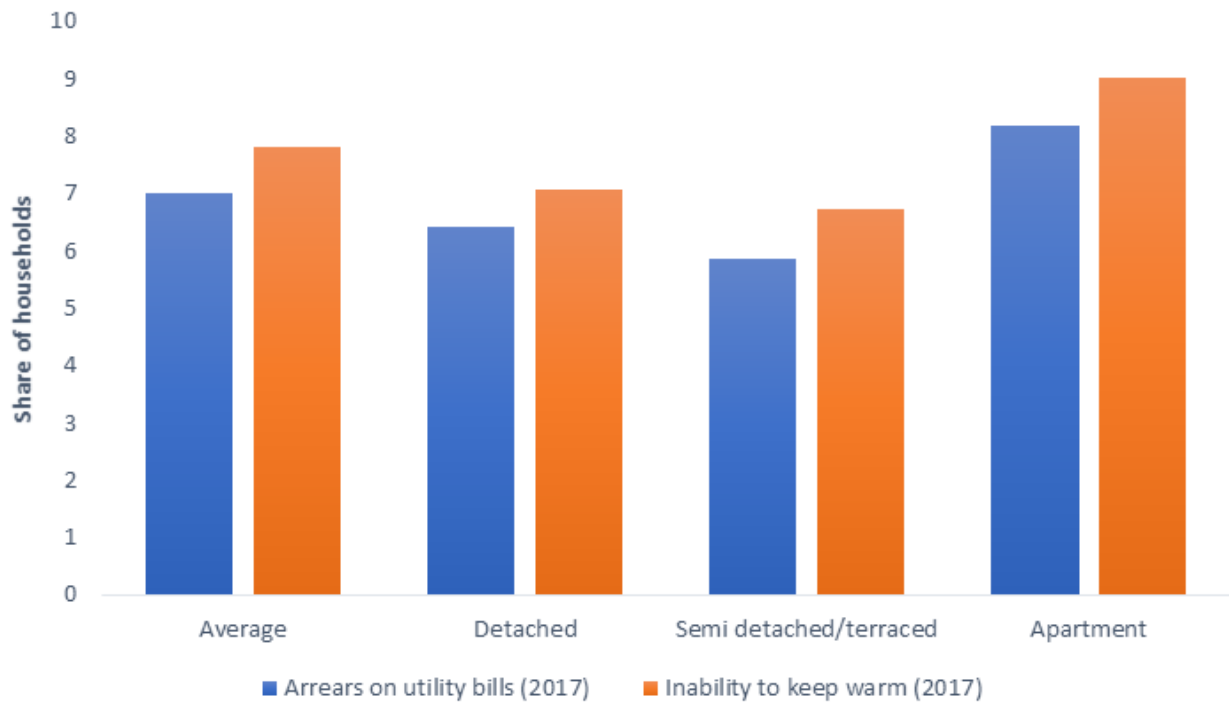
Ganges, France • Françoise, 56, divorced, three children, retired caregiver, owner.

Françoise bought this home when she retired in 2011, planning to repair it with her son's help.

"Buying the house left me with €15 000 of savings. In the end, I used the money to help pay some debts my son had. Now, I have €50/month to live on.

Sleeping here in winter is difficult. I have no electricity, no water and no toilet. I use candles for lighting and heat canned food on a Butagaz stove. I stuff the windows with clothes and warm myself with an oil stove. "

Photo: Stéphanie Lacombe

4. Conclusion

This report has presented EPOV's latest activities in the measurement, monitoring and sharing of knowledge and best practice on energy poverty. The report examined measures to tackle energy poverty, both in terms of new EU legislative requirements within the Clean Energy Package for all Europeans, and national approaches towards vulnerable households. Special attention was provided to specific measures developed in response to the COVID-19 crisis. The report also provided an overview of headline statistics and trends over time in energy poverty within the EU, as well as a segmentation analysis of the intersections between energy poverty, on the one hand, and income, degree of urbanisation, tenure, and dwelling type on the other.

Before outlining the main conclusions of the report, it is worth highlighting that EPOV collects and publishes Europe-wide energy poverty data while serving as the focal point of growing networks of policy-makers, researchers, advocacy groups and community activists interested in the issue. Its overall purpose is transform the state of the art on energy poverty detection, measurement and reporting by creating a public forum for the exchange of knowledge on the issue. The EPOV web portal (www.energypoverty.eu) provides the world's most comprehensive range of energy poverty resources, including an indicator dashboard with 28 primary and secondary indicators of energy poverty, a publications database with over 500 scientific articles, as well as catalogue of over 300 policies and measures (with examples of practical schemes and measures). The portal also contains more than 60 practical training resources, including videos and toolkits, as well as a directory with more than 800 members from 60 countries across the world. Also presented is a list of relevant organisations - with more than 100 organisations active in research, policy, and practice – in addition to discussion forums and guidance for policymakers, with information on essential points to consider for new policies.

In analysing policy measures to address energy poverty – boosted by decisive action at the EU level – we found that significant progress has already been made at the level of most MS; however, much more remains to be done to tackle energy poverty via concrete measures and policies in some contexts. We also found that the COVID-19 crisis has led to speedy short-term action to address energy affordability issues across the EU, even though most measures are of a temporary character and may not encompass most vulnerable population. Nevertheless, they have emphasised the importance of state policy and collective solidarities. Altogether, future EU and MS policy, regulation and legislation in the energy poverty domain will continue to require decision support, expert input and active stakeholder involvement.

The report also explored the prevalence of energy poverty across the EU using a range of available statistical indicators, finding:

- Energy poverty is not easily measured with a single indicator; each indicator captures a different aspect of the phenomenon;
- EPOV recommends using a suite of indicators in combination;
- The last decade has seen an overall gradual reduction energy poverty according to most of the measures that are used to monitor the problem;
- 37.4 million people were unable to keep their home warm in 2018 (EU-SILC);
- 33.8 million people had arrears on their utility bills in 2018 (EU-SILC);
- Significant proportions of households have disproportionately high – and low (i.e. they may be under-consuming) - energy expenditure burdens (HBS);
- 19.2% of households reported being too hot during summer in 2012 (EU-SILC).

The segmentation analysis of energy poverty showed strong links between energy poverty income. It also indicated that more sparsely populated areas are likely to exhibit higher rates of domestic energy deprivation, as are dwellings in the private rented sector and apartment buildings. This potentially indicates a dual energy poverty problem across the EU – in low-income urban areas and marginalised rural areas, altogether points to the complex and contingent nature of the phenomenon across the EU.

A number of key issues remain in the energy poverty domain: these include the need for better data collection on space cooling and summer overheating in particular – a neglected dimension where information coverage remains scarce and fragmentary. A further challenge is the incorporation and understanding of gender, housing and regional differences in energy poverty measurement and policy. How energy poverty and transport are connected is another important domain of future analysis and policy – particularly given the increased transfer of energy poverty action to the regional and urban scale, under wider decarbonisation imperatives.

The need for compiling and evaluating best practices at the local level remains strong, particularly as a result of the implementation of both the Clean Energy Package and the European Green Deal. In this context, it should be noted that many NECPs have missed the opportunity to foreground and support local action, while proposing more ambitious energy poverty alleviation measures where they might be needed. As a whole, addressing energy poverty in the period to come will necessitate continuing to ensure that 'no one is left behind' in the energy transition by engaging and developing the EU's vibrant stakeholder community in the energy poverty domain.

Vendrell, Tarragona, Spain • Rosa

Rosa remembers well the day her situation went from bad to worse. She and her sons, who have been squatting in this house since 2016, returned to find that thieves had broken in and stolen the windows, the wall sockets, and the entire water and electricity installation.

Now they run one extension cord to an outside electrical supply and feed other rooms with a network of power bars.

5. Appendix 1: Statistical data sources and temporal coverage

Within the EPOV indicator dashboard, we make a distinction between indicators classified as primary, and those classified as secondary:

- Primary indicators – those that capture various aspects of energy poverty, and are applied elsewhere in policy and research;
- Secondary indicators – the reasons for a secondary classification are twofold. Either the indicator captures facets of energy poverty but perhaps does not meet our quality of indicator criteria, or it is relevant in the context of energy poverty, but is not a direct indicator of energy poverty itself.

Indicator name	Data source	Data year(s)	Primary/secondary	Description
Inability to keep home adequately warm	EU-SILC	2004-2018	Primary	Based on the question 'Can your household afford to keep its home adequately warm?' This indicator encompasses the prevailing qualitative definition of energy poverty and captures self-reported thermal discomfort issues. We note that the wording of this question varies by MS. It is a recommended indicator by Rademaekers et al. (2016).
Arrears on utility bills	EU-SILC	2004-2018	Primary	Based on question 'In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?' This indicator captures potential financial difficulties, and is an important indicator as households unable to keep up to date with energy bill payments may experience disconnection of supply. Note, however, that for some MS it might cover all utility bills, including those beyond energy. In addition, arrears are not possible for some energy carriers, such as heating oil and wood pellets.
High share of energy expenditure in income (2M)	HBS	2010, 2015	Primary	The 2M indicator presents the proportion of population whose share of energy expenditure in income is more than twice the national median share. This suggests the prioritisation of energy costs over other household costs. The 2M threshold was established on the basis that this represents disproportionately high expenditure. It is a recommended indicator by Rademaekers et al. (2016).

Indicator name	Data source	Data year(s)	Primary/ secondary	Description
Low share of energy expenditure in income (M/2)	HBS	2010, 2015	Primary	The M/2 indicator presents the share of population whose absolute energy expenditure is below half the national median, in other words abnormally low. M/2 is a relatively new indicator that has been used in Belgium to complement other expenditure and self-reported indicators. In Belgium, the M/2 indicator is called Hidden energy poverty (HEP), and refers to the proportion of households which have a low energy expenditure due to the fact that they restrict their energy spending below what is necessary to meet their needs. It is a recommended indicator by Rademaekers et al. (2016). –
Fuel oil prices	EU Building Stock Observatory (BSO)	2004-2015	Secondary	Average household prices per kWh generated from fuel oil.
Biomass prices	BSO	2004-2016	Secondary	Average household prices per kWh generated from biomass.
Coal prices	BSO	2004-2016	Secondary	Average household prices per kWh generated from coal.
Electricity prices	Eurostat: nrg_pc_204	2007-2016	Secondary	Electricity prices for household consumers, band DC 2500-5000 kWh/yr consumption, all taxes and levies included.
Gas prices	Eurostat: nrg_pc_202	2007-2016	Secondary	Natural gas prices for household consumers, band 20-200GJ consumption, all taxes and levies included.
Presence of leaks, damp, rot	EU-SILC	2004-2016*	Secondary	Share of population with leaks, damp or rot in their dwelling, which can be seen as an indirect proxy of housing quality and living conditions. *However, from 2020, this indicator will no longer be collected annually; rather it will take place every 3 years.
Dwelling comfortably cool during summer time	EU-SILC ad-hoc modules	2007 and 2012**	Secondary	Share of population, based on question 'Is the cooling system efficient enough to keep the dwelling cool?' and/or 'Is the dwelling sufficiently insulated against the warm?' **For the moment there are no plans as to whether and when data for this indicator will be collected.
Dwelling comfortably warm during winter time	EU-SILC ad-hoc modules	2007 and 2012**	Secondary	Share of population, based on question 'Is the heating system efficient enough to keep the dwelling warm?' and 'Is the dwelling sufficiently insulated against the cold?' **For the moment there are no plans as to whether and when data for this indicator will be collected
Equipped with air conditioning	EU-SILC ad-hoc module	2007***	Secondary	Share of population living in a dwelling equipped with air conditioning facilities. ***Collection of this indicator has not occurred since the 2007 ad-hoc module.

Indicator name	Data source	Data year(s)	Primary/ secondary	Description
Equipped with heating	EU-SILC ad-hoc modules	2007 and 2012**	Secondary	Share of population living in a dwelling equipped with heating facilities. **From 2020, this indicator will no longer be collected.
Number of rooms per person by tenure status and dwelling type	Eurostat: ilc_lvho03	2004-2016	Secondary	Average number of rooms per person by tenure status and dwelling type.
Dwellings in densely populated areas	BSO	2004-2014	Secondary	Share of dwellings located in densely populated areas (at least 500 inhabitants/km2). Share of dwellings located in intermediately populated areas (between 100 and 499 inhabitants/km2).
Risk of poverty or social exclusion	Eurostat: ilc_peps01	2004-2016	Secondary	People at risk of poverty or social exclusion (% of population).
Energy expenditure for electricity, gas and other fuels as a share of income, split by income decile				Consumption expenditure for electricity, gas and other fuels as a share of income, by income decile.
Excess winter mortality	BSO	2005-2014	Secondary	Share of excess winter mortality.

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