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**EU GUIDANCE ON ENERGY POVERTY**

*Accompanying the document*

**Commission Recommendation**

**on energy poverty**

{ C(2020) 9600 final }

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## EU GUIDANCE ON ENERGY POVERTY

**INTRODUCTION - MEMBER STATES SHOULD DEVELOP THEIR RELEVANT NATIONAL DEFINITION OF ENERGY POVERTY, BUILDING ON A HORIZONTAL APPROACH AND PRINCIPLES**

**With about 34 million Europeans unable to afford to keep their homes adequately warm in 2018<sup>1</sup>, energy poverty is a major challenge for the EU.** Energy poverty results from a combination of low income, high expenditure of disposable income on energy and poor energy efficiency, especially as regards the performance of buildings. For decades, the EU has been facing an acute and persistent housing affordability challenge with an alarming number of Europeans being unable to afford rents or cover basic housing costs. Given the wide range of socioeconomic factors surrounding general poverty, and challenges around housing tenure systems, the issue calls for a multi-faceted approach.

**The energy transition represents both a challenge and an opportunity for EU households in the years to come.** As the Commission's analysis setting out its long-term strategic vision indicates<sup>2</sup>, energy-related expenses per household could further increase in absolute terms up to 2030. The rising trend in energy-related expenses as a proportion of income is expected to peak around 2025-2030, after which this share is expected to decline, as the benefits of the energy transition materialise in full<sup>3</sup>. At the same time, the energy transition, with the 'energy efficiency first' principle at its core and the legal and financial framework established to facilitate it, will help ensure that costs are distributed fairly. The transition will also give energy-poor households easier access to affordable energy-efficient buildings and products and to renewable energy, as it enables citizens and consumers to become active participants in the transition.

**Addressing energy poverty can also help achieve progress towards the Sustainable Development Goals.** SDG 7 calls for access to affordable, reliable, sustainable and modern energy for all. Among other aspects, it emphasises the need for affordable energy for reasons of social equality and justice. When a lack of access to affordable energy is associated with low income levels, improving such access would also advance progress towards SDG 1 on tackling poverty.

**The Covid-19 pandemic has exacerbated energy poverty issues and is likely to accentuate pressure and demand for social and affordable housing.** While its full socioeconomic impact has yet to be measured, it is clear that it has already increased unemployment and poverty across the EU. Confinement measures have raised awareness of the importance of access to affordable essential energy services and are a reminder of the need to address consumers' increasing energy needs, both conventional (space heating, hot water, etc.) and new (digitalisation of energy services).

However, as the full consequences of COVID-19 emerge, so does the opportunity to commit to our just transition objectives. This is even more evident in areas closely intertwined with social policy, such as energy poverty.

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<sup>1</sup> Eurostat, SILC [[ilc\\_mdcs01](#)] for EU27 in 2020.

<sup>2</sup> See 'In-depth Analysis in support of Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee, the Committee of the Regions, and the European Investment Bank - A Clean Planet for all - A European strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy', (COM(2018)773 final).

<sup>3</sup> These benefits will accrue as technologies become cheaper and continued energy efficiency gains lead to reduced consumption and expenditure.

**In analysing the challenges associated with energy poverty, we need to bear in mind that the degree of such poverty varies significantly across Member States and across income levels.** While only about 3% of the total expenditure of Finland's poorest households (1<sup>st</sup> income quintile) goes on energy, the proportion exceeds 16% in Czechia and Slovakia. At all events, measures are needed throughout the EU to ensure that the transition does not disproportionately affect low-income households lacking the means, financial and other, to offset higher energy costs by investing in energy efficiency and renewables.

**Access to essential energy services is among the 20 key principles of the European Pillar of Social Rights.** The Pillar explicitly states that everyone has the right to essential services of good quality, including energy. Support for access to such services must be available for those in need. **Appropriate structural measures** are needed to **ensure that the energy transition benefits the whole of society.** Social protection systems play an important role in preventing and mitigating the consequences of energy poverty. For instance, social benefits in different forms (e.g. unemployment benefits, minimum income schemes) can help tackle energy poverty indirectly by increasing the disposable income of low-income households. Social housing can provide low-income households with relatively energy-efficient housing, thereby lowering their energy bills. Energy bill support and social tariffs providing targeted financial support to help households pay their energy bills also reduce immediate pressures on the energy-poor.<sup>4</sup> As outlined in the 2020 Skills Agenda, skills are another essential aspect of social fairness in the context of the green and digital transitions.

At the same time, energy policy also has a role to play, especially where energy poverty is linked with poor energy efficiency of homes. Energy efficiency improvements to infrastructure, particularly those involving renovation of buildings, should prioritise buildings occupied by energy-poor households. In this respect, indicator breakdowns can help identify in which dwellings energy poor households live (i.e. urban or rural, owned or rented, private or reduced rate). The Commission's Renovation Wave initiative<sup>5</sup> proposes action at local, regional, national and EU level to upgrade those buildings that perform worst and tackle energy poverty.<sup>6</sup> Member States are encouraged to address major barriers to building renovation such as split incentives between owners and tenants, decision-making difficulties in multi-owner buildings, building value not fully reflecting energy performance and general low awareness of the benefits of renovation. National, regional and local regulatory frameworks are crucially important to address important administrative barriers in the context of condominium laws, procedures for permitting building renovation or extensions of modern thermal networks. Energy policy can also help consumers play a more active role, taking advantage of growing opportunities for generating and storing their own electricity,

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<sup>4</sup> Employment and Social Developments in Europe 2019, Chapter 5.

<sup>5</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions 'A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives' (COM(2020)662 final).

<sup>6</sup> Through a strategic communication containing an action plan, the Renovation Wave will address the low renovation rates across the EU and tackle the underlying barriers to improving the energy efficiency of EU building stock, with a particular focus on areas such as social housing, schools and hospitals. The initiative will cover specific legislative and non-legislative measures and enabling tools, including financing. It will promote action at all levels (EU, national, regional and local) to scale up renovation and foster deep renovation.

purchasing ‘green’ power, and reducing consumption through energy efficiency.<sup>7</sup> These policies provide for structural solutions that are more effective in the longer term.

**Energy poverty is a key concern of the ‘Clean Energy for All Europeans’ legislative package,** designed to facilitate a fair energy transition. Through their interaction, these pieces of legislation are designed to provide structural remedies to the problem, and ensure that energy poverty is addressed exhaustively and comprehensively in the new governance framework<sup>8</sup> and the mix of energy policy measures implemented under the national energy and climate plans (NECPs).

**The recast Electricity Directive 2019/944/EU requires Member States to take appropriate measures<sup>9</sup> to address energy poverty wherever it is identified,** including in the broader context of poverty. In addition, Member States must also protect vulnerable customers<sup>10</sup>. In particular, they are required to take measures to protect customers in remote areas. The 2009 Directive concerning common rules for the internal market in natural gas contains similar provisions<sup>11</sup>.

**A significant new element in the new legislative framework is that it requires the number of households in energy poverty to be quantified.** Article 29 of the recast Electricity Directive refers to Member States’ obligation to assess the number of households in energy poverty and provides that Member States must establish and publish the criteria underpinning this assessment. Article 29 also suggests possible criteria: low income, high expenditure of disposable income on energy, and poor energy efficiency of dwellings.

**Where the number of households in energy poverty is significant, Member States must include in their NECPs an indicative objective to reduce energy poverty, provide a time frame, and outline relevant policies<sup>12</sup>.** They are then under an obligation to report on any progress made towards the objective of reducing the number of households in energy poverty<sup>13</sup>.

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<sup>7</sup> The active role of members of the public and consumers is a key consideration underpinning the new legislative framework. The recast Electricity Directive also provides more effective tools to protect and empower consumers, such as better consumer information and contracts, easier switching of suppliers, out-of-court dispute settlement procedures, smart metering and demand response.

<sup>8</sup> Regulation 2018/1999/EU on the Governance of the Energy Union and Climate Action.

<sup>9</sup> Such as formulating national energy action plans, providing benefits in social security systems to ensure the necessary electricity supply to vulnerable customers, or providing for support for energy efficiency improvements (see Article 28). Important requirements are also laid down in Article 27 of the Electricity Directive, which requires Member States to ensure that all household customers, and, where Member States deem it appropriate, small enterprises, enjoy universal service, i.e. the right to be supplied with electricity of a specified quality within their territory at reasonable, easily and clearly comparable, transparent and non-discriminatory prices. To ensure the provision of universal service, Member States may appoint a supplier of last resort.

<sup>10</sup> Energy vulnerability and energy poverty are two distinct, but intertwined concepts. Both concepts need to be defined at Member State level. This Guidance does not deal with the wider issue of energy vulnerability, but rather focuses on energy poverty, and specifically the issue of affordability of essential energy services. The Electricity and Gas Directives both require Member States to define the concept of vulnerable customers. They specify that this concept ‘may refer to energy poverty’ and, inter alia, to a ban on disconnecting such customers at critical times. It is generally understood that energy poverty can be seen as a form of energy vulnerability, but the latter encompasses a wider range of situations that may be but are not necessarily related to income levels. Examples are critical dependence on electrical equipment for health reasons, or socio-demographic factors (age, education) which may be exacerbated by market-based drivers (complexity of contracts, biased comparison tools, aggressive commercial practices). Consumer vulnerability can therefore be regarded, in general terms, as a limitation on consumers’ capacity to access fully the benefits provided by the internal energy market.

<sup>11</sup> Directive 2009/73/EC of the European Parliament and of the Council concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC.

<sup>12</sup> Article 3(3)(d) of the Governance Regulation.

<sup>13</sup> Article 24 of the Governance Regulation.

In compliance with the Governance Regulation, Member States submitted their draft NECPs to the Commission by 31 December 2018. The Commission examined the draft plans and provided an EU-wide assessment<sup>14</sup> and country-specific recommendations in June 2019<sup>15</sup>. This exercise was intended to allow Member States to provide, if deemed necessary, improved final versions of their NECPs by 31 December 2019 to ensure collective and timely progress to reach the 2030 climate and energy targets. The Commission reiterated the assessment process to deliver another overall assessment<sup>16</sup> and country specific guidance on the implementation of the NECP, adopted as part of the State of the Energy Union Package<sup>17</sup>.

Starting with the draft NECPs, the Commission held that, overall, energy poverty could have figured more prominently. The more pressing requirement was the need to start energy poverty assessments by indicating the number of households in energy poverty as well as their main characteristics (composition, income levels, etc.) and their potential geographic concentration. In concrete areas of energy policy, Member States were recommended to further elaborate on the role of public bodies' buildings and explore more deeply the ways in which energy efficiency policies could address energy poverty in the final plans. Furthermore, Member States were communicated that national strategies to tackle energy poverty could benefit from a more structured approach ensuring better safeguards for consumer empowerment, protection and awareness. By June 2019, the Greek NECP stood out for offering specific objectives and the assessments provided by Italy, Malta, and Finland were appreciated for the level of detail.

As regards the final plans, the Commission assessed how the recommendations to the draft NECPs have been taken into account by Member States. Overall, the iterated EU-wide assessment echoes the main recommendations to Member States that resonate in the individual assessments, in particular the need to:

- provide more detailed assessments of the estimated number of energy poor households and more clearly set out indicative targets to reduce the numbers;
- intensify efforts to tackle energy poverty to match the momentum of the Renovation Wave initiative by providing more solutions to increase the energy performance of the existing building stock with dedicated measures and concrete actions; and
- continue improving the monitoring systems in place to better understand how energy poverty levels vary depending on the building type or quality, income levels, and geographical characteristics and over time as targeted measures are being implemented.

Some NECPs did not include the mention of an existing, or plans for the future design of, a dedicated regulatory framework addressing the issue of energy poverty. This is an important consideration since setting out clear legislative and regulatory steps that follow a binding and comprehensive implementation timeline for the period 2021-2030 helps adequately monitor the implementation of concrete and quantifiable measures by authorities and relevant stakeholders.

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<sup>14</sup> 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 - United in delivering the Energy Union and Climate Action - Setting the foundations for a successful clean energy transition (COM/2019/285 final)

<sup>15</sup> [https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans\\_en](https://ec.europa.eu/energy/topics/energy-strategy/national-energy-climate-plans_en)

<sup>16</sup> 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 - An EU-wide assessment of National Energy and Climate Plans - Driving forward the green transition and promoting economic recovery through integrated energy and climate planning (COM/2020/564 final)

<sup>17</sup> Please refer to the link provided in footnote 15.

When making a global assessment of the extent to which Member States have progressed on the June 2019 issued recommendations in their final NECPs, just transition and energy poverty aspects were considered largely addressed by Belgium, Cyprus, Spain, France, Lithuania and Malta and partially addressed by Italy, Luxembourg, Latvia, the Netherlands, Poland, Portugal, Romania, Slovenia and Slovakia. The 2020 EU-wide assessment of the final plans represents a shift from the previous years. Overall, the Commission finds that many NECPs address energy poverty and, among them, a majority present a detailed overview. The fact that many of them reported detailed indicators to analyse the impact on their territories is particularly positive. Primary indicators developed by the European Energy Poverty Observatory were used in many instances. However, in spite of this clear improvement, it has been noted that most Member are only preparing to take a more systematic approach to address energy poverty, despite the clear focus set out in the Clean Energy Package.

**The Energy Efficiency Directive 2018/2002/EU requires Member States to take into account the need to reduce energy poverty in the context of their energy efficiency obligations.** Article 7(11) states that Member States shall require, to the extent appropriate, a share of energy efficiency measures, under their national energy efficiency obligation schemes or alternative policy measures, to be implemented as a priority among vulnerable households, including those affected by energy poverty.<sup>18</sup> There are also reporting obligations in this regard in the Governance Regulation<sup>19</sup>. Finally, under the revised version of the **Energy Performance of Buildings Directive 2018/844/EC**, Member States must outline relevant national measures that help alleviate energy poverty as part of their long-term renovation strategies (LTRSs) to support the renovation of the national stock of residential and non-residential buildings.<sup>20</sup>

Another novelty worth highlighting in the package is the link it establishes between energy communities and energy poverty. The recast Electricity Directive states that “community energy can [also] advance energy efficiency at household level and help fight energy poverty through reduced consumption and lower supply tariffs. Community energy also enables certain groups of household customers to participate in the electricity markets, who otherwise might not have been able to do so<sup>21</sup>. Similar calls to mobilise support mechanisms through energy communities can be found in the **recast Renewable Energy Directive 2018/2001/EU**. Article 22 reads as follows: ‘Member States shall provide an enabling framework to promote and facilitate the development of renewable energy communities. That framework shall ensure, inter alia, that: the participation in the renewable energy communities is accessible to all consumers, including those in low-income or vulnerable households’.

**The EU legislative framework also contains safeguards to ensure that price-related measures taken to address energy poverty do not impede the opening up and functioning of the market.** Retail markets that operate smoothly are a prerequisite for a fair transition. These safeguards are enshrined in Article 28 of the recast Electricity Directive and are operationalised in particular in its Article 5(5). The latter specifies that whenever a

<sup>18</sup> This builds on existing obligations under Directive 2012/27/EU. See also the Annex to the Commission Recommendation on the transposition of the energy savings obligation under the amended Energy Efficiency Directive, C(2019) 6621 final.

<sup>19</sup> Regulation 2018/1999/EU on the Governance of the Energy Union and Climate Action

<sup>20</sup> This builds on existing obligations under Article 4 of the Energy Efficiency Directive 2012/27/EU that have been moved to the Energy Performance of Buildings Directive and strengthened as regards the need to address energy poverty. Recital 11 of Directive 2018/844/EU clarifies that the need to alleviate energy poverty should be taken into account, in accordance with criteria defined by the Member States. The Recital further clarifies that while outlining national actions that contribute to the alleviation of energy poverty in their renovation strategies, the Member States have the right to establish what they consider to be relevant actions.

<sup>21</sup> Recital 43 of the recast Electricity Directive

Member State applies public intervention in setting the price for the supply of electricity to energy-poor and vulnerable households, it must set an indicative objective and outline in its national energy and climate plan the necessary policies and measures to reduce energy poverty, regardless of whether it has a significant number of energy-poor households.

## 1. THE IMPORTANCE OF AN ENERGY POVERTY DEFINITION

**To quantify households in energy poverty according to transparent criteria, Member States need to develop a working definition of the concept of energy poverty and make it publicly available.** This is essential, because such quantification lies at the heart of the new more structured approach to energy poverty enshrined in the new legislative framework. Up to now there have been no rules requiring Member States to provide information about whether, and on what basis, energy poverty has been identified as a concern calling for appropriate measures. Now they are required to establish and publish the criteria underpinning their assessment of the number of households in energy poverty.

**The fact that the new legislative framework provides no harmonised definition of energy poverty shows that it acknowledges the diversity of situations in the Member States.** There is great diversity among EU countries as regards market situations<sup>22</sup>, energy costs<sup>23</sup>, average income levels and income distributions<sup>24</sup>, the share of population at risk of poverty, social exclusion, the energy performance of the building stock, etc. There is also diversity in the policy measures they have implemented thus far to deal with situations of energy poverty and vulnerability.<sup>25</sup>

**However, the Electricity Directive and Regulation (EU)2018/1999 on the Governance of the Energy Union and Climate Action contain clear indications that ‘energy poverty’ means a situation in which a household cannot afford the essential energy services necessary for a decent standard of living.** This may be inferred from Article 29 of the Electricity Directive, which mentions criteria that may be taken into account when assessing the number of households in energy poverty (low income, high expenditure on energy as a proportion of disposable income, and poor energy efficiency), read in conjunction with Recital 59. The latter explains that a combination of these factors renders energy-poor households unable to afford the essential energy services necessary for a decent standard of living. The recast Electricity Directive also throws some light on what may constitute such essential energy services, and is agnostic as to fuel types. Consequently, the concept of energy poverty is not limited to electricity, or gas, but covers all energy types: Recital 59 emphasises the importance of access to adequate warmth, cooling and lighting, and to the energy needed to power appliances. In this spirit, the present Guidance does not extend to households’ use of energy for mobility, although this can also be usefully investigated by Member States, to

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<sup>22</sup> For example, in terms of market opening and degree of competition.

<sup>23</sup> Reflecting differences in geography and endowments in terms of infrastructure and interconnections, for example.

<sup>24</sup> Please refer to the Statistics Explained articles on [Income poverty statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Income_poverty_statistics) ([https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Income\\_poverty\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Income_poverty_statistics)) and [Living conditions in Europe - income distribution and income inequality](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living_conditions_in_Europe_-_income_distribution_and_income_inequality) ([https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living\\_conditions\\_in\\_Europe\\_-\\_income\\_distribution\\_and\\_income\\_inequality](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Living_conditions_in_Europe_-_income_distribution_and_income_inequality))

<sup>25</sup> Whilst the co-legislators left it to the Member States to define energy poverty at national level, the Vulnerable Consumer Working Group under the Citizens Energy Forum, in its working paper on energy poverty, also noted that ‘a *strict and prescriptive definition of energy poverty for EU-28 could be too restrictive given the diverse realities across Member States.*’ The paper further noted: ‘*However, it is important to have improved transparency in the identification and measuring of energy poverty especially for the Member States who may not have identified the issue.*’ This is precisely what the new legal framework is designed to achieve. (add hyperlink)



identify and address specific challenges arising in this regard, including distributional assessments.<sup>26</sup>

**It follows that the Electricity Directive already provides some high-level indications which Member States should adapt and operationalise to cater for the national context.** This means they need to ascertain the main reasons for energy poverty at national level. Although the criteria mentioned in Article 29 (low income, high expenditure on energy as a proportion of disposable income, and poor energy efficiency) are key drivers of energy poverty, they are not an exhaustive list. Moreover, the relative significance of individual criteria may vary by Member State. For example, in some EU countries energy poverty may result from households lacking access to energy services and networks.

**Questions about affordability and what constitute ‘essential energy services’ required for a decent standard of living must be seen in their national context.** This is clear from the wording of the Governance Regulation. The latter states clearly that when assessing the number and characteristics of households in energy poverty, Member States must take into account the domestic energy services needed to enable people to live in dignity *in the relevant national context*, and refers to social policies. Both the issue of what basic standards of living must be met, and the question of the social support to be made available for this purpose, depend on economic, social and climatic conditions in the country concerned. This underscores the importance of the principle of subsidiarity.

## **2. INDICATORS FOR MEASURING ENERGY POVERTY**

**Energy poverty is a multi-dimensional concept that cannot readily be captured by a single indicator.** It is therefore useful to apply a combination of relevant indicators, each of which sheds light on a different dimension of the phenomenon. Such indicators, developed at EU level, enable the likely reasons for energy poverty to be measured, along with the consequences of such poverty. Accordingly, all indicators referred to in this Section are aggregate indicators: they are used to estimate the extent of the issue across Member States.

**Since there is no single measure of energy poverty, Member States are encouraged to use the national data available to develop further indicators, to refine those mentioned in this section, and to compare the latter with other relevant information.** When operationalising the concept of energy poverty at national level, Member States can also build on data gathered through previous regulatory and policy initiatives. For example, they may wish to build on existing definitions of energy vulnerability that refer to affordability.

**The indicators outlined in this section are available from the Statistical office of the European Union (‘EUROSTAT’) and the European Energy Poverty Observatory (‘EPOV’), and Member States may consult them for their energy poverty assessments.** These indicators are derived from harmonised EU data collections (e.g. EU Survey on Income and Living Conditions survey (EU-SILC), the Household Budget Surveys (HBS) and statistics on energy prices and final energy consumption).

As regards timeliness of data, energy prices are quite up-to-date. Information from EU-SILC (Statistics on Income and Living Conditions survey) is currently available 6 to 10 months after the end of the reference year depending on the Member State but will progressively be

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<sup>26</sup> See, for example, the ‘European Energy Poverty Index (EEPI)’ report developed by Open-Exp and commissioned by the European Climate Foundation, which developed three indexes, one of which measures transport energy poverty. The EEPI is a composite index based on a domestic energy poverty index and the transport energy poverty index.

available already at the end of the reference year (December N for data reference year N) under the new Framework Regulation 2019/1700<sup>27</sup>. By contrast, the Household Budget Survey data is collected with lower frequency (every 5 years). Currently 2015 data is available and the 2020 HBS data is being collected.

The indicators can also help in comparing situations across Member States and over time. In addition, they provide key background information for cooperation and exchange of good practices between Member States<sup>28</sup>. The Building Stock Observatory also provides a number of useful indicators linked to the energy performance of buildings, including social aspects.

Member States can also use similar and more up-to-date information and statistics available at national level, in particular for the share of disposable income spent for energy, e.g. using national household budget surveys that are collected at higher frequency in some countries.

Indicators fall into four groups:

- (a) *indicators comparing energy expenditure and income*: these quantify energy poverty by looking at the energy expenditure of households in relation to an income measure (e.g. number of households spending more than a given share of their income on domestic energy services)
- (b) *indicators based on self-assessment*: these assess energy poverty by asking households directly to what extent they feel able to afford energy (e.g. ability to keep home adequately warm in winter and cool in summer)
- (c) *indicators based on direct measurement*: these measure physical variables to determine the adequacy of energy services (e.g. room temperature)
- (d) *indirect indicators*: these are designed to measure energy poverty situation through related factors, such as arrears on utility bills, number of disconnections, and housing quality.

**Each of these categories usefully complements the others.** For example, it is useful to compare subjective indicators, such as the self-assessed ability to afford energy, with objective indicators, such as energy expenditure as a share of disposable income. In the same vein, comparing indicators that suggest abnormally low energy expenditure with housing quality indicators may help in discarding ‘false positives’, i.e. situations of high energy efficiency rather than energy poverty.

## **2.1. Indicators focusing on the affordability of energy services**

Given the premise that ‘energy poverty’ means a situation in which a household cannot afford the essential energy services required for a decent standard of living, efforts to capture affordability are particularly important in assessing its extent.

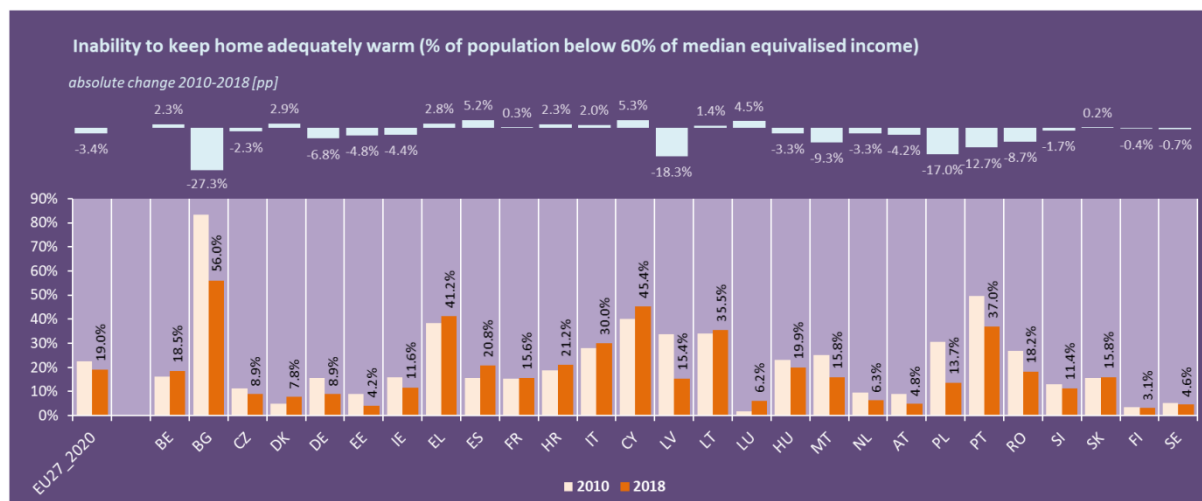
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<sup>27</sup> It is worth referring here to the Trinomics 2016 study ‘Selecting indicators to measure energy poverty’ commissioned by DG ENER, which states that ‘EU-SILC was not designed for analysis of energy poverty issues. Detailed recommendation suggests inclusion of new variables that capture issues of energy expenditure, payment method, efficiency measures and heating systems. Existing variables should be modified to help differentiate between issues of affordability and technical characteristics of building / heating systems’.

<sup>28</sup> The Commission Recommendation on building renovation ((EU) 2019/786) provides examples of good practices for alleviating energy poverty and shows how energy poverty issues can be included in the long-term renovation strategies under Article 2a of the Energy Performance of Buildings Directive, including indicators that can be used to monitor progress. In addition, the Building Stock Observatory provides a number of useful indicators linked to the energy performance of buildings, including social aspects. See: <https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-performance-of-buildings/eu-bso>

The European Energy Poverty Observatory therefore uses as ‘primary indicators’ those designed to uncover situations in which energy poverty is related to income-related factors. They include the following indicators:

**The indicator referred to most frequently is designed to capture self-reported affordability** by asking whether a household can afford to keep their home adequately warm<sup>29</sup>. In 2018, 19% of households with an income below 60% of the median equalised income reported that they could not keep their home sufficiently warm.<sup>30</sup> *Graph 1: Share of population below 60% of median equivalised income not able to keep their home adequately warm, based on question ‘Can your household afford to keep its home adequately warm?’ (Eurostat, SILC [[ilc\\_mdes01](#)])*



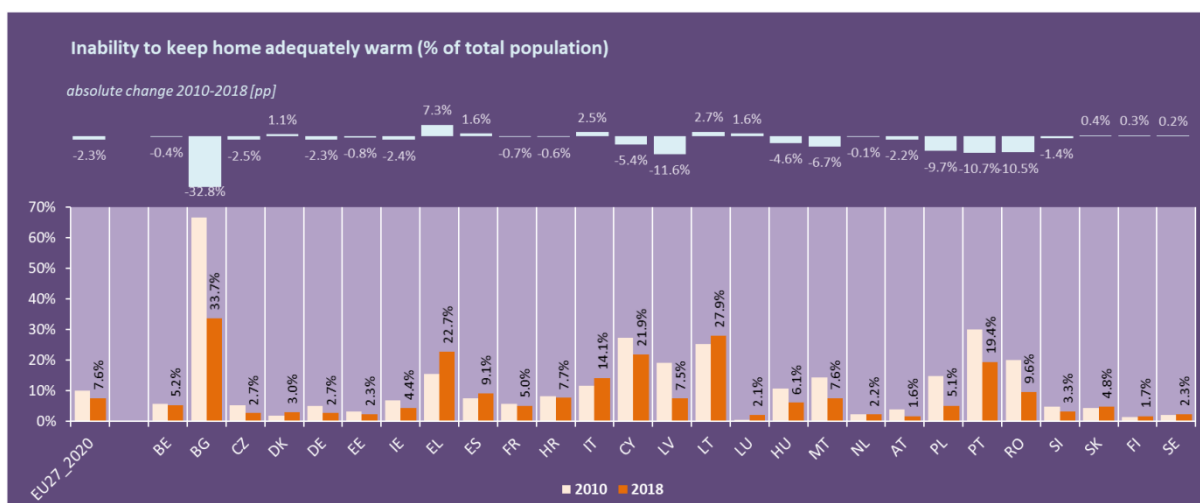
Overall, 7.6% of the EU27\_2020 population (about 34 million people) reported an inability to keep their home warm enough in 2018, as shown in graph 2 below.

For both the total population and people at risk of poverty (lowest income groups), this indicator showed a fairly positive trend on average between 2010 and 2018. However, there is significant variation across the EU: for example, while the relevant proportions have fallen significantly in Bulgaria, Latvia, Poland, Portugal and Romania, some other countries, especially Greece, Spain, Italy, Lithuania, Luxembourg and Denmark, have seen an increase. In Cyprus, the situation of the poorest households has deteriorated, while that of the population as a whole is improving. The same goes for Belgium and Croatia.

<sup>29</sup> It is important to clarify that the indicator is calculated on the basis of individual people (as a percentage of the population), but is based on a household question. The same applies to Graphs 2-4, 12 and 13 (Eurostat).

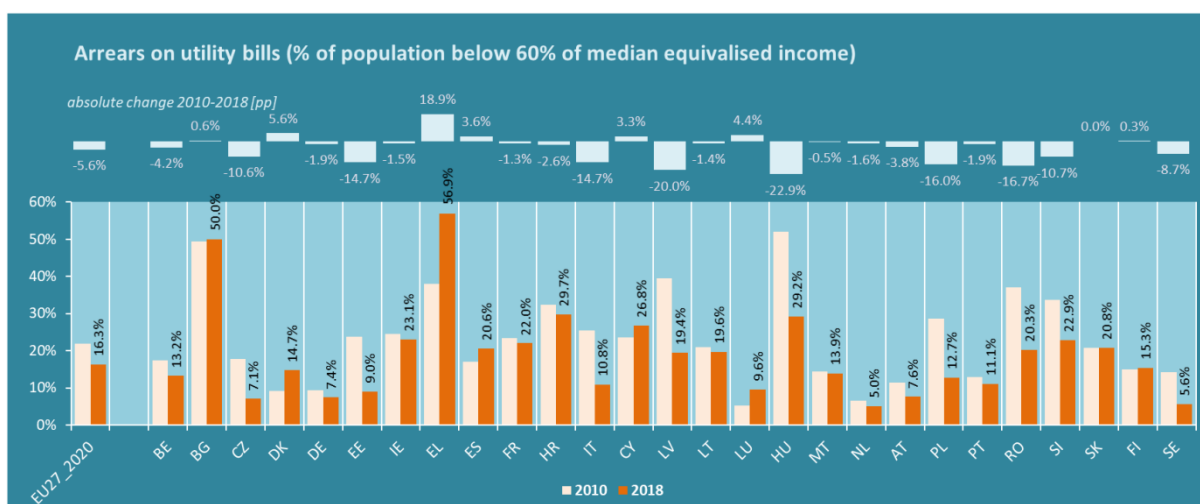
<sup>30</sup> This indicator captures only one kind of energy services, namely heating, but it is generally considered as particularly meaningful because of its direct relationship with energy poverty.

Graph 2: Share of total population not able to keep their home adequately warm, based on question 'Can your household afford to keep its home adequately warm?' (Eurostat, SILC [[ilc\\_mdes01](#)])



A second indicator reports on arrears on utility bills, i.e. situations where a household has not been able to pay the utility bills (heating, gas, water, etc.) of the main dwelling on time, owing to financial difficulties.

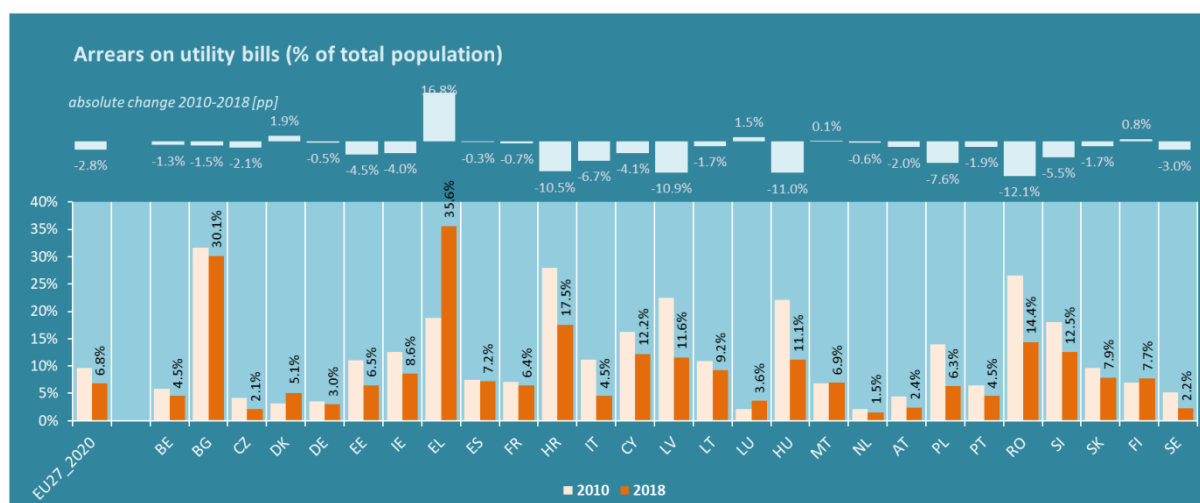
Graph 3: Arrears on utility bills: share of population at risk of poverty (below 60% of median equivalised income) in arrears with utility bills (Eurostat, SILC, [[ilc\\_mdes07](#)])



On average, the trend in this indicator was also fairly positive for the people at risk of poverty (lowest income groups) between 2010 and 2018. This is also true of the population as a whole, with the noticeable exception of one Member State (Greece), where the situation has seriously deteriorated.<sup>31</sup> In four other countries (Denmark, Spain, Cyprus, Luxembourg) the results for the poorest households were also significantly worse in 2018 than in 2010.

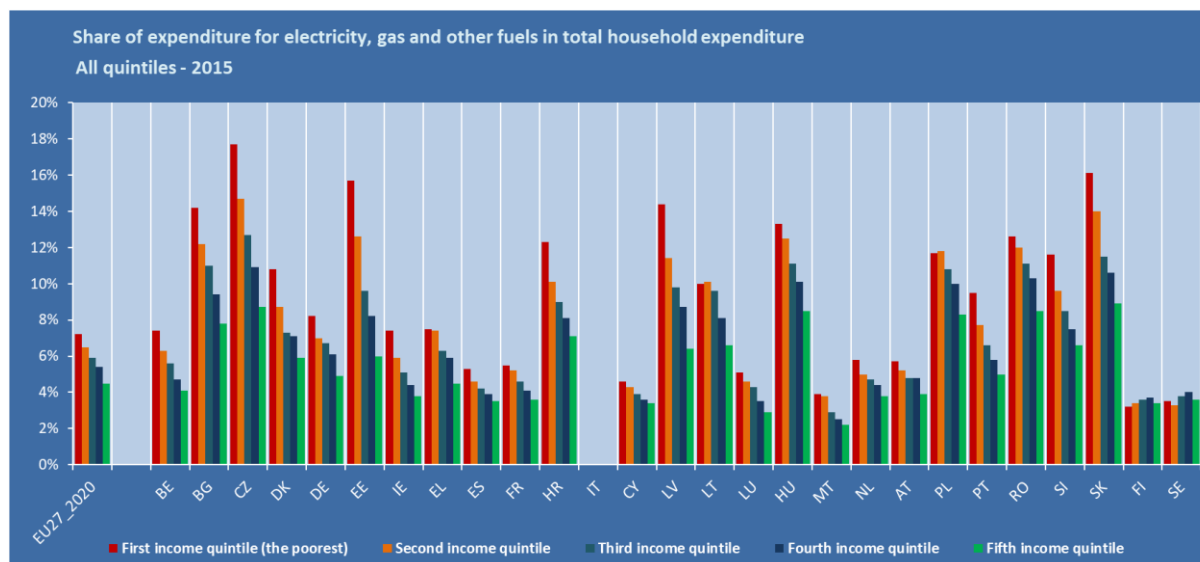
<sup>31</sup> For Denmark and Luxembourg, there is also an increase of more than one percentage point.

Graph 4: Arrears on utility bills: share of population in arrears with utility bills (Eurostat, SILC, [[ilc\\_mdes07](#)])



Since the arrears indicator covers all utilities, it is interesting to compare it with **the proportion of total expenditure that goes on energy in the poorest income quintile of households** (see Graph 5). This shows that for most of the EU Member States (excepting Finland and Sweden) as well as at the EU average, the share of energy expenditure (in purchase power standard) of the poorest two quintiles is the highest among all quintiles. This also enables the findings on the above-mentioned self-reported indicators to be compared with more objective data on actual expenditure on energy.

Graph 5: Share of expenditure on electricity, gas and other fuels in total household expenditure (Eurostat, HBS, [[hbs\\_str\\_t223](#)])

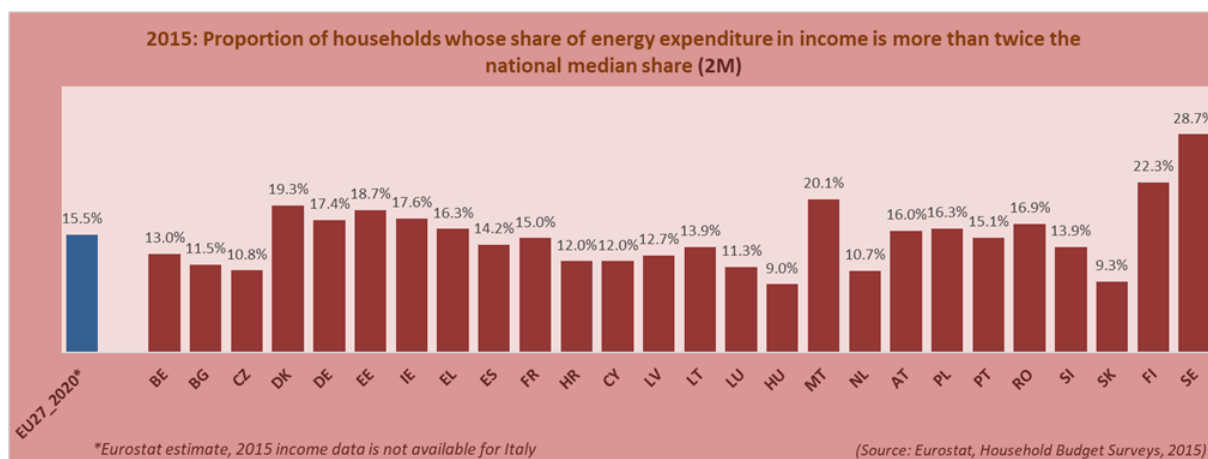


Graph 5 shows that in 2015 energy expenditure in five Member States (Czechia, Hungary, Poland, Romania and Slovakia) accounted for around 10% or even more of a household's overall spending for all but the richest income group. This suggests that middle-income households are also continuing to face high expenditure, despite improvements since 2010.

The European Energy Poverty Observatory also uses other income-related indicators gathered by Eurostat in 2015. Where Member States have up-to-date data, these can also provide

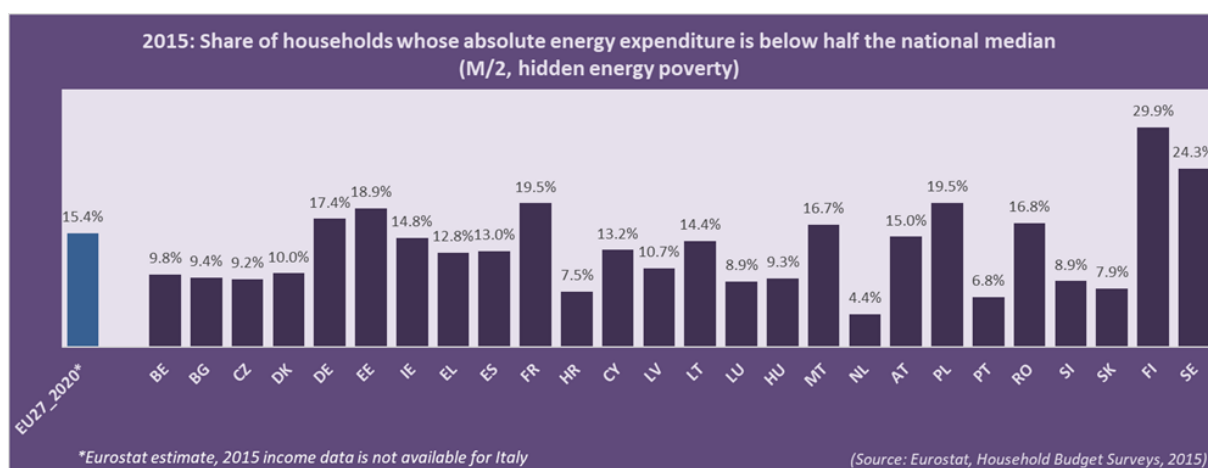
important insights into households in need of protection. One of these indicators measures **the proportion of households whose share of energy expenditure in equivalised disposable income is more than twice the national median share**. This indicator does not lend itself easily to cross-country comparison, because where income distribution is more equal, variance in energy expenditure translates into higher shares.

*Graph 6: Proportion of households whose share of energy expenditure in income is more than twice the national median share (source Eurostat, based on the Household Budget Surveys, 2015)*



Member States may also consider an additional, rather novel indicator, to complement other expenditure and self-reported indicators; this indicator provides insights into the share of **households whose absolute energy expenditure is particularly low, i.e. below half the national median** (see Graph 7). Where high shares of households are shown for this indicator, it is important to analyse the situation in greater depth to assess whether the indicator really does show that there are households seriously under-consuming energy<sup>32</sup>, perhaps because they lack access to the market, for example, or whether there is a ‘false positive’, in that the high shares may depict high energy efficiency standards.

*Graph 7: Share of households whose absolute energy expenditure is below half the national median. (Eurostat, based on the Household Budget Surveys, 2015)*



<sup>32</sup> For example, Lithuania estimated in its final National Energy and Climate Plan that based on this indicator, 14.9% of Lithuanian households experienced hidden energy poverty in 2016. Lithuania also indicated in its draft plan that this finding could be linked to the fact that the percentage of households that are unable to keep their home sufficiently warm is significantly higher than the percentage of households in arrears with utility bills. The Belgian Energy Poverty Barometer also uses a ‘below a threshold’ indicator to identify households.

The last two indicators mentioned above show a shift in the literature towards increased use in expenditure-based metrics of relative thresholds rather than just fixed thresholds. A 2016 study<sup>33</sup> commissioned by the Commission looked into the energy poverty indicators used in the literature, assessing their respective strengths and weaknesses, and eventually recommended that households should be classed as energy-poor if they meet the following criteria, three of which refer to relative thresholds:

- the household states that it cannot keep the home warm enough (see Graph 1);
- the household's energy expenditure is less than half the national median energy spending (see Graph 7);
- the share of income the household spends on energy services is more than twice the national median (the 2M indicator, see Graph 6);
- the household's income after energy expenses are deducted falls below the general poverty line and the share of its income spent on energy is above the national median. Compared with the last-mentioned indicator, this one (also referred to as the LIHC, for 'low income, high costs') is more successful in excluding high-income groups. In lower-income groups, it enables energy poverty to be distinguished from generalised poverty.

The study also notes that the indicators complement one another. The first two mentioned suggest that the household may be compromising on energy expenditure, while the last two suggest that it may be compromising on other expenditure, including spending on other essential goods and services. Certain consequences of compromising on energy spending, such as the impact on well-being and health, can also be measured. They will affect public expenditure and could also produce dramatic effects: for example, studies have shown that excess winter deaths can be attributed to cold housing.<sup>34</sup>

## 2.2. Going wider and deeper with complementary indicators

While the above indicators are designed to compare energy expenditure and income, income levels lie beyond the scope of energy policy. In contrast, energy costs affecting energy expenditure and the energy-efficiency of dwellings are relevant to energy policy. Energy costs can be reduced through policies to (i) improve the functioning and competitiveness of retail markets, notably by promoting healthy and vibrant competition to yield lower prices and more variety in terms of offers, and by empowering energy consumers, and (ii) improve the energy performance of buildings through a series of instruments – regulatory, financial and supporting measures.

### 2.2.1. Looking at prices

In measuring the share of income spent on energy, it may be useful to compare the result with the level of prices in purchasing power parities compared with other Member States. This may make it possible to investigate whether there are any shortcomings in the functioning of the markets in certain Member States, and in particular whether there is a low level of competition that might result in higher than average prices, which in turn are likely to push up

<sup>33</sup> The 2016 Trinomics study on energy poverty indicators identified 178 indicators for a systematic assessment of energy poverty in an EU-wide framework. The final report discussed key indicators, identifying two main approaches in the literature, i.e. 1) expenditure-based metrics that define energy poverty based on information about the household's expenditure on energy, often comparing it with the household's income, and 2) consensual metrics identifying households that say they face difficulties in obtaining basic energy services.

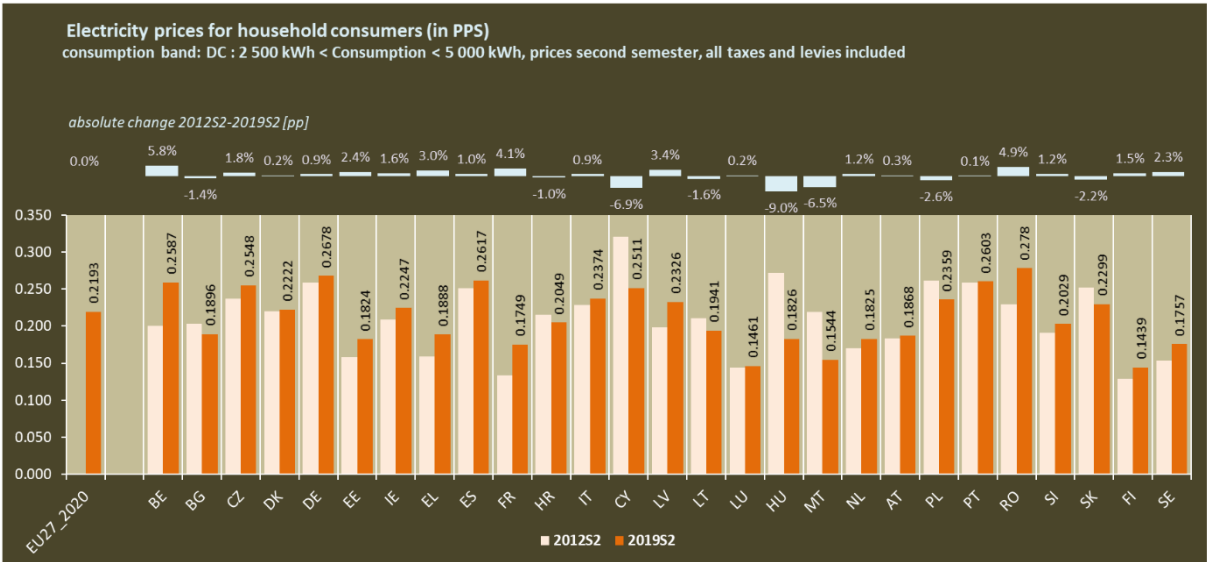
<sup>34</sup> The above-mentioned study by Trinomics refers to the strong relationship highlighted by the Marmot Review Team (2011) between colder homes and excess winter deaths, but also with increased incidence of other health problems. They found that 22% of excess winter deaths in the UK could be attributed to cold housing.

energy expenditure. There is no causality, however, as price levels depend on a number of variables.

Great caution should therefore be exercised when interpreting the figures shown in this section. In particular, the prices shown include the share of taxes and levies. The latter may also reflect an increasing share of energy from renewable sources, the cost of which is ‘socialised’. This may not necessarily be against consumers’ interests, given their increased interest in sustainability. As Graphs 1 and 2 in Annex 1 show, the share of taxes is particularly high in Denmark, Austria and Portugal (for both electricity and gas). The same applies to electricity in Germany, Latvia and Slovenia, and to gas in Estonia, Italy, the Netherlands and Sweden.

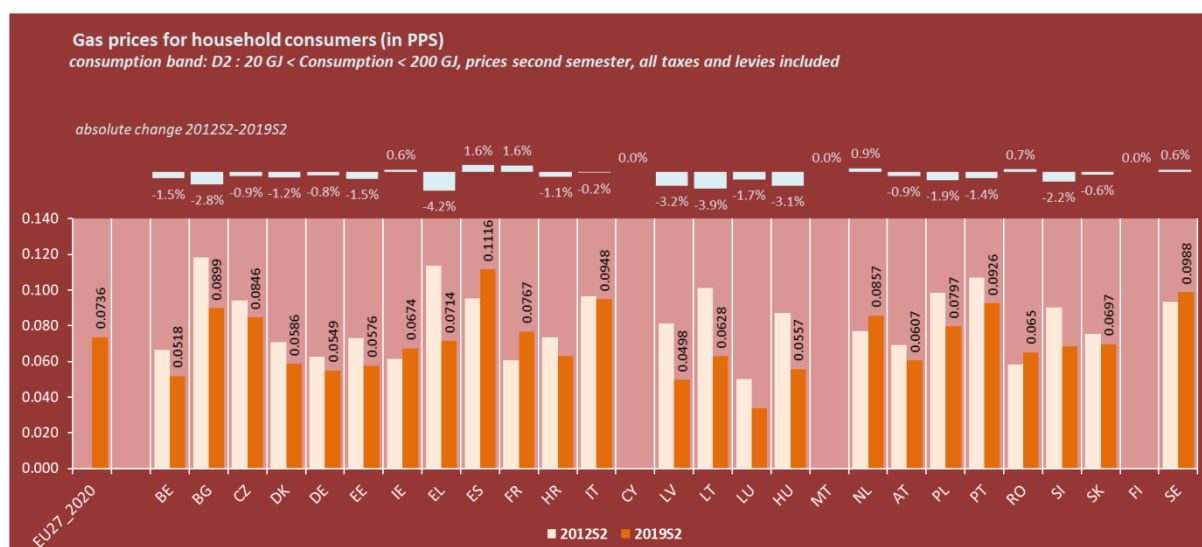
However, where the concern is energy poverty, it is the actual price level in terms of purchasing power parity, rather than the determinants of the price level, that is relevant. The higher the prices for consumers, the higher the burden on the poorest households. This may result in the latter reducing their consumption as much as possible.

Graph 8: Electricity prices for household consumers – average consumption band (Eurostat, [\[nrg\\_pc\\_204\]](#))

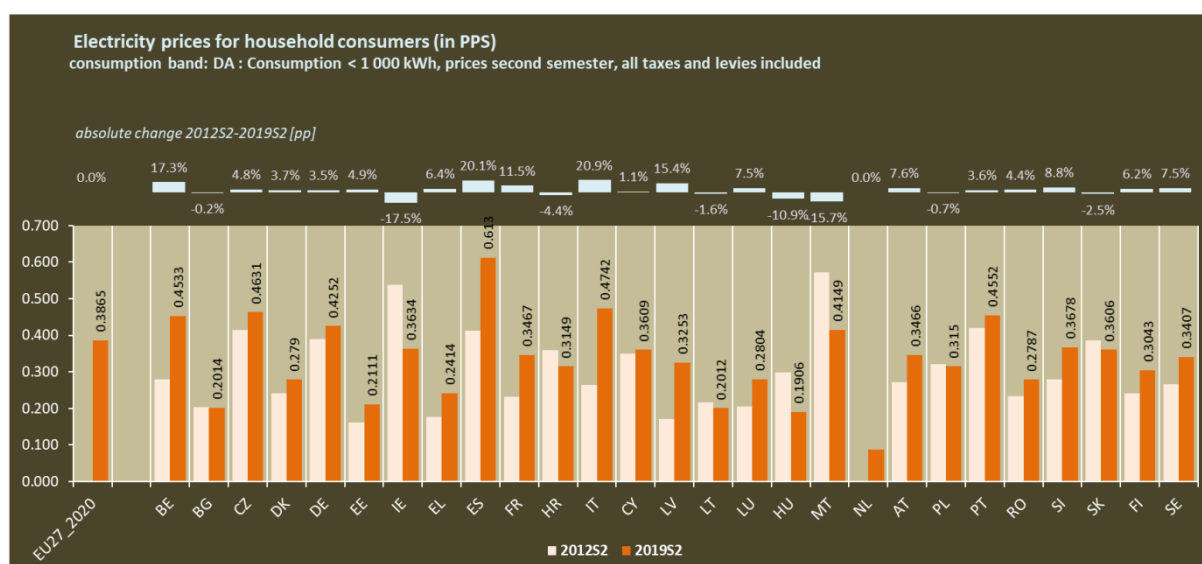




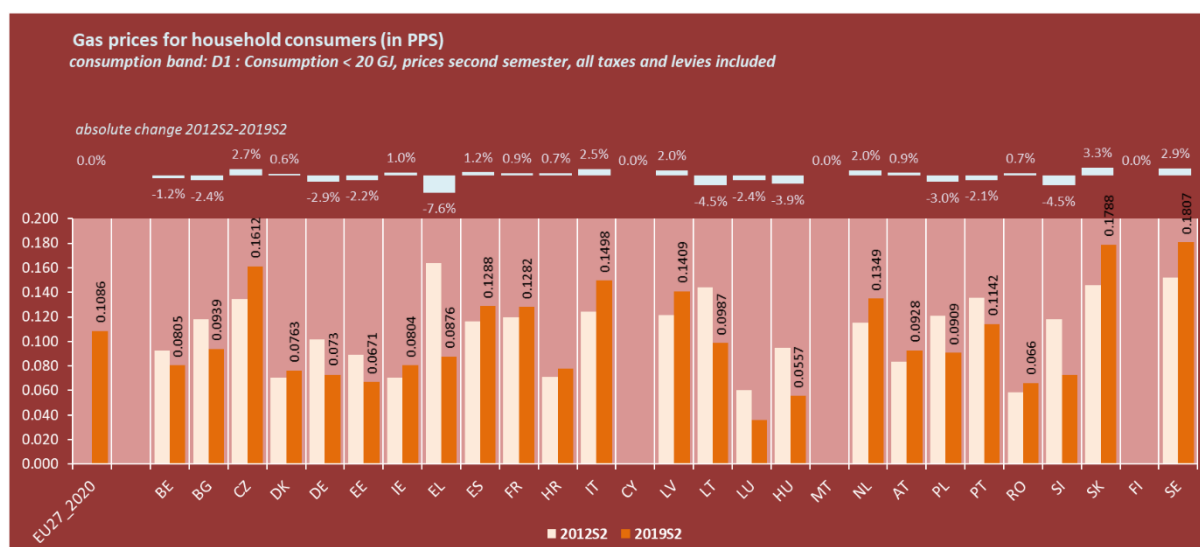
Graph 9: Gas prices for household consumers – average consumption band (Eurostat, [\[nrg\\_pc\\_202\]](#))



Graph 10: Electricity prices for household consumers – lowest consumption band (Eurostat, [\[nrg\\_pc\\_204\]](#))



Graph 11: Gas prices for household consumers - lowest consumption band (Eurostat, [\[nrg\\_pc 202\]](#))



### 2.2.2. Energy performance of building stock

**People living in poor-quality dwellings with a poor energy performance may have to spend a large proportion of their disposable income on energy.** Inefficient buildings are often synonymous with energy poverty and social welfare problems. Poor-quality buildings consume high volumes of energy, and low income consumers have little control over this source of expenditure, which results in a vicious circle of arrears on energy bills and broader poverty and wellbeing problems. Buildings thus have a strong influence on the economic conditions of people and households in the EU. The quality and energy performance of buildings have a major impact on the affordability of housing, making poor energy performance one of the main causes of energy poverty. Households that may live in<sup>35</sup> old, non-refurbished buildings with low-performing equipment (heating and cooling systems without temperature control devices, etc.) which they own or that rent low-quality houses or apartments with a low energy performance have to spend more of their income on heating and cooling and cannot easily control the amount of energy they consume. They are thus likely to benefit particularly from energy efficiency improvements that reduce heating costs. The situation may be that owner occupiers have limited resources to invest in energy efficiency due to low income levels and in some cases a short time horizon for return on investment (the elderly). For tenants, the split incentive cost may be widespread across income levels for cost of renovation for the landlord and energy savings for the tenant.

There is a comprehensive body of research demonstrating that buildings' energy performance affects their occupants' health, wellbeing and productivity. If buildings and their systems and components are not properly designed, installed and maintained, adverse effects are to be expected on indoor air quality, affecting the occupants' health, comfort and performance<sup>36</sup>.

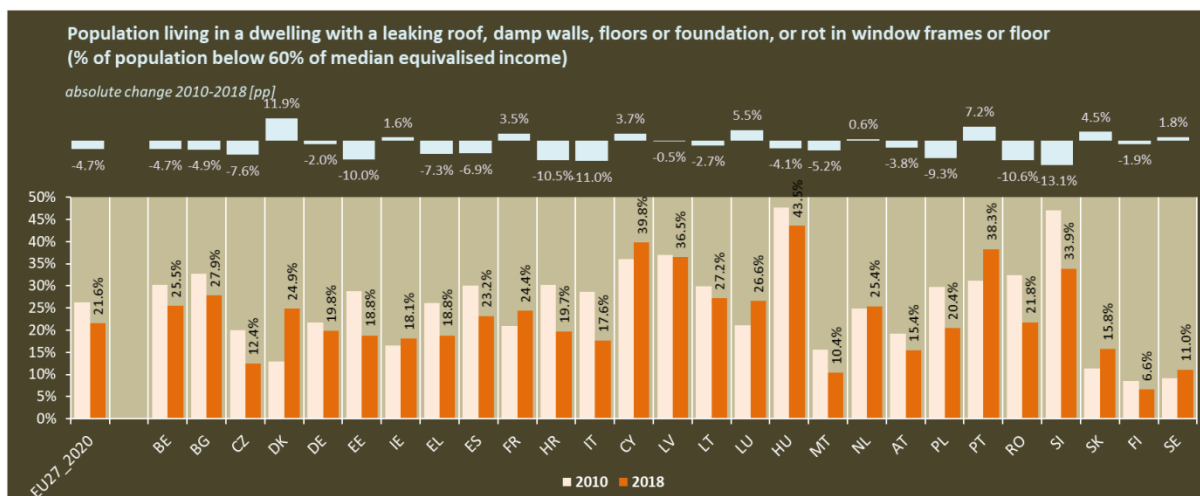
It may therefore be useful to compare the above indicators with indicators designed to capture the quality of building stock. Applying such indicators in combination with socioeconomic determinants and tenure type may further understanding of the type of buildings that policy action should target.

<sup>35</sup> Note that some households may own poor quality buildings in which they don't live themselves.

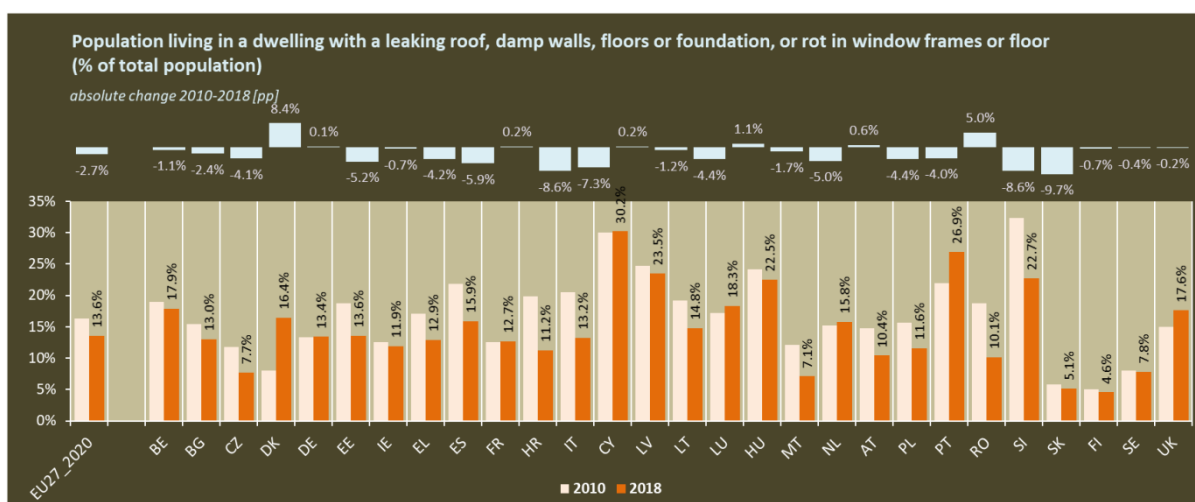
<sup>36</sup> JRC study 'Promoting healthy and highly energy performing buildings in the European Union'  
<https://publications.jrc.ec.europa.eu/repository/bitstream/JRC99434/kj1a27665enn%281%29.pdf>

One such indicator shows the proportion of people living in housing affected by leaks, damp or rot. Such situations may push up energy consumption to mitigate the impact of such defects, thereby inflating energy expenditure as a share of income.

Graph 12: Share of population at risk of poverty (population above 60% of median equalised income) with leak, damp or rot in their dwelling (Eurostat, SILC [[ilc\\_mdho01](#)])



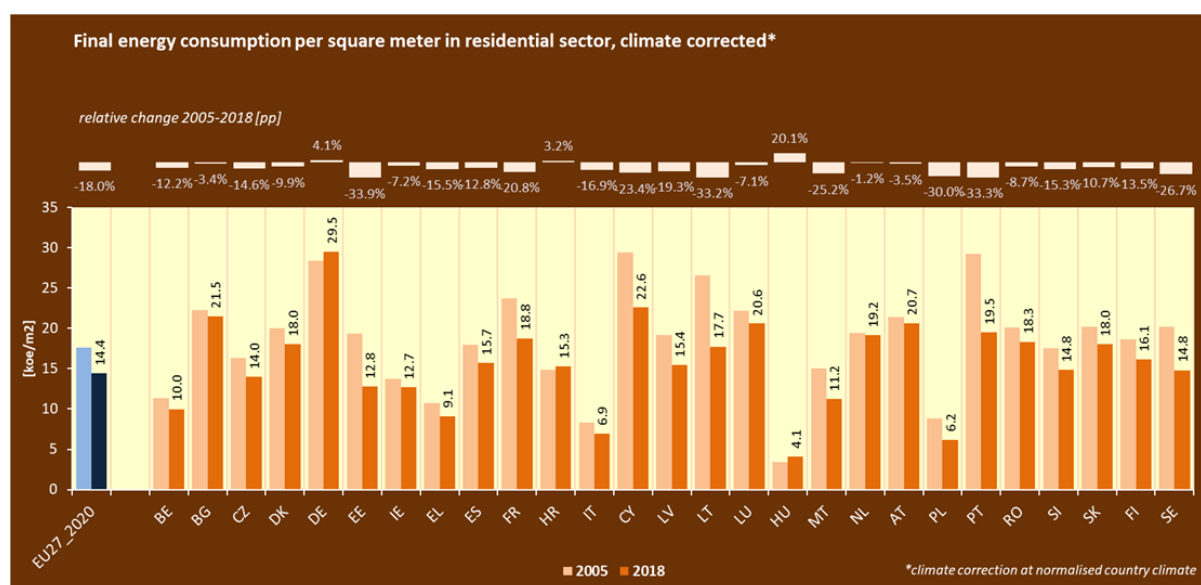
Graph 13: Share of population with leak, damp or rot in their dwelling – total population (Eurostat SILC [[ilc\\_mdho01](#)], [TESSI292])



This indicator has declined since 2010, with rather different developments across Member States. There have been increases in the poorest households, especially in Ireland, France, Luxembourg, Cyprus, Slovakia, Sweden, Denmark and Portugal (with the last two also showing an increase across the population as a whole). Decreases of over two percentage points have been observed for the poorest households in Belgium, Bulgaria, Czechia, Estonia, Greece, Spain, Croatia, Italy, Hungary, Malta, Austria, Poland, Romania and Slovenia.

Another indicator that may provide interesting insights is **final energy consumption in the residential sector**. Where these data are corrected to account for climate differences they can also help us compare households' energy consumption, and thus their average needs, across Member States. The larger the consumption, the greater the share of energy in a household's overall expenditure. Consumption may be affected by the energy performance of the building stock, but this indicator can also be affected by other factors. These include consumer

preferences, habits and needs<sup>37</sup>, price levels, what the energy is used for (heating, cooling, cooking, lighting, other energy uses, such as powering appliances) and the number and type of appliances used. Consumers should be provided with information and measuring devices, user interfaces and outcomes should be provided to consumers in accessible formats, giving older people and those with disabilities access to the relevant data. This will enable them to monitor their consumption patterns and adapt them in their own interests. *Graph 14: Final energy consumption per square metre in the residential sector, climate-corrected (Odyssee-MURE project database)*<sup>38</sup>



The above indicators can also be compared with other indicators reflecting the quality of the dwelling (and the possible cost-optimal renovations of the building stock<sup>39 40</sup>). It is important for buildings to be designed, constructed, renovated and operated in such a way as to reflect the amount of energy needed for both heating and cooling (the energy needed to avoid overheating) and maintain the temperature conditions and comfort levels appropriate for the particular building.

One such indicator shows the proportion of people who consider their cooling system to be ‘efficient enough to keep the dwelling cool’ and/or who think that ‘the dwelling is sufficiently insulated against the cold’. Data are also available on the proportion of dwellings equipped with heating or air conditioning. These data may raise energy poverty issues, since adequate warmth and cooling are among the essential services mentioned in the recast Electricity Directive. Eurostat collected these two datasets in 2012 as part of SILC. They can be viewed on Eurostat’s website and that of the European Energy Poverty Observatory. Member States may have up-to-date national data.<sup>41</sup>

<sup>37</sup> For example, older people, those with disabilities and people suffering from illnesses might need to consume more energy to maintain their home at a given temperature,

<sup>38</sup> More info at: <https://www.indicators.odyssee-mure.eu/energy-efficiency-database.html>

<sup>39</sup> Filippidou, F. and Jimenez Navarro, J.P., Achieving the cost-effective energy transformation of Europe’s buildings, EUR 29906 EN, Publications Office of the European Union, Luxembourg, 2019, ISBN 978-92-76-12394-1, doi:10.2760/278207, JRC117739.

<sup>40</sup> Faidra Filippidou et al., Mapping energy poverty in the EU: policies, metrics and data. Eceee 2019 Summer Study. Hyeres France, July 2019.

<sup>41</sup> See, for example, the specific 2015 EU SILC module for Belgium: <https://suspensnet.files.wordpress.com/2020/03/josefine-vanhille-pathways-energy-efficiency.pdf>

Member States could also consult their data on the division of their buildings into energy classes (provided in energy performance certificates), where available. Energy performance certificates can offer an effective way to map the data of EU building stock, enabling legislative, fiscal or non-legislative measures to be taken that prioritise specific segments in need of building renovation and track progress against milestones for national renovation strategies. The revised Energy Performance of Buildings Directive requires Member States to include in their long-term renovation strategies policies and action on the buildings that perform worst and energy poverty (Article 2a(1)(d)). **Commission Recommendation (EU) 2019/786 on building renovation**<sup>42</sup> proposes ‘public investments addressing energy poverty in the context of the long-term renovation strategies’ within the possible context of defining indicators and milestones such as public and private investments allocated to improve the energy performance of buildings for energy-poor people, the share of buildings in the lowest energy classes, buildings using wood for heating, and excess winter/summer mortality or deaths.

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<sup>42</sup>

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019H0786&from=EN>

### 2.3. Further disaggregation

**The data available can be further disaggregated, thus enabling Member States to conduct a deeper analysis of the possible reasons for energy poverty at national level.**

The data on ‘primary indicators’ available from Eurostat and the European Energy Poverty Observatory can be further disaggregated so as to identify the households concerned more precisely. This means that assistance can be targeted and tailored to their specific needs. For example, all indicators can be disaggregated by income decile and degree of urbanisation. The latter dimension may be important, as recognised by the Electricity Directive, which requires Member States to protect customers in remote areas. The indicators ‘inability to keep homes adequately warm’ and ‘arrears in energy bills’ can also be disaggregated by tenure type (owned/market rented/reduced or free rent) and by dwelling type (i.e. detached/semi-detached house or apartment). This enables a more detailed analysis to be conducted. Specifically, it means that the profile of households in difficulty can be identified<sup>43</sup>.

The proportion of households in energy poverty has also been found to display specific sociodemographic features in many cases<sup>44</sup>, and Member States may compare the above indicators with data on such features (e.g. size and composition of household, employment status, age, presence of disabilities). This information is very important in designing the policy intervention. For example, a higher percentage of energy costs among people with disabilities, compared with those without, could be due to lower income levels, resulting in a higher poverty risk, or higher heating needs associated with reduced mobility.

### 3. READING THE INDICATORS: IDENTIFYING A SIGNIFICANT NUMBER OF HOUSEHOLDS IN ENERGY POVERTY

**A reading across the above indicators shows that a number of Member States seem to be facing significant challenges.** Compared with the EU28 average, Bulgaria, Cyprus, Greece, Italy, Lithuania and Portugal have a markedly higher share of the total population reporting that they cannot keep their homes warm. The figures for Romania, Spain, Croatia, Malta and Latvia are also above the EU average. Those for Greece, Italy and Lithuania, too, have increased markedly since 2010. Looking at the population with an income below 60% of the national median equalised income, Bulgaria, Greece, Cyprus and Portugal report shares at least twice the EU average. In Italy, Lithuania, Croatia and Spain, more than one in five households in this income group say they cannot keep their homes warm. In some Member States, the problem does not appear to be restricted to the poorest households: in Bulgaria, Greece, Cyprus, Lithuania and Portugal, 10% of households with an income above 60% of the national median equalised income report problems with keeping their houses warm enough. This is at least double the 2018 EU average<sup>45</sup>.

Of the above-mentioned Member States, the proportion of the total population that is in arrears with utility bills is at least double the EU average in Bulgaria, Greece, Croatia and

<sup>43</sup> As regards the importance of understanding and tackling the problem of the split incentives limiting investments in energy efficiency in buildings by owners or increased rent prices exacerbating energy poverty for vulnerable tenants, please see Economidou, M., Serrenho, T. (2019). Assessment of progress made by Member States in relation to Article 19(1) of the Directive 2012/27/EU and Castellazzi, L., Bertoldi, P., Economidou, M. (2017). Overcoming the split incentive barrier in the building sector – Unlocking the energy efficiency potential in the rental & multifamily sectors. Both are available at <https://op.europa.eu/en/publication-detail/-/publication/81c4bbd0-56a4-11e9-a8ed-01aa75ed71a1/language-en/format-PDF/source-153474387> and <https://op.europa.eu/en/publication-detail/-/publication/ae5716d7-fb39-11e7-b8f5-01aa75ed71a1/language-en>.

<sup>44</sup> Preston, I., White, V., Blacklaws, K., Hirsch, D. (2014) Fuel and poverty: A Rapid Evidence Assessment for the Joseph Rowntree Foundation. Centre for Sustainable Energy (CSE). [https://www.cse.org.uk/downloads/reports-and-publications/fuel-poverty/Fuel\\_and\\_poverty\\_review\\_June2014.pdf](https://www.cse.org.uk/downloads/reports-and-publications/fuel-poverty/Fuel_and_poverty_review_June2014.pdf)

<sup>45</sup> The EU average is 5.1% (see Graph 3, Annex 1).

Romania. The figures for Ireland, Spain, Cyprus, Latvia, Lithuania, Hungary, Malta, Slovenia, Slovakia and Finland are also above the EU average. Looking at the population with an income that is 60% of the median equalised income, the same countries have shares clearly above the EU average, as does France, while the figures for Malta and Finland are below the EU average. As with the above-mentioned indicator, the situation has deteriorated since 2010 for the poorest households in Cyprus and Greece, as it has in Denmark, Spain and Luxembourg. Looking at the population with an income above 60% of median equalised income, Bulgaria, Greece, Croatia, Cyprus, Romania and Slovenia have shares that are at least twice the EU average<sup>46</sup> for this income group, suggesting that non-income-related factors also play a role.

While some Member States – namely Bulgaria, Cyprus, Greece, Spain, Croatia, Italy, Lithuania, Portugal and Romania – stand out, this does not rule out the possibility that other EU countries may have a significant number of energy-poor households. Article 29 of the Electricity Directive makes it clear that ‘any proportion of households in energy poverty can be considered to be significant’, and this is an issue for Member States to decide in their own national context. The high proportion of energy bill arrears in Slovakia, Slovenia and Hungary also deserves attention, as the share of income spent on energy in these countries exceeds 10% in low-income households. In Hungary, Slovakia, Romania, Poland and Czechia, households in all but the highest income quintile spend over 10% of their income on energy.

Finally, the high level of arrears in energy bills in France, Ireland and Finland may also warrant examination, as these countries perform fairly well on other indicators. Moreover, spending on energy exceeds 10% of income for the two lowest income groups in Estonia, Latvia and Croatia, and the proportion of Luxembourg’s poorest households that cannot afford to keep their homes warm has increased since 2010.

Looking at the possible reasons for these results, energy poverty – as previously mentioned – can be driven by low incomes, high energy costs and energy-inefficient housing, and most often a combination of these factors. It is very important to investigate the underlying reasons for energy poverty in order to be able to target policy measures.

As regards energy efficiency, over one in five of all households in Cyprus, Latvia, Hungary, Portugal and Slovenia occupy dwellings with leaks, damp or rot. Up to one in three households with an income below 60% of the equalised median income lives in such dwellings. These countries thus need to take a closer look at how much energy inefficiency exacerbates energy poverty in the national context and implement policies that address related concerns. The national long-term strategies under Article 2a of the revised Energy Performance of Buildings Directive provide a framework for this assessment and for proposing measures.

The phenomenon also exists in Belgium, Bulgaria, Denmark, Spain, France, Luxembourg and the Netherlands, which all have shares of households above the EU average for households ‘below 60% equalised income’ population group. It therefore appears particularly useful for these countries’ energy efficiency measures to prioritise low income and energy-poor households. At the other end, higher-income households are also affected across the EU, especially in Cyprus and Portugal, where the share of households above 60% of median equalised income is nearly double the EU average (12.3% for EU28 in 2018). In Latvia, Hungary and Slovenia, around 20% of these households occupy a dwelling with a leak, damp or rot, while in Belgium, Denmark and Luxembourg the proportion exceeds 15%<sup>47</sup>.

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<sup>46</sup> The EU average is 4.8% (see Graph 4 in Annex 1).

<sup>47</sup> See Graph 5 in Annex 1.

### **The indicators used to identify a significant number of households in energy poverty as reported in the final NECPs**

Although official energy poverty indicators for **Austria** are not mentioned and an approximate number of households at risk of poverty is given for 2013-2014, the plan refers to the EU-SILC primary indicators.

**Belgium** mentions several indicators such as the number of operational budget meters and the average monthly amount of repayment plans, the number of formal notice letters sent by suppliers, the number of terminated contracts and, in particular, the number of ongoing and additional repayment plans arranged by commercial suppliers.

**Croatia's** NECP states that indicators necessary to monitor the energy poverty will be identified and a monitoring system will be established through the already existing system for collecting data on household consumption and habits (Croatian Bureau of Statistics). Therefore, no official indicators are currently made available.

The **Czech NECP** recognises the use of indicators on 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 and the adequacy of living area as relevant but the certified methodology for evaluating energy poverty and vulnerable customers in the Czechia has yet to be established, likely towards the end of 2020. Therefore, no official indicators are identified. However, the NECP makes a reference to EPOV's indicators on hidden energy poverty, high energy expenditure, arrears for energy bills and the inability to achieve thermal standards, dating from 2010 and 2016.

The **Danish NECP** mentions the EU-SILC survey and refers to Denmark's share and how it compares to the EU-28 average, which suggests that complementary national indicators have not been developed at national level.

**Estonia** refers in its plan to the EPOV statistics to highlight that energy poverty does represent a major issue. Just like the Danish NECP, the plan does not refer to existing national indicators developed to complement those available with EPOV or Eurostat.

**Finland** chose to cross-reference plans set out in the LTRS. Indicators used to assess the energy performance of the building stock to target policies and actions according to set targets include the energy use of the building stock, energy efficiency levels of the buildings, GHG emission from building use, GHG emissions from renovations, energy poverty, the number and size of apartments, living conditions, smart energy systems and societal impacts.

In **France**, two indicators are used to evaluate energy poverty: 1) the indicator based on the energy effort rate, which considers a household to be in a situation of energy poverty where its expenditure on energy in the home exceeds 8% of revenue, where revenue by consumption unit (CU) is below the third decile of revenue per CU; 2) the indicator of feeling cold, taken from the energy-info barometer produced by the National Energy Ombudsman using a sample of 1,500 people.



In **Germany**, the group of people specifically entitled to claim is determined in accordance with individual aspects, whereby the minimum subsistence level defined by the legislature is compared with the relevant income and financial situation of the individual seeking assistance. The NECP mentions that the at-risk-of-poverty rate and the primary indicators suggested by EPOV are statistical values that do not provide any information about individual need.

Although **Italy** does not have an official definition of energy poverty, in the National Energy Strategy approved in November 2017, an ad hoc indicator was adopted to measure its scope. According to that indicator, in the period 2005-2016 the proportion of households in energy poverty was, on average, approximately 8% of all households. The trend is essentially the same as for the proportion of households in relative poverty, according to estimates provided by Istat.

**Latvia** recognises the indicators proposed by EPOV. At present, Latvia has identified the EU-SILC indicator *Share of population below 60% of median equivalised income not able to keep their home adequately warm, based on question 'Can your household afford to keep its home adequately warm?'* as the main indicator to measure energy poverty in the country. Latvia complements this by stating that another complementary indicator used is the amount of delays in the supply of utilities in Latvia in 2018, observed in the case of 11.6 % of all inhabitants.

**Lithuania** acknowledges the value of EU level indicators and traces how they develop for Lithuania and for the EU average from 2011 to 2018. The plan refers to the National Progress Programme 2021-2030 designed for the reduction of energy poverty, for which national indicators with targets for 2025 and 2030 are used. These 'impact' indicators are the share of population unable to keep the house adequately warm and the share of households spending a large share of income on energy.

**Malta's** Strategic Policy for Poverty Reduction and Social Inclusion 2014-2024 uses two primary indicators developed by EPOV. For the purposes of the plan's identification of number of households in energy poverty it relies on the inability of households to keep their homes adequately warm indicator.

**Portugal** is in the process of developing its long-term strategy to combat energy poverty and is therefore still determining the monitoring indicators, strategies and targets that would most adequately address household needs.

It is not clear that EPOV's main indicators have been established as the official set of indicators to measure energy poverty levels in **Romania**, but Eurostat's indicators are mentioned in the NECP (arrears on utility bills and inability to keep the home adequately warm) albeit without providing an approximate figure of energy poor households.

It is not clear from the **Slovakian NECP** that EU or national indicators have been taken into account for the energy poverty assessment.

In **Spain**, the National Strategy against Energy Poverty has developed four official indicators that coincide with those used by EPOV as it facilitates the comparison with the energy poverty levels in other Member States. These are high share of energy expenditure in income (2M), low absolute energy expenditure (M/2), inability to keep home adequately warm and arrears on utility bills.

**Bulgaria, Cyprus, Greece, Hungary, Luxembourg, Netherlands, Poland, Slovenia and Sweden's** plans do not refer to the use of indicators for their respective analyses.

**To try to understand whether there may be a particular energy dimension at play**, it is interesting to compare energy poverty with the more general risk of poverty and social exclusion. There may be energy-poor households that are not considered poor or socially excluded under standard definitions of poverty, and vice versa.

Table 1 of Annex 1 shows a **strong correlation over 2010-2018 between the share of the total population that is at risk of poverty or social exclusion and the share of the total population that is unable to keep a home adequately warm**. The correlation is equal to or above 0.70 for two-thirds of Member States, equal to or above 0.80 for 12 Member States, and very strong (above 0.90) for Czechia, Greece, Latvia, Hungary, Malta and Poland. It would therefore appear that energy poverty mirrors poverty and social exclusion in these countries.

The same table also shows a **strong correlation between the share of the total population that is at risk of poverty or social exclusion and the share of the total population in arrears with utility bills**. This correlation equals or exceeds 0.80 for more than half the Member States and is particularly strong (above 0.90) in the case of Czechia, Latvia, Hungary, Poland, Portugal, Romania and Slovenia. Household income, work intensity of household or material deprivation seem to play a particular role here, but also the energy bills since they account for a large proportion of energy expenditure in relation to income in all these countries but Portugal (see Graph 5 in text above).<sup>48</sup>

In the EU as a whole, the correlation over 2010-2018 between the proportion of the total population that were unable to keep their home adequately warm and the proportion occupying a dwelling with a leaking roof and damp walls is clearly lower. For this indicator, the correlation is strong (0.70 or above) for Bulgaria, Czechia, Latvia, Malta and Romania. Again, in the EU as a whole, the correlation between the proportion of the total population living in a dwelling with a leaking roof and damp walls and the proportion in arrears with utility bills is comparatively stronger (0.8). It is above 0.70 for Czechia, Estonia, Italy, Latvia, Lithuania and Romania. **The poor energy performance of buildings probably plays a significant role** in these cases.

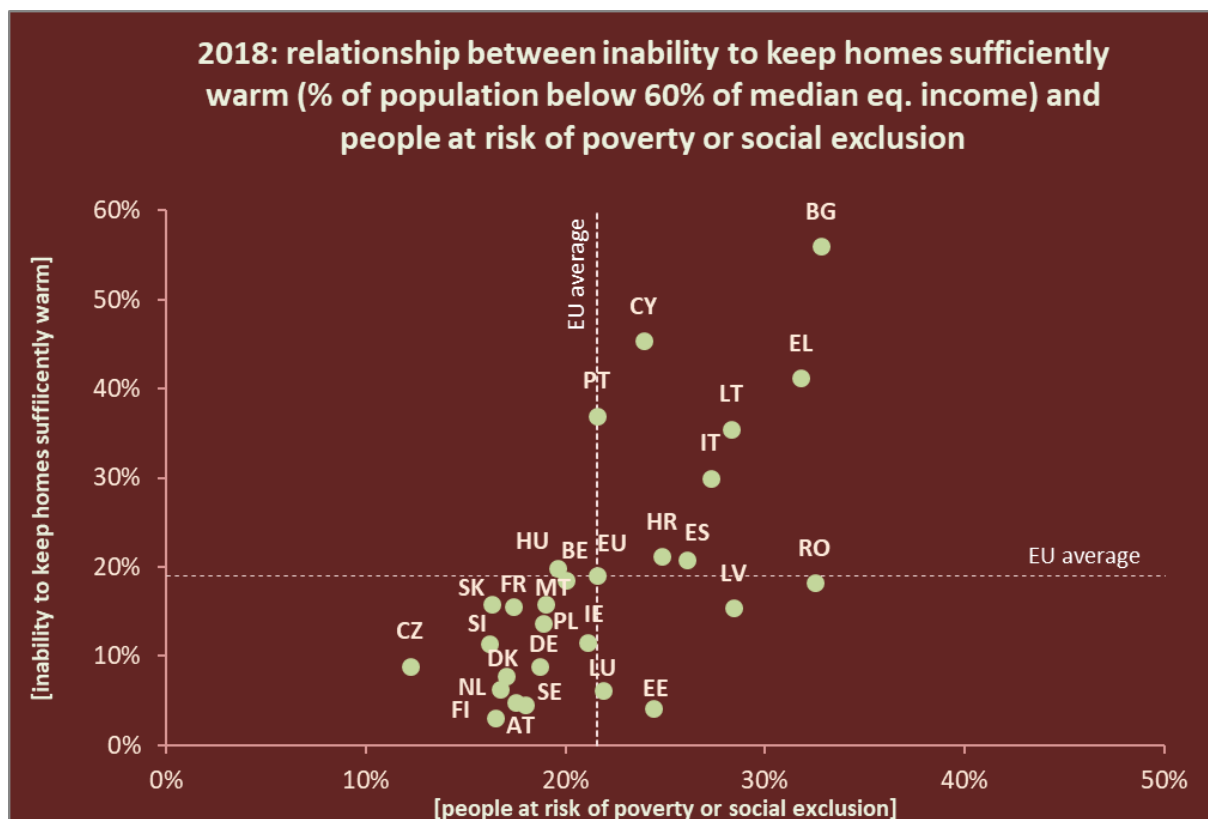
The above-mentioned study commissioned by the Commission found that the presence of leaks or damp in the house affects energy poverty: in the Netherlands and Spain, households with leaks were found to be twice as likely to say they could not keep the house warm enough, while in Italy and Slovakia they were three times as likely to do so. Households living in leaky houses were found to spend more on energy and were thus 17% more likely to be energy-poor under the 2M indicator, the figure being 22% under the LIHC indicator.<sup>49</sup>

The above data provide a snapshot of the correlation over time. While this can shed light on the presence and weight of different drivers of energy poverty, it must also be recognised that energy poverty is probably driven not by a single factor, but by a mix. In contrast to the above-mentioned data, which are based on a time series, the following graphs give an indication of how Member States compare with each other at a specific time (2018).

<sup>48</sup> The study by Trinomics referred to above also found, through its correlation analysis across a sample of Member States, that households are less likely to be energy-poor if they have a higher equalised disposable income, and that this held true across all countries and all energy poverty indicators chosen.

<sup>49</sup> Selecting Indicators to Measure Energy Poverty, Trinomics (2016).

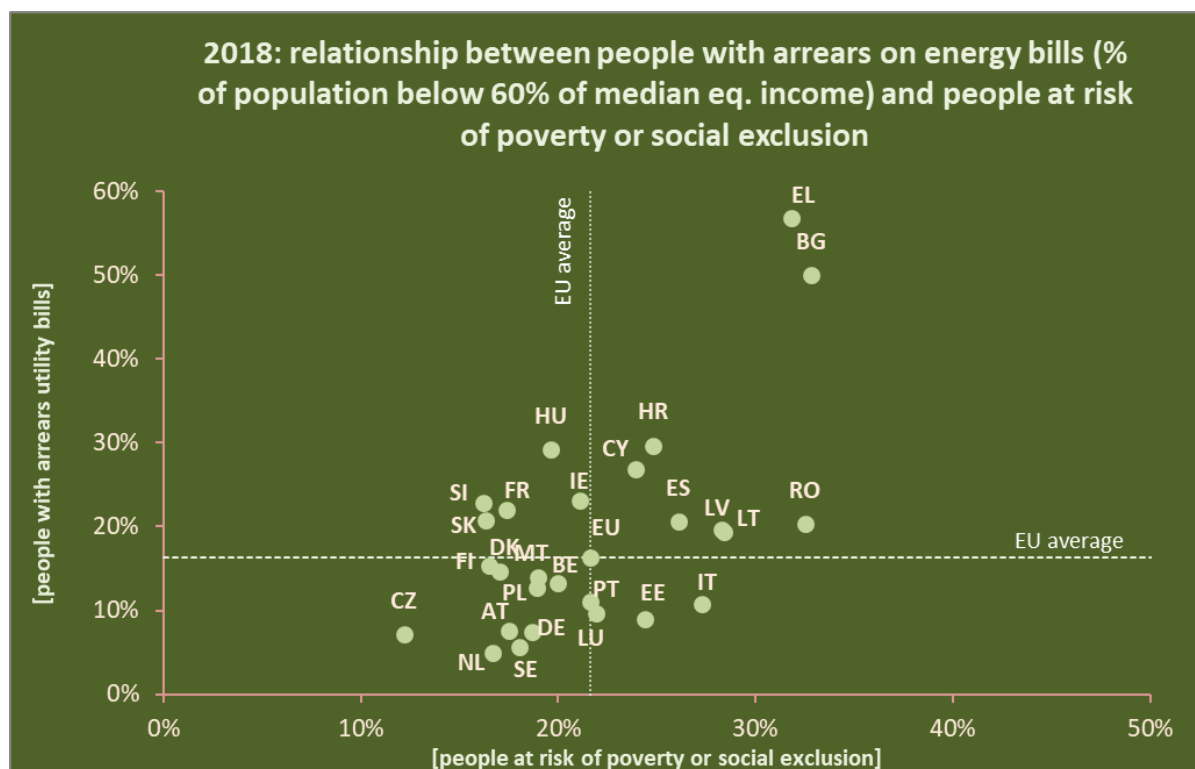
Graph 15: Relationship between the share of people at risk of poverty or social exclusion (i.e. below 60% of median equivalised income) and the share of population below 60% of the median equalised income that are unable to keep their homes warm (EC DG ENERGY, based on Eurostat [ilc\_mdcs01] and [ilc\_peps01])



Graph 15 shows the share of households at risk of poverty across the EU countries and those countries where the income, low work intensity or material deprivation place a particular burden on such households (see the upper right-hand quadrant). Of particular interest is the lower right-hand quadrant, which shows countries with a larger share of households at risk of poverty or social exclusion than the EU average, but where the incidence of energy poverty among such households is below the EU average.

The following graph offers a similar visualisation in relation to arrears with utility bills.

Graph 16: Relationship between the share of people at risk of poverty or social exclusion and the share of population below 60% of the median equalised income in arrears with utility bills (EC DG ENERGY, based on Eurostat[[ilc\\_mdes07](#)] and [[ilc\\_peps01](#)])



The above analysis has consistently pointed to some Member States facing particular challenges, which seem not only to be linked with issues relating to low income, but also to have a specific energy dimension. Member States should be encouraged to analyse the reasons for these results in more depth, so as to reduce the number of energy-poor households and implement measures targeting the most vulnerable households, thus ensuring the fairness and social acceptability of the energy transition.

Where there is a poverty issue specifically associated with energy – that is, one not arising solely out of general poverty – it is vital for Member States to add structural measures to the existing social policy measures designed to mitigate the social consequences of energy poverty. Structural measures may be regulatory, designed to improve the functioning of the markets; or infrastructure-related, designed to cut energy costs through renovations to improve the energy performance of buildings.

#### 4. IDENTIFYING BEST PRACTICES IN THE NECPS<sup>50</sup>

It is the Member States' prerogative to define the concept of energy poverty in their own national context and to design policies to protect energy-vulnerable and energy-poor consumers. **The sharing of information and good practices among EU countries is beneficial in helping them to refine such policies and put them into practice.** Accordingly, the recast Electricity Directive (Recital 59) states that the Commission should actively support the implementation of the Directive on energy poverty by facilitating the sharing of good practices between Member States.

**An assessment of the final NECPs shows that Member States have adopted different approaches to the definitions of energy vulnerability and energy poverty.** Most have not defined energy poverty; public interventions (such as helping households that receive subsistence allowances to pay their energy bills) are based on criteria unrelated to energy. However, several countries have used indicators described above in Section 3 as proxies, to define the problem. At the same time, many of them take the view that there is not necessarily an energy poverty issue. Accordingly, they treat energy poverty not as an energy policy issue, but rather as part of general poverty, which they tackle through general social policy measures, with varying degrees of importance being attached to energy efficiency. These countries include Denmark, Estonia, Finland, Germany, Luxembourg, the Netherlands, Slovenia and Sweden.

**These different approaches and definitions affect the form and substance of the very diverse policies implemented by the Member States with a possible impact on energy poverty.** A comprehensive overview of these measures is included in the 2020 ESPN report on access to essential services<sup>51</sup>. This maps the main measures and challenges in national approaches to ensuring access to essential services, including energy, as set out in Principle 20 of the European Pillar of Social Rights. National approaches vary considerably, including:

- general social policy measures targeting low-income or poor households in general, which may include support to help them pay their energy bills,
- direct interventions in the price of supply of energy to energy-poor/vulnerable consumers (e.g. Belgium, Spain, Portugal),
- energy vouchers (e.g. Bulgaria),
- credit lines and subsidies (e.g. Poland), and
- tax exemptions or reductions (e.g. France) to support building renovation and energy efficiency.

Other measures described in the NECPs include protecting people against disconnection, general consumer empowerment measures and counselling, audits or low-cost measures to help households cut their energy consumption (including advice on behaviour and investment)<sup>52</sup>. Of the broad array of measures implemented across the Member States, only

<sup>50</sup> Please refer to the original and English translations of the NECPS which have been the basis for the identification of concrete, national measures. Available at: [https://ec.europa.eu/info/energy-climate-change-environment/overall-targets/national-energy-and-climate-plans-necps\\_en#final-necps](https://ec.europa.eu/info/energy-climate-change-environment/overall-targets/national-energy-and-climate-plans-necps_en#final-necps)

<sup>51</sup> ESPN(2020), Access to essential services for people on low incomes in Europe. An analysis of policies in 35 countries, Brussels: European Commission. Available at: <https://ec.europa.eu/social/main.jsp?catId=1135&intPageId=3589>

<sup>52</sup> Examples of such energy advice and home audit projects include H2020-funded ASSIST (<http://www.assist2gether.eu/>), SAVES2 (<https://saves.nus.org.uk/>), and SMART-UP ([www.smartup-project.eu](http://www.smartup-project.eu/)), as well as IEE-funded projects REACH (<http://reach-energy.eu/>) or ACHIEVE (<https://ec.europa.eu/energy/intelligent/projects/en/projects/achieve>).

those that contribute to energy savings are relevant as regards Article 7(11) of the Energy Efficiency Directive.

In view of the rather scant information available before the deadline for the transposition of the recast Electricity Directive and without the full effects of measures already taken by Member States having been evaluated, **the following practices can be flagged as particularly positive:**

- The new Electricity Directive and the general governance framework of which it is a part provide a **useful opportunity for Member States to review existing definitions and policies thoroughly, and to build upon them or adjust them to make them more effective.** In Italy, for example, the main determinants of energy poverty have been analysed in depth, and existing instruments reviewed, and there are plans to set up a national observatory on energy poverty. Romania also foresees the creation of a new institution to monitor energy poverty. In Belgium, the Flemish Region also conducted a comprehensive review in 2018-2019. Other Member States (e.g. Croatia, Poland and Portugal) have announced further research and/or integrated strategies and programmes, or reviews of existing strategies.
- **An integrated strategy will be more effective the more it relies on meaningful and accountable public participation and broad stakeholder engagement,** since the aim is to engage with consumers and build awareness and social acceptance of the challenges posed by the energy transition. The importance of stakeholder consultation and of field experts is highlighted in the Belgian context, for example. Portugal aims to promote a platform for a structured differentiated dialogue with local populations. Malta's national strategic policy for poverty reduction and for social inclusion was reportedly underpinned by an extensive consultation that included civil society and the public.
- Given the multiple determinants of energy poverty, it is essential that measures to address it build on **close cooperation between different sections of the administrative apparatus (energy, environment, social policy, housing, finance, consumers), and between different levels of administration.** While it is useful for energy poverty to be recognised at the highest political level, a bottom-up approach is important for cross-fertilisation between data and knowledge, and to identify the individual households most in need of support. Luxembourg is a good example of a system that offers a comprehensive strategy for tackling energy poverty.
- **Cooperation between municipalities, civil society (NGOs, energy communities, philanthropic bodies) and private sector entities has yielded good results at local level** in terms of improving the energy efficiency of dwellings and appliances and increasing awareness of ways to reduce energy bills or develop revenue streams to help combat energy poverty<sup>53</sup>. Facilitating such measures is thus a very useful complement to policies and measures defined at national level<sup>54</sup>. There are clear benefits in supporting energy

<sup>53</sup> For example, the IEE-funded FIESTA project set up 14 energy helpdesks for members of the public together with municipalities, technical partners and a social housing agency (<http://www.fiesta-audit.eu/en/>).

<sup>54</sup> Energy-poor households may not be fully aware of the problems they face. These bodies and organisations are well placed to provide households with the basic facts on energy poverty. They may provide the knowledge required to identify

communities, especially when they are designed to involve vulnerable households to have a say in the main services the community plans to prioritise. Energy communities across Europe can lead by example as many support energy efficiency schemes, encourage vulnerable customers to invest in renewables and face a lower supply price in return and provide special assistance to tackle the split incentive dilemma<sup>55</sup>.

- While Member States' existing and planned action plans and strategies are designed to improve the tools available for addressing energy poverty, many EU countries have also worked to **improve access to these tools**. For example, France, Greece, Italy<sup>56</sup> and Portugal have focused particularly on facilitating access to support (for example by simplifying procedures, making assistance available to certain customer groups without their having to apply for it, or providing financial support upfront, rather than after the event).
- While social tariffs or income support can provide immediate relief to households facing energy poverty, **targeted structural measures**, in particular energy renovations, **provide lasting solutions**. In some Member States, the role of energy efficiency in fighting energy poverty does not seem to be fully appreciated. At the other end of the scale, Malta links the observed decrease in energy poverty to considerable investment in energy infrastructure. Many Member States, such as Greece, Romania and Cyprus, apply better conditions for vulnerable consumers or people on low incomes (e.g. higher grants and/or loans offered at lower interest rates, or even interest-free) in their programmes of subsidies to support household renovation. The Croatian and Irish NECPs also provides for the planning and launch of a systematic programme to combat energy poverty through energy efficiency measures. Lithuania has included plans to continue modernising indoor heating and hot water systems in multi-apartment buildings among its priority energy efficiency measures<sup>57</sup>.
- While several Member States already address energy poverty in their national long-term renovation strategies (issued in 2017), the revised Energy Performance of Buildings Directive states that these strategies must outline 'relevant national actions that contribute to the alleviation of energy poverty'. **Commission Recommendation (EU) 2019/786 on building renovation** provides further examples of good practices that have been implemented,

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and share their needs and problems in the area of home energy comfort, thereby helping to identify the problem and solutions of energy poverty.

<sup>55</sup> Good examples of such contributions by energy communities can be drawn from renewable energy cooperatives in France (<https://www.lesamisdenenercoop.org/>) and Belgium (<https://energent.be/>).

<sup>56</sup> The Italian Regulatory Authority for Energy, Networks and Environment has proposed automatically enrolling energy-poor people in a subsidy programme: [https://www.arera.it/it/com\\_stampa/19/190701.htm](https://www.arera.it/it/com_stampa/19/190701.htm)

Automatic enrolment is a type of 'choice architecture' intervention that could enable vulnerable people to save their already impaired cognitive resources. However, this depends on identifying the target categories (DellaValle, Nives. 'People's decisions matter: understanding and addressing energy poverty with behavioural economics.' Energy and Buildings 204 (2019): 109515)

Greece refers to the potential introduction of an 'energy card'. This card could be given to vulnerable consumers to replace other support measures for the consumption of energy goods and also enable them to select on their own the way to meet their energy needs.

<sup>57</sup> Economidou, M., et al. (2019), Draft National Energy and Climate Plans under the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, JRC Technical Report, European Commission, 2019, JRC117464. See also Economidou, M., et al. (2019). Assessment of the Second National Energy Efficiency Action Plans under the Energy Efficiency Directive. <https://doi.org/10.2760/780472>, in particular the specific section on energy poverty (table 8).



notably as regards social housing and providing advisory services to energy-poor households.<sup>585960</sup> In fact, the Renovation Wave initiative focuses particularly on energy poverty and addresses integrated approaches to tackle those buildings that perform worst, while at the same time bearing in mind the social setting and affordability of housing. Some Member States have managed to have a substantial share of their multi-apartment block buildings renovated, on some occasions with the active support of energy service companies (ESCOs) and the rollout of energy performance contracts<sup>61</sup>. Energy performance contracting enables private capital to be attracted along with the necessary technical expertise provided by ESCOs<sup>62</sup>. ESCOs may have a particularly important role to play in integrating new heating solutions in the social housing sector. Heavier investment in insulation and ventilation, for example, may require stronger public support for vulnerable consumers. Social housing policies as well as appropriate assistance and protection against forced eviction are also key to achieving the goal of eliminating energy poverty. By way of example, Belgium and the Netherlands host several projects designed to moderate energy demand by focusing on retrofitting social housing.<sup>63</sup>

- Sharing experiences among Member States is crucial for the successful implementation of all EU policies. Among other networks, the Concerted Actions of the Energy Performance of Buildings Directive<sup>64</sup>, the Energy Efficiency Directive<sup>65</sup> and the Renewables Energy Directive<sup>66</sup> provide well-established platforms enabling Member States to share good practices and establish a dialogue on how to implement the Directives effectively, which includes alleviating energy poverty. Special attention should be given to exchanges with the residential sector.
- **Integrated approaches** to combating poverty and social exclusion are an important tool to prevent and mitigate the consequences of energy poverty, which cannot be addressed in isolation. Social services, including financial

<sup>58</sup> See also the national implementation measures described by the Joint Research Centre in its 2017 assessment of Member States' long-term renovation strategies, where the majority of Member States included existing or planned measures directly or indirectly associated with alleviating energy poverty. Direct references include specific policies and measures targeting low-income households, while indirect references may refer to general strategies or initiatives that may also concern the social housing sector. See: <https://publications.jrc.ec.europa.eu/repository/bitstream/JRC114200/kjna29605enn.pdf>

<sup>59</sup> Cited above, please refer to the relevant Joint Research Centre technical report on the cost-optimal energy renovation of the EU building stock that provides further recommendations. Filippidou, F., Nieboer, N., & Visscher, H. (2016). Energy efficiency measures implemented in the Dutch non-profit housing sector. *Energy and Buildings*, 132, 107-116.

<sup>60</sup> Castellazzi L. et al. (2020), Assessment of the long-term renovation strategies under the Energy Performance of Building Directive –EPBD Art.2a JRC Science for Policy report (forthcoming).

<sup>61</sup> Member States that indicate the need to further consider ESCOs and energy performance contracts for the mobilisation of private savings include Belgium, Bulgaria, Croatia, Cyprus, Denmark, Greece, Italy, Poland (although with some difficulty) and Slovakia.

<sup>62</sup> The Staff Working Document accompanying the Renovation Wave Communication refers to a successful experience involving the roll-out of energy performance contracting in hospitals through public-private partnerships. Some Member States have shown that a combination of elements is required: regular consultations to understand local market needs and bottlenecks; a combination of private and public funds (60% ESCO private fund with a grant component of approximately 40%); a clear template for the energy performance contract provided by national or local government (with defined conditions, obligations, risk sharing, rights of each party, etc.); clear targets (number of buildings tackled); and appropriate public procurement procedures.

<sup>63</sup> <https://aster.vlaanderen.nl/english-summary> and <https://energiesprong.org/>. H2020 Transition Zero (<http://transition-zero.eu/>) built on the success of Energiesprong in the Netherlands, advancing its implementation and kick-starting the project in France and the UK.

<sup>64</sup> <https://epbd-ca.eu/about-us>

<sup>65</sup> <https://www.ca-eed.eu/Homepage>

<sup>66</sup> <https://www.ca-res.eu/>



counselling for dealing with utility arrears, are a key component of these strategies.

**The Spanish National Strategy against energy poverty for 2019-2024 appears particularly well structured in terms of sharing good practices in future.** Building on relevant Eurostat data, it refines that data through an analysis of climate zones and the socio-demographic features of households. The evolution of the results under four primary energy poverty indicators is to be published annually and compared with the following targets to reduce energy poverty: Spain is aiming, as a minimum, to reduce the 2017 values of the indicators selected by 25% by 2025. The over-reaching objective is to halve them. This strategy was designed with the help of a working group bringing together the representatives of several ministries and state organisations, with the involvement of academic experts. It benefited from two consultations that attracted some 160 responses. The strategy is designed to make policy more effective by making support measures more accessible, promoting coordination between relevant sections of public administrations, and outlining short-, medium- and long-term actions.

## 5. EU FUNDING

In January 2020, the Commission unveiled its European **Green Deal investment plan** to mobilise at least EUR1 trillion in sustainable investments over the next decade through the EU budget. The **just transition mechanism** ('JTM'), and as part of it the Just Transition Fund, is designed to alleviate the social and economic consequences of the transition to a climate-neutral economy in the territories most affected, especially those relying heavily on solid fossil fuels and carbon-intensive industries.

The economic and social impacts of the COVID-19 pandemic crisis have set the EU budget on a course to power a recovery plan for Europe. The proposal for a recovery package, presented by the Commission on 27 May 2020, is designed to strengthen both the current multiannual financial framework ('MFF') and the future one (2021-2027). The package comprises a new emergency European recovery instrument amounting to EUR750 billion, **Next Generation EU**, to be channelled through a number of programmes, plus a stronger multiannual financial framework of EUR1,074.3 billion. The recovery plan states that the principles of solidarity and cohesion will be applied in addressing the priority green and digital transitions.

The package strengthens existing cross-cutting instruments and creates new ones that also cut across sectors. They are thus not designed to target specific sectors. Moreover, the link with green transition objectives varies depending on the instrument.

Projects addressing energy poverty may vary considerably and it is important to ascertain which funding programme represents the best match to ensure successful implementation.

### *Social programmes*

Particular attention should be given to the **European Social Fund + (ESF+)**, which provides for social inclusion measures that include targeting the most deprived and children. Energy poverty may be taken into account when assessing how vulnerable the target group is and what measures have been taken to remedy this situation. Moreover, in view of its transversal nature energy poverty could be tackled in the context of an active inclusion strategy or of strategy addressing housing exclusion and homelessness.

### *Energy efficiency and building renovation*

Various sources of EU funding will be available at regional, national and European level to support energy efficiency and buildings renovations. The new instruments under the Recovery Plan and the funds under Cohesion Policy, the Just Transition Mechanism and the central EU programmes like LIFE Programme or Horizon Europe will provide significant sources of primarily grant-based support and capacity building for investments to improve buildings energy performance. To make best use of the available funding and to mobilise private financing, buildings renovation investments need to be placed in the centre of the plans and strategies that Member States will propose for recovery and just transition.

**Cohesion policy programmes** represent a major source of funding for energy efficiency projects. In particular, allocations from the **European Regional and Development Fund ('ERDF')** and the **Cohesion Fund**, in their current and future form, are important for energy poverty alleviation. In the 2014-2020 period, Member States and regions have allocated more than EUR 17 billion for energy efficiency investments from the ERDF and Cohesion Fund. These investments contribute to increasing energy efficiency performance in buildings,

including housing and public infrastructure, and in enterprises, with a focus on small and medium-sized enterprises ('SMEs'). Assistance – help with capacity building for administrators, financial support for experts, or peer-to-peer solutions – is also available. Planned investment in the energy efficiency of residential buildings during the 2014-2020 programming period currently comes to about EUR4.62 billion in the EU28. It is expected that through these investments, energy consumption classification will be improved for more than 700 000 households.<sup>67</sup> Although it is difficult to quantify what proportion of this has gone into tackling energy poverty, the direct and indirect effects are considerable. Public funds, especially grants, should be used where they are most needed, particularly for those categories of beneficiaries who have very limited resources and limited access to commercial loans. Higher grant intensities are particularly useful for people at risk of poverty or affected by energy poverty. In other cases, financial instruments may play a more important role, with grants accounting for a smaller share.

Investments in building renovation facilitated by cohesion policy can lead to high energy savings and greenhouse gas emission reductions, and significant social returns. While energy renovation of buildings makes economic sense in the long term, as the costs incurred can be largely or even fully recovered from energy savings, the initial investment involves high upfront costs and split incentives between landlords and tenants. Appropriate funding solutions are therefore needed for low-income households and consumers at risk of energy poverty. These solutions may use the energy savings for repayment, but need to address the financing of upfront investment costs. Grants under cohesion policy must serve energy-poor households, to incentivise building renovation. Solutions involving ESCOs and tax-financing and on-bill financing should also be explored<sup>68</sup>.

Given the strong correlation between the renovation of those buildings that perform worst and the alleviation of energy poverty, Member States are encouraged to focus on dedicated programmes for deep building renovation financed from the EU programmes under shared management. Additionally, Member States are encouraged to raise funds at national level, channel it into building renovation, and, where possible or necessary, focus on improving low-income and energy-inefficient dwellings. At the same time, buildings should be made not only more energy-efficient, but also smarter, enabling households both to play a more active role in the way they consume, and also, potentially, to produce their own energy. This would incentivise changes in behaviour without compromising quality of life. ESCOs may have an important role to play in this area, too.

Alongside these programmes, the **InvestEU facility** also deserves a mention. Under the recovery plan, the Commission will deploy guarantees through the sustainable infrastructure window of InvestEU, which leverages private investments through loans and financial products backed by an EU guarantee. This translates into opportunities to channel bespoke financial products to spark investments in energy efficiency projects designed to improve the lives of people in energy-poor households. The programme is foreseen to play a key role in leveraging investment in building renovation. The focus will lie on public areas and on social and affordable housing. The programme also supports three other areas in addition to sustainable infrastructure: research, innovation and digitisation; small and medium-sized businesses; and social investment and skills. It will be flexible, able to react to market changes and shifting policy priorities. To address the twin challenges of affordability and energy

<sup>67</sup> See <https://cohesiondata.ec.europa.eu/themes/4>

<sup>68</sup> Such solutions may include upfront financing provided by ESCOs or financial institutions, where energy savings are guaranteed (i.e. based on energy performance contracts), micro-credits backed by a guarantee fund, measures to promote fair cost sharing between owners and tenants, municipal green bonds to finance on-tax solutions, social impact bonds to support social infrastructure, and grants to close the gap between social and private returns.

efficiency, the Commission, alongside the InvestEU implementing partners, will develop financial products for the energy renovation of buildings. These will target the residential sector, with a special focus on social and affordable housing. Financial incentives will also focus on public buildings, schools and hospitals, SMEs, and support for ESCOs to help them integrate energy performance contracting into the renovation of public buildings<sup>69</sup>.

Together, these investment areas can support projects that help combat energy poverty. In addition, project development assistance plays a crucial role and the ELENA facility has become part of the InvestEU Advisory Hub.

The **LIFE programme** will continue to provide funds earmarked for the alleviation of energy poverty. In the next MFF, LIFE will include a new sub-programme on the clean energy transition that will continue the work done under Horizon 2020 Energy Efficiency Market Uptake projects for capacity building and policy supporting measures to promote the clean energy transition, including projects to alleviate energy poverty. On average, these H2020 projects addressing energy poverty have accounted for around €6 million annually under Horizon 2020 energy efficiency calls. These projects supported the development of support measures designed to help energy-poor households save energy. They resulted in reduced energy bills, the setting-up of financial and non-financial support schemes for energy efficiency or renewable energy investments, and specific measures and innovative financing schemes involving the obliged parties under Article 7 of the Energy Efficiency Directive. This type of support, which will continue under LIFE, can be used for monitoring developments on the ground and identifying good practices at various levels, but especially in regions, cities and communities, that could be replicated across the EU. LIFE is set to promote a variety of measures by private and public actors at local, regional and national level. LIFE is a very effective tool for mobilising transition on the ground: it promotes bottom-up initiatives through local cooperation, connecting communities and networks.

Many energy efficiency projects, including those that contribute to energy poverty alleviation, may be specifically relevant for the territories eligible for the Just Transition Mechanism if such investments help mitigate the cost of the transition towards a climate-neutral economy. The Commission has proposed a strengthening of the **Just Transition Fund** with up to EUR17.5 billion, in view of the increasingly urgent need to assist Member States, regions and territories in addressing the associated socio-economic impacts of the transition. The remaining two pillars of the Just Transition Mechanism will also leverage additional public and private investments to support a clean and fair transition across all Member States. Furthermore, a dedicated just transition scheme under InvestEU (second pillar of the JTM) will leverage private investments and support new economic activities contributing to a green growth. The European Investment Bank ('EIB') will also help leverage the necessary resources by mobilising public investments contributing to the green transition through the public sector loan facility (third pillar of the JTM). While the Just Transition Fund will support investments directly contributing to alleviating the social and economic impacts of the green transition in the most affected territories, the scope of eligible territories and investments will be broader under pillar 2 and 3 of the Just Transition Mechanism. The adoption of territorial just transition plans(s) by the Commission will be a key condition for the use of resources under each of the three pillars of the Just Transition Mechanism and will be the document of reference for programming resources under the JTM.

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<sup>69</sup> COM(2020)662

The **Modernisation Fund**, designed to help 10 lower-income EU countries<sup>70</sup> shift to climate neutrality, by helping to modernise their energy systems and improve energy efficiency, may also be relevant to tackling energy poverty. This Fund will operate under the auspices of the Member States, which will select the investments they wish to submit for support. Where such investments are confirmed as priority investments or recommended for financing by the investment committee (non-priority investments), Member States implement them with reporting obligations to the Commission.

The priority areas for investments, which will account for at least 70% of the Fund's resources, are established by Directive (EU) 2018/410 of the European Parliament and of the Council of 14 March 2018 amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, and Decision (EU) 2015/1814 (EU ETS Directive)<sup>71</sup>. Thermal renovation of buildings and support schemes to encourage the transition would, for example, fall under 'energy efficiency'. Investments to modernise district heating pipelines are also included. These are examples where Member States could address energy poverty.

#### *A cross-sectoral increase in EU funding*

Through **REACT-EU**, the Commission proposed to strengthen cohesion policy with an additional EUR 47.5 billion in grants immediately available to the European **Regional Development Fund (ERDF)** and the **European Social Fund (ESF)** over the 2020-2022 period. Amendments proposed to existing operational programmes in relation to a new thematic objective, 'fostering crisis repair', include investment in the green, digital and resilient recovery.. This initiative, which is very flexible, will not target specific energy sectors in boosting spending on green and inclusive transition efforts. Member States are advised to take account of priority areas for public investment, in order to understand the schemes where energy poverty alleviation may become most relevant. It will be even more important to renovate buildings during recovery, given the need to maintain and create local jobs while supporting households directly affected by energy poverty. The Commission is committed to helping Member States develop financial solutions involving very limited upfront investment (or none at all) for low-income households and energy-poor consumers. These will rely on structural funds and the **Recovery and Resilience facility** to address the challenges related to the green transition, including energy poverty.

Finally, rural areas in all EU countries need to be given the tools to play an active role in a just transition to climate neutrality. Member States should look into deploying a stronger **European Agricultural Fund for Rural Development** to relieve the socioeconomic consequences of the energy transition: it could play a vital role in helping to solve the problems arising from energy poverty.

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<sup>70</sup> Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

<sup>71</sup> Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a system for greenhouse gas emission allowance trading within the Union and amending Council Directive 96/61/EC: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02003L0087-20180408>

## 6. ADDITIONAL FORMS OF EU SUPPORT AVAILABLE

**The European Energy Poverty Observatory** provides a range of useful resources, including indicators, studies, information on practical policies and measures, and training materials. It aims to improve transparency by bringing together disparate sources of data and knowledge, enabling networking, facilitating knowledge sharing among Member States and relevant stakeholders, and providing technical assistance to a wide range of interested parties. Of particular interest to Member States is the Observatory's most recent report, entitled 'Towards an inclusive energy transition in the European Union: Confronting energy poverty amidst a global crisis'<sup>72</sup>. This analyses energy poverty-relevant provisions in the national energy and climate plans and looks into COVID-19 responses across the EU in relation to the energy-income nexus. It also provides a up-to-date overview of energy poverty indicators and trends, headline statistics, and trends over time. The report concludes by summarising the results of these analyses and emphasising avenues for future action to address the problem. These include the need for better data collection and the continued compilation and evaluation of best practices in the context of the Clean Energy Package and the European Green Deal.

**The Covenant of Mayors for Climate and Energy** provides a useful platform for implementing and sharing best practices among 9000+ local authorities. More political commitment is needed at local level, along with more focus on the effective monitoring of the practical aspects of energy poverty, along with ways to alleviate its impact. The Covenant is tasked with supporting public authorities in developing energy transition roadmaps and thereby encouraging specific measures to combat energy poverty. The Convent has the capacity to provide action-oriented peer-to-peer learning programmes on a large scale for cities and/or regions. Such programmes have strong potential for replication throughout Europe, and sharing best practice on combating energy poverty can achieve real results.

Other EU initiatives focusing on the local level, such as the Coal Regions in Transition and the Clean Energy for EU islands initiative can also provide useful forums and tools for preventing and tackling energy poverty.

**The Urban Agenda for the EU** was launched in May 2016 with the Pact of Amsterdam. It represents a new multi-level working method promoting cooperation between Member States, cities, the European Commission and other stakeholders in order to stimulate growth, liveability and innovation in the cities of Europe and to identify and successfully tackle social challenges. The years to come will see an increase in discussions around energy poverty solutions.

**The Technical Support Instrument (TSI)** is the proposed successor of the Structural Reform Support Programme and finances tailor-made technical support to EU Member States upon their request. The TSI is a flexible instrument supporting both the design and implementation of reforms in numerous policy areas, including energy poverty. The **Directorate General for Structural Reform Support (DG REFORM)** manages the TSI in cooperation with other Commission services. Once a technical support request has been selected for funding, DG REFORM works with the Member State to mobilise the most suitable expertise for delivering the support, for example from public agencies in other Member States, international organisations, or private companies. In the area of energy poverty, the TSI could support Member States in developing detailed reform concepts, action plans, and implementation modalities that adapt best practices on energy poverty to national and local circumstances. For example, DG REFORM has already provided technical support for the definition and monitoring of energy poverty in a Member State and has supported the development of targeted energy efficiency policies, programmes and financial instruments.

<sup>72</sup>

<https://op.europa.eu/en/publication-detail/-/publication/4a440cf0-b5f5-11ea-bb7a-01aa75ed71a1/language-en>

The Directorate General for Internal Market, Industry, Entrepreneurship and SMEs (**DG GROW**) will lead together with several DG's an **Affordable Housing Initiative** which will address the need for a EU level coordinating partnership on social and affordable housing. It will facilitate the creation of and provide support to local cross-sectoral project partnerships. The initiative should pre-shape projects and guarantee access to necessary technical capacity as well as assist them in using the different EU funds, for example through the local/regional one-stop-shops and ELENA facility. By facilitating projects from a sector point of view, immediate implementation capacity is created for a direct respond to the created project pipelines targeting social and affordable housing. There is a very clear need as local stakeholders, in particular in the social housing sector, risk losing track of the many funds that can be used and can only deliver the needed capacity and scale in such partnerships.

## CONCLUSION

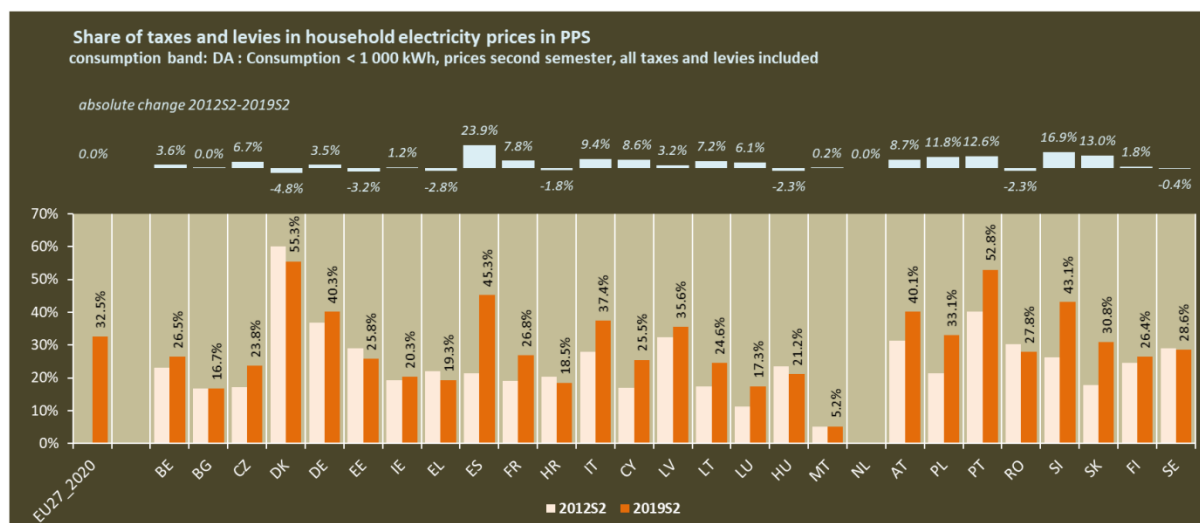
Access to energy services is essential to enable people to live in dignity and fulfil their potential. Addressing energy poverty is a key element of a just transition to a greener economy with the potential to bring multiple benefits, including lower spending on health, reduced air pollution (by replacing heating sources that are not fit for purpose), improved comfort and wellbeing, improved household budgets, and increased economic activity. The European Pillar of Social Rights, in placing access to energy within the broader integrated approach of social inclusion and stressing the importance of supporting people in need, provides a compass for Member States to address the problem. At EU level, funding and other forms of support can also be mobilised to facilitate such an approach, and the Commission will encourage exchanges of information and good practices, thus building on the results achieved through implementing the new provisions. The momentum of the Renovation Wave initiative of the European Green Deal is an opportunity to intensify efforts to tackle energy poverty by improving the energy performance of the existing building stock with dedicated measures and concrete actions.

The new legal provisions set out in the Clean Energy for All Europeans package were designed for EU countries to take a structured approach and we have already begun to appreciate this trend across Member States during the final NECP assessment, which has allowed us to identify numerous best practices. Despite this improvement, there is still room for further targeted action against energy poverty. It is important to stress that NECPs are tools made available under the existing Energy Union governance and new recovery framework to facilitate the monitoring of energy poverty strategies across Member States. The plans will be subject to further review in 2023 and 2024, providing the opportunity to consider this guidance, build on lessons learned from the first years of implementation and adapt plans to the climate and energy targets and economic circumstances. Importantly, the second round of NECPs will reflect to what extent Recovery and Resilience Plans take the priority of energy poverty alleviation into consideration.

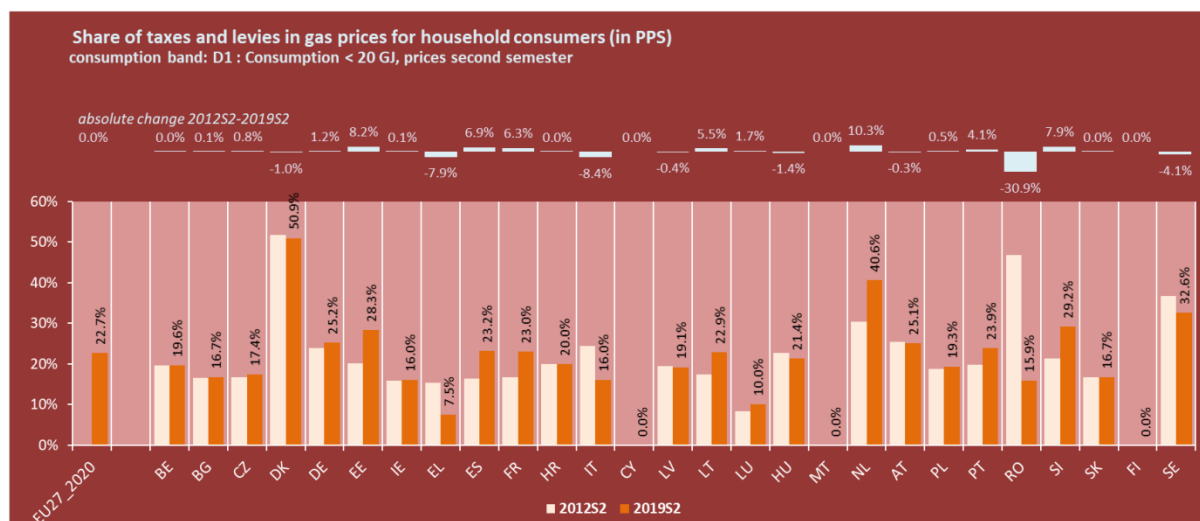


## Additional data

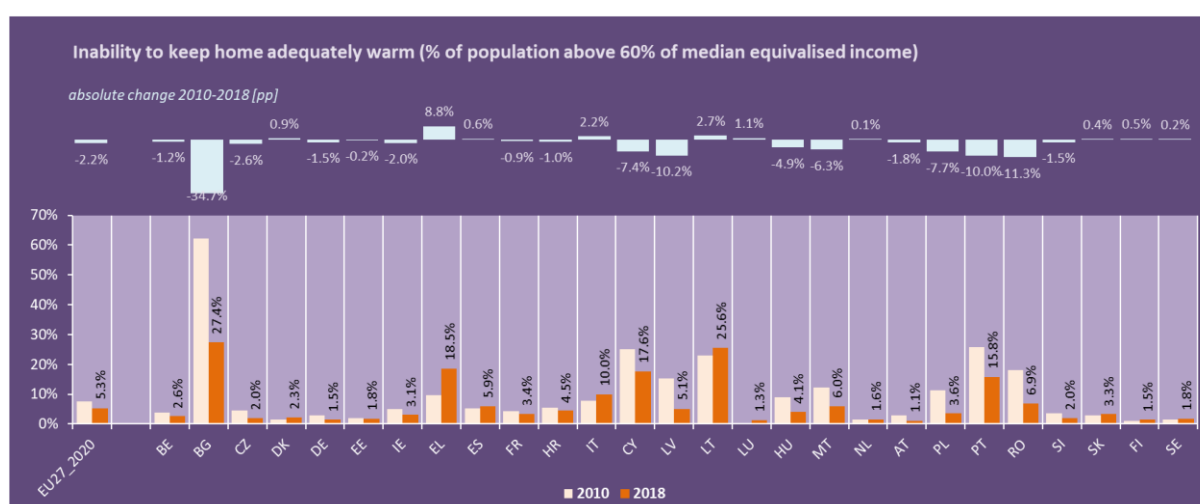
Graph 1: Share of taxes and levies in household electricity prices, lowest consumption band (based on Eurostat, [[nrg\\_pc 204](#)])



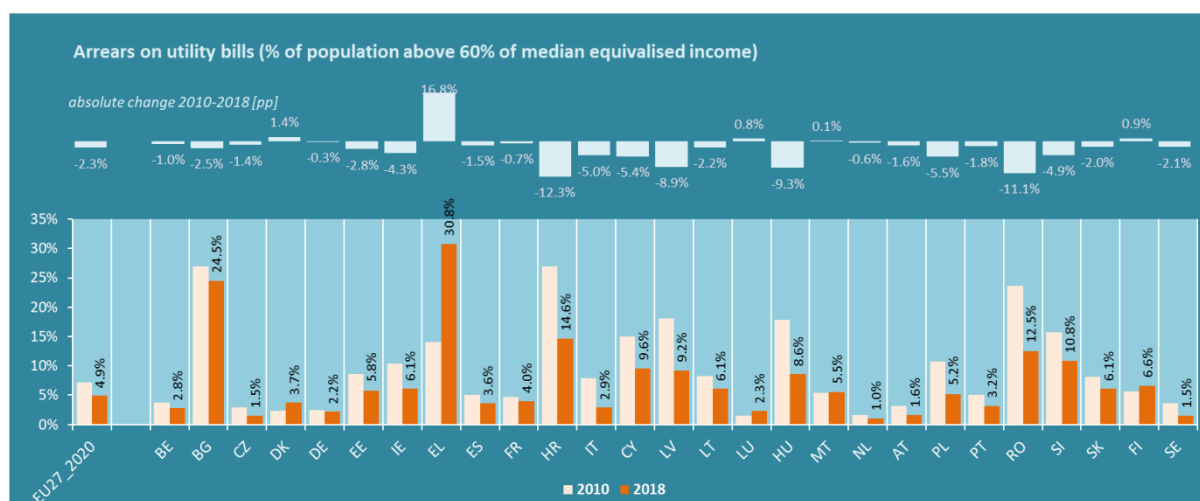
Graph 2: Share of taxes and levies in household gas prices, lowest consumption band (based on Eurostat, [[nrg\\_pc 202](#)])



Graph 3: Inability to keep home adequately warm, population above 60% of median equalised income. (Eurostat SILC, [[ilc\\_mdes01](#)])<sup>73</sup>



Graph 4: Utility bill arrears, population above 60% of median equalised income (Eurostat SILC, [[ilc\\_mdes07](#)])<sup>74</sup>



<sup>73</sup> As the core guidance text points out, please bear in mind that for SILC data, the indicator is calculated on the basis of individual people (as a percentage of the population), but is based on a household question.

<sup>74</sup> Idem above

Graph 5: Population living in a dwelling with a leaking roof, damp walls, floors or foundations, or without window frames; population above 60% of median equalised income (Source Eurostat SILC, [[ilc\\_mdho01](#)])<sup>75</sup>

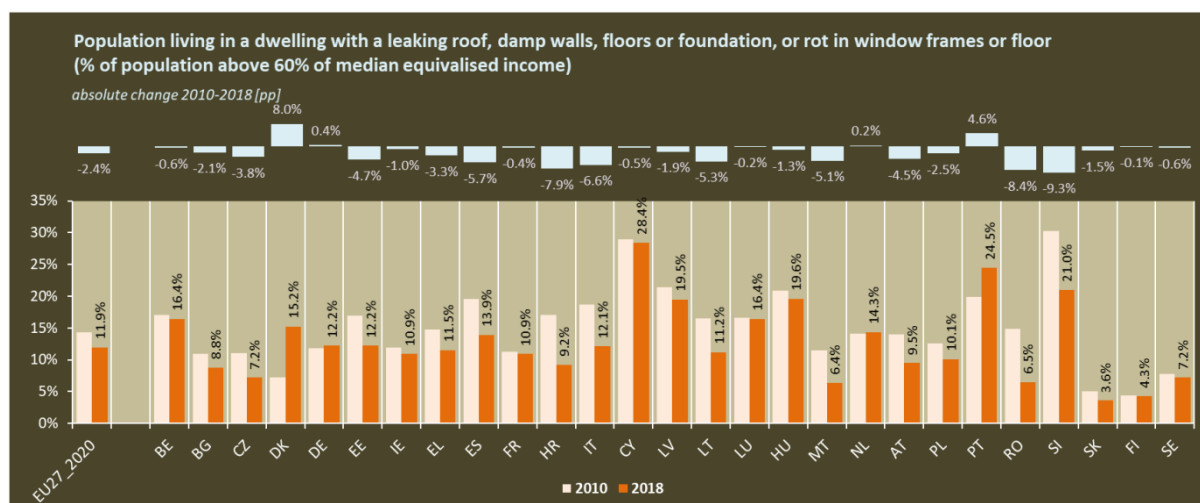


Table 1: Correlations at Member State level between consensual energy poverty indicators from Eurostat SILC over 2011-2018

indicators reflecting shares in total population						
	CR1	CR2	CR3	CR4	CR5	CR6
EU27_2020	0.97	0.97	0.72	0.96	0.75	0.82
BE	0.39	0.52	0.63	0.73	0.17	0.40
BG	0.75	0.01	0.83	-0.14	0.67	-0.37
CZ	0.98	0.92	0.76	0.93	0.81	0.78
DK	0.08	0.23	0.56	0.01	-0.45	0.18
DE	0.81	0.71	0.16	0.83	-0.27	-0.13
EE	-0.66	0.41	0.66	-0.34	-0.54	0.93
IE	0.81	0.94	0.68	0.89	0.25	0.59
EL	0.96	0.86	-0.58	0.88	-0.59	-0.66
ES	0.80	0.80	-0.13	0.75	-0.09	0.08
FR	0.60	0.33	0.00	0.80	0.03	-0.37
HR	0.71	0.84	-0.04	0.81	0.59	0.33
IT	0.74	0.47	0.51	0.01	0.18	0.94
CY	0.57	0.88	0.07	0.74	-0.55	-0.24
LV	0.93	0.97	0.79	0.96	0.65	0.78
LT	0.37	0.32	0.04	0.55	0.46	0.72
LU	0.84	0.41	0.50	0.35	0.50	0.29
HU	0.94	0.95	0.27	0.97	0.38	0.27
MT	0.93	0.73	0.77	0.83	0.78	0.47
NL	0.33	0.31	0.33	-0.12	-0.21	0.06
AT	0.72	0.68	0.50	0.58	0.46	0.64
PL	0.96	0.85	0.26	0.91	0.13	-0.13
PT	0.71	0.58	-0.11	0.96	0.48	0.59
RO	0.77	0.72	0.92	0.92	0.84	0.87
SI	0.85	0.84	0.69	0.96	0.59	0.67
SK	0.04	-0.43	0.22	0.19	0.59	-0.53
FI	-0.04	-0.16	-0.44	-0.21	0.65	0.24
SE	-0.36	-0.40	-0.10	0.00	0.35	0.65

indicators reflecting shares in the population below 60% of the median equalised income						
	CR1	CR2	CR3	CR4	CR5	CR6
EU28	0.96	0.95	0.65	0.94	0.73	0.74
BE	-0.10	-0.72	-0.39	0.30	0.31	0.87
BG	0.82	-0.24	0.75	-0.20	0.69	-0.20
CZ	0.85	0.76	0.73	0.85	0.97	0.81
DK	-0.01	0.11	0.61	0.04	-0.47	0.15
DE	0.69	0.67	0.36	0.63	-0.17	0.44
EE	-0.82	0.52	0.71	-0.51	-0.58	0.93
IE	0.59	0.75	0.42	0.73	-0.20	0.31
EL	0.91	0.89	-0.57	0.92	-0.74	-0.78
ES	0.66	0.87	-0.10	0.54	-0.03	-0.18
FR	0.10	0.05	-0.33	0.15	-0.22	-0.37
HR	0.30	0.84	-0.61	0.43	0.41	-0.40
IT	0.55	0.60	0.65	-0.06	0.16	0.96
CY	0.73	0.61	-0.29	0.72	-0.70	-0.44
LV	0.92	0.95	0.72	0.96	0.57	0.65
LT	0.21	-0.08	-0.34	0.35	-0.05	0.42
LU	0.81	0.66	0.36	0.39	0.16	0.44
HU	0.84	0.92	0.92	0.92	0.81	0.89
MT	0.95	0.78	-0.13	0.84	-0.09	0.06
NL	-0.32	0.52	0.27	-0.21	-0.42	-0.07
AT	0.47	0.59	0.45	0.27	0.33	0.51
PL	0.96	0.82	0.44	0.90	0.33	0.14
PT	0.72	0.32	-0.21	0.82	0.22	0.55
RO	0.77	0.56	0.82	0.84	0.81	0.77
SI	0.64	0.68	0.48	0.84	0.55	0.75
SK	-0.48	-0.31	0.33	0.10	-0.25	-0.42
FI	0.79	-0.67	-0.05	-0.63	0.18	0.48
SE	-0.65	-0.01	-0.14	-0.04	0.23	0.22

Legend:

CR1	correlation 1	inability to keep home sufficiently warm - share of total population living at risk of poverty and social exclusion
CR2	correlation 2	inability to keep home sufficiently warm - arrears on utility bills
CR3	correlation 3	inability to keep home sufficiently warm - share of total population living in a dwelling with a leaking roof, damp walls
CR4	correlation 4	arrears on utility bills - share of total population living at risk of poverty and social exclusion
CR5	correlation 5	population living in a dwelling with a leaking roof, damp walls - share of total population living at risk of poverty or social exclusion
CR6	correlation 6	population living in a dwelling with a leaking roof, damp walls - arrears on utility bills

<sup>75</sup>

Idem above