

# Energy poverty and gender in the EU: the missing debate

## HIGHLIGHTS

- Energy poverty is a significant issue, affecting many Europeans. Already in 2020, 8% of the EU population reported not being able to keep their homes adequately warm, one of the symptoms of being “energy poor”. Due to the crises that the world is facing, the current situation is expected to worsen.
- Women are at higher risk of experiencing energy poverty due to gender inequalities in the economic, social and decision-making spheres.
- At the same time, energy poverty may amplify existing gender inequalities, especially in terms of working life balance, and exposes women to adverse physical and mental health conditions.
- The EU needs to work on a common definition of energy poverty that also considers its gendered dimension. This is a necessary step in order to boost awareness, enable cross-country monitoring and design effective policies to reduce energy poverty.
- Gender mainstreaming should be applied to all EU energy related policies and programmes, with a special focus on women at risk of poverty and social exclusion. Women should play a more prominent role in relevant policy-making and their careers in the energy sector should be supported.
- Women often manage energy in the household. The EU should invest in training them in energy efficiency measures. This would both reduce the burden of energy poverty and facilitate women’s role as drivers of change regarding energy efficiency.

## POLICY CONTEXT

Energy poverty is a complex, multifaceted problem globally and in the EU. It is generally understood as the inability of households to heat or cool their homes or to pay their energy bills on time. A combination of low income levels, low household energy efficiency and high energy prices are the main causes of energy poverty. In 2020, about 35 million EU citizens (approximately 8% of the EU population) were unable to keep their homes adequately warm [17]. The increase and volatility in energy prices [11] that started in 2021 and became worse with the Russian invasion of Ukraine and related sanctions in February 2022, along with the impact of

the COVID-19 crisis, have aggravated an already difficult situation for many Europeans [12].

Goal 7 of the 2030 Agenda for Sustainable Development aims to ensure access to affordable, reliable, sustainable and modern energy for all, by 2030<sup>1</sup>. It integrates ending energy poverty with action on climate change through targets on increasing renewable and efficient energy use. In similar lines, the EU officially declared energy as an essential service that everyone is entitled to access in the Principle 20 of the European Pillar of Social Rights [16]. The European Green Deal<sup>2</sup>, one of the top priorities of the current European

<sup>1</sup> <https://sdgs.un.org/goals/goal7>

<sup>2</sup> [https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal\\_en](https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en)

### Box 1: EU policies tackling energy poverty

Over the past few years, there has been an increased effort from the EU to address energy poverty. Energy poverty is a key concept in the "[Clean energy for all Europeans package](#)", adopted in 2019 and it has also been targeted in the energy efficiency, decarbonisation and clean energy policies to support a just energy transition for all. In their [National Energy and Climate Plans](#) (NECPs), EU MS have the obligation to tackle energy poverty and many have already integrated targeted measures in their national strategies. The Commission published in 2020 a [Recommendation on energy poverty](#), delivered as part of the [Renovation wave strategy](#), which includes guidance on adequate indicators to measure energy poverty, promotes best practices and identifies the potential to access relevant EU funding programmes. Following this, the [Fit for 55 package](#), adopted in July 2021, proposed specific measures to identify key drivers of energy poverty risks for consumers (such as high energy prices, low income, poor energy efficiency buildings and appliances). It also proposed a revision of the [Energy Efficiency Directive](#) with a focus on relieving energy poverty.

In October 2021, the Commission issued the Communication "[Tackling rising energy prices: a toolbox for action and support](#)", proposing national level initiatives to support the most vulnerable consumers. In similar lines, a proposal is expected, for a recast of the [Energy Performance of Buildings Directive](#) and [the hydrogen and decarbonised gas market package](#) to highlight even more the importance of the alleviation of energy poverty in EU policies. At the request of the European Parliament, the European Commission launched in 2021 the [Energy Poverty Advisory Hub](#) (EPAH) that builds on the work of the [EU Energy Poverty Observatory](#) and is the leading EU initiative with the aim to eradicate energy poverty and accelerate the just energy transition of European local governments.

Commission, aims to boost the efficient use of resources and a rapid clean energy transition, just and inclusive for all.

As shown below, women are particularly at risk of energy poverty as they usually have lower incomes, do more unpaid care work at home and many times they handle the energy resources in a different way than men. Nevertheless, policy makers haven't applied much of a gender-sensitive approach to the topic of energy poverty so far [5], [22].

**Box 1** contains the main policies the EU has put in place to tackle energy poverty. The gender perspective is not included in any of them and thus, they remain gender-blind. A positive update has been the opinion issued in July 2022, by the Committee of Regions, on "Gender equality and climate change: towards mainstreaming the gender perspective in the European Green Deal", acknowledging that energy poverty disproportionately affects women [7].

## ENERGY POVERTY: CONCEPT AND MEASUREMENT

Energy is at the core of many of today's global challenges, such as climate change and poverty. In fact, energy poverty is an increasingly prominent theme both in research and policy-making agendas across Member States. However, finding a common definition of energy poverty has proven very challenging given its complexity and multidimensional nature. Different indicators have been explored for its measurement, mainly related to access to essential energy services, when in the context of developing countries, and energy expenditures, when in developed ones [28]. Early research and policy work would employ the terms "energy poverty" and "fuel poverty" interchangeably to refer, broadly speaking, to domestic energy deprivation [1].

Previous research has identified some drivers of energy poverty, such as low income, high energy prices, inefficient energy household and/or building appliances, or lack of access to certain energy services, along many other societal and demographic factors [20]. Recently, transport has been signaled as another relevant aspect, with transport poverty referring, in particular, to the inability to achieve an adequate level of transport services [14]. For instance, the recent proposal for a Social Climate Fund aims, among other targets, at assisting "vulnerable transport users" [13]. All things considered, and given its multifaceted nature, the measurement of energy poverty should thus rely on a framework that tackles several of the mentioned relevant aspects.

Some academics have claimed that establishing a unified definition could boost awareness and facilitate the design of policies addressing both energy poverty reduction and other related targets. Other authors have pointed out that a common definition should somehow be able to capture the diversity across countries in terms of energy services and infrastructure [18].

At the moment, the European Union lacks a common definition of energy poverty, although the European Commission's DG for Energy defines it as "a situation in which households are unable to access essential energy services and products." Furthermore, it states that the European Union is "committed to tackling energy poverty and to the protection of vulnerable consumers" [12]. Despite the fact that the Electricity Directive [15] requires that Member States define and monitor energy poverty, the reality is that, by 2020, only 9 countries had fulfilled this requirement. Moreover, most Member States had failed to provide a precise methodology to measure energy poverty in their 2021-2030 National Energy and Climate Plans [2].

In order to support Member States in their task, the Energy Poverty Advisory Hub<sup>3</sup> recommends to look at four main indicators to assess energy poverty: arrears on utility bills, low absolute energy expenditure, high share of energy expenditure in income, and inability to keep home adequately warm. These four indicators, which can be understood as proxies of energy poverty, can be followed up with data from European household surveys and enable the comparison across Member States and by demographic and socio-economic characteristics. However, there is plenty of room for improvement with regards to data availability [24]. The fact that most surveys are carried out at the household level hampers the measurement of the gender aspect of energy poverty. More precise information about each household member would hence allow to better measure the extent to which females are at higher risk of energy poverty.

As reported in [20], based on EU-SILC survey data from 2019, in some EU countries, such as Bulgaria, Greece, or Croatia, as much as about 15% of households declared to have arrears with utility bills at least twice per year. Concerning the ability to keep one's home adequately warm, around 30% of Bulgarian or Lithuanian households state to be unable to do so, while less than 5% declare to struggle in this sense in Denmark, Sweden, or Finland ([20], p.19). Households with the lowest incomes are also those reporting arrears in their utility bills more frequently in most Member States and are more likely to declare their inability to maintain an adequate temperature in their homes, as stated in the same report. Furthermore, older people and women declare to find it harder to pay their utility bills and satisfy their thermal needs.

The Eurofound's online survey on Living, working and COVID-19<sup>4</sup>, although with limitations, allows to gain further insight on how citizens experienced the COVID pandemic and, in particular, on how vulnerable they feel in terms of their energy needs [10]. For instance, around 16% of respondents declare to have arrears in their utility bills, with similar responses by sex (with some exceptions, such as Croatia or Poland, where women struggle more). However, when assessing one's ability to keep up with the energy bills in the upcoming three months, women are more pessimistic in most countries. In addition, between 20% and 30% of respondents across most countries aren't satisfied with the quality of the insulation in their household and its energy efficiency (up to 40% in Portugal, Greece or Cyprus). While the proportion of men and women is fairly similar in the majority of countries, in some cases the percentage of women suffering from this problem is much higher (like in Poland, Hungary, Croatia, and Cyprus). Finally, as much as about a quarter of all respondents declare to struggle when facing their car's running costs, and a similar proportion state to have poor access to public transport. Women appear to be particularly disadvantaged in these two indicators of transport poverty.

## ENERGY POVERTY THROUGH A GENDER LENS

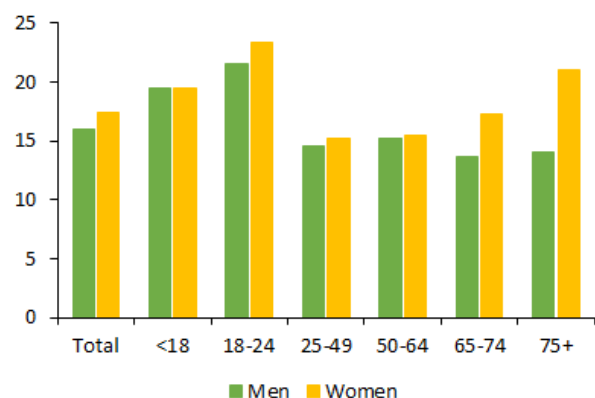
Existing gender inequalities in the economic, social and decision-making spheres can influence women's likelihood of experiencing energy poverty. For instance, women's lower incomes as well as their disproportionate share of care work and other household duties make them more likely to be "energy poor". Moreover, women's underrepresentation in policy positions can limit the application of a gender lens to decision-making processes also related to energy poverty. In the following, we describe these channels in more detail. In particular, we categorise them under three dimensions: economic, socio-cultural and decision-making/leadership.

### Economic dimension

In Europe, energy poverty is more a matter of affordability of energy rather than access to energy [24]. There are a number of economic factors making women particularly likely to be "energy poor".

First, women are more at-risk of poverty and social exclusion, especially older women. **Figure A** plots the average AROPE (at-risk of poverty and social exclusion) rate by sex and age group for the EU-27 in 2021. It shows that 17.4% of women are at-risk of poverty and social exclusion, against 16% of men. The gap between women and men's AROPE rate is more pronounced in later stages of life, reaching its peak among people over 75.

Figure A – At-risk of poverty and social exclusion (AROPE) rate by sex and age group, EU-27 average, 2021 percentage values



Source: Eurostat table *ilc\_li02*

Furthermore, in 2021 the average EU-27 percentage of single parent households who are AROPE is 44%.<sup>5</sup> Given that in 2021 the largest proportion of single parents in the EU-27 is composed by single mothers (83%)<sup>6</sup>, one can infer that the burden of being at-risk of poverty and social exclusion associated with single parent status falls more heavily on women.

<sup>3</sup> [https://energy-poverty.ec.europa.eu/index\\_en](https://energy-poverty.ec.europa.eu/index_en)

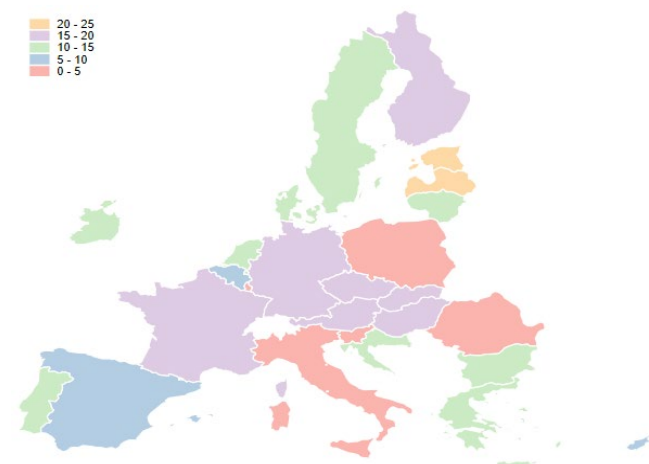
<sup>4</sup> For more info, check the quick guide.

<sup>5</sup> Eurostat table *ilc\_peps03n*

<sup>6</sup> Eurostat table *lfst\_hhaceday*

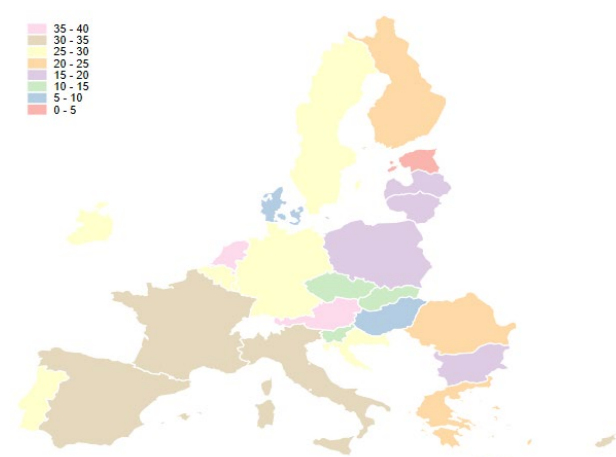
Second, women's lower incomes. **Figure B** maps the gender pay gap (in unadjusted form<sup>7</sup>) across the EU-27 in 2020. Although variations exist between MS, women earn less compared to men across the EU. At EU level, the gender pay gap is equal to 13%.

**Figure B** – Gender pay gap in unadjusted form by country, 2020 percentage values



Source: Eurostat table ilc\_li02; Latest information available for Ireland and Greece is 2018

**Figure C**– Gender pension gap, 65+, 2021 percentage values



Source: Eurostat table ilc\_pnp13; Latest information available for Slovakia is 2020

**Figure C** instead shows the gender pension gap between women and men over 65 across the EU-27 in 2021. Although women received lower pensions in all EU countries, the extent of the gap varies widely across countries. The largest difference is observed in Malta, where women aged over 65 received 41.5% less pension than men. The smaller distance is observed in Estonia, where women over 65 received 3.5%

less pension than men. At EU level, the gender pension gap between women and men over 65 is equal to 30%.

Third, women's extra care burden, thus leaving them with less time for paid work – if any, is another possible driver of their higher likelihood to be energy poor. The latest round of Eurofound's Living, Working and Covid-19 e-survey shows that the time spent by women on caring responsibilities is much higher than that of men (**Table A**).

**Table A** - Number of hours per week spent on care and household

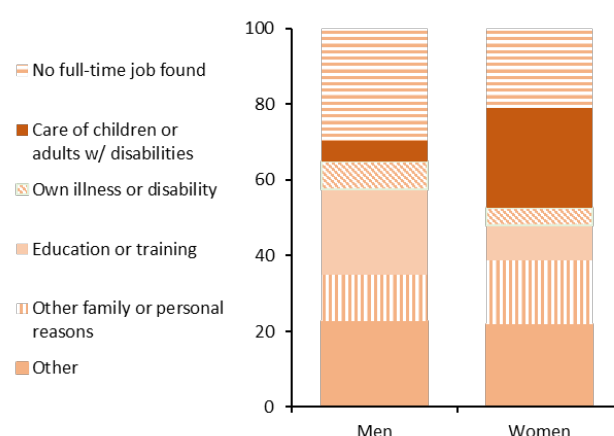
Time spent on:	Men	Women
Caring for children or grandchildren	7.1	15.8
Caring for elderly or disabled relatives	3.1	5.4
Cooking and housework	9.4	14.7

Source: JRC elaborations based on Eurofound's Living, working and COVID-19 survey, Rounds 3 (Spring 2021) and 5 (Spring 2022)

**Figure D** plots the overall percentage of part-time employees by sex and disaggregated by main reasons for choosing a part-time working arrangement. Noteworthy is that the share of women working part-time because of caring responsibilities is more than 5 times larger than the share of (26.2% of women against 5.2% of men).

Furthermore, in 2021 the average percentage of inactive women wanting to work but reporting not seeking for employment because they are looking after children or incapacitated adults is 19.5% in the EU, against 2.8% of inactive men.<sup>14</sup>

**Figure D** – Main reason for part-time employment by sex, EU-27 average, 2021 percentage values



Source: Eurostat table lfsa\_epgar

<sup>7</sup> Gender pay gap in unadjusted form: Eurostat definition [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Gender\\_pay\\_gap\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Gender_pay_gap_statistics)

## Socio-cultural dimension

From a socio-cultural point of view, energy poverty may disproportionately affect women due to the traditional gender norms that expect women to be the main caregivers of the household. Cooking and housework remain a predominantly female duty in Europe. The latest round of Eurofound's Living, Working and Covid-19 e-survey shows that the time spent by women on cooking and housework is much higher than the time spent by men on the same household tasks (**Table A**). Furthermore, while both men and women in the same household could be considered energy poor, the gendered division of labour within the household, often assigns women the mental burden for the management of household energy, most notably cooling and heating. More generally, often women represent the main managers and users of energy within the household. Energy poverty thus may create an extra-burden on women, who already carry out more unpaid work compared to men, as they need to seek for alternative and cheaper solutions to traditional energy sources. For instance, literature [3] show that when electricity charges vary, the workload of women increases as they tend to postpone their household chores at night and at weekends when electricity is cheaper. The authors also find that women refrain from using electrical appliances resulting in more time spent completing household chores.

## Decision-making dimension

This dimension relates to the underrepresentation of women in decision-making and leadership roles. The lack of gender balance in top positions implies that women do not have equal voices on policy recommendations, including those related to energy poverty. The weak representation of women workers in the energy sector further exacerbates this issue.

**Figure E** shows the percentage of men and women employed in the electricity, gas, steam and air conditioning supply sector (D) over all employed men and women across EU-27 Member States in 2021. The higher concentration of men working in the energy sector is evident and common to all EU-27 Member States.

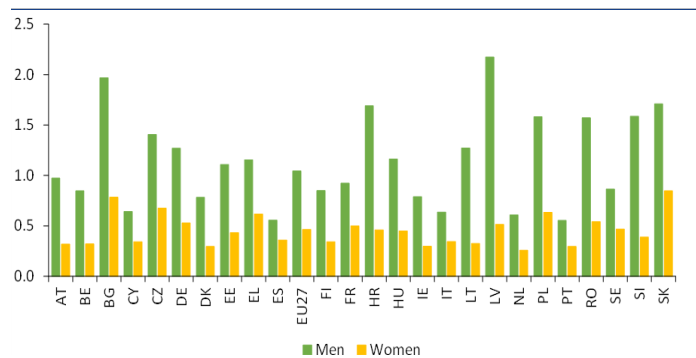
## THE POSSIBLE CONSEQUENCES OF ENERGY POVERTY FOR WOMEN

Women's higher risk of experiencing energy poverty may amplify existing gender inequalities. Additionally, energy poverty may expose women to adverse health outcomes, both physical and mental. In what follows, we describe in more detail some of the possible consequences of energy poverty for women.

## Exacerbation of gender inequalities

Gender inequalities can increase the risk of women being exposed to energy poverty. At the same time, energy poverty

**Figure E** – Percentage of men and women employed in Electricity, gas, steam and air conditioning supply (D) over all employed men and women, 2021 percentage values



Source: JRC elaborations based on Eurostat table lfjsa\_egan2

may exacerbate already existing gender gaps in various domains. Here the focus is on gender inequalities in terms of working life and the labour market being the first-order effects, which are easiest to examine<sup>8</sup>.

Energy poverty can disproportionately reduce the time women can devote to their jobs. Indeed, women's extra-care burden caused by energy saving needs, e.g. washing clothes by hand versus using a washing-machine, leaves them with less time for paid work or for finding a salaried job [23], resulting in an increase in the gender divide in employment and in earnings.

In addition, transport poverty can limit women's access to both public and private transport, especially in more remote rural areas. In Eurofound's Living, Working and Covid-19 e-survey, 26.3% of female respondents report that they have poor access to public transport in the area where they live and this percentage climbs to 40.4% for the women living in rural areas (versus 35.5% of men in rural areas).

**Table B** - Difficulty paying car's running costs in the next three months, EU-27 2022

Difficulty paying car's running costs in the next three months	Men	Women
Total - EU27	29.3	32.3
Rural areas	31.9	34.9
Urban areas	25.0	28.9

Source: JRC elaborations based on Eurofound's Living, working and COVID-19 survey, Round 5 (Spring 2022). Note: The men – women percentages are significantly different at 95% sign. level.

Similarly, **Table B**. shows that 32.3% of women in EU – 27 anticipate having difficulties to pay for the car costs to keep it up and running in comparison to 29.3% of men, while again the percentages are higher in rural areas (34.9% of female

<sup>8</sup> Other inequalities, such as in health and education, may likewise be worsened due to the impact of energy poverty. These impacts are not fully explored here due to the intricacies with which they interact with energy poverty and that would require in-depth analyses beyond the

scope of this policy brief. However, they may be inferred based on the nature of those inequalities and other information presented here.



respondents living in rural areas and 31.9% of male). On the other hand, the respective percentages in urban areas are significantly lower. Transport poverty reduces women's mobility and prevents their full participation in society. In particular, transport poverty not only may make it harder for women to reach their workplace but also to reach care facilities, including those dedicated to children, older adults and people with disabilities. Women are the main beneficiaries of such services, which lift a significant share of informal care work from their shoulders. Furthermore, higher energy costs can also make care services less affordable. In the worst-case scenario, care centers may choose to close temporarily to weather the increase in energy prices. All of these factors have a detrimental impact on women's income and career opportunities.

## Health impacts

Being energy poor negatively affects people's health and well-being. In particular, evidence for the EU shows that energy poverty has a greater impact on women's health [23]. More specifically, energy poverty can have both a *direct and indirect* impact on women's health and well-being.

Research shows that women and men have different thermal comfort preferences due to physiological and metabolic differences between the two sexes [25], with women often preferring higher room temperature than male in home and office situations [19]. Women are also at higher risk of suffering from intense heat. The majority of European studies show that women are more at risk, in both relative and absolute terms, of dying in heatwaves [21]. Evidence on the death toll caused by the European 2003 heatwave suggests that the risk of mortality was higher for older women than for older men [8].

Inadequately heated or cooled homes due to energy poverty, may thus place women at greater risk of developing negative health outcomes, both physical and mental. According to the scientific literature, cold homes, but also exposure to high ambient temperatures, are associated with higher morbidity and mortality ([9] and [31]). Moreover, a systematic review on temperature exposure during pregnancy, finds an adverse impact of both high and low temperature on pregnancy outcomes [27]. Exposure to low and hot indoor temperatures has also been associated with mental ill health, including depression, anxiety and increased suicide risks ([6] and [29]). In addition, [4] find that in comfortable temperatures, women perform better in cognitive tasks.

The *indirect* impact of energy poverty on women's health and well-being is associated with poor indoor air quality due to the use of alternative, cheaper but unsafe, forms of energy sources [30]. Women usually spend more time at home than men thus, they are more exposed to the negative health consequences of such changes, such as developing respiratory

disorders. Furthermore, women's household energy saving behaviours put further pressure on their unpaid work burden, as discussed above. The link between women's more unpaid work hours and a deterioration of their well-being has been extensively studied in the related literature [26].

## POLICY RECOMMENDATIONS

Energy poverty has become an important challenge for the EU and women are disproportionately affected. However, a debate on energy poverty and gender is currently missing in the EU context. From this policy brief, a series of policy recommendations can be made in order to bring a spotlight on the issue.

First, an EU-wide definition of energy poverty is an essential step in order to increase awareness of the problem, allow for cross-country comparisons and monitoring and lead to efficient policies for its alleviation.

Second, it is important that the gender dimension of energy poverty is acknowledged. That can be done through the application of a gender perspective in both the definition of energy poverty and the relevant indicators.

Third, knowledge, mechanisms, tools, and sex-and age-disaggregated data should be more available and of higher-quality. Currently, relevant information is based on household data. Nevertheless, there are big gaps in our knowledge about the intra-household distribution of income and decision-making powers proving significant limitations to this data.

Gender mainstreaming should be applied to all EU policies and in this case, all energy related policies and programmes, with a special focus to women and girls at risk of poverty and social exclusion. At the same time, the gender-responsive monitoring and evaluation processes and policy formulation should be supported.

Although women are most likely to be the main energy users in their households, often, they are not aware of energy efficiency measures they could take. Hence, education and training could be important factors of easing their conditions."

Fourth, a better inclusion of women in the shaping of relevant policies and programmes is required. People experience energy challenges differently according to their gender, age and cultural backgrounds and their opinions need to be taken into account when forming decisions.

Last, women are underrepresented in the energy sector and closing this gender gap will be crucial as they are key drivers of innovative and inclusive solutions. Their careers should be boosted and supported and they should be fully involved in shaping a fair, inclusive and green future.

**QUICK GUIDE –** Eurofound's e-survey, *Living, working and COVID-19*, sheds light on the social and economic situation of people across Europe through the pandemic, with the aim of providing policymakers with useful insights towards an equal recovery. It also explores the reality of living in this new uncertain period caused by the invasion of Russia in Ukraine, inflation, and rising energy prices.

The survey was conducted online and applied a non-probability sampling method that produces a non-representative sample. Therefore, in order to obtain representative data the sample was weighted on the basis of gender, age, education and self-defined urbanisation levels. People without access to the internet or without digital literacy are by default excluded and it is not possible to correct for the bias that is introduced by these factors. Readers are reminded that the results of the e-survey are not directly comparable with the Eurostat/ EU SILC data that are cited and are asked to treat the results with caution. However, despite these limitations, the survey provides very useful insights for the scope of this policy brief. For more details on the methodology, please consult [XXX]

For the purpose of this policy brief, JRC analyses the microdata<sup>9</sup> of Round 5 (29 March–2 May 2022) with a sample of 36,550 male and female respondents<sup>10</sup> across the EU and Round 3 (March 2021) with a sample of 44,857 male and female respondents. EU27 averages are population weighted averages of the MS data.

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<sup>9</sup> Eurofound (2020), *Living, working and COVID-19* dataset, Dublin, <http://eurofound.link/covid19data>

<sup>10</sup> Gender option “other” was excluded due to extremely small sample size

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