UNITED NATIONS DEVELOPMENT PROGRAMME

REPORT on Energy Poverty Assessment and Support Mechanisms in the Republic of Moldova

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Executive summary

It should be noted that the energy poverty is a widespread problem across Europe, as between 50 and 125 million people are unable to afford proper indoor thermal comfort. Member States (MS) acknowledge the scale of this socio-economic situation and its negative impact translated into severe health issues and social isolation. However, there is no single EU definition of Energy Poverty, each country having to define it individually. Certain forms of unofficial definitions can be found in several other countries (e.g. Austria, Italy, Malta). However, it is commonly defined as the inability to secure adequate levels of energy services at home.

At the end of 2021 in addition to the COVID-19 pandemic and related health crisis, the Republic of Moldova was faced with significant increase of gas prices as a consequence both of very tight global energy markets and amended contract with its gas supplier - Gazprom, which has had a significant negative impact not only on Moldova's economy, but on the ability of the most vulnerable households to afford gas throughout the winter. The increase in the price of gas has had a domino effect on all other prices, thus not only increasing the risks of energy, but also food poverty in both rural and urban Moldova. Therefore, the analysis of the problem and determination of viable, well-targeted mechanisms for reducing the effects of the crisis effects on the economy and on the vulnerable population by analyzing different current national and international approaches was the scope of this report.

At the national level, there are several approaches to define energy poverty: those provided by the regulatory and policy framework, but also those used in the analysis of absolute poverty and living standards of the population. Thus according to the Law on Energy Efficiency[1] the "energy poverty – a situation in which the consumer lacks access to modern energy sources and technologies and/or has insufficient purchasing power for energy sources, particularly fuel for cooking, electricity and/or thermal energy, and/or lacks thermal comfort at home or in the building". The reference to Energy Poverty is also made in the National Energy Efficiency Action Plans for 2016-2018[2] and for 2019-2021[3], which identifies measures for increasing efficiency in the residential sector, but without specifying direct measures in alleviating energy poverty. As well, the energy related legislation (Law no. 107/2016 on electricity, Law no. 108/2016 on natural gas) and the social protection legislation (Social Assistance Law no. 547/2003, Law no. 123/2010 on Social Services and Law on Social Aid no. 133/2008) operates with different terms as: "vulnerable consumer", "disadvantaged person and family" and "disadvantaged family" which are insufficient corralled among each other, but also with energy poverty definition.

Even the energy poverty is not defined as such in social protection legislation, the Aid for the cold period of the year (APRA) grated simultaneously with Social Aid poverty benefit is an instrument of supporting households exactly during the five cold months (from November to March), when they are most vulnerable from the energy perspective. There are also regulated other compensatory mechanisms designed to reduce the effects of rising energy tariffs on vulnerable groups, such as: financial assistance for energy recourse mechanism implemented in Chisinau municipality, on-bill compensation mechanism introduced by the Government at the end of 2021.

1 Art. 3 of the Law on Energy Efficiency no.139/2018, https://www.legis.md/cautare/getResults?doc_id=105498&lang=ro

2 Government Decision no. 1471/2016. https://www.legis.md/cautare/getResults?doc_id=111780&lang=ro

3 Government Decision No. 698/2019. https://www.legis.md/cautare/getResults?doc_id=119890&lang=ro

The energy component is included in calculation of key indicators related to poverty, such as Absolute Poverty and Minimum Subsistence Level, as well as implicitly embedded in the eligibility criteria for beneficiaries of social assistance. The Household Budget Survey (HBS) is the main source of data used to estimate the living standard of population and poverty in the Republic of Moldova. In the respective study the data of HBS is used to analyse the situations of the households of the challenges related to price increase for energy resources used for heating and cooking. Certain simulations were performed, as well, to identify the impact on the structure of incomes and expenditures.

According to the HBS survey data, the expenses for energy in 2020 were classified on the second place according to their weight, following the expenses for food products and non-alcoholic beverages. The energy use pattern differs by areas of residence in Moldova. Thus the energy sources taking most of the urban households' expenses are electricity and network-supplied gas, while the rural households spend more on wood, logs, sawdust, etc. and electricity. In general, rural households have lower expenses, as the total monthly average consumption expenditures account only for 2/3 (66%) as compared to urban households, while the energy expenditures in villages represent almost 90% as compared to those registered by urban households. Hence, the burden of energy expenditures in villages is higher.

The results of the simulations performed for 2021, by adjusting the data for 2020 to the consumer price index, show an increase of total household monthly expenses for energy by 26.6% compared to previous year. This increase of expenses was more accentuated for urban households (by 36%) compared to those rural (by 19.7%). However, the share of expenses for energy in total monthly household expenses amounted to 13.2% (in urban areas 11.8% and 14.7% in rural areas). The results of simulation to measure the impact of the shock caused by rising energy prices on household spending for 2021 (by adjusting the data for 2020 to the consumer price index) and 2022 (by adjusting to the estimated coefficients according to the real increasing of prices) showed that the most affected were the households that use natural gas and central heating for domestic heating.

EU members and other countries use various approaches to measuring energy poverty, based on household expenditure, using different thresholds. The use of these definitions in the survey does not set a single energy poverty line for all the persons/households included in the survey, as these lines are specific to households depending on their total incomes/ expenditures, energy pattern and monetary amount spent for energy. Based on the suggested definitions, it may be noted about 57.2% persons in total for the country is in energy poverty by incomes and 12% - by double median (2M). The incidence is higher in case of households, with 64.4% of households in energy poverty by incomes and 17.1% - by double median (2M).

The picture of the simulation of energy poverty incidence evolution in 2021 (by adjusting the data for 2020 to the consumer price index), in case of *"the 10% approach "* show an increase of energy poverty incidence to 63.1% (or by 3.9 percent points compared to previous year), this increase is more accentuated in urban area versus rural area. In case of *"double weight of the median"* approach the simulation results show about an decrease of energy poverty incidence to 9.3% (or by 2.7 percent points compared to 2020), this decrease being more accentuated in rural area to 9.7% (or by 4.5 percent points), while in rural areas the situation has remained practically unchanged. This decrease can be explained by the effect of the increase in prices which led to an increase of the median, causing fewer households to fall into the energy poverty incidence. Respectively, in case of *"energy consumption and Income correlation approach"*, the simulation results do not showing significant evolutions on energy poverty incidence in total population, as well in urban and rural areas.

The pattern of energy poverty varies by residence area, household income, availability of the utilities, and the main sources of energy used for heating. Also the profiling of beneficiaries of Social Aid benefit and APRA support based on the Social Assistance Automated Information System (SAAIS) data have shown a high request for these benefits in 2020-2021 was in the northern rayons of the country. Over 60% of applicants located in rural areas. 2/3 of the applicants for these benefits are women, more than half of those applied are pensioners and 32% are people with disabilities, 60% of them having an accentuated degree of disability. However, the analysis of APRA according to HBS and the three approaches (over 10%; double weight of median; energy consumption and income correlation) reflected on the need to review and adapt this mechanism for better capture and targeted protection of energy-poor households. It also needs to revise the current on-bill mechanism introduced by the Government at the end of 2021 as an emerging measure, which is implemented in parallel with APRA, access to which is based on universal principles without any elements of targeting to those vulnerable to energy poverty.

Thus a new mechanism for targeting state social support for energy poverty is needed, in definition of this a specific approach have to be focused on: (i) the profile of energy-poor households; (ii) their place of residence; (iii) the main sources of heating used by them; and (iv) the amount of energy income and expenditure of households. A specific approach have to be focused primarily on: (i) the profile of energy-poor households; (ii) their place of residence; (iii) the main sources of heating used by them; and (iv) the amount of energy income and expenditure of households. At the current stage, APRA is an appropriate model in terms of management capacity, access and cost-effectiveness, which can be adapted and streamlined for the incorporation of the new targeting mechanism. Also, this new targeting mechanism should complemented by a series current measures provided by the current international policy instruments to tackle energy poverty, which can range from financial support to awareness-raising on population.

I. Background and the Crisis Context

The Republic of Moldova is facing a significant increase of gas prices as a consequence both of very tight global energy markets and of a recently-amended contract with its gas supplier - Gazprom. During the current heating period, Moldova purchased its gas at prices about three or four times higher than in previous period. This is putting significant pressure on Moldova's public finances and on the ability of the most vulnerable households to afford gas throughout the winter. The increase in the price of gas is having a domino effect on all other prices, thus not only increasing the risks of energy, but also food poverty in both rural and urban Moldova.

This energy crisis comes in addition to the COVID-19 pandemic and related health crisis, which has had a significant negative impact on Moldova's economy, causing a drop of 7% in Gross Domestic Product (GDP) in 2020. Moldova remains one of the poorest countries in Europe; in November 2021, the Moldovan National Bureau of Statistics reported that 26.8% of the population live in absolute poverty, an increase of 1.6 percentage points compared to 2019 (25.2%). This highlights the significant impact of COVID-19 on the most vulnerable households and the next generation of risks for such households to become energy poor.

Against such a background, UNDP is currently supporting the Government of the Republic of Moldova, i.e. Ministry of Labor and Social Protection and other relevant stakeholders, in defining and measuring the energy poverty in a broader socio-economic context as described above. The intent is to suggest and cost possible alternatives for improved targeting and coverage of energy poor households to compensate for the increased prices for energy.

The current report contains three sections:

- Defining energy poverty in the Moldova's current context, taking into account the existing and new vulnerabilities at the level of households; measurement of the energy poverty by use of existing evidence;
- Possible alternatives to compensate the poor and costing;
- Key policy recommendation and programmatic approaches.

II. Energy Poverty Definition and Measurement

II.1. International Approaches to Energy Poverty

II.1.1 European Union[4] and Moldova's Commitments under Energy Community Treaty[5]

Energy poverty is a widespread problem across Europe, as between 50 and 125 million people are unable to afford proper indoor thermal comfort. Member States (MS) acknowledge the scale of this socio-economic situation and its negative impact translated into severe health issues and social isolation. Different terms are used to describe affected persons: fuel poor, energy poor, vulnerable energy consumers or, to a larger sense, at-risk-of-poverty or low-income people.

There is a consensus in relevant literature regarding the additionally and distinctiveness of energy poverty with respect to income poverty. Energy poverty involves dimensions beyond just having low income – the infrastructural provision of energy, the nature of housing stock, nature of energy use in the home, and particularly the efficiency of domestic energy installations. While there is an overlap between income poverty and energy poverty, the latter is not entirely a subset of the former.

There is no single EU definition of Energy Poverty, each country having to define it individually. Only a few countries officially defined energy poverty on the national level (Cyprus, France, Ireland, Scotland, Slovakia, United Kingdom). Certain forms of unofficial definitions can be found in several other countries (e.g. Austria, Italy, Malta)[6]. However, it is commonly defined as the *inability to secure adequate levels of energy services at home*. This definition has three interlinked elements that need further explanation.

First, *secure* means that there may be multiple reasons why a household cannot attain the energy it needs. This may involve not being able to pay for the required energy (affordability) or lacking the necessary supply infrastructure (energy access). Energy affordability challenges are more common in developed countries, whereas energy access is frequently an issue in the developing world. In SEE countries, the two issues overlap. Many households have low incomes to afford energy price, but also in some remote areas, infrastructure is poorly developed or access to energy grids is intermittent, putting them at a disadvantage. The access element involves not only electricity grids but also district heating and gas mains which is generally underdeveloped in the SEE region.

Second, the *adequate level of domestic energy* involves both a material and social minimum. The material minimum is a level of domestic energy services below which living in a home is

4 **https://ec.europa.eu/energy/eu-buildings-factsheets-topics-tree/energy-poverty**

5 **https://www.energy-community.org/dam/jcr:f201fefd-3281-4a1f-94f9-23c3fce4bbf0/DOOREIHP_poverty_122021.pdf**

6 Kytka, I., Vacha, T., Malik, Z., Vcelak, J., & Noskova, S.(2019). Study on Energy Poverty in the Danube Region. University Centre for Energy Efficient Building CTU in Prague. Project co-funded by the European Union (ERDF). Page. 13. **https://energy.danube-region.eu/wp-content/uploads/sites/6/sites/6/2020/02/Studie_Energy_Poverty_in_the_Danube_Region.pdf**

unhealthy, as cited in most academic papers on the subject, which generally accepted as a temperature of 21°C in occupied rooms, and 18°C in bedrooms. The social minimum is a level of domestic energy below which a household undertake customs and practices that define membership in a society, i.e., living in a home that is too cold, too warm, inadequately lit, or imposing limitations on appliance use has well-known negative effects on personal wellbeing and social participation.

Third, *energy services delivered to home* are benefits contributing to human wellbeing. Energy services include activities such as heating and cooling of living spaces, water heating, lighting, and powering of appliances. Energy services normally satisfy specific human needs, require human involvement for utilization, and rely on energy conversion inside the boundaries of the home. All this depends on the energy efficiency of domestic installations and infrastructure, such as the building envelope (walls, windows, doors, roofs), heating systems, and appliances.

In 1991, the United Kingdom was among the first ones to introduce an official definition of Energy Poverty (where it is known as 'fuel poverty'): "a household is said to be fuel poor if it needs to spend more than 10% of its income on fuel to maintain an adequate level of warmth". Thus, one of the important indicators associated with energy poverty, and particularly the affordability aspect, is the share of households' expenditure covering their energy costs. Also, high energy costs and/or low household income often force people affected by energy poverty to fall behind on the payments of their utility bills. Therefore, another indicator associated with energy poverty is "arrears on utility bills". This indicator is monitored by Eurostat and refers to the percentage of persons from the total population who are in the state of arrears on utility bills, expressing the enforced inability to pay on time their utility bills due to financial difficulties.

However, where domestic energy deprivation has an infrastructural provision element – such as SEE – a wider understanding is necessary. This approach is already present at the EU level: the official website of the European Commission (EC) points to the French definition within the Grenelle II Act, in which energy poverty is defined as "a situation in which a person has difficulty obtaining the necessary energy in their home to meet their basic needs because of inadequate resources or living conditions".

Importantly, the main organizations relevant to the development of energy poverty policies at the EU level have been the EC and its agencies (particularly DG ENER) and the European Parliament. Eurostat has played an important role in generating statistics on energy poverty. The European Economic and Social Committee, as well as the European Committee of the Regions, have often provided an impetus for public policy action and discussion on these challenges. Definitions of energy poverty can be found in a majority of National Energy and Climate Plans – documents prepared by EU member states in response to recently-introduced pan-EU energy legislation.

The Outline of the Social Strategy in the Energy Community proposes a definition of socially vulnerable consumers and identifies certain protective measures. According to the Outline, in terms of electricity, a socially vulnerable consumer is:

- using energy for supplying the consumer's permanent housing;
- not exceeding maximum energy consumption per person, i.e., in defining the level of electricity consumption per person, countries shall only consider total consumption of up to 200 kWh/month for a family with up to 4 members while also considering seasonal usage;

- belonging to the category of citizens with the lowest income, i.e., the definition of low income, besides income, also takes into consideration all available assets;
- getting electricity supplied through a single-phase meter with a connection not exceeding maximum power. In defining the power of a mono phase meter, Contracting Parties shall consider a power rating of up to 16 ampere.

The Outline also states that the "definition shall not include more than a minority of the population", and "consumption of vulnerable consumers should be financed by social allowances."

In terms of natural gas, a socially vulnerable consumer is:

- using gas for supplying the consumer's permanent housing;
- not exceeding maximum gas consumption per person, i.e., in defining the level of gas consumption per person, Contracting Parties shall only take into consideration total consumption of up to 70 cubic meters/month for a family with up to 4 members while also considering seasonal usage;
- belonging to a category of citizens with the lowest income, i.e., the definition of low income, besides income, also takes into consideration all available assets.

The document also states that support schemes offered to socially vulnerable gas consumers shall not apply if the same consumer receives benefits from the support mechanism for socially vulnerable electricity consumers.

Thus, the Outline of the Social Strategy in the Energy Community proposes a number of additional indicators/criteria for defining vulnerable energy consumers:

- maximum consumption of energy per month (200 kWh for electricity and 70 cubic meters for natural gas);
- belonging to a category of citizens with the lowest income, taking into consideration all available assets;
- minority of the population, i.e. it is assumed that if the majority of the population is falling into the socially vulnerable energy consumers, then it could rather be due to loose criteria applied for defining them.

Moreover, issues regarding energy vulnerability and energy poverty are covered in energy-related legislation of the EU, partly transposed and obligatory for Moldova, as one of the Energy Community Contracting Parties:

- Directive 2009/72/EC on common rules for the internal market for electricity and Directive 2009/73/EC on common rules for the internal market for gas require EU Member States (MS) and Energy Community Contracting Parties (CP) to ensure adequate safeguards for vulnerable consumers. Accordingly, **each MS and CP "shall define the concept of vulnerable consumers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity/gas to such consumers in critical times"**. Also, the legislation requires that MS and CP "take appropriate measures, such as formulating national energy action plans, providing benefits in social security systems to ensure the necessary electricity/gas supply to vulnerable consumers, or providing for support for energy efficiency improvements, to address energy poverty where identified, including in the broader context of poverty". These measures should "not impede the effective opening of the market".
- Directive 2019/944/EU on common rules for the internal market for electricity in Article 28 expands definition of vulnerable consumers, specifying that it may include "income

levels, the share of energy expenditure of disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria". Also, Article 29 of the **Directive requires that MS and CP "establish and publish a set of criteria, which may include low income, high expenditure of disposable income on energy and poor energy efficiency" that define energy poverty**.

- **The Governance Regulation (EU) 2018/1999** of the European Parliament and of the Council on the Governance of the Energy Union and Climate Action requires all MS and CP to develop an integrated national energy and climate plan. Inter alia, Article 3 **requires that MS "assess the number of households in energy poverty taking into account the necessary domestic energy services needed to guarantee basic standards of living in the relevant national context, existing social policy and other relevant policies, as well as indicative Commission guidance on relevant indicators for energy poverty"**. The same article stipulates that if a MS/CP has a significant number of energy poor households, the MS/CP should develop "a national indicative objective to reduce energy poverty". Such Member States and Contracting Parties are to "outline in their integrated national energy and climate plans, the policies and measures, which address energy poverty, ..., including social policy measures and other relevant national programs". Finally, Article 24 requires that MS and CP include in their integrated national energy and climate progress report the following: (a) information on progress towards the national indicative objective to reduce the number of households in energy poverty; and (b) quantitative information on the number of households in energy poverty, and, where available information on policies and measures addressing energy poverty.

- Directive 2018/844 amending Directive 2010/31/EU on the energy performance of buildings stipulates in the new Article 2a details that Member States must establish a long-term renovation strategies and outline "relevant national actions that contribute to the alleviation of energy poverty". This obligation is not yet applicable to Energy Community Contracting Parties, but is expected to become an obligation in the course of 2022.

- The Energy Efficiency Directive 2012/27/EU in Article 7 stipulates that "within the energy efficiency obligation scheme, including ... a share of energy efficiency measures [are] to be implemented as a priority in households affected by energy poverty or in social housing". The issue of energy poverty is further highlighted in Article 7 (11) of Directive 2018/2002 on energy efficiency amending Directive 2012/27/EU.

The most recent addition from EU documentation on energy poverty came in the form of the European Commission Recommendation on energy poverty (SWD(2020) 960 final) in October 2020[7]. The Recommendation defines energy poverty as "**a situation in which households are unable to access essential energy services, where adequate warmth, cooling, lighting, and energy to power appliances are essential services that underpin a decent standard of living and health**". These services are considered necessary as they are essential for social inclusion.

In its Recommendations, the EC further states that tackling energy poverty offers multiple benefits, including lower spending on health, reduced air pollution (by replacing heating sources that are not fit for purpose), improved comfort and wellbeing, and improved household budgets. Taken together, these benefits will directly boost economic growth and prosperity.

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

7 EC(2020). Commission Staff Working Document. EU GUIDANCE ON ENERGY POVERTY. Accompanying the document Commission Recommendation on energy poverty {C(2020) 9600 final}. **https://energy.ec.europa.eu/system/files/2020-10/swd_on_the_recommendation_on_energy_poverty_swd2020960_0.pdf**

all. Among other aspects, it emphasizes 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[8].

The just transition towards a climate-neutral EU by 2050 is the backbone of the European Green Deal which is built around the Renovation Wave. The Renovation Wave is a comprehensive initiative with the goal of encouraging structural energy renovations in the private and public sectors and aiming to decrease GHG emissions and reduce energy poverty. The Commission proposes expanding the EU Renovation Wave to the Western Balkans, as the Flagship 6 initiative under the 2020 Economic and Investment Plan for the Western Balkans.

The European Commission had also noted that the COVID-19 pandemic-triggered crisis has shown urgency in tackling energy poverty. With the increasing unemployment rates, the expectation is that the energy poverty problem will further worsen, hence the importance of achieving the Green Deal goals.

National long-term renovation strategies and other instruments aimed at achieving 2030 and 2050 targets must be directed towards protecting households and empowering vulnerable consumers by helping citizens spend less on energy bills, and providing them with healthier living conditions, as well as reducing energy poverty.

Along these lines, the European Commission thus recommends that Member States do the following:

- Develop a systematic approach to liberalizing energy markets, sharing benefits with all segments of society, particularly those most in need.
- Take particular account of the respective staff working document that provides guidance on energy poverty indicators as well as on defining what constitutes a significant number of energy poor households. Importantly, Member States should rely on guidance from the Commission in implementing and updating their current national energy and climate plans in accordance with Article 14 of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.
- Use the indicators outlined in the Annex (of the Guidance issued by the European Commission) in their energy poverty assessments.
- In line with Recital 60 of the recast Electricity Directive, produce integrated policy solutions as part of the energy and social policy. These should include social policy measures and energy efficiency improvements that reinforce each other, especially in housing.
- Assess the distributional effects of energy transition, in particular, energy efficiency measures in a national context, as well as define and implement policies that address related concerns. Proper attention should be given to obstacles hindering investments in energy-efficient housing and the type of dwellings in most need of renovation, all in line with national long-term renovation strategies.
- Develop all necessary policies to tackle energy poverty based on meaningful and accounTable processes through public participation and broad stakeholder engagement.
- Develop measures to address energy poverty that build on close cooperation between all

8 EC(2020). Commission Staff Working Document. EU GUIDANCE ON ENERGY POVERTY. Accompanying the document Commission Recommendation on energy poverty {C(2020) 9600 final}. **https://energy.ec.europa.eu/system/files/2020-10/swd_on_the_recommendation_on_energy_poverty_swd2020960_0.pdf**

levels of administration, enabling close cooperation between regional and local authorities on the one hand, and civil society organizations and private sector entities on the other.

- Take full advantage of the potential to deploy Union funding programs, including cohesion policy, tackle energy poverty by analyzing the distributional effects of energy transition projects and prioritizing measures targeting vulnerable groups to ensure access to support.

As mentioned in p.3, the European Commission provided a list of indicators associated with Energy Poverty, that can be divided into four groups:

- indicators comparing spending on energy with income: these quantify energy poverty by comparing the amount households spend on energy with an income measure (e.g. percentage or number of households spending more than a certain proportion of their disposable income on domestic energy services);
- indicators based on self-assessment: households are asked directly to what extent they feel able to afford energy (e.g. ability to keep the home warm enough in winter and cool enough in summer);
- indicators based on direct measurement: these indicators measure physical variables to determine the adequacy of energy services (e.g. room temperature);
- indirect indicators: these measure energy poverty through associated factors, such as arrears on utility bills, number of disconnections, and housing quality.

Thus, the Annex lists:

1. Indicators focusing on the Affordability of Energy Services

- Share of population at risk of poverty (below 60% of national median equivalised disposable income) not able to keep their home adequately warm, based on the question 'Can your household afford to keep its home adequately warm?' (Eurostat, SILC [ilc_mdes01])
- Share of total population not able to keep their home adequately warm, based on the question 'Can your household afford to keep its home adequately warm?' (Eurostat, SILC [ilc_mdes01])
- Arrears on utility bills: share of population at risk of poverty (below 60% of national median equivalised disposable income) having arrears on utility bills (Eurostat, SILC, [ilc_mdes07])
- Arrears on utility bills: share of population having arrears on utility bills (Eurostat, SILC, ilc_mdes07])
- Expenditure on electricity, gas and other fuels as a proportion of total household expenditure
- Proportion of households whose share of energy expenditure in income is more than twice the national median share (source Eurostat, Household Budget Surveys, 2015)
- Share of households whose absolute energy expenditure is below half the national median (Eurostat, Household Budget Surveys, 2015)

2. Complementary indicators

- Electricity prices for household consumers – average consumption band (Eurostat, [nrg_pc_204])
- Gas prices for household consumers – average consumption band (Eurostat, [nrg_pc_202])
- Gas prices for household consumers, lowest consumption band (Eurostat, [nrg_pc_202])
- Share of population at risk of poverty (below 60% of national median equivalised disposable income) with leak, damp or rot in their dwelling (Eurostat, SILC [ilc_mdho01])

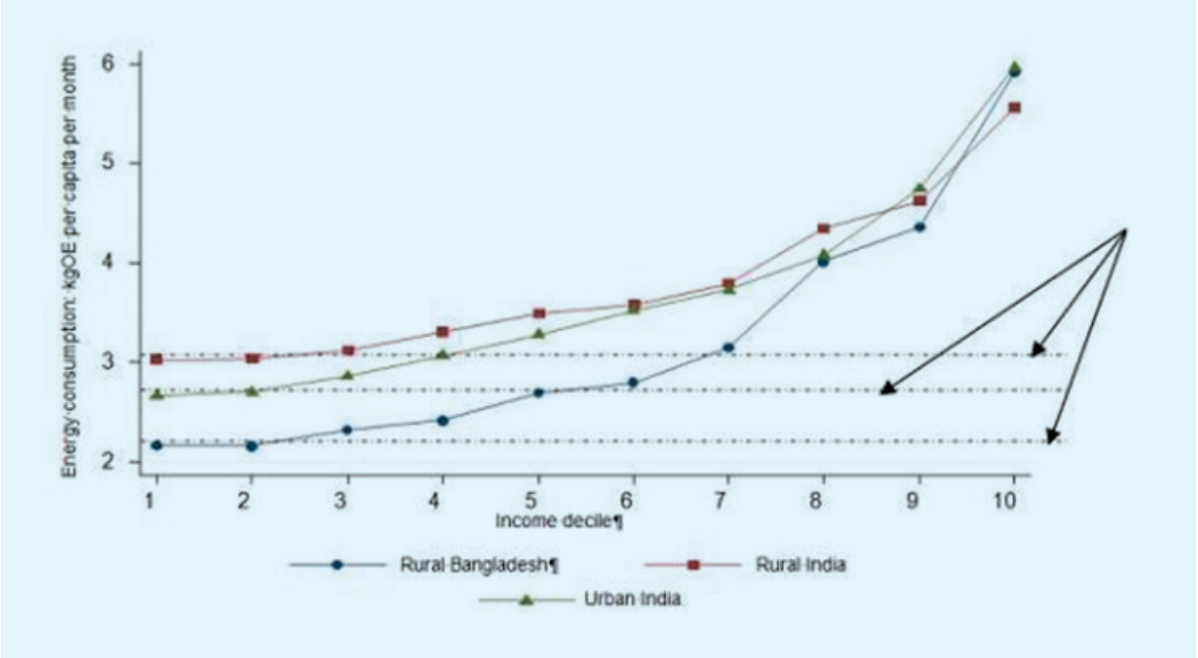
- Share of population with leak, damp or rot in their dwelling – total population (Eurostat SILC, [TESSI292])
- Final energy consumption per square meter in the residential sector, climate corrected (Odyssee-MURE project database)

Thus, despite the fact that there is no common European definition, both the scale of the problem and the severe health impacts caused by energy poverty are widely recognized. Data from Eurostat can be used to estimate the scale of the problem, indicating the major threat for a significant proportion of the European population. Across member states, numbers and percentages of affected persons vary significantly. It is striking that energy poverty is less of an issue in various colder countries than in warmer ones.

II.1.2. Energy consumption and income correlation approach[9]

In 2013, Douglas Barnes, Hussain Samad, and Shahid Khandker tested an approach to define energy poverty using household survey data from Bangladesh and India. The findings show that, although energy consumption rises with income, the increase is not uniform. At the lower end of the income profile, growth in energy consumption remains flat as income rises. Only after a certain low-income threshold is reached does energy consumption also begin to rise. The horizontal line that captures flat growth is the energy poverty line, defined as the point above which household energy consumption rises along with income. Households that consume less energy than this threshold amount are considered energy poor, as shown in Figure 1 below.

Figure 1. **ENERGY CONSUMPTION GROWTH AND INCOME DECILES, SHOWING ENERGY POVERTY LINE**



Applying this concept of the energy poverty line to India, Figures showed that 28% of urban residents were energy poor, while 20% were income poor. In rural areas, a sweeping 59% were energy poor, while only 23% were income poor. With better access to modern energy services, as in urban India, energy consumption is relatively similar for each income decile, meaning that income poverty can track energy poverty. In urban India, 17% of the income non-poor were

9 **https://blogs.worldbank.org/developmenttalk/why-energy-poverty-may-differ-income-poverty**

energy poor, compared to 41% in rural India. By contrast, 64% of urban households were both income non-poor and energy non-poor, compared to only 37% of rural households.

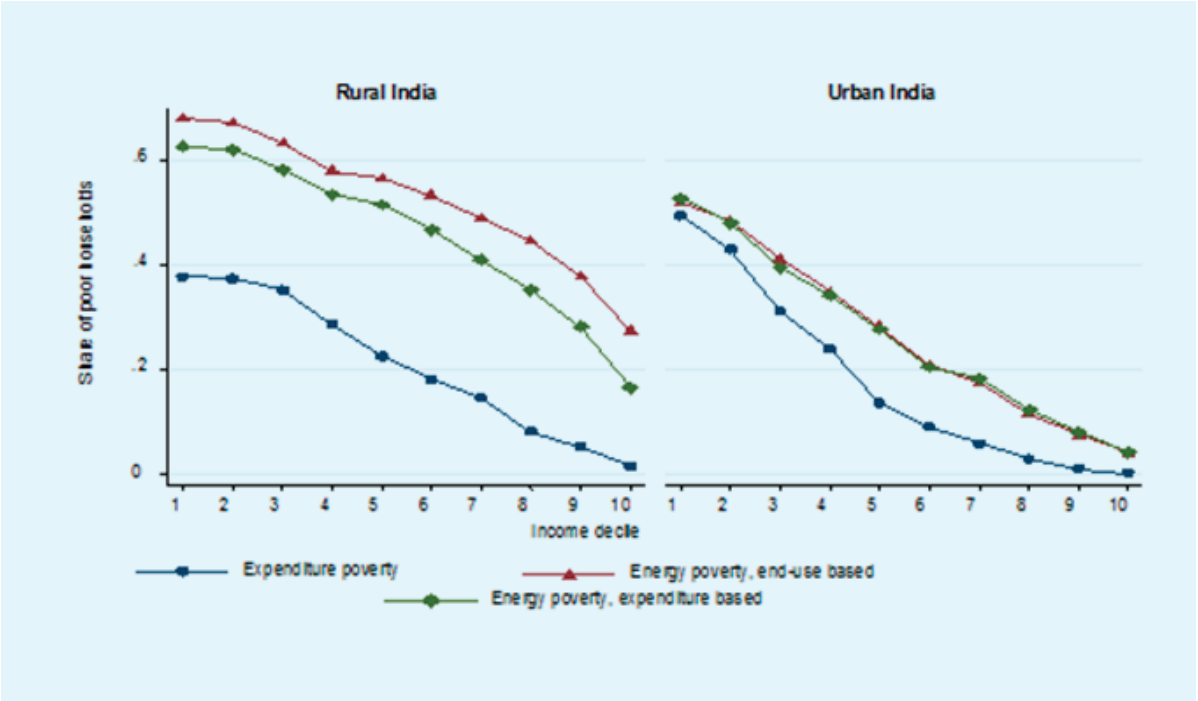
In rural India, households had limited access to modern energy but relatively easy access to natural resources, including a variety of biomass. If they consume enough of those energy sources and use energy-efficient appliances, they may not be energy poor. Thus, electricity connection is not necessary for determining who are energy poor. But if rural households are energy non-poor, with abundant biomass fuels, or energy poor, despite having abundant biomass fuels, then they must deal with such issues as resource depletion and the health risks associated with burning biomass energy in open fires or traditional stoves. Thus, access to energy services matters, as does the efficiency of energy consumption.

This means energy consumption must be properly weighed to determine the energy consumption basket to measure energy poverty. Similarly, simple access to modern energy, such as electricity, does not ensure households are energy non-poor. How much they consume and whether the electricity supply is reliable are also key factors. Energy poverty thus depends on access, efficiency, pricing, and reliability.

Both income poverty and energy poverty are expected to decrease along with increasing household income, but the pattern may differ by income decile and geographic area. In rural India, the gap between expenditure on food and non-food items (including energy) and energy poverty is wide and consistent for all income deciles, but is much smaller in urban India.

The association between expenditure poverty and energy poverty depends on the level of access to modern energy sources and the efficient use of traditional ones. In urban India, where people have reliable access to modern energy services, such as electricity and LPG, energy poverty closely tracks expenditure or income poverty. But in rural India, where households are relatively poor with limited access to modern energy services, depending mainly on low-cost, inefficient energy sources, energy poverty is higher than income poverty (see Figure 2).

Figure 2. **EXPENDITURE AND ENERGY POVERTY IN RURAL AND URBAN INDIA**



Although income is a key factor in eliminating energy poverty, energy policies and access to higher-quality energy services also matter. The Global Tracking Framework led by the World Bank and the IEA, underscores that business as usual will not suffice to achieve the goals of the Sustainable Energy for All initiative. While improved and equiTable access to modern energy, such as electricity, is necessary, more efficient use of traditional energy is equally important in moving toward achieving universal access to reliable and affordable modern energy. Because an overwhelming percentage of the poor still rely on traditional energy services, such as biomass, more efficient use of traditional energy services can help reduce energy poverty. Similarly, improved reliability of modern energy supply in situations where service is erratic is also helpful. Once a better understanding of energy poverty is achieved, pro-poor policies that influence energy access and pricing of modern energy services can be implemented to reduce energy poverty.

II.2. Approaches to Poverty Definition in Moldova

II.2.1. Energy Poverty

Energy Poverty is defined in Moldovan legislation only through Art.3 of the Law on Energy Efficiency no.139/2018,[10] as follows:

- *"energy poverty* – a situation in which the consumer lacks access to modern energy sources and technologies and/or has insufficient purchasing power for energy sources, particularly fuel for cooking, electricity and/or thermal energy, and/or lacks thermal comfort at home or in the building".

However, besides definition, the Law only refers to Energy Poverty in paragraph (8) of the Art.8 on Energy Efficiency Obligation Scheme, stating that:

- "(8) For calculations provisioned in paragraphs (2)–(5), expected energy savings are expressed as primary or final energy consumption by employing conversion factors indicated in Annex 1 and principles provisioned in Annex 2. To achieve energy savings, priority will be given to energy efficiency measures with social impact, measures aimed at reducing energy poverty or improving the living conditions of vulnerable consumers".

In the context of the above mentioned Law, reference to Energy Poverty is also made in the National Energy Efficiency Action Plan 2016-2018 (NEEAP 2016-2018), approved by Government Decision no. 1471/2016[11]. The NEEAP for 2019-2021 approved by Government Decision No. 698/2019[12] identifies measures for increasing efficiency in the residential sector but fails to specify direct measures in alleviating energy poverty.

Other than that, energy related legislation (Law no. 107/2016 on electricity, Law no. 108/2016 on natural gas) operates with the term "vulnerable consumer", defined as:

- "*vulnerable consumer*" – household consumer that is defined as disadvantaged person or member of disadvantaged family in accordance with social protection legislation".

The Law no. 547/2003 on Social Assistance defines the disadvantaged persons and families in Art.1:

10 **https://www.legis.md/cautare/getResults?doc_id=105498&lang=ro**

11 **https://www.legis.md/cautare/getResults?doc_id=111780&lang=ro**

12 **https://www.legis.md/cautare/getResults?doc_id=119890&lang=ro**

- *"disadvantaged person and family* - socially vulnerable person and family, in a situation that his/her/their normal activity - economic, educational, social etc.".

The Law no. 133/2008 on Social Aid provides another definition specifically for disadvantaged families:

- *"disadvantaged family* – family that has an overall average monthly income below the minimal guaranteed monthly income and that accumulated, based on wellbeing indicators, a score lower than or equal to the one established as a threshold for family wellbeing evaluation".

This definition differs from the one provided in the older Law on Social Assistance (no. 547/2003) mainly by referring to specific criteria that are to be used for assessing disadvantaged status of a family, such as Guaranteed Average Monthly Income (venitul lunar mediu garantat, VLMG) and welfare / well-being indicators. Also, the Law on Social Aid introduces the notion of aid for the cold period of the year, defined as:

- *"aid for the cold period of the year* – a fixed monthly monetary payment provided to a disadvantaged family for January-March and November-December periods".

Although the Law does not operate with the concept of energy poverty, de facto the aid for the cold period of the year is an instrument of supporting households exactly during the five cold months (from November to March), when they are most vulnerable from the energy perspective.

Other social protection legislation (e.g. Law no. 123/2010 on Social Services, Government Decision no. 716/2018) also operates with the same term of disadvantaged family/person.

Thus, in terms of social protection legislation, energy poverty is not defined as such. At the same time, the energy component is included in calculation of key indicators related to poverty, such as Absolute Poverty and Minimum Subsistence Level, as well as implicitly embedded in the eligibility criteria for beneficiaries of social assistance.

II.2.2. Absolute Poverty

HBS data serve as a basis for estimating poverty line and the main poverty indicators – these estimations are performed annually by the National Bureau of Statistics[13]. The methodology for calculating the poverty lines is periodically reviewed, the last revision was carried out by the National Bureau of Statistics in 2019, with some amendments made in 2020[14].

A number of poverty lines is used for an in-depth analysis of population living standards: absolute poverty line, extreme poverty line, and the equivalent in lei of the lines, respectively 2.15 USD and 4.3 USD[15].

According to the absolute poverty line, poverty is mainly concentrated in rural area, as the share of the poor in villages is 2.5 times higher than the share of the poor in cities (Table 1).

13 NBS, Social Statistics, Poverty and inequality **https://statbank.statistica.md**

14 NBS, Methodology to calculate absolute poverty line, **https://statistica.gov.md/public/files/Metadate/alte/Metodologie_saracie.pdf**

15 The lines of 2.15 USD and 4.3 USD are used mainly for international comparison reasons, and will not be used in the given Analytical Note.

Table 1. **POVERTY BY AREAS OF RESIDENCE, 2020**

		absolute	extreme
Poverty line, MDL	Total	2,174.10	1,753.40
Poverty rate, %	Total per country	26.8	10.8
	Urban	14.0	5.1
	Rural	35.3	14.6

The study is focused on analyzing the situation regarding the energy consumption in households, using the absolute poverty line, estimated for 2020 to be 2,174.10 MDL. An in-depth analysis of the situation regarding the population expenditures and incomes, energy consumption in households are provided in the subsequent chapters.

II.2.3. Minimal Subsistence Level

Another approach would be analyzing the living standard according to the minimal subsistence level[16]. According to the *Regulation on how to calculate the minimal subsistence level*, the value of the minimal subsistence level is calculated by summing up the values of the food basket, expenditures for buying industrial goods and for paying for provided services, as well as the mandatory contributions and premiums.

Depending on the social-demographic characteristics of the population, the minimal subsistence level is calculated for the following groups of population:

- children under 1 year old;
- children from 1 to 7 years old;
- children from 7 to 18 years old;
- working-age men (in 2020 – from 18 to 63 years old)[17];
- working-age women (in 2020 – from 18 to 59 years old);
- persons over standard retirement age (in 2020 – men over 63 years old, women over 59 years old).

The minimal subsistence level is calculated for the entire population, including for the population from Chisinau and Balti mun., other cities and villages, for a semester and an entire calendar year. The minimal subsistence level is calculated in lei per person per month (Table 2).

16 GD No. 285/ 2013 approving the Regulation on how to calculate the minimal subsistence level, **https://www.legis.md/cautare/getResults?doc_id=19426&lang=ro**

MLSPF Order No. 147/ 2013 approving the Methodological Guide on how to calculate the minimal subsistence level, **https://www.legis.md/cautare/getResults?doc_id=12102&lang=ro**

17 Age-limit pensions, award conditions, **http://cnas.md/tabview.php?l=ro&idc=534&t=/Pensii/Pensie-pentru-limita-de-virsta**

Table 2. **MINIMAL SUBSISTENCE LEVEL BY CATEGORIES OF POPULATION, ANNUAL AVERAGE 2020, LEI**

	Total, country	Big cities	Small cities	Villages
Total population	2088.4	2318.8	2057.9	2002.8
Working-age population	2247.6	2465.0	2206.4	2158.7
Working-age men	2434.5	2679.2	2387.9	2342.6
Working-age women	2041.2	2253.0	2011.0	1943.7
Age-limit pensioners	1759.8	1955.9	1746.8	1692.8
Children -total	1995.0	2206.6	2002.4	1924.9
Children aged under 1 year old	803.5	906.6	808.6	764.6
Children aged 1-6 years old	1734.5	1969.3	1757.1	1638.3
Children aged 7-17 years old	2262.8	2533.5	2260.8	2186.5

Given that the amount of the minimal subsistence level of 2,088.4 lei is very close to the amount of the absolute poverty line of 2,174.10 lei, the energy expenditures analysis in this study will refer to the absolute poverty line.

II.3. Energy Poverty Analysis

II.3.1. Energy Costs in Household Budgets

Different approaches are used to analyze the living standard of the Republic of Moldova population, which serve as bases to identify the profile of the poor, developments over the time, state support needs, etc., and to estimate different variables, which are applied in identifying the most vulnerable and those most in need. Administrative databases and household surveys are used for this purpose, as well as ad-hoc modules are developed depending on the area of interest.

The Household Budget Survey (HBS) is the main source of data used to estimate the living standard of population and poverty in the Republic of Moldova. The respective survey provides the possibility to estimate the households' incomes and expenditures, their structure and allows performing different analyses regarding the situation in the households according to different life aspects.

The respective study is focused on households' situation in the context of the challenges related to price increase for energy resources used for heating and cooking. Certain simulations were performed as well to identify the impact on the structure of incomes and expenditures. The situation analysis is presented based on the data available from the HBS for 2020, with disaggregation of expenditures by energy resources. The data of incomes' and expenditures' indicators are presented as monthly annual average per adult equivalent[18].

18 Republic of Moldova does not have a national equivalence scale, hence the OECD equivalence scale is used for calculation. The OECD scale provides for attributing the coefficients as follows: the first adult in the household (the person indicated in the household questionnaire, usually the head of the household) is attributed the coefficient 1.0; the other adults – coefficient 0.7; every child aged up to 15 years old – coefficient 0.5.
https://statistica.gov.md/public/files/Metadate/alte/Metodologie_saracie.pdf page 6.

According to the survey data, the expenses for energy accounted in 2000 for 421.28 MDL in average per adult equivalent (448.76 lei in cities and 403.27 in villages), being classified on the second place according to their weight, following the expenses for food products and non-alcoholic beverages .

The energy use pattern differs by areas of residence in Moldova. The energy sources taking most of the urban households' expenses are *electricity* (143.13 lei) and *network-supplied gas* (149.31 lei). Rural households spend more on *wood, logs, sawdust, etc. (161.85 lei)* and *electricity* (134.81 lei).

In general, rural households have lower expenses, as the total monthly average consumption expenditures account only for 2/3 (66%) as compared to urban households, while the energy expenditures in villages represent almost 90% as compared to those registered by urban households. Hence, the burden of energy expenditures in villages is higher – energy expenditures cumulate about 13.7% in the expenditures' structure for rural households, as against 10.2% - in urban households (Table 3).

Table 3. **STRUCTURE OF MONTHLY AVERAGE CONSUMPTION EXPENDITURES PER ADULT EQUIVALENT, TOTAL AND BY AREAS OF RESIDENCE**

	Lei			Percentage		
	Total	Areas of residence		Total	Area of residence	
		city	village		city	village
Consumption expenditures, lei	3.523,91	4.418,53	2.937,47	100	100	100
Food products and nonalcoholic beverages	1.534,03	1.759,66	1.386,12	43.5	39.8	47.2
Alcoholic beverages and tobacco	69.77	96.88	52.01	2.0	2.2	1.8
Clothes and shoes	310.50	369.67	271.72	8.8	8.4	9.3
Dwelling, water, electricity, gas	568.08	690.46	487.86	16.1	15.6	16.6
Including: energy (*electricity, gas, wood, etc. and water heating*)	**421.28**	**448.76**	**403.27**	**12.0**	**10.2**	**13.7**
of which: electricity	143.13	155.82	134.81	4.1	3.5	4.6
: network-supplied gas	87.59	149.31	47.13	2.5	3.4	1.6
: gas in cylinders	19.82	4.26	30.02	0.6	0.1	1.0
: liquid fuels	0.14	0.01	0.22	0.0	0.0	0.0
: coal	19.96	7.19	28.33	0.6	0.2	1.0
: wood, logs, sawdust, etc.	111.61	34.96	161.85	3.2	0.8	5.5
: preparing hot water	5.75	14.51	0.01	0.2	0.3	0.0
: district heating	33.27	82.68	0.88	0.9	1.9	0.0
Furniture, dwelling maintenance and endowment	197.50	241.71	168.52	5.6	5.5	5.7
Health	163.93	232.29	119.12	4.7	5.3	4.1
Transport	193.45	279.27	137.19	5.5	6.3	4.7
Telecommunication	165.33	200.16	142.49	4.7	4.5	4.9
Recreation and culture	82.84	157.49	33.90	2.4	3.6	1.2
Education	26.59	44.30	14.99	0.8	1.0	0.5
Restaurants and hotels	69.09	146.72	18.21	2.0	3.3	0.6
Diverse products and services	142.80	199.91	105.36	4.1	4.5	3.6

The energy expenses account for 10.8% as compared to monthly average disposable income per adult equivalent. The incomes are higher, as percentage, in rural areas as compared to urban areas (11.8% rural versus 9.6% urban), at the same time, rural population incomes are lower as compared to urban population incomes as quantum in lei (Table 4).

Table 4. **MONTHLY EXPENDITURES FOR ENERGY AS SHARE OF INCOMES, TOTAL AND BY AREAS OF RESIDENCE**

	Total	Area of residence	
		city	village
Disposable income by adult equivalent, lei	3,909.68	4,679.89	3,404.80
Expenditures per person for energy (electricity, gas, wood, etc. and water heating), lei	421.28	448.76	403.27
Expenditures for energy in relation to disposable incomes, %	**10.8%**	**9.6%**	**11.8%**

The results of the simulations performed for 2021, by adjusting the data for 2020 to the consumer price index, show an increase of total household monthly expenses for energy by 26.6% compared to previous year. This increase of expenses was more accentuated for urban households (by 36%) compared to those rural (by 19.7%). However, the share of expenses for energy in total monthly household expenses amounted to 13.2%, 11.8% in urban areas, and 14.7% in rural areas (*see Table 5*).

Table 5. **HOUSEHOLDS ENERGY SPENDING SIMULATION**

Expense categories	2020			2021 (sim.)		
	Total	Urban	Rural	Total	Urban	Rural
Total monthly expenses, lei	3523.9	4418.5	2937.5	4039.9	5192.5	3284.2
Including for energy, lei	421.3	448.8	403.3	533.3	610.5	482.8
Share of expenses for energy in total HH expenses	12.0%	10.2%	13.7%	13.2%	11.8%	14.7%

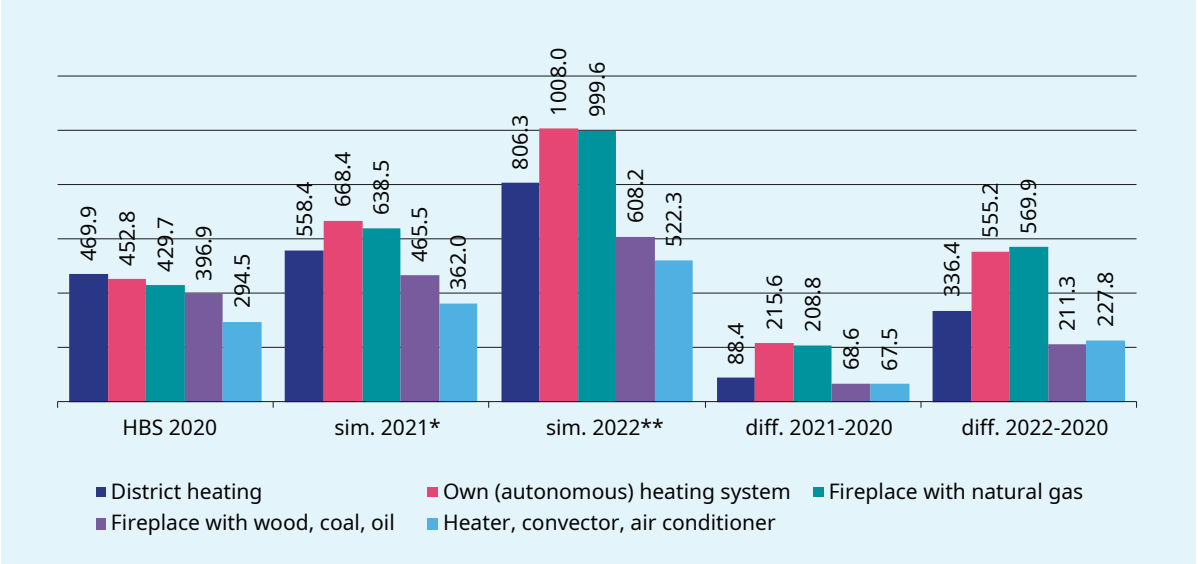
The picture of the simulation of energy poverty incidence evolution in 2021 (by adjusting the data for 2020 to the consumer price index), according to the main approaches, looks different. Thus, in case of *"the 10% approach"* the simulation results show an increase of energy poverty incidence to 63.1% (or by 3.9 percent points compared to previous year), this increase is more accentuated in urban area versus rural area. In case of *"double weight of the median"* approach the simulation results show about an decrease of energy poverty incidence to 9.3% (or by 2.7 percent points compared to 2020), this decrease being more accentuated in rural area to 9.7% (or by 4.5 percent points), while in rural areas the situation has remained practically unchanged. This decrease can be explained by the effect of the increase in prices which led to an increase of the median, causing fewer households to fall into the energy poverty incidence. Respectively, in case of *"energy consumption and Income correlation approach"*, the simulation results do not showing significant evolutions on energy poverty incidence in total population, as well in urban and rural areas (*see Table 6).*

Table 6. **SIMULATION OF ENERGY POVERTY INCIDENCE BY DIFFERENT APPROACHES APPLIED TO MOLDOVA**

Energy Poverty		2020	2021 (sim)
"the 10% approach"	Incidence in the total population	57.2%	63.1%
	Incidence in urban area	50.2%	59.7%
	Incidence in rural area	61.8%	65.3%
"Double the weight of the median approach"	Incidence in the total population	12.0%	9.3%
	Incidence in urban area	8.8%	8.7%
	Incidence in rural area	14.2%	9.7%
"Energy consumption and Income correlation approach"	Incidence in the total population	9%	9%
	Incidence in urban area	5.7%	4.8%
	Incidence in rural area	11.2%	11.8%

Also, the results of simulation to measure the impact of the shock caused by rising energy prices on household spending for 2021 (by adjusting the data for 2020 to the consumer price index) and 2022 (by adjusting to the estimated coefficients according to the real increasing of prices) showed that the most affected were the households that use natural gas and central heating for domestic heating. Thus, in the case of households that use natural gas for heating, the expenditures in 2021 compared to 2020 increased by over 48% and by around 19% of those that use central heating. In 2022 compared to 2020, household expenditures using autonomous heating systems increased by 1.2 times, by 1.3 times of those using fireplaces with natural gas, and by about 72% of those using central heating (*see Figure 3).*

Figure 3. **IMPACT OF 2021 PRICE SHOCK ON HOUSEHOLDS ENERGY EXPENSES**



*adjusted to IPC, NBS, Evoluția prețurilor de consum în Republica Moldova în luna decembrie 2021 și în anul 2021, https://statistica.gov.md/newsview.php?l=ro&idc=168&id=7264

** adjusted to the estimated coefficients according to the real increasing of prices

The results of the simulations performed for 2021, by adjusting the data for 2020 to the consumer price index, show an increase in the incidence of energy poverty for households from 57.2% in 2020 to 63.1% in 2021. In urban areas the increase is more accentuated, the

estimated incidence was 59.7% in 2021 (increasing by 9.5 percent points compared to 2020), and in rural areas the incidence was 65.3% (increasing by 3.5 percent points compared to 2020) (Figure 4). The analysis of the incidence of energy poverty in 2021 according to the main source of heating used shows, that it is more accentuated for households that use fireplaces with wood, coal and oil and those with natural gas (over 67%), the lowest incidence of poverty energy is observed for households using district heating (39.4%) (Figure 5).

Figure 4. **ENERGY POVERTY INCIDENCE 2021 (SIM.) VS 2020**

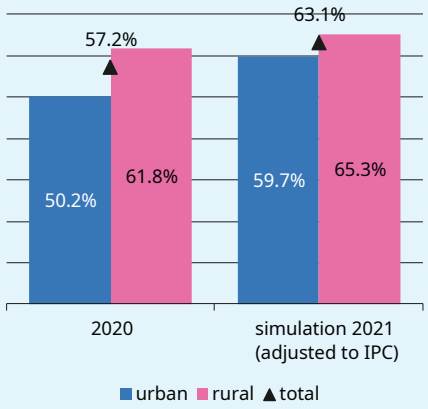
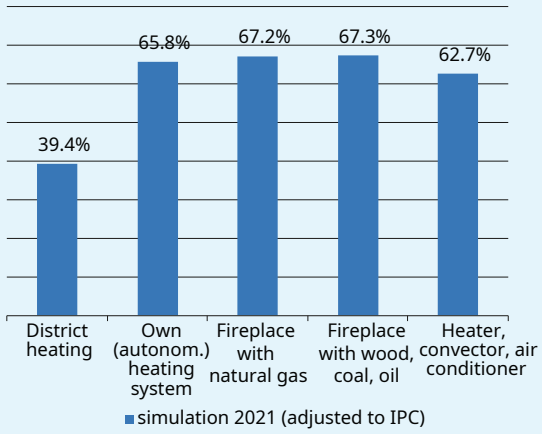


Figure 5. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: MAIN HEATING SOURCE**



The results of the simulations for 2021, by adjusting the data to the consumer price index of the data for 2020, show a decrease in the incidence of energy poverty for energy-poor households from 12% to 9.3%. In rural areas the incidence was 9.7% (decreasing by 4.5 percent points compared to 2020), and in urban areas – 8.7%, remaining at the level of the previous year (Figure 6). The analysis of the incidence of energy poverty in 2021 according to the main source of heating used, shows that it is the most accentuated for households using fireplaces with natural gas (over 17%) and the least accentuated for households using district heating (2%) (Figure 7).

Figure 6. **ENERGY POVERTY INCIDENCE 2021 (SIM.) VS 2020**

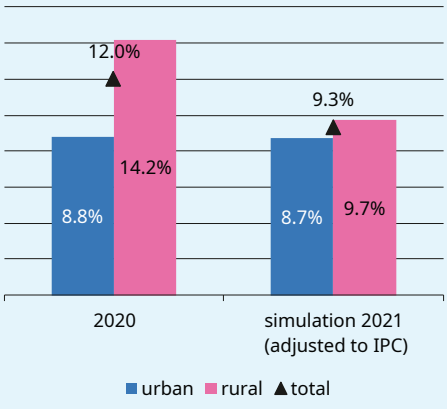
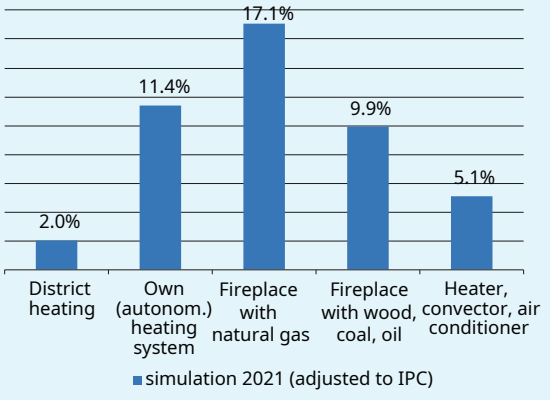


Figure 7. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: MAIN HEATING SOURCE**



The results of the simulations under this approach for 2021, by adjusting the 2020 data to the consumer price index, do not show positive evolutions in the incidence of energy poverty, both for urban and rural areas (Figure 8). The analysis of the incidence of energy poverty according to the main source of heating used shows that in 2021 it was the most accentuated for households using heaters, convectors and air conditioning (16.4%) and the least accentuated for households using district heating (0.6%) (Figure 9).

Figure 8. **ENERGY POVERTY INCIDENCE 2021 (SIM.) VS 2020**

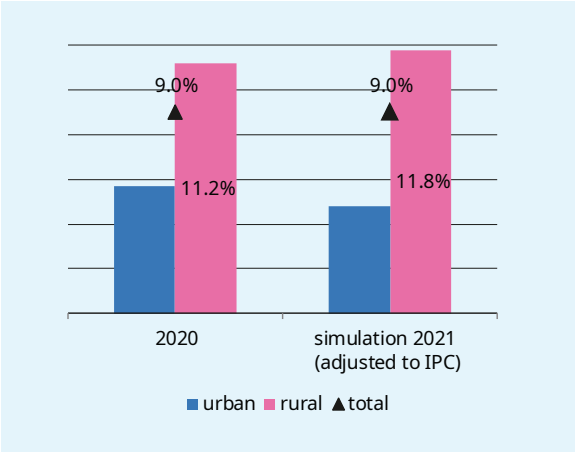
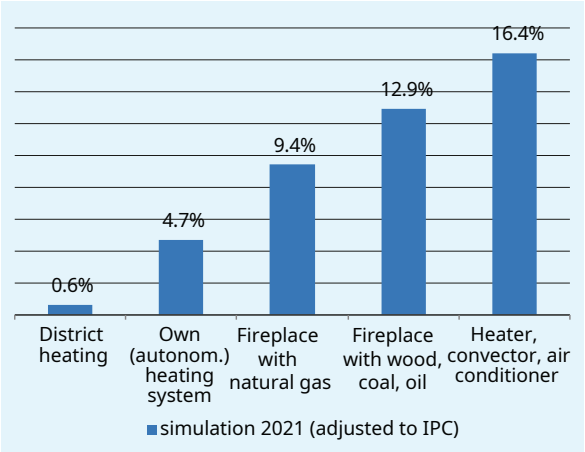


Figure 9. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: MAIN HEATING SOURCE**



EU documentation[19] includes the following definition for energy poverty in the form of the European Commission's Recommendation on Energy Poverty: *Energy poverty is a situation in which households are unable to access essential energy services, when adequate warmth, cooling, lighting, and energy to power appliances are essential services that underpin a decent standard of living and health.*

EU members and other countries use various approaches to measuring energy poverty, based on household expenditure, using different thresholds[20] and the Table below presents the incidence of energy poverty in Moldova for each of the approaches, based on the Household Budgets Survey for 2020.

19 SWD(2020) 960 final, October 2020, https://ec.europa.eu/transparency/documents-register/detail?ref=SWD(2020)960&lang=en

20 https://energy.ec.europa.eu/system/files/2016-05/Selecting%2520Indicators%2520to%2520Measure%2520Energy%2520Poverty_0.pdf; https://www.energy-community.org/dam/jcr:f201fefd-3281-4a1f-94f9-23c3fce4bbf0/DOOREIHP_poverty_122021.pdf; https://comact-project.eu/wp-content/uploads/2021/05/ComAct-D1.1_Overview-report-on-the-energy-poverty-concept_Final-version_UPDATED-1.pdf

Table 7. **MEASUREMENTS OF ENERGY POVERTY**

Type		Measuring energy poverty	% population	% households
Expenditure-based	Energy expenditure above the threshold	Share of energy expenses relative to its disposable income is higher than 10%	57.2%	64.4%
		Share of energy expenses in its consumption expenditures is higher than 10%	67.2%	74.0%
		Share of energy expenses relative to its disposable income is more than twice as large as the national median in the current year (2M inc)	12.0%	17.1%
		Share of energy expenses relative to its consumption expenditures is more than twice as large as the national median in the current year (2M exp)	4.2%	7.9%
	Hidden Energy Poverty: Energy expenditure below a threshold	The share of energy expenses relative to disposable income is less than a half of the national median in each year (M/2 inc)	11.5%	9.7%
		The share of energy expenses relative to consumption expenditures is less than a half of the national median in each year (M/2 exp)	10.3%	8.1%
Consensual-based	Self-declaration on inability to keep the house adequate warm	Answer 'No' to the question: Could your household afford, financially, to provide sufficiently heated housing?	29.2%	31.2%
	Limited financial capacity to ensure adequate living conditions	Answer 'Several times' to the question: In the last 12 months, has your household had any restrictions due to financial difficulties in paying for communal services?	6.6%	7.2%

The use of these definitions does not set a single energy poverty line for all the persons/households included in the survey, as these lines are specific to households depending on their total incomes/expenditures, energy pattern and monetary amount spent for energy.

Three of the above mentioned approaches will be analyzed in more detail in the present study:

(i) Share of energy expenses of a household relative to its disposable income is higher than 10% ("over 10% disposable income approach");

(ii) Share of energy expenses relative to its disposable income is more than twice as large as the national median ("double the Median approach")[21];

(iii) Energy consumption and income correlation approach.

21 Median of consumption expenditure per adult equivalent is equal to 3,264.02 MDL, median of energy expenditure per adult equivalent is 381.06 MDL, median of share of energy expenditure in disposable income is 0.11 (or 11%).

II.3.2. Over 10% Disposable Income Approach

Of the households that are considered to be energy poor according to the definition of *"energy expenses over 10% of disposable income"*, the households with the highest incomes but also expenditures for hom eheating in 2020 were the households using district heating, followed by those using autonomous heating systems and those using fireplaces with natural gas. At the same time, the households with the lowest incomes but also expenditures for heating were the households using heaters, convectors and air conditioning (Figure 10). The analysis of the share of heating costs in the disposable income of households shows that the lowest share belongs to households that use district heating (15.1%) and autonomous heating systems (16.4%), and the highest belongs to households using fireplaces with wood, coal, oil, heaters, convectors and air conditioning (17.3%) and those using fireplaces with natural gas (17.9%).

The distribution of energy income and expenditure of energy-poor households by heating source which are above and below the absolute poverty line looks similar, but in the case of those below absolute poverty line, both income and expenditure are much lower (Figure 11).

Thus, the incomes of households below the poverty line that use district heating were about 33% lower than those of households above the absolute poverty line, and the expenditures - by 26%. In the case of households using autonomous heating systems, incomes were lower by 37% and expenditures by 32%. In the case of households that use fireplace with natural gas, the income was lower by about 29%, and the expenses by 23%. The incomes of households using fireplaces with wood, coal, oil were lower by 31.4%, and expenditures by 29.7%, and the incomes of households using heaters, convectors and air conditioning were lower by 24% , and expenditures by 11.8%.

Figure 10. **INCOMES AND ENERGY COSTS OF HH, BY TYPE OF MAIN HEATING SOURCE**

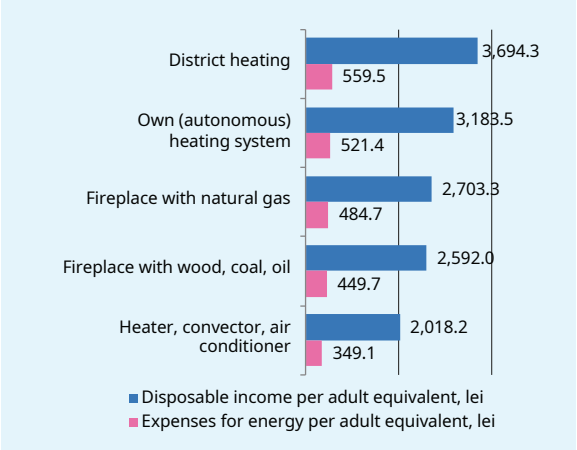
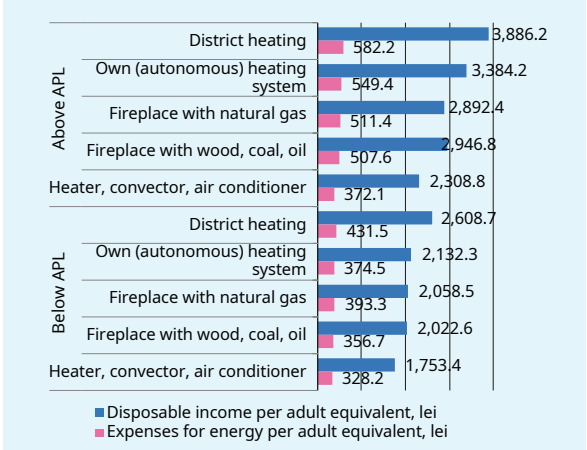


Figure 11. **DISTRIBUTED BY: HOUSEHOLDS OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 = 2,174.1 lei/month/adult equivalent

The analysis of the incidence of energy poverty according to the type of main heating source used shows that it is the most accentuated for households that use fireplaces with wood, coal, oil, such as those that use heaters, convectors and air conditioning (65%). The lowest incidence is for households using district heating (38.8%) (Figure 12). The picture of the incidence of energy poverty on households above and below the poverty line looks different, this being extremely accentuated for households below the absolute poverty line, which uses autonomous heating systems (78.2%), and the lowest - among households using fireplaces

with natural gas. For those who use other sources, the incidence is about the same - around 65% (Figure 13).

Figure 12. **ENERGY POVERTY INCIDENCE, BY TYPE OF MAIN HEATING SOURCE**

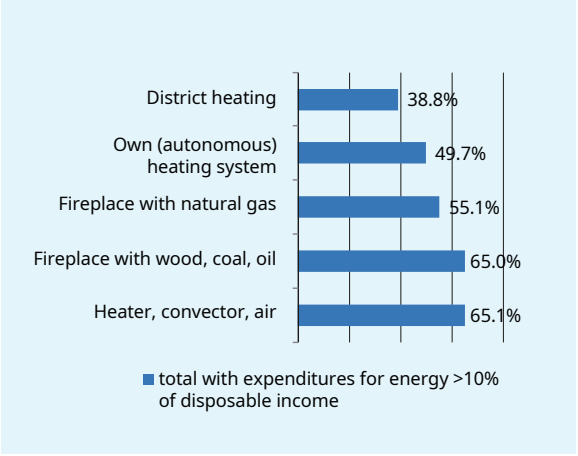
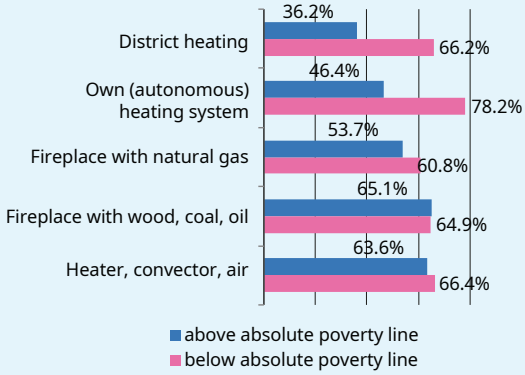


Figure 13. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: POPULATION OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 = 2,174.1 lei/month/adult equivalent

II.3.3. Double the Median Approach

Out of all the households considered energy poor according to the definition *"energy expenses weight in total income are twice as median"*, the highest incomes and expenditures for home heating in 2020 were incurred by households using district heating, followed by those using autonomous heating systems and those using fireplaces with natural gas. Households using heaters, convectors and air conditioning had the lowest incomes and expenditures for heating the house (Figure 14). This picture of the distribution of incomes and expenditures of energy-poor households for heating is similar to the *"over 10%"* approach.

The analysis of the distribution of energy income and expenditure by heating source on households above and below the absolute poverty line shows the same, with lower energy income and expenditure for households below the absolute poverty line (Figure 15). Thus, the incomes of households below the poverty line that use district heating were 20% lower than those of households above the absolute poverty line, and the expenditures by 17.6%. In the case of households using autonomous heating systems, incomes were by 32.8% lower and expenditures by 32% lower. In the case of households using fireplaces with natural gas, incomes were lower by 42.3% and expenditures by 31.4%. Also, household incomes using fireplaces with wood, coal and oil were lower by 24.3% and expenditures by 27.9%. At the same time, household incomes using heaters, convectors and air conditioning were lower by 30.6% and expenditures by 45.8%.

Figure 14. **INCOMES AND ENERGY COSTS OF HOUSEHOLDS, BY TYPE OF MAIN HEATING SOURCE**

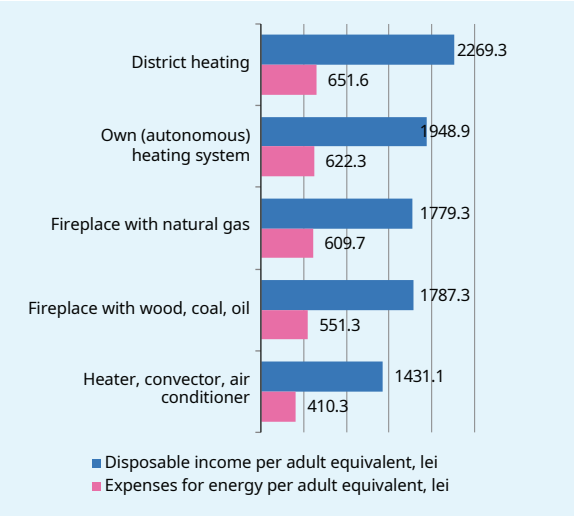
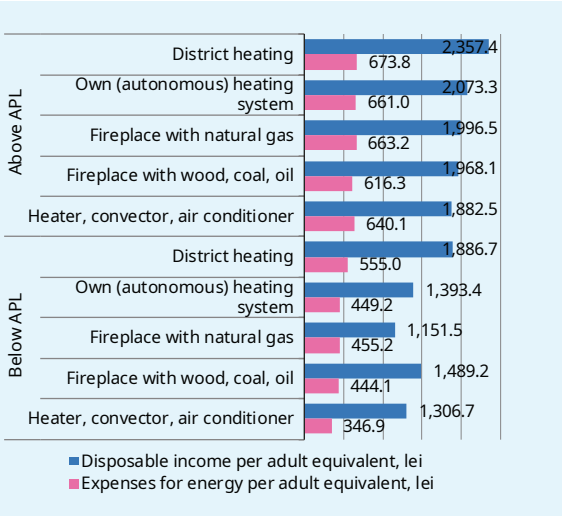


Figure 15. **INCOMES AND ENERGY COSTS OF HOUSEHOLDS, DISTRIBUTED BY: HOUSEHOLDS OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 = 2,174.1 lei/month/adult equivalent

The analysis of the incidence of energy poverty within this approach, depending on the type of main heating source used, shows that it is the most accentuated for households that use fireplaces with wood, coal, oil (15.0%), such as those that use heaters, convectors and air conditioning (14.1%). The lowest incidence is for households using district heating (4.8%) (Figure 16). The picture of the incidence of energy poverty on households above and below the absolute poverty line looks different. Thus, the incidence is higher for households below the absolute poverty line using heaters, convectors and air conditioning (22.2%) and the lowest for households using district heating (9.3%) (Figure 17).

Figure 16. **ENERGY POVERTY INCIDENCE, BY TYPE OF MAIN HEATING SOURCE**

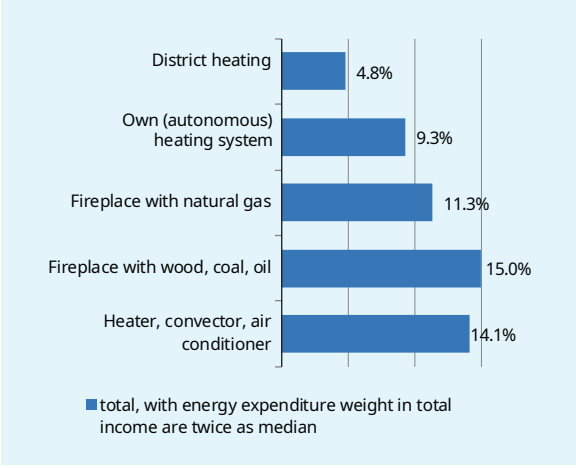
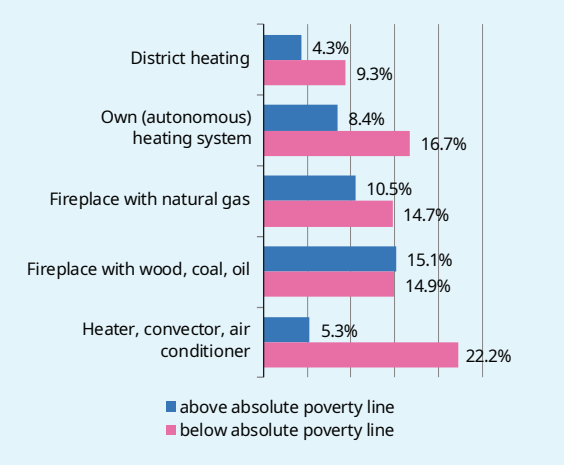


Figure 17. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: POPULATION OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 =2,174.1 lei/month/adult equivalent

II.3.4. Energy Consumption and Income Correlation Approach

According to this approach, energy poverty is analyzed considering the low income of households. To identify these households, an analysis of the distribution of income per equivalent adult in groups of hundredths of the sample was performed. As a result, the group of 9% of households with the lowest equivalent income per adult was identified as relevant for the analysis, which in 2020 also had the lowest expenditures for energy, below 322.5 lei. (Figures 18 and 19).

Figure 18. **DISTRIBUTION OF THE HOUSEHOLDS - "ENERGY CONSUMPTION AND INCOME CORRELATION", IN 2020 YEAR**

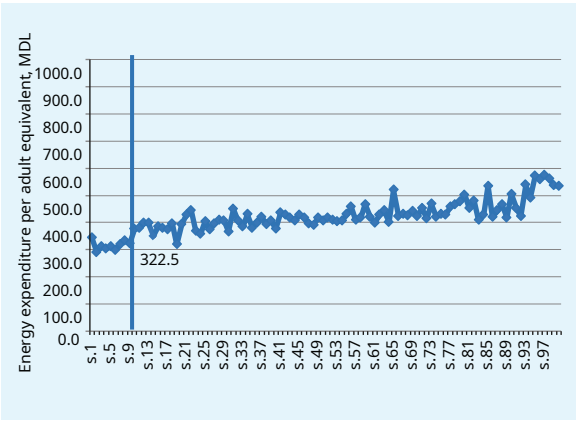
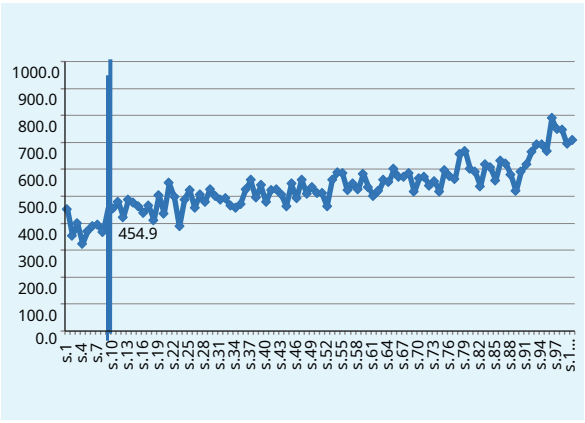


Figure 19. **DISTRIBUTION OF THE HOUSEHOLDS - "ENERGY CONSUMPTION AND INCOME CORRELATION", IN 2021 YEAR (SIMUL.)**



Of the households that are considered to be energy poor according to the definition of *"Energy consumption and income correlation"*, the highest incomes had those that use heaters, convectors and air conditioning, as well as those that use fireplaces with wood, coal, oil, and the highest expenditures for home heating were incurred in 2020 by households using district heating and fireplaces with natural gas (Figure 20).

The analysis of the distribution of energy revenues and expenditures according to the source of heating on households above and below the absolute poverty line looks different. In the case of households below the absolute poverty line, the households using district heating had the highest incomes but also expenditures for home heating in 2020. At the same time, the lowest incomes were for households using fireplaces with natural gas, and the lowest energy expenditures were for households using heaters, convectors and air conditioning (Figure 21).

Figure 20. **INCOMES AND ENERGY COSTS OF HOUSEHOLDS, BY TYPE OF MAIN HEATING SOURCE**

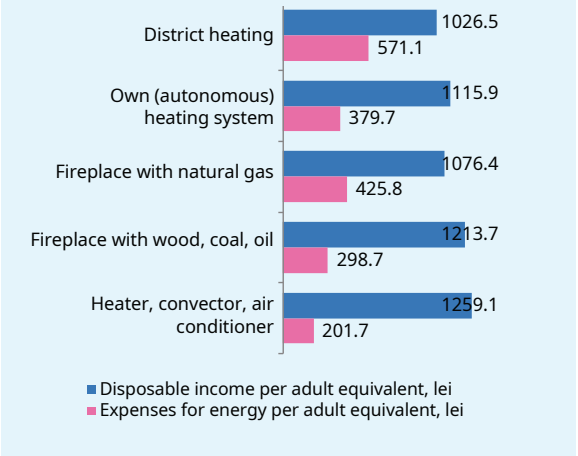
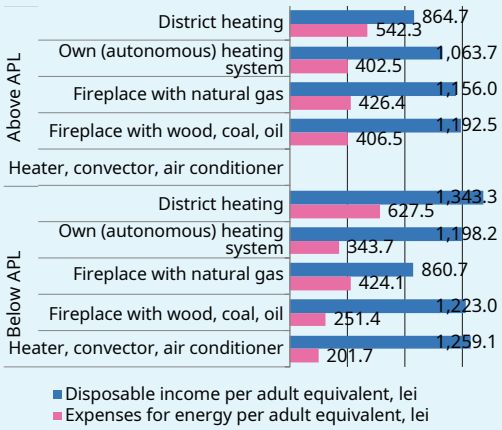


Figure 21. **INCOMES AND ENERGY COSTS OF HOUSEHOLDS, DISTRIBUTED BY: HOUSEHOLDS OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 = 2,174.1 lei/month/adult equivalent

The analysis of the incidence of energy poverty within this approach, by the type of main heating source used, shows that it is the most accentuated for households using heaters, convectors and air conditioning (22.7%) and lower for households using district heating (0.6%) (Figure 22). The picture of the incidence of energy poverty on households above and below the absolute poverty line looks different. Thus, the highest incidence in 2020 was for households below the absolute poverty line using heaters, convectors and air conditioning (43.5%), followed by those using fireplaces with wood, coal and oil, and those using autonomous heating systems. The lowest incidence of energy poverty was faced by households below the absolute poverty line using district heating (1.9%) (Figure 23).

Figure 22. **INCOMES AND ENERGY COSTS OF HOUSEHOLDS, BY TYPE OF MAIN HEATING SOURCE**

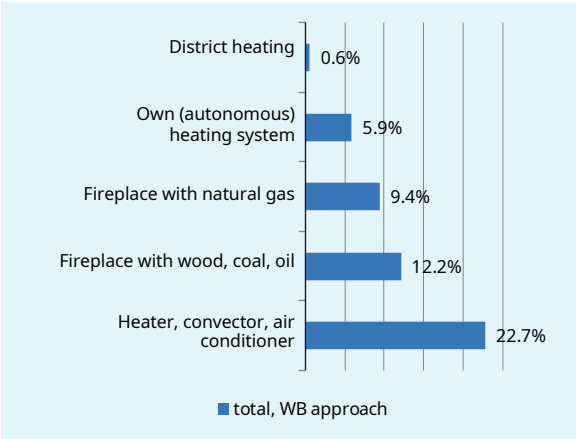
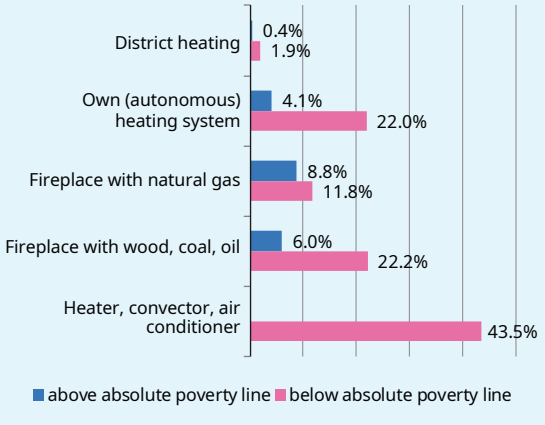


Figure 23. **ENERGY POVERTY INCIDENCE DISTRIBUTED BY: POPULATION OVER AND UNDER APL***



Source: HBS 2020

*Absolute Poverty Line in 2020 = 2,174.1 lei/month/adult equivalent

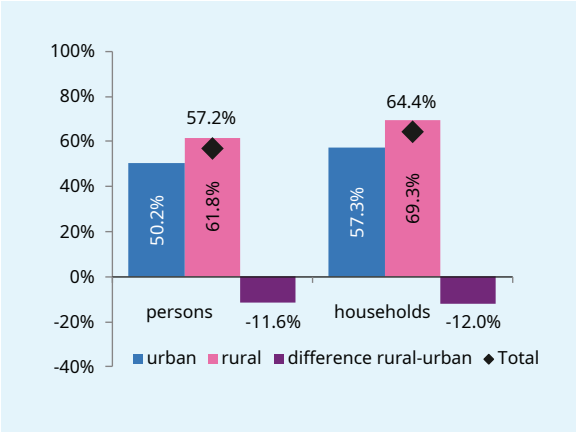
II.3.5. Comparative Analysis of Approaches to Energy Poverty Applied to Moldova

Based on the suggested definitions, 57.2% of all people in the country are energy poor in terms of income, and 12.0% in terms of the double median. The incidence is higher in case of households, with 64.4% of households in energy poor by incomes and 17.1% - by double median (2M).

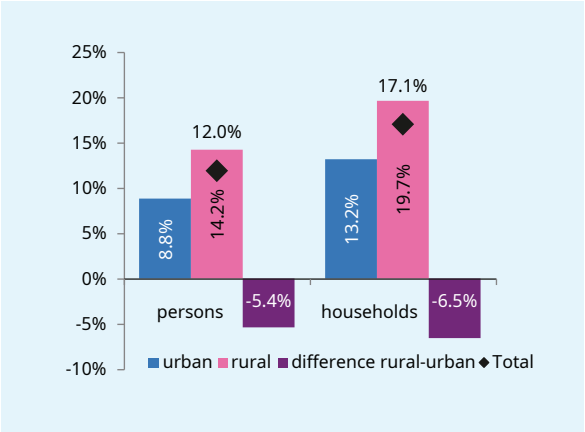
Areas of residence. The incidence of poverty energy is higher in rural area than in urban area, and the difference by areas of residence is about 12 percentage points (p.p.) in case of energy poverty by incomes and about 6 p.p. in case of energy poverty estimated by double median (2M) (Figure 24).

Figure 24. **INCIDENCE OF ENERGY POVERTY, TOTAL, AREAS OF RESIDENCE**

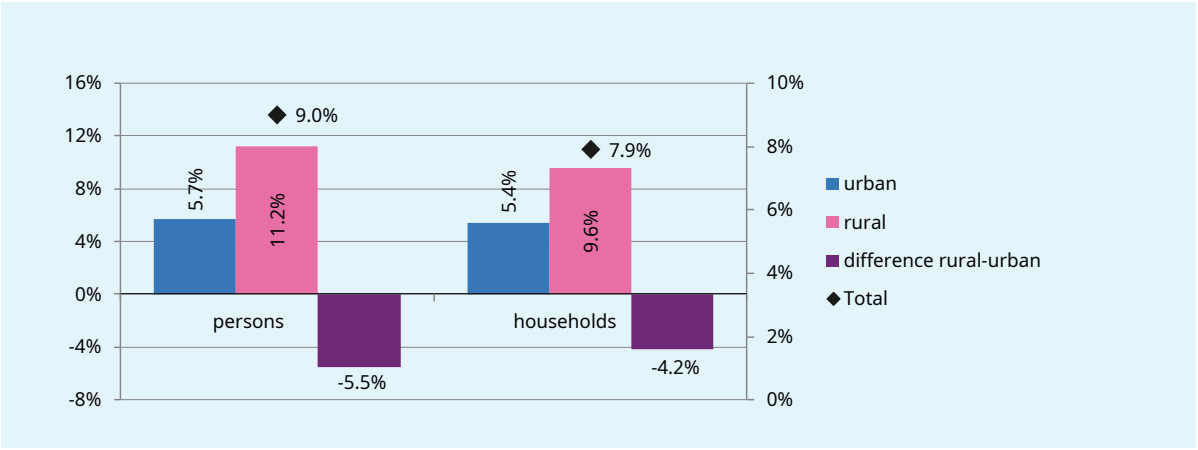
Expenditures for energy >10% of disposable income



Share of energy expenditure > double median (2M)



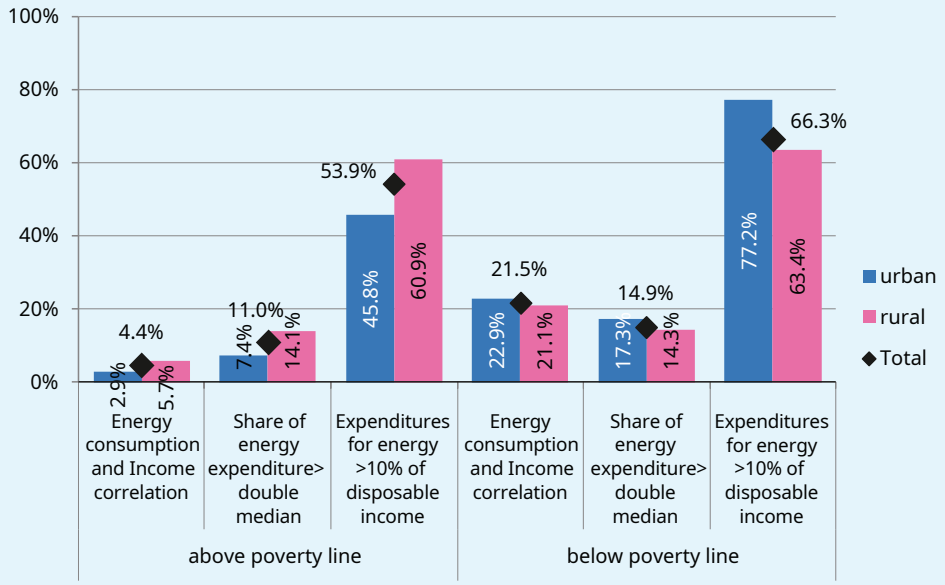
Energy consumption and Income correlation



Respectively, energy poverty among those over the absolute poverty line is more pronounced for rural populations; while among those under the absolute poverty line – the incidence of poverty energy is more pronounced in urban areas.

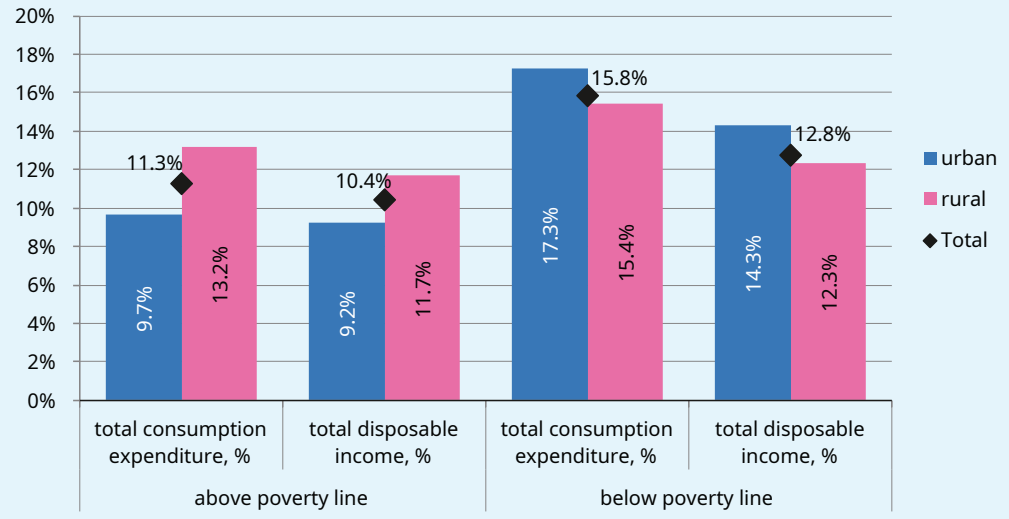
It may be noted that poverty energy is very pronounced among the persons under the absolute poverty line from urban area, with an incidence of 77.2% in energy poverty by incomes and 17.3% in energy poverty by double median (2M). In rural area, the gaps between the incidences of energy poverty are less pronounced among those who are poor and non-poor in relation to the absolute poverty line (Figure 25).

Figure 25. **INCIDENCE OF ENERGY POVERTY IN RELATION TO ABSOLUTE POVERTY, PERSONS, TOTAL, AREAS OF RESIDENCE**



The analysis of the situation in relation to the poverty line reveals different pictures related to the share of energy expenditures in relation to disposable income and total consumption expenditures. The share of energy expenditures is higher among the urban poor, with a difference of 2 p.p. between the respective shares by areas of residence. The energy expenditures are higher in rural areas among the persons over the absolute poverty line, both as a share of incomes and a share of expenditures (Figure 26).

Figure 26. **ENERGY EXPENDITURES IN RELATION TO CONSUMPTION EXPENSES AND DISPOSABLE INCOME, TOTAL, AREAS OF RESIDENCE**



In absolute Figures (lei), energy expenditures are higher among persons from urban areas, who are over the absolute poverty line, respectively the total consumption expenditures and disposable incomes are also higher.

Hence, the urban non-poor population registers disposable incomes which are 2.06 times higher, total expenditures which are 2.37 times higher, and the monthly expenses for energy are on average 1.33 times higher as compared to the urban poor population.

The gaps are lower in case of rural population: the incomes of the non-poor are 1.58 times higher, total consumption expenditures – 1.75 times higher, and expenses for energy – 1.5 times higher as compared to the poor population (Table 8).

Table 8. **DISPOSABLE INCOME AND MONTHLY AVERAGE CONSUMPTION EXPENDITURES PER ADULT EQUIVALENT IN RELATION TO ABSOLUTE POVERTY, TOTAL, AREAS OF RESIDENCE, LEI**

	over absolute poverty line			under absolute poverty line		
	Total	City	Village	Total	City	Village
Total disposable income	4,440.51	5,052.68	3,910.05	2,468.24	2,447.58	2,473.75
Total consumption expenses	4,088.67	4,817.59	3,457.03	1,990.32	2,028.87	1,980.04
of which total for energy:	460.52	465.24	456.43	314.72	350.05	305.3
including: electricity	156.81	161.24	152.97	105.98	123.37	101.35
: network gas	105.87	158.48	60.27	37.97	94.40	22.92
: gas in cylinders	17.63	3.48	29.88	25.78	8.90	30.28
: liquid fuel	0.16	0.02	0.29	0.09	0.00	0.11
: coal	21.43	6.91	34.02	15.96	8.89	17.84
: wood, logs, sawdust, etc.	109.21	30.21	177.67	118.11	63.43	132.70
: preparing hot water	7.38	15.88	0.02	1.33	6.31	0.00
: district heating	42.03	89.02	1.31	9.50	44.74	0.11

The structure of energy consumption by sources of energy differs by areas of residence, as well as depending on the living standards.

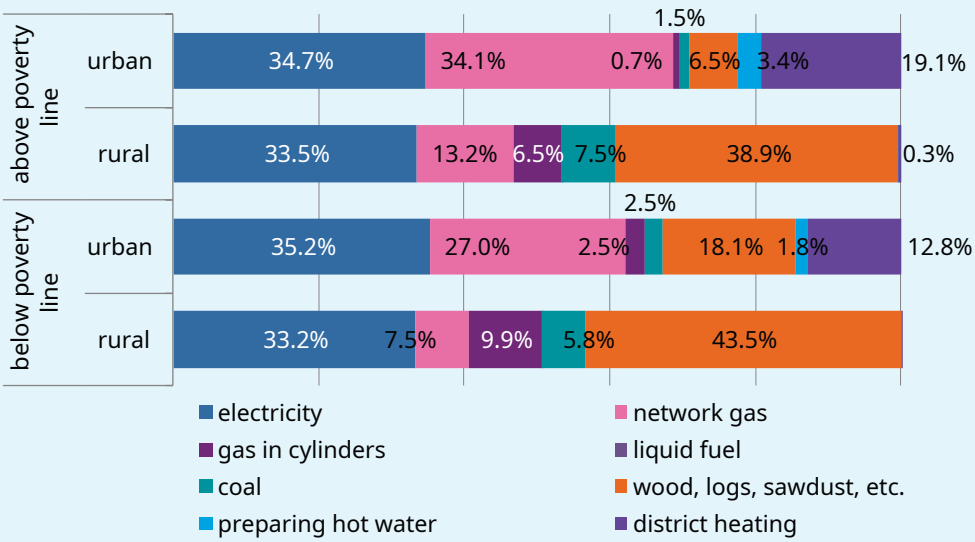
It should be mentioned that electricity consumption as share of the total consumption of energy is approximately the same by areas of residence. Both the poor and the non-poor from urban area spend about 35% of their energy consumption for electricity, in rural area – about 33%.

Except for electricity, it may be noted that there are differences in energy expenses' structure in urban area by energy sources, especially in relation to expenses for wood, logs, sawdust, etc., registering a share of 6.5% in case of the non-poor and 18.1% in case of the poor population. At the same time, the better-off population from cities spend 34.1% for network gas, about 19.1% for district heating. The urban poor spend 27.0% of their energy expenses for network gas, and the expenses for district heating account for 12.8%.

The distribution of energy expenditures in rural area among the non-poor population registers 13.2% of energy expenses for network gas as compared to only 7.5% of energy expenses for network gas among the poor, while the expenses for gas in cylinders in case of the non-poor account for 6.5% and among the poor 9.9%. The biggest share of 43.5% of energy expenses

in case of the poor is registered for wood, logs, sawdust, etc., while in case of the non-poor 38.9% (Figure 27).

Figure 27. **ENERGY EXPENSES BY SOURCES AND AREAS OF RESIDENCE, AS RELATED TO ABSOLUTE POVERTY LINE, %**



Utilities. The level of population wellbeing is correlated with the availability of utilities in households, which would ensure necessary comforTable living conditions. Among the non-poor population, a higher share is registered for those who have higher quality of utilities. Almost 2/3 of non-poor households (and persons living in such households) have natural gas from public supply network; over 55% of poor households have only liquefied gas (in cylinders). About 82% of poor households provide their heating with stoves using wood, coal, oil; and about 2/3 have no installation which would provide the possibility to heat the water (Table 9).

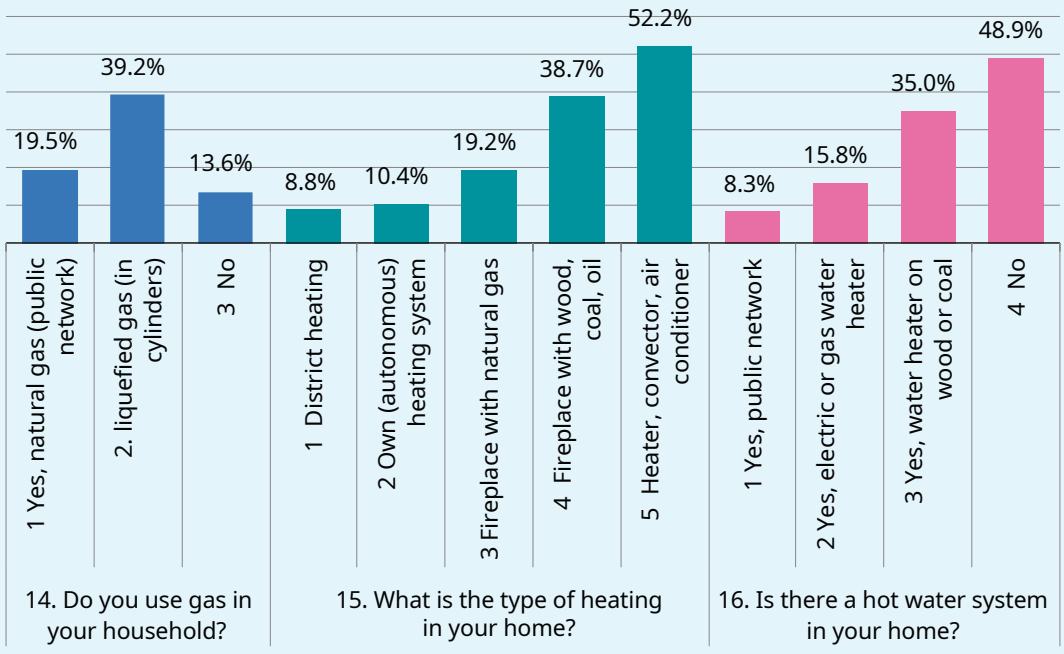
Table 9. **AVAILABILITY OF UTILITIES IN HOUSEHOLDS IN RELATION TO THE ABSOLUTE POVERTY LINE, %**

		non-poor		poor		Total	
		Hous.	Pers.	Hous.	Pers.	Hous.	Pers.
14. Does your household have gas?	1. Yes, natural gas (public network)	63.5%	64.1%	42.7%	42.2%	57.9%	58,2%
	2. Yes, liquefied gas (cylinder)	32.2%	31.8%	55.3%	56.0%	38.4%	38,3%
	3. No	4.3%	4.1%	2.1%	1.8%	3.7%	3,5%
Total		100%	100%	100%	100%	100%	100%
15. What is the type of heating in your dwelling?	1. District heating	18.0%	16.8%	5.5%	4.4%	14.6%	13,5%
	2. Own (autonomous) heating system	30.6%	33.2%	9.3%	10.5%	24.9%	27,1%
	3. Fireplace with natural gas	1.3%	1.4%	1.1%	0.9%	1.3%	1,3%
	4. Fireplace with wood, coal, oil	49.3%	48.1%	81.6%	82.8%	58.0%	57,4%
	5 Heater, convector, air conditioner	0.7%	0.5%	2.4%	1.4%	1.1%	0,7%
	6 No	-	-	0.1%	0.1%	0.0%	0,0%
Total		100%	100%	100%	100%	100%	100%

		non-poor		poor		Total	
		Hous.	Pers.	Hous.	Pers.	Hous.	Pers.
16. Do you have hot water installation in your dwelling?	1. Yes, public network	10.5%	10.1%	3.3%	2.5%	8.6%	8,1%
	2. Yes, electrical or gas water boiler	61.4%	64.3%	28.1%	32.9%	52.4%	55,9%
	3. Yes, wood or coal based water boiler	1.8%	1.8%	2.0%	2.7%	1.9%	2,0%
	4. No	26.2%	23.8%	66.6%	62.0%	37.1%	34,0%
Total		100%	100%	100%	100%	100%	100%

Hence, the most pronounced poverty rates are noted in the case of households heating with *heater, convector, air conditioner* (52.2%), which have no hot water installation (48.9%); and in case of gas availability in the dwelling, poverty is more pronounced in the case of households having *liquefied gas (in cylinders)* (39.2%) (Figure 28).

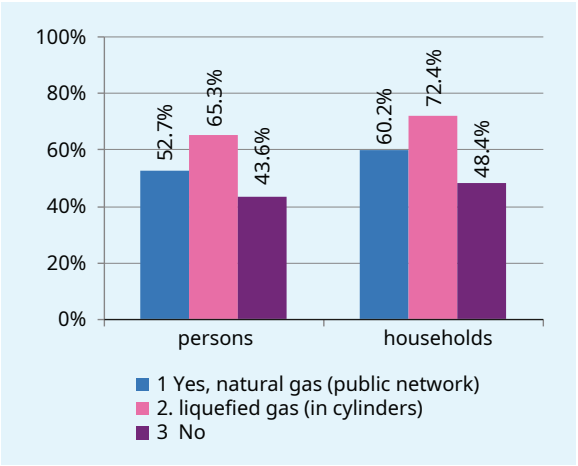
Figure 28. **ABSOLUTE POVERTY RATE DEPENDING ON UTILITIES' AVAILABILITY IN THE HOUSEHOLDS, AS RELATED TO ENERGY EXPENSES, %**



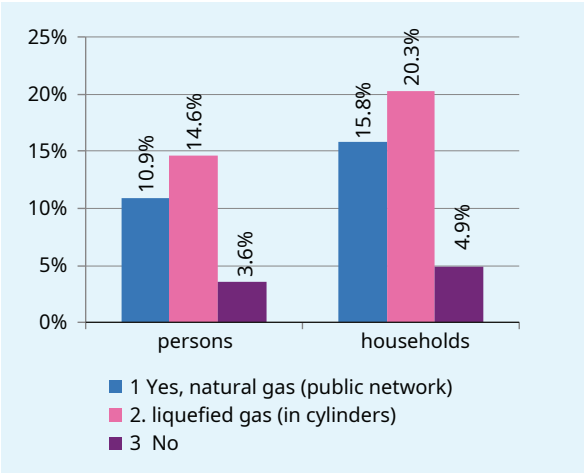
Gas use. Energy poverty incidence, estimated by incomes and expenditures is higher among the population having liquefied gas (in cylinders) in their dwellings. For about 72.4% of households (65.3% persons), the energy expenses account for over 10% of incomes; for about 20.3% households (14.6% persons) – share of energy expenditure is over double median (2M) (Figure 29).

Figure 29. **INCIDENCE OF ENERGY POVERTY DEPENDING ON AVAILABILITY OF GAS IN THE DWELLING**

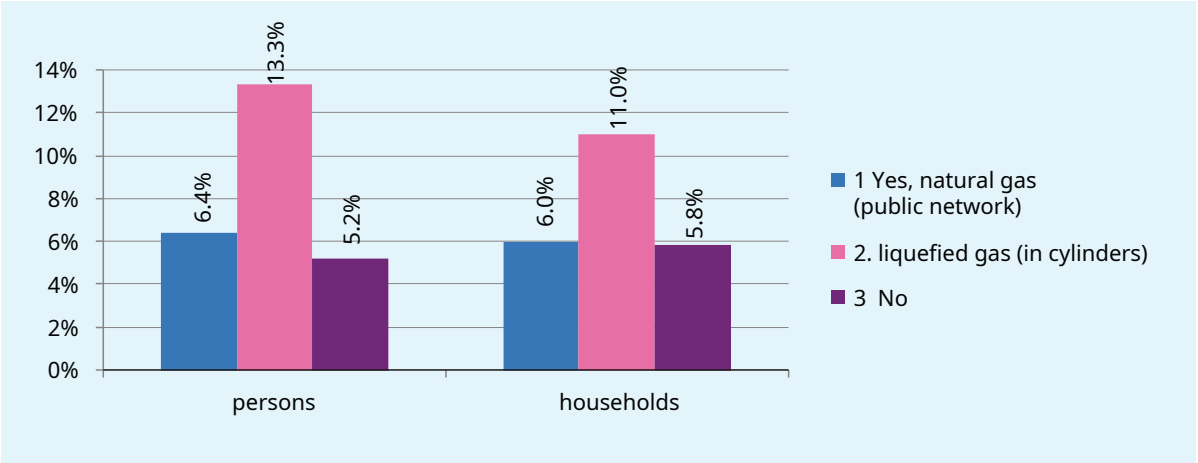
Expenditures for energy >10% of disposable income



Share of energy expenditure > double median (2M)

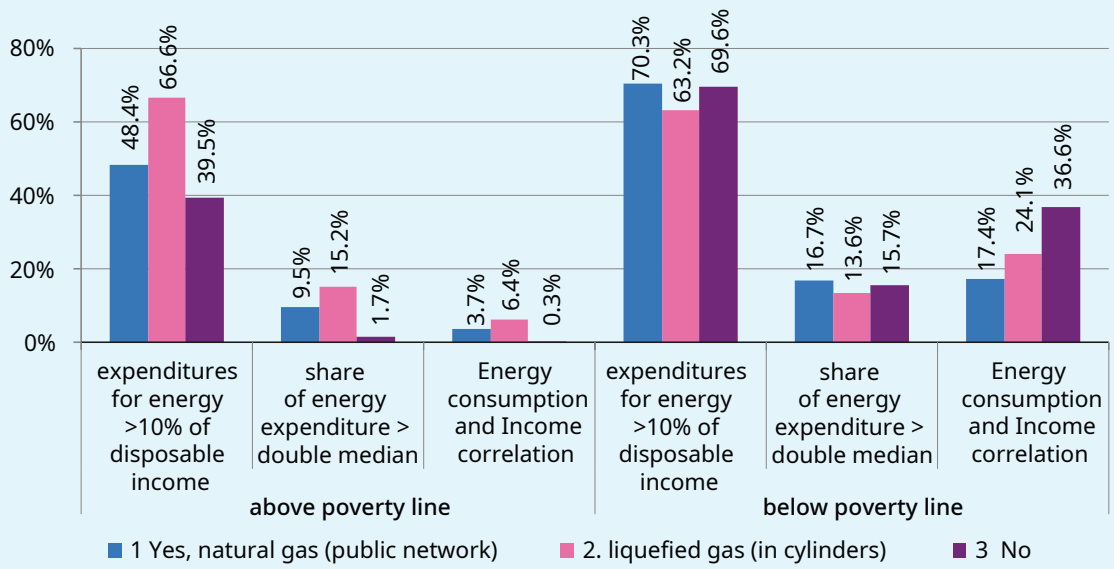


Energy consumption and Income correlation



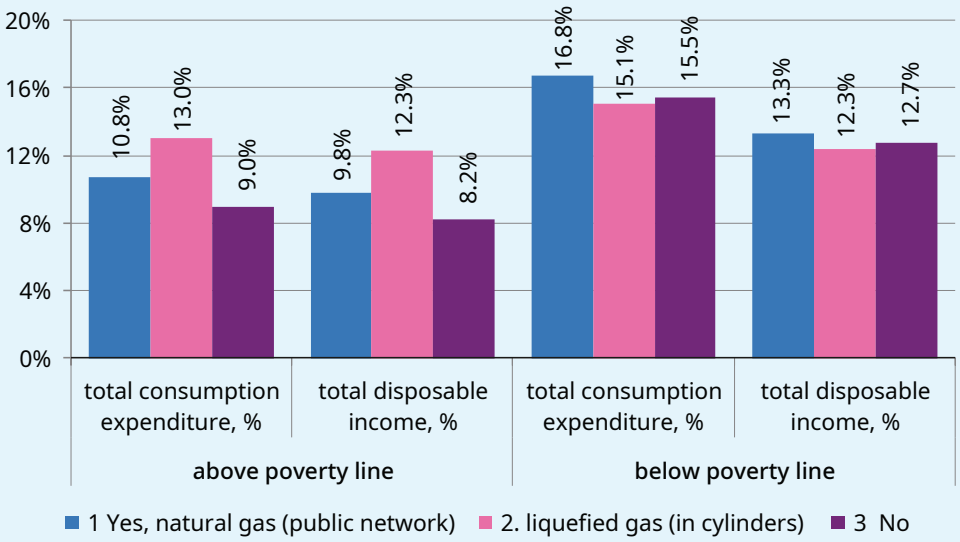
The incidence of energy poverty among the poor is higher for those who are connected to gas supply from the public network by almost 70.3% by incomes and 16.7% by double median. In case of those over the absolute poverty line, energy poverty is more pronounced for those persons who has liquefied gas (in cylinders) in their dwellings 66.6% by incomes and 15.2% energy poverty estimated as share of energy expenditure > double median (2M) (Figure 30).

Figure 30. **INCIDENCE OF ENERGY POVERTY AS RELATED TO ABSOLUTE POVERTY, DEPENDING ON AVAILABILITY OF GAS IN THE DWELLING, PERSONS**



The share of energy expenditures is also higher in case for those under the poverty line, and the highest share is registered among the population connected to public gas supply network: 13.3% estimation by incomes and 16.8% estimation by expenses. In case of the non-poor, the expenditures are more pronounced for those who use liquefied gas (in cylinders), about 12.3% estimation by incomes and 13.0% estimation by expenses (Figure 31).

Figure 31. **ENERGY EXPENSES AS RELATED TO CONSUMPTION EXPENDITURES AND DISPOSABLE INCOME, DEPENDING ON GAS AVAILABILITY IN THE DWELLING**



Energy expenses are higher among the persons whose households are connected to public gas supply network and over the absolute poverty line. At the same time, the total consumption expenditures and disposable incomes are higher in case of non-poor who do not use gas in their households. This group of households registers significant differences between those over and under the absolute poverty line.

Hence, the non-poor population with no gas connection in their households registers incomes which are 2.53 times higher, total expenditures which are 2.80 times higher, and the monthly energy expenses on average 1.62 times higher as compared to the poor population not using gas in their households.

The lowest gap in the incomes and expenditures of the poor and non-poor is registered for those who use liquefied gas (in cylinders): the incomes of the non-poor are 1.5 times higher, total consumption expenditures are 1.74 times higher, and energy expenses are 1.5 times higher as compared to the poor.

In case of non-poor households, the major household expenses are registered for electricity, followed by the expenses related to the u sed fuel.

The poor households spend more, first of all, for electricity, followed by expenses for wood, logs, sawdust in all the cases, etc. (Table 10).

Table 10. **DISPOSABLE INCOME AND MONTHLY AVERAGE CONSUMPTION EXPENSES PER ADULT EQUIVALENT AS RELATED TO ABSOLUTE POVERTY, DEPENDING ON GAS AVAILABILITY IN THE DWELLING, LEI**

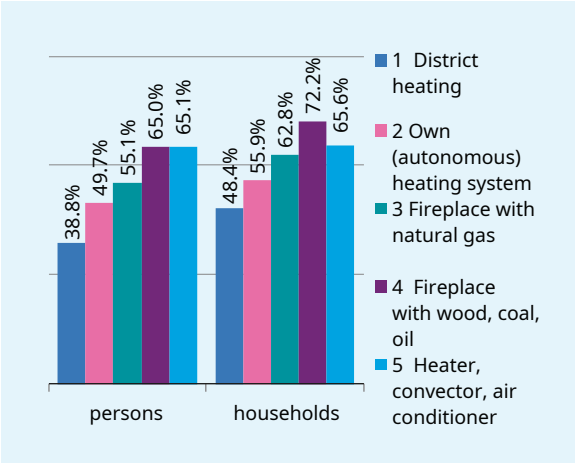
	over absolute poverty line			under absolute poverty line		
	1 Yes, natural gas (public network)	2 Yes, liquefied gas (in cylinders)	3 No	1 Yes, natural gas (public network)	2 Yes, liquefied gas (in cylinders)	3 No
Total disposable income, lei	4,79 8.94	3,596.44	5,417.60	2,569.23	2,401.89	2,144.67
Total consumption expenditures, lei	4,372.54	3,409.38	4,945.97	2,034.39	1,964.02	1,766.38
of which total energy expenses:	470.22	443.41	442.68	340.77	296.26	273.14
of which: electricity	153.48	155.95	214.93	113.99	99.72	111.68
: network gas	165.31	0.55	0	89.52	0	0
: gas in cylinders	0.14	54.92	0	0.36	45.93	0
: liquid fuels	0.18	0.15	0	0.06	0.11	0
: coal	13.59	39.57	2.60	10.51	20.51	3.07
: wood, logs, sawdust, etc.	75.66	189.39	8.76	104.12	129.99	79.56
: preparing hot water	10.19	0.0	21.03	2.66	0	11.13
: district heating	51.67	2.88	195.36	19.54	0	67.71

Type of dwelling heating. Incidence of energy poverty is higher among the households heating their own dwellings with fireplaces with wood, logs, oil; the energy expenses account for over 10% of the disposable income per adult equivalent for about 72.2% households (65.0% persons from these households). In case of energy poverty as share of energy expenditure > double median (2M), the incidence is 21.1% households (15.0% persons).

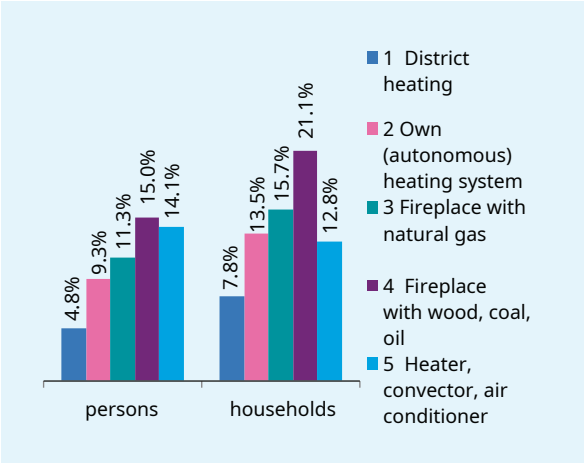
The lowest incidence of energy poverty is registered for households heating their dwellings via district heating system; the share of those in energy poverty by incomes accounts for 48.4% households (38.8% persons) and the share of those in energy poverty by double median accounts for 7.8% households (4.8% persons) (Figure 32).

Figure 32. **INCIDENCE OF ENERGY POVERTY DEPENDING ON THE TYPE OF DWELLING HEATING**

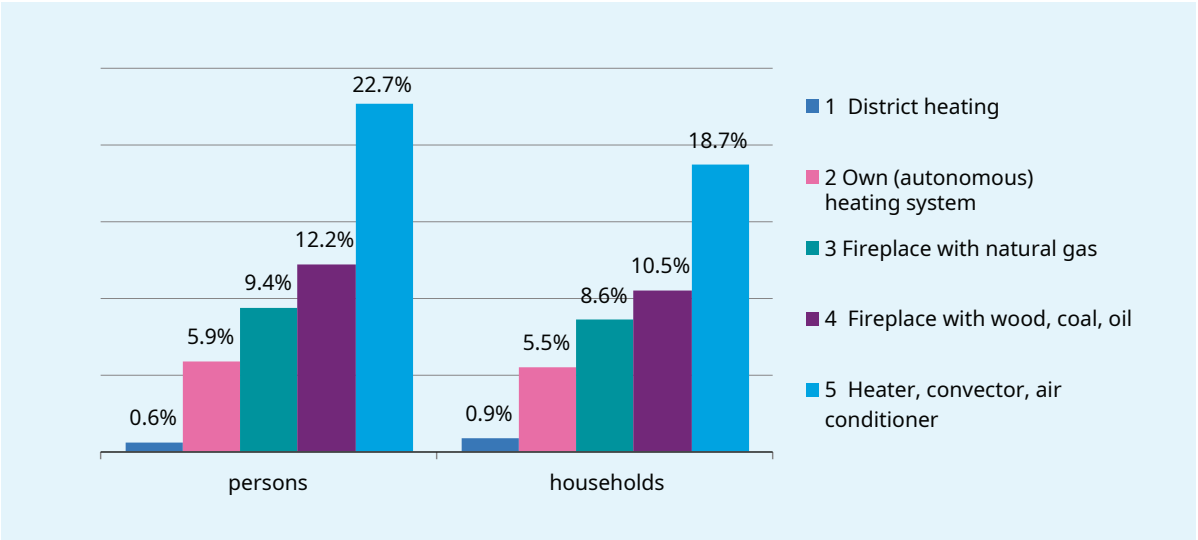
Expenditures for energy >10% of disposable income



Share of energy expenditure > double median (2M)



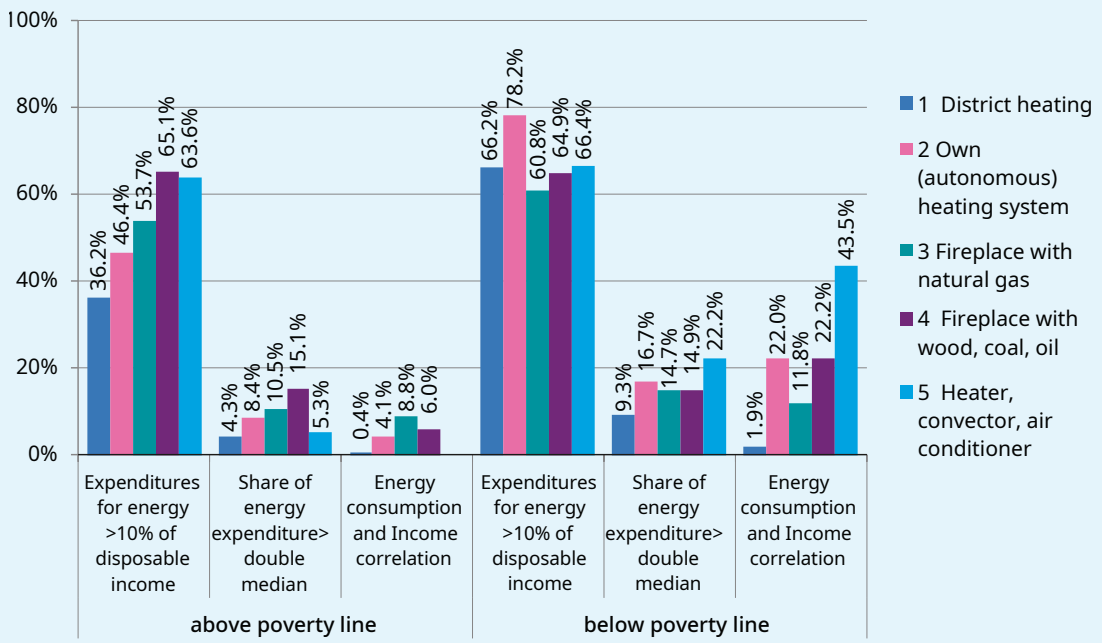
Energy consumption and Income correlation



The energy poverty picture is different depending on absolute poverty. The highest energy poverty incidence in case of persons over the absolute poverty line absolute is registered for those heating their dwellings with fireplaces based on wood, coal, oil (65.1% incidence by incomes, 15.1% - by double median), the lower incidence – in case of district heating (36.2% - by incomes, 4.3% - by double median).

The highest energy poverty incidence in case of persons under the absolute poverty line is registered for those with their own (autonomous) heating system (78.2% - by incomes) (Figure 33).

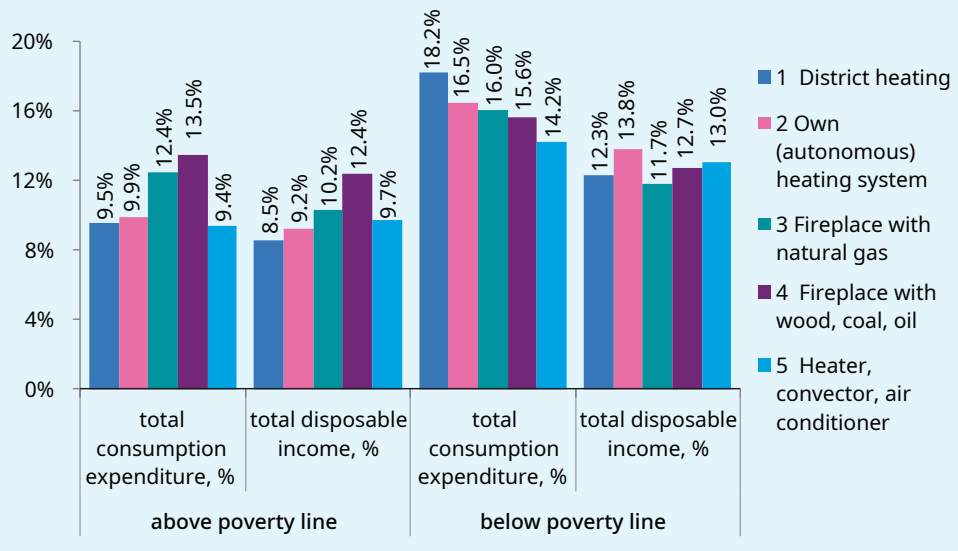
Figure 33. **ENERGY POVERTY INCIDENCE IN RELATION TO ABSOLUTE POVERTY, DEPENDING ON TYPE OF DWELLING HEATING, PERSONS**



The share of energy expenses in total consumption expenditures of persons over the absolute poverty line is higher in case of heating the dwellings with fireplaces based on wood, coal, oil, accounting for 13.5% and 12.4% by incomes. The largest shares - 8.5% of incomes and 9.5% of expenditures - are registered in case of district heating.

In case of persons under the absolute poverty line, the highest share of energy expenses out of the total consumption expenditures – 18.2% – is noted in case of district heating, followed by 16.5% in case of own (autonomous) heating system. The share of energy expenses in relation to incomes is almost the same - 12%-13% for all types of heating (Figure 34).

Figure 34. **ENERGY EXPENSES AS RELATED TO CONSUMPTION EXPENDITURES AND DISPOSABLE INCOME, DEPENDING ON TYPE OF DWELLING HEATING**



The highest disposable incomes and consumption expenditures, as well as energy expenses are noted in case of persons whose dwellings have district heating and own (autonomous) heating systems, the lowest ones – in case of persons heating their dwellings with heater, convector, air conditioner. The respective trends are noted for both the non-poor and the poor (Table 11).

Table 11. **DISPOSABLE INCOME AND MONTHLY AVERAGE CONSUMPTION EXPENDITURES PER ADULT EQUIVALENT AS RELATED TO ABSOLUTE POVERTY, DEPENDING ON THE TYPE OF DWELLING HEATING, lei**

	1 District heating	2 Own (autonomous) heating system	3 Fireplace with natural gas	4 Fireplace with wood, coal, oil	5 Heater, convector, air conditioner
over the absolute poverty line					
Total disposable income, lei	5,605.72	5,020.82	4,466.09	3,653.97	3,450.64
Total consumption expenditures, lei	5,031.09	4.707.77	3,676.95	3,361.95	3,566.28
of which for total energy:	479.15	464.05	457.50	453.06	335.48
of which: electricity	171.43	159.86	133.98	149.72	212.58
: network gas	21.18	257.03	284.83	29.12	117.48
: gas in cylinders	1.55	4.26	0	32.84	5.42
: liquefied fuels	0	0.01	0	0.32	0
: coal	0	7.79	1.89	38.86	0
: wood, logs, sawdust, etc.	0	32.30	36.81	202.20	0
: preparing hot water	42.97	0.22	0	0	0
: district heating	242.02	2.58	0	0	0
under the absolute poverty line					
Total disposable income, lei	3,065.40	2,581.19	2,743.36	2,426.02	1,983.10
Total consumption expenditures, lei	2,074.40	2,164.97	2,007.77	1,966.87	1,818.56
of which for total energy:	377.13	356.57	322.22	307.14	258.11
of which: electricity	119.92	126.47	109.97	101.22	176.80
: network gas	22.67	189.48	186.76	17.58	65.08
: gas in cylinders	0.00	4.98	0	30.34	15.50
: liquefied fuels	0	0	0	0.10	0
: coal	0	1.70	6.45	19.06	0
: wood, logs, sawdust, etc.	0	33.21	19.03	138.84	0
: preparing hot water	29.01	0	0	0	0
: district heating	205.53	0.73	0	0	0.73

III. Support Mechanisms Targeting Energy Poverty

III.1. International Practices on Social Policy Measures to Reduce Energy Poverty

The analysis of current international practices show that the decision makers can choose a broad variety of policy instruments to tackle energy poverty, which range from financial support to awareness-raising. Various academic and policy categorisations have been made to create an overview of available measures. For example, the European Energy Poverty Observatory presents a broader set of policy types[22]:

- Financing structural improvements in the energy situation of households;
- Energy audits;
- Financial assistance reducing energy bills/social support;
- Legal disconnection protection;
- Information and awareness measures.

In turn, the latest Energy Community Report[23] identifies two main sets of policy measures to mitigate the causes and consequences of energy poverty:

- Measures aimed at increasing household incomes and protecting against disconnections from utilities.
- Measures to reduce energy costs.

The first set of policy measures focuses on increasing the total income of households and protect the households from disconnection from utilities such as gas, electricity and/or district heating networks. These measures are generally considered short-term measures because they tend to reduce primarily the consequences of energy poverty, but not its causes. This approach usually includes direct financial support through: (i) deductions from monthly energy bills; (ii) direct financial allocations; or (iii) financial transfers to reduce the total burden of energy bills for households and protection against utility disconnections. The main elements of this group of measures are:

1. Protection:

- **Protection against disconnection of utilities in case of non-payment.** *For example, in the case of Catalonia, regional legislation requires electricity, gas and water provider companies to contact social protection services before stopping the supply to household beneficiaries to*

22 Community Tailored Actions for Energy Poverty Mitigation (2021). Overview report on energy poverty concept. Energy poverty in the privately-owned, multi-family environment. **https://www.bpie.eu/wp-content/uploads/2021/05/ComAct-D1.1_Overview-report-on-the-energy-poverty-concept_Final-version_UPDATED-1.pdf**

23 Energy Community (2021). Study on Addressing the Energy Poverty in the Energy Contracting Parties. Chapter 3.

check whether they are at risk of social exclusion according to established criteria[24]. In the case of the Netherlands, the regulatory framework prohibits the disconnection from electricity and gas of vulnerable-confirmed household consumers who have debts[25]. In the case of Romania, the legislation adopted in 2021 prohibits the disconnection of the vulnerable consumer from all energy sources in situations of energy crisis[26]. And in the case of Hungary, people with disabilities, the blind and other vulnerable consumers cannot be disconnected from energy and water supply services[27].

- **Ensuring a minimum energy supply**. *For example: in the case of Greece people and families living in extreme poverty are provided with a free amount of electricity for their main home up to 1200 kwh for four months, corresponding to three quarterly settlement bills[28].*

2. Prices regulation:

- **Social tariffs - capping the maximum price that households must pay for energy bills.** *The example of Bulgaria - the social tariff for electricity. Vulnerable consumers, about 14% of the population, will pay 33% less for electricity over a five-year period. In addition, 100 kWh will be guaranteed for households that do not use electricity for heating and 150 kWh for households that do not use electric heating[29]. In Cyprus, specific tariffs are in place for people on low incomes and households in the category of "Special Household Valuation for Specific Categories of Vulnerable Consumers". These reduced tariffs represent a discount estimated to be around 17-20%[30]. In case of Spain, the central state regulates access to energy and discounts on tariffs which are borne by the electricity companies; however, the regions and the municipalities manage the aid and even pay part of the tariff for households in a situation of social emergency or severe exclusion[31]. In Romania the Government decided in march 2022 to capping (till to 2023) the final billed electricity prices for vulnerable or potentially energy-intensive household customers, in two tranches of consumption, based on average monthly consumption in 2021 and final natural gas prices. Electricity: (i) 0.68 lei / kWh (VAT included) for consumption <= to 100 KWh; and b) 0.8 lei / kWh (VAT included) for those whose consumption is between 100 kWh and 300 KWh inclusive. Natural gasses: 0.31 lei / kWh (VAT included)[32] for an average annual consumption up to 1200 KWh.*

- **Prepaid meters.** *Hungary, vulnerable consumers who have energy debts can only be disconnected from the grid if they refuse to install and use a prepaid energy meter, which only allows the consumption of energy that is prepaid[33].*

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24 Herrero, S.T. (2020). Disconnection in Spain. Environmental Science and Technology Institute (ICTA), Universitat Auònoma de Barcelona (UAB), Spain. Page. 2. **https://www.eppedia.eu/sites/default/files/2021-01/Tirado%20Herrero_2020_Disconnections%20in%20Spain_EP-pedia_2.pdf**

25 **https://wetten.overheid.nl/BWBR0030164/2018-05-01#Paragraaf2_Artikel2**

26 Legea 266/2011 privind stabilirea măsurilor de protecție socială pentru consumatorul vulnerabil de energie. **https://legislatie.just.ro/Public/DetaliiDocument/246430**

27 Community Tailored Actions for Energy Poverty Mitigation (2021). Overview report on energy poverty concept. Energy poverty in the privately-owned, multi-family environment. Subchapter 4.3.7. Page 74. **https://www.bpie.eu/wp-content/uploads/2021/05/ComAct-D1.1_Overview-report-on-the-energy-poverty-concept_Final-version_UPDATED-1.pdf**

28 **https://www.taxheaven.gr/law/4320/2015**

29 **https://www.me.government.bg/bg/interviews-detail-type-347-detail-324-.html**

30 ESPN (2020). Access to essential services for people on low incomes in Europe. An analysis of policies in 35 countries. Authors: Baptista, I. & Marlier, E., Page. 67. **https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8340&furtherPubs=yes**

31 Ibidem.

32 Government of Romania. **https://sgg.gov.ro/1/wp-content/uploads/2022/03/OUGANEXE.pdf**

33 Community Tailored Actions for Energy Poverty Mitigation (2021). Overview report on energy poverty concept. Energy poverty in the privately-owned, multi-family environment. Subchapter 4.3.7. Page 74. **https://www.bpie.eu/wp-content/uploads/2021/05/ComAct-D1.1_Overview-report-on-the-energy-poverty-concept_Final-version_UPDATED-1.pdf**

3. Direct financial support

- **This is expressed through various models of support for the payment of energy bills and revenue growth.** For example*: in the case of Romania, aid is granted for home heating plus an energy supplement, the amount of which varies according to the average monthly net income per family member of the single person*[34]*. In Bulgaria, targeted heating aid is granted to Bulgarian residents who do not have enough income to heat their homes during the winter months. The aid is BGN 495.90 (or EUR 253.53) which is paid twice a winter and can be received only after the beneficiaries have demonstrated that they have not sold real estate in the last five years, have no maintenance contracts, have not saved more than BGN 500 per family member and have not travelled abroad on their own in the last year*[35]*. In Croatia, the allowance for vulnerable energy consumers of HRK 200 is provided*[36]*. In January 2022, the Croatian government took action to reduce the shocks caused by rising energy prices in the following areas: (i) increase the amount of allowance for vulnerable consumers, improve the purpose of these payments and expand their gas supply in addition to electricity; (ii) revision of the whole set of elements for the financial calculation of gas and electricity prices; and (iii) the revision of all elements of the tax and VAT system, which is currently 13% for electricity and 25% for gas*[37]*. In Malta, low-income households may qualify for the so-called "Energy Benefit", managed at national level, which aims to mitigate the cost of water and electricity bills entitling the recipient to an amount to offset 30% of the consumption of electricity prior to the ecoreduction, up to a certain limit. Persons who qualify for the "Energy Benefit" are entitled to an annual Gas Rebate per household. A subsidy for the rental of water and electricity meters is also possible. In the case of Italy there are two national-level measures targeted at low income households which facilitate access to energy: the electricity bonus and the gas bonus. These offer a rebate of the amount to be paid in both bills*[38]*.*

The second set of policy measures focuses on reducing energy consumption and household expenditure, such as: (i) improving the energy efficiency of homes and appliances, (ii) informing and raising awareness of households. These measures are considered to have a long-term impact as they address the causes of energy poverty.

Improving the energy efficiency of homes and appliances that focus on improving the insulation of buildings, heating, ventilation and air conditioning (HVAC), appliances and the generation of renewable energy are opportunities to structurally reduce energy consumption. and reducing household energy costs. Financing these measures can take many forms, from grants to low-interest loans. *Examples of practices include the KredEx Renovation Loan Program - Estonia; Lithuanian Apartment Building Modernisation Programme – JESSICA II; The Latvian Baltic Energy Efficiency Facility (LABEEF) and the Better Energy Warmer Homes Scheme in Ireland*[39].

Energy audits. *A relevant example is that of Catalonia, which supports low-income households by paying for energy audits, by installing low-cost energy efficiency items, by supporting tariff modifica-*

34 Legea 266/2011 privind stabilirea măsurilor de protecție socială pentru consumatorul vulnerabil de energie. https://legislatie.just.ro/Public/DetaliiDocument/246430

35 https://pomosti.com/socialni-pomosti/pomost-za-otoplenie/

36 https://gov.hr/en/allowance-for-vulnerable-energy-buyers/746

37 https://vlada.gov.hr/news/three-segments-to-mitigate-energy-price-hike/33799

38 ESPN (2020). Access to essential services for people on low incomes in Europe. An analysis of policies in 35 countries. Authors: Baptista, I. & Marlier, E., Page. 68. https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8340&furtherPubs=yes

39 Community Tailored Actions for Energy Poverty Mitigation (2021). Overview report on energy poverty concept. Energy poverty in the privately-owned, multi-family environment. https://www.bpie.eu/wp-content/uploads/2021/05/ComAct-D1.1_Overview-report-on-the-energy-poverty-concept_Final-version_UPDATED-1.pdf

tion procedures, and by training residents in efficient consumption habits. After conducting an energy audit of a household, they receive personalized advice on how to reduce their energy consumption and support for the implementation of energy-efficient appliances. In addition, they are provided with training so that they can change their energy-consuming habits. The regional government supports local authorities in creating and managing the implementation of the program[40]. Another example is that of Romania, where the legal framework allows local public authorities to implement certification and energy audit programs for residential buildings for vulnerable consumers[41].

Informing and awareness raising. *An example is the French public authorities (local and national) and private partners, which through the Local Energy Management Intervention Service (SLIME), support/inform poor households in improving energy management at home. Also, thanks to the energy-saving certification system, up to 70% of community expenditure can be funded under the SLIME program[42]. In case of Hungary, consumers in arrears must be informed of the options available to them (e.g. support measures and respective eligibility conditions) so as to keep their access to the services. Likewise, in Lithuania, municipalities are responsible for providing information and consultation for people on low incomes, to facilitate their access to home heating and hot water subsidies[43].*

III.2. Moldovan Social Policy Mechanisms to Reduce Poverty

III.2.1. Social Aid Benefit

The "social aid benefit" or the "poverty benefit" currently represents the only governmental program targeting poor families/households and is not specifically targeting energy poverty. Since its implementation in 2009, a switch has been made from the compensating mechanism of monetary social assistance provision based on principles of determining the eligibility categories to the mechanism of testing the wellbeing of the family/household targeting the provided benefits. Hence, the following categories are entitled to get the social aid benefit – Ajutor social: disadvantaged families/households[44] whose adult members fit at least one of the following situations:

- reached the necessary age for setting the pension according to the legislation;
- are persons with disability degrees;
- are unemployed registered with territorial employment offices and do not refuse participating in activities of community interest;
- are in between the 30th week of pregnancy and 12th week after birth, in case if the child is born dead or dies during the postnatal leave, or take care of a child aged under 3 years old;

40 Audituri și intervenții în locuințe aflate în situație de sărăcie energetică. **https://www.diba.cat/web/benestar/auditories**

41 Legea 266/2011 privind stabilirea măsurilor de protecție socială pentru consumatorul vulnerabil de energie. **https://legislatie.just.ro/Public/DetaliiDocument/246430**

42 Programme Slime. **https://www.lesslime.fr/le-programme/**

43 ESPN (2020). Access to essential services for people on low incomes in Europe. An analysis of policies in 35 countries. Authors: Baptista, I. & Marlier, E., Page. 71. **https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8340&furtherPubs=yes**

44 Disadvantaged family – the family with a monthly average global income lower than the guaranteed minimum monthly income, and has accumulated a score for wellbeing indicators which is lower or equal to the one set for assessing the wellbeing of the family. Art. 3, para. 7 of the Law no. 133/2008 on Ajutor social. **https://www.legis.md/cautare/getResults?doc_id=129347&lang=ro**

- take care of a family member(s) needing care from a third person, according to the conclusion of the medical advisory council of the public medical-sanitary institution;
- have incomes from paid full-time or part-time employment, from entrepreneurship activity or activities related to the use of agricultural fields in an area outside of the locality.

The eligibility for Ajutor social and the amount of the benefit is determined based on the difference between the monthly average global income of the family/household and the state guaranteed minimum monthly income (GMMI), which is close to the international line of absolute poverty per day of 4.3 USD per day[45], as well as using the set of proxy-means testing indicators, with a score which should not be exceeded.

The **GMMI** of the family represents the sum of guaranteed minimum monthly income amounts established for each member of the respective family, and namely:

- 100% of the guaranteed minimal monthly income for the applicant;
- 70% of the guaranteed minimal monthly income for each adult family member;
- 75% of the guaranteed minimal monthly income for each child;
- plus 30% of the guaranteed minimal monthly income for each adult with a disability degree;
- plus 50% of the guaranteed minimal monthly income for each disabled child;
- plus 10% of the guaranteed minimal monthly income, if the person with registered disability degree is the only adult in the family.

All of the above imply different values for the benefits depending on the number of family/household members.

It should be mentioned that as of 2021, the GMMI is indexed 2 times per year: on April 1 (the indexation coefficient represents the average annual increase of consumption price index for the last 3 years) and October 1 (inflation rate registered during the first semester of the respective year). The development of indexed GMMI amounts is provided in Table 12 bellow.

Table 12. **DEVELOPMENT OF INCREASES IN GMMI AFTER INDEXATION**

	1.04.2019	1.04.2020	1.04.2021	1.10.2021
GMMI (lei)	1,056	1,107	1,151	1,196
Indexation coefficient (%)	3.0%	4.8%	3.89%	3.86%

Source: p.1[1] from GD 1167/2008

The following is considered when establishing the **global income of the family/household:** monetary incomes obtained from paid work, incomes from all types of entrepreneurship activity, incomes from use of agricultural fields and land plots, as well as other types of income, including from insurance and social assistance benefits. At the same time, the following types of incomes are exempted from the calculation of the global income of the family/household:

- 200 lei from the declare salary amount for each employee from the applying or benefiting family/household;
- 200 lei from the allowance for taking care/raising a child for every child for whom such an allowance is paid;

45 But it is not anchored either in the national absolute poverty line or the minimal subsistence level.

- Incomes obtained from farms' agricultural activity and auxiliary households or from activities based on use of agricultural fields for families composed only from members unfit for work (children; persons with registered disability degree; persons who reached the age of 75 years old (62 years old for the allowance for the cold period of the year));
- one-time allowance for child's birth;
- assistance provided in case of death;
- payments provided for liquidating the consequences of natural calamities or exceptional situations;
- travel costs within the limits set by the Government;
- one-time allowance for unemployed person's, based on the individual labor contract in localities at a 30 km distance from the locality in which he/she domiciles, equal to the average salary per economy for the previous year;
- one-time allowance for settlement in another locality for unemployed persons employed on individual labor contract, equal to 3 average salaries per economy for the previous year;
- ajutorul social, allowance for the cold period of the year, single support, state financial support, material support from budgets of all levels, including from local funds and/or Population Support Fund, with special destination – material support provided to socially vulnerable persons from the Population Support Fund.

Wellbeing indicators (or proxy indicators) represent the second element used in determining the eligibility of a family/household for Ajutor social and include a set of points to be taken into consideration, both: the composition of the family/household, as well as movable or immovable property owned and/or used, and the characteristics of the dwelling, such as: (i) gas consumption by the family/household and use modality: via centralized pipeline and/or in cylinders; and (ii) the main source of hot water in the dwelling: public network, electrical or gas boiler, wood- or coal-based boiler, or no hot water. Hence the score obtained by cumulating the points obtained by the family/household should not exceed the score set by the Government for the year of reference, otherwise it loses eligibility. The score set for 2022 is 94.10 points, which is an increase with 2.82 points as compared to the previous year (*see Table 13 below*).

Table 13. **DEVELOPMENT OF DISADVANTAGED FAMILY/HOUSEHOLD WELLBEING INDICATORS' SCORES**

	2019	2020	2021	2022
Score of family wellbeing indicators	85.64	88.46	91.28	94.10

Source: p.29 of GD. 1167/2008

Although Ajutorul social is currently considered to be one of the best targeted social assistance program, nevertheless, it cannot reduce the dependence of disadvantaged families/households from these benefits with as soon as they enter the system, they stay there for a long period[46]. According to the data of the Ministry of Labor and Social Protection, about 78,000 thousand disadvantaged families/households benefited from Ajutor social in 2019 (or about 160,000 persons)[47].

46 The entitlement to Ajutor social based on an application is established for a period up to 2 years, but it is reviewed every 12 months to identify any changes that might influence the right to this benefit and the set amount for the respective benefit. Hence, if no changes occurred over the 12 months, upon the expiration of the mentioned period, the poor disadvantaged family/household continues to be eligible and may lodge a new application for provision of this benefit.

47 MHLSP (2020). Annual Social Report 2019.

III.2.2. Assistance for the Cold Period of the Year (APRA)

Despite not being explicitly defined as targeting energy poverty, the assistance for the cold period of the year (APRA) is designed to support households during the five cold months, from November to March, when they are most vulnerable from the energy perspective. APRA represents a component of the Ajutor social Program and is provided to disadvantaged families/households simultaneously with the Ajutor social benefit and under the same conditions. It should be mentioned that in case of this benefit, to evaluate the eligibility of the disadvantaged family/household, the GMMI is increased by 2.2 times[48] accounting for 2,361.2 lei as of October 1, 2021 (*see Table 10 below for the GMMI increase dynamic for APRA*). The APRA amount is 500 lei monthly, but for the purpose of supporting the disadvantaged families/households as a result of energy price increase, by derogation, during November 1, 2021 – March 31, 2022, the amount of the respective benefit is 700 lei monthly. During this period, APRA is established for disadvantaged families/households, whose average monthly income is lower than the GMMI increased by 2.6 times, and in the eligibility assessment the score of welfare indicators is not applied.[49]

Table 14. **DEVELOPMENT OF GMMI AMOUNT TO DETERMINE THE ELIGIBILITY FOR APRA**

	1.04.2019	1.04.2020	1.04.2021	1.10.2021
GMMI amount (lei MDL)	1,056	1,107	1,151	1,196
Multiplier for APRA	1.95	2.2	2.2	2.2
GMMI amount for APRA (lei MDL)	2,059.2	2,435.4	2,532.2	2,631.2

Source: art. 151 of the Law No. 133/2008

In 2020, the number of ARPA beneficiaries was around 200 thousand disadvantaged families /households.

III.2.3. Profiling of Beneficiaries of Social Aid and APRA Support

The data on the application for social assistance (SA) and the cold period of the year (APRA) were used for the data visualization and analysis process. The data set contains information for the years 2020-2021. Based on the set, the view panel was created where the data were aggregated based on location (LPAs) and administrative districts.

Currently, the Government is providing support to those in need based on the Social Aid and APRA mechanisms that are complementary. A detailed analysis of the end-users of such programs since 2020 is presented below in Figure 35-36.

48 Via Law No. 155/2019, as of 01.01.2020, the multiplier for GMMI used to establish the entitled for the allowance during the cold period of the year was increased from 1.95 to the current 2.2. **https://www.legis.md/cautare/getResults?doc_id=119315&lang=ro**

49 Law No. 190/2021, on the modification of the condition for the establishment and granting of aid for the cold period of the year. **https://www.legis.md/cautare/getResults?doc_id=129680&lang=ro**

Figure 35. **PRESENTATION OF THE SIIAS/APRA COVERAGE FOR 2020 YEAR**

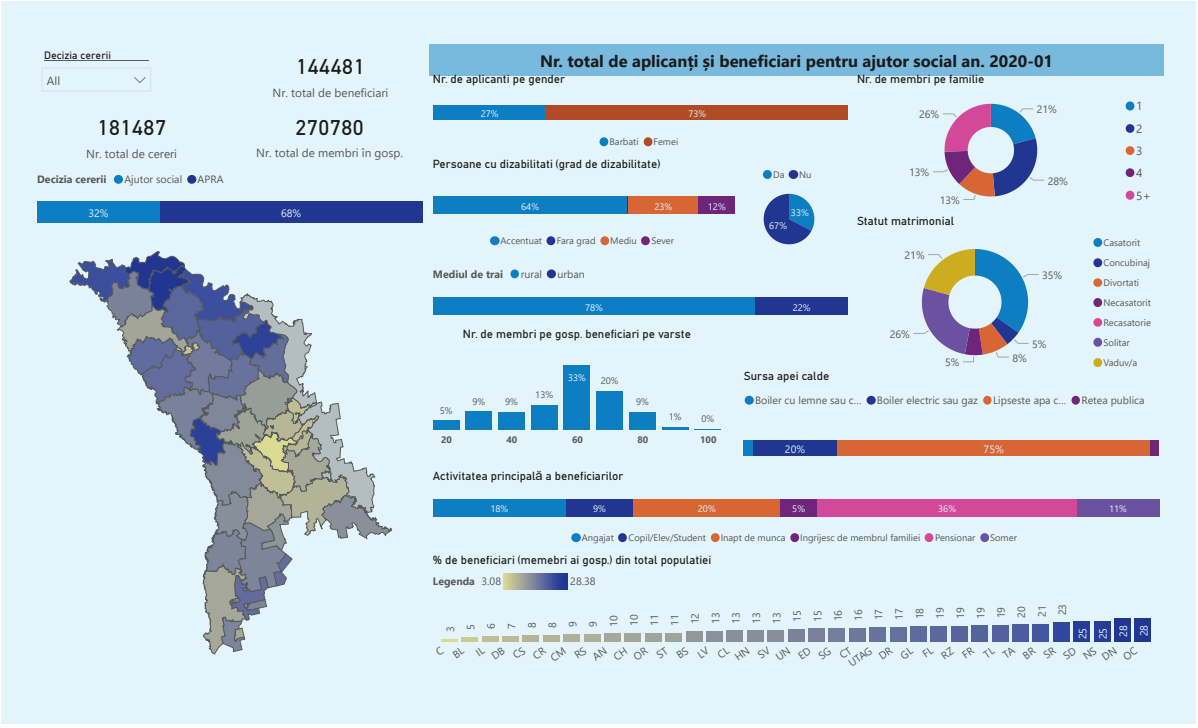
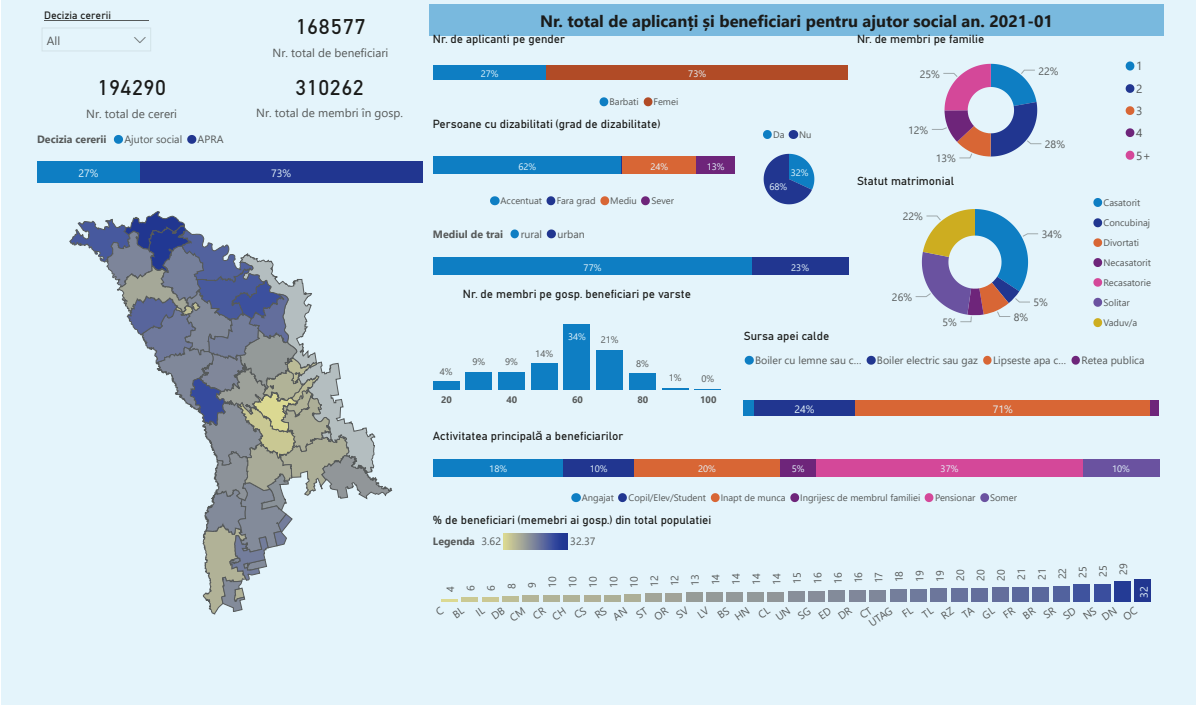


Figure 36. **PRESENTATION OF THE SIIAS/APRA COVERAGE FOR 2021 YEAR**



The images show the distribution of applications for the period 2020-2021, relative to the total population according to the 2014 Census. According to the data, there is a request for aid in the northern districts of the country, especially Donduseni and Ocnita, as well as in Nisporeni.

A dashboard containing all available disaggregation of data and a synthesis of the key insights can be derived from such evidence. This will include visualization of the following parameters:

- Urban and rural
  - ⅔ of applicants located in rural area
  - in territorial aspect, the north of the country represents the most requests
- Distribution of aid according to gender, people with disabilities
  - ⅔ of the applied applications are submitted by women
  - more than half of those applied are pensioners and 32% are people with disabilities
    - out of the total number of applications submitted by people with disabilities, 60% have a degree of accentuated disability

III.2.4. Monetary Social Support for Disadvantaged Families/Persons

The monetary assistance provided under the social support for disadvantaged families/persons[50] is part of the minimum package of social services[51] and represents a monetary amount which is not reimbursed, not taxed, and provided as a single time and/or monthly payment for a determined period of time, but not longer than 6 months. The amount of the monetary social support does not exceed 6,000 lei. The purpose of this support is to prevent/decrease/overcome difficult situations encountered by the disadvantaged families/persons in order to reduce their social marginalization and exclusion. The monetary support is provided for:

- repairing the dwelling and/or repairing/building the fireplace;
- adjusting the dwelling to the needs of disadvantaged family/person;
- buying fuel for cooking and heating during the cold period of the year;
- buying furniture adjusted to specific needs;
- other needs established in the individualized assistance plan for the beneficiary.

It should be mentioned that for families/households benefiting from Ajutor social/APRA, when determining their eligibility for the monetary support, the needs mentioned in the cooperation agreement signed by the beneficiary and territorial social assistance structure (STAS) are taken into consideration in order to avoid duplication of provided assistance.

III.2.5. On-bill Compensations

In order to reduce the effects of the shock generated by the increase of natural gas prices on the population and increase its social protection, the Government, at the end of 2021, implemented the on-bill compensation mechanism of the difference in prices for natural gas /thermal energy used during cold of the year (November-December 2021; January-March 2022)[52]. Under this mechanism, the calculation of the on-bill price difference compensation is

50 Government Decision No. 716/2018 approving the Framework-Regulation for organization and operation of the Social Service of monetary support meant for disadvantaged families/persons. **https://www.legis.md/cautare/getResults?doc_id=125330&lang=ro**

51 Government Decision No. 800/2018 approving the minimum package of social services and amending the Regulation on how to establish and pay the material support. **https://www.legis.md/cautare/getResults?doc_id=113486&lang=ro**

52 Law No. 192/2021, on compensating for the difference in price for gas / heat consumption during the cold period of the year. **https://www.legis.md/cautare/getResults?doc_id=129682&lang=ro**

performed by natural gas suppliers, heat suppliers and/or settlement intermediaries. And the process of paying the compensation of the calculated price difference is carried out through the Ministry of Labor and Social Protection, by transferring the budgetary financial means approved for these purposes (294 million lei from the Government reserve fund for February-March 2022[53]) to the accounts suppliers' settlement.

Thus, each household consumer of natural gas (by derogation from the legal provisions in the period January-March 2022), in the bill is compensated the price difference following the increase of the regulated prices for the supply of natural gas in proportion: (i) of 79.8% for the first 50 m^3 consumed per month and; (ii) 69.5% for the next 100 m^3 consumed over the first 50 m^3 consumed per month[54]. In the case of household consumers connected to the district heating system (for heating and hot water preparation), they are compensated 80% of the price difference following the increase of regulated heat tariffs for a monthly volume consumed up to 1.5 Gcal inclusive.

This compensation mechanism is implemented in parallel with APRA and is similar to the one implemented in the municipality Chisinau, but the compensations are granted on universal principles, without establishing any special eligibility criterias and targeting to energy poverty vulnerable groups, which suggesting about the waste of the financial resources and the need for revision and improvement measures.

III.2.6. Financial Sssistance for Energy Resources Mechanism in Chisinau Municipality

A specific model to compensate the vulnerable groups for the costs associated with increased tariffs for energy resources meant for utilities is implemented in Chisinau municipality[55]. According to the respective model, the following costs are compensated during the cold period of the year:

- natural gas and electricity used for heating and hot water (an amount of 500 lei);
- district heating and supply of domestic hot water (40% monthly of the amount calculated according to the tariff in force for thermal energy).

Financial assistance for thermal energy supply (hot water and heating) is provided through transfer of financial means to the settlement accounts of: (i) service suppliers/providers (in case of direct contracts concluded with consumers); (ii) intermediates when making the payments (in case of contracts concluded between the administrator of the dwelling fund and consumers), based on contracts concluded between the empowered authority and the providers/suppliers and intermediates when making the payments.

At its turn, *the financial assistance for natural gas supply for autonomous heating during the cold period of the year and for water heating* is provided through transfer of financial means to the accounts of district praetors' offices, village (commune) and town mayoralties from Chisinau municipality, with subsequent provision of cash to the beneficiaries.

53 The disposition no. 4 of 18.02.2022 of the Commission for Exceptional Situations of the Republic of Moldova. https://cancelaria.gov.md/sites/default/files/dispozitia_cse_nr.4_18.02.2022.pdf

54 The disposition no. 7 of 04.03.2022 of the Commission for Exceptional Situations of the Republic of Moldova. https://gov.md/sites/default/files/document/attachments/dispozitia_7.pdf

55 Decision of Chisinau Municipal Council No. 8/12 of 12.10.2021 approving the Regulation on provision of financial assistance for certain categories of citizens from Chisinau municipality, for making the payments for energy resources and utilities. https://www.chisinau.md/doct.php?l=ro&idc=408&id=35859

It should be mentioned that the *financial assistance for paying for electricity used for heating the dwelling and water heating* is provided on the condition that the consumer has the provider's authorization to use electricity for these purposes and has no other heating sources.

The second element of the compensating model in the municipality is the *financial assistance for utilities*, which is provided to disadvantaged categories over the entire year, in order to cover: (i) the difference as a result of tariff increase for solid domestic waste transportation for multi-level building dwellers (3.65 lei monthly per dweller) and in the private sector (7.30 lei monthly per dweller); and (ii) the difference in the share-part[56] of 10.69 lei each per 1m^3 of water additionally calculated.

The Financial assistance for hot water and sewerage supply (share part) and for covering the difference as a result of increasing the tariff for solid domestic waste transportation is provided through transfer of financial means to the settlement account of the JSC "Apă-Canal Chișinău" and the settlement account of the ME Regia "Salubritate".

The persons whose monthly income per person for the fiscal year preceding the date of lodging the application did not exceed 3,000 lei and in case of young persons[57] - 5,000 lei are eligible to obtain the financial assistance provided for disadvantaged categories. Also, those persons who have been included in the compensating system for making the payment for energy resources during the cold season of 2020/2021 will continue to benefit from this support during the cold season of the current year, without lodging an application for this purpose, if further meeting the eligibility criteria for the respective assistance.

The monthly income per person (MIP) is determined by summing up all the incomes obtained during the previous fiscal year by all family members, persons with legal domicile registered in the beneficiary's dwelling, dividing to the number of dwellers and 12 months.

The following social benefits are exempted from being taken into consideration when determining the monthly income per person: (i) one-time allowance for child birth; (ii) assistance in case of death; (iii) social assistance provided for liquidation of consequences of natural calamities or exceptional circumstances; (iv) social allocations envisaged for persons with the I degree of disability – for accompanying and taking care of them at home, as well as (v) travel expenses and one-off benefits (within the limits set by the Government).

In 2021 the total number of beneficiaries of this financial support were 2,74.76 households, with the total approved budget 72.95 mi. MDL.

56 Share part – payment for water volume calculated additionally, after distribution per each flat the difference between the water volume registered according to the common meter installed at the connection with the dwelling block and the water volume indicated by the individual meters of dwellers.

57 Both or one of the spouses reached 35 years old, or the family is composed of one single parent, who did not reach the respective age.

IV. Main Findings and Recommendations

IV.1. Energy Poverty Definition and Measurement

IV.1.1. Advantages and Limitations of Analyzed Approaches to Defining and Measuring Energy Poverty

The summary results for all approaches are presented in the Table below.

Table 15. **SUMMARY RESULTS FOR ALL APPROACHES**

	Energy Poverty Incidence in total population (2020)	APRA eligibility	APRA coverage
The 10% approach	57.2%	35.3%	17.1%
Double the weight of the median approach	12.0%	57.5%	23.7%
Energy consumption and income correlation	9.0%	72.5%	19.3%

The analysis shows a series of advantages and limitations for each of the approaches proposed for measuring the energy poverty of the households in Moldova. The summary of them are presented below.

Table 16. **ADVANTAGES AND LIMITATIONS OF THE ENERGY POVERTY APPROACHES**

Energy Poverty approaches	Advantages	Limitations
"the 10% approach"	• Simple to define and measure EP, as well as to implement the compensation mechanism • Extremely high coverage of support mechanism	• Largely outdated approach • EP incidence in Moldova would arguably reach 63% of population, while over 50% incidence of EP is contrary to the recommendations of Energy Community Secretariat. • May not capture statistical extremes: could include HHs with "luxury energy consumption" (large private houses, pools, saunas, etc.), as well as exclude HHs with very low consumption on the expense of wellbeing.
"Double the weight of the median approach"	• Defines energy poverty relative to other members of the specific society • Takes into account evolution of society's general growth of comfort (and energy consumption) level	• EP incidence in Moldova would arguably be less than 10% of population in 2021, which is lower than the coverage of the existing APRA mechanism. • May not capture statistical extremes: could include HHs with "luxury energy consumption", as well as exclude HHs with very low consumption on the expense of wellbeing.

Energy Poverty approaches	Advantages	Limitations
"Energy consumption and Income correlation approach"	• Good targeting: targets the population with lowest income levels • Creates basis for defining minimal energy consumption basket	• Low coverage: EP incidence in Moldova would arguably be around 9% of population in 2021, which is lower than the coverage of the existing APRA mechanism • By definition captures HHs with minimal (survival level) energy consumption, which is highly probable to be below decent live standards

IV.1.2. Proposed New Approach for Definition of Energy Poverty (EP)

The strategic documents drafted and updated within the framework of Moldova's international commitments mention energy poverty issues without further elaboration of criteria, measures, and responsibilities for its alleviation. Legal aspects of the issue of energy poverty are currently covered by energy and social assistance legislation. Legislation on the energy sector (Law on Energy, Law on Electricity, Law on Natural Gas) recognizes categories of vulnerable consumers as socially disadvantaged categories, according to social assistance legislation, and is handled by specific support schemes within the social protection system. The definition of energy poverty provided in the Law on Energy Efficiency covers all main aspects as defined in the latest European Commission Recommendation on energy poverty (2020):

a. Access: availability of infrastructure to access energy services;

b. Affordability: purchasing power (income sufficiency for covering energy resources costs);

c. Wellbeing: sufficiency of energy consumption for ensuring basic comfort and social participation (e.g. temperature in home, use of equipment).

However, the current Energy Poverty definition is more cumbersome than the definition provided in the latest European Commission Recommendations on energy poverty. Also, in order to comply with obligations assumed under Enery Community Treaty with regards to transposing The Governance Regulation (EU) 2018/1999 (art.3), while developing the integrated National Energy and Climate Plan, Moldova will have to "*assess the number of households in energy poverty taking into account the necessary domestic energy services needed to guarantee basic standards of living in the relevant national context, existing social policy and other relevant policies, as well as indicative Commission guidance on relevant indicators for energy poverty*".

Such assessment would require defining the necessary domestic energy services, and the new approach proposed is to define these services for different types of households, based on their main source of heating.

The reasons for applying such a differentiated approach are:

i. In Moldova, access to main energy infrastructure (except for domestic hot water) is almost universal: almost 100% of households have access to electricity and are provisioned with a source of heating for the cold period. Heating represents both the largest share of total energy consumption in accordance with the Energy Balance, and accounted for over 60% of households' total energy expenses in accordance with Household Budget Survey for 2020. For comparison, the second largest energy cost for households (electricity) represents approximately 25% of the total energy expenses. Moreover, unlike households incomes and

other energy costs, heating costs are unevenly spread throughout the year, putting most of the pressure on households' budgets during the cold period (November-March) aggravating the energy poverty vulnerability.

ii. Depending on the type of the heating, households are buying different types of fuel/energy sources. Although prices among energy sources have a certain degree of correlation, there's significant differences both in terms of the magnitude of fluctuations as well as the timing. Thus, following the signature of the new contract with Gazprom in October 2021, households natural gas prices spiked from 4.64 MDL/cubic meter to 11.08 in November-December 2021 and 15.19 in January 2022, an overall increase of +227%. In the same time, district heating prices in Chișinău increased from 1,122 MDL/Gcal (October 2021) to 1,772 (November-December 2021) and 2,169 (January 2022), which is an increase of +93%. During the same period, in Bălți, district heating costs increased by +73% "only", while end user electricity prices will increase by 23-43% (depending on the area of residence) starting from April 2022, which means that electricity prices shock will come outside the cold period of the year. Needless to say, the impact on affordability would be extremely different for households that use electricity as their main heating source compared to those who use natural gas or are connected to district heating.

iii. Due to technical peculiarities, unlike consumers that use other main sources of heating, the overwhelming most of consumers connected to district heating cannot adjust their heat consumption in order to cope with increasing costs of energy. Moreover, even if the temperature in their homes is above their comfort level, they cannot reduce it other than by opening windows and basically wasting part of the energy they are forced to consume and pay.

iv. Changing the main heating source for a household usually requires major investments, which makes it extremely difficult, particularly for the poor households.

The Household Budget Survey operates with the following categories of households, based on their main heating source:

- District heating
- Individual (autonomous) heating system [natural gas based]
- Stove fueled with natural gas
- Stove fueled with firewood, coal, oil
- Convector/air conditioner [electricity based]

The HBS so far does not cover the option of local thermal plants for multi-level residential blocks or a group of blocks as the main heating source. Although such systems are similar to district heating, they are different in that their costs are different from regulated district heating prices and are tightly correlated with prices for natural gas. The number of such households is estimated to be at least 10,000.

Additional to Energy Poverty indicators monitored by Eurostat, it is proposed to use the eligibility criteria for beneficiaries of APRA mechanism to define households affected by Energy Poverty in Moldova. The APRA mechanism (including the eligibility criteria) will need to be updated (see the Section below for more details).

IV.2. Support Mechanism(s) for Energy Poor

IV.2.1. Assessment of Current Compensation Mechanisms

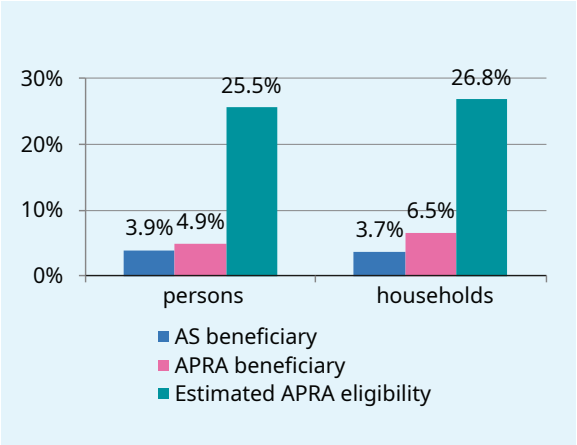
IV.2.1.1. APRA

According to HBS data in 2020, a share of 3.7% of the total household during the year benefited from Social Assistance (which included 3.9% persons), about 6.5% benefited from APRA (4.9% persons). At the same time, 26.8% of households (25.5% persons) were estimated to be eligible for APRA.

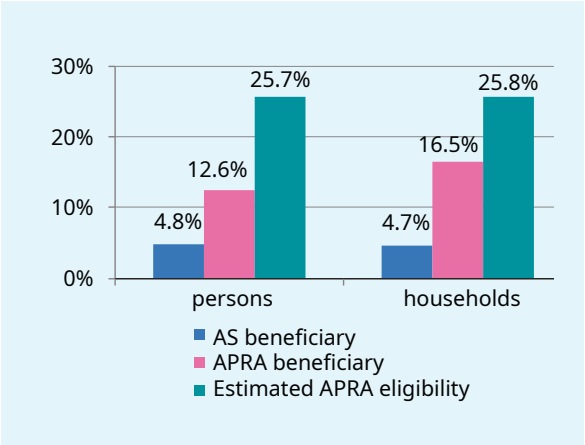
If we analyze only the cold period of the year which includes 5 months (December, January-April), then the proportion of the beneficiaries are more pronounced especially of the households benefiting from APRA, which constituted 16.5% of households (12.6% persons).

Figure 37. **ACCESS TO SOCIAL SUPPORT AND ESTIMATED ELIGIBILITY, %**

Total year



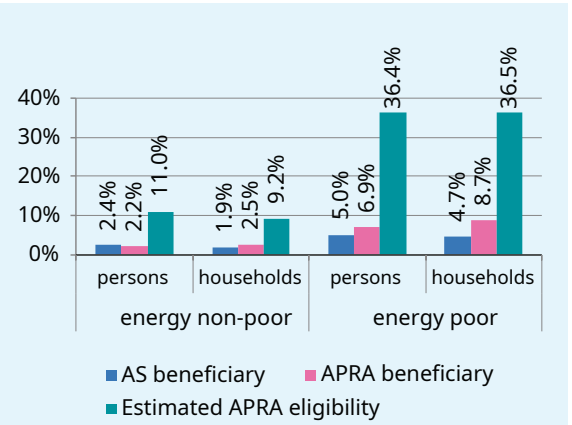
Cold period: December, January-April



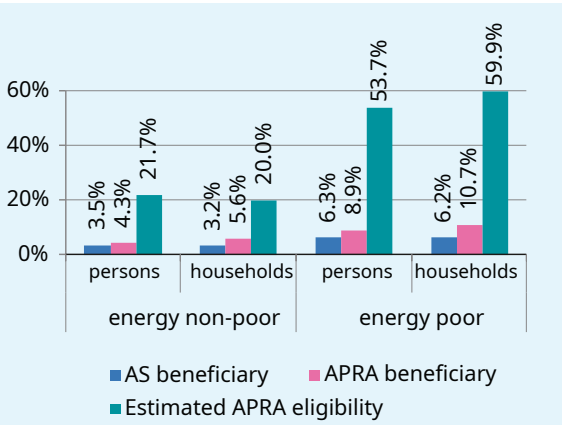
The analysis of the situation in relation to the two thresholds of energy poverty shows that among the energy-poor households considerable shares are estimated as eligible for APRA: about 36.5% of households (36.4% persons) of those with energy expenditures>10% of disposable income, as well as 59.9% of households (53.7% persons) have higher energy expenditures than twice the median.

Figure 38. **ACCESS TO SOCIAL SUPPORT AND ESTIMATED ELIGIBILITY IN CORRELATION WITH ENERGY POVERTY, TOTAL YEAR, %**

expenditures for energy >10% of disposable income



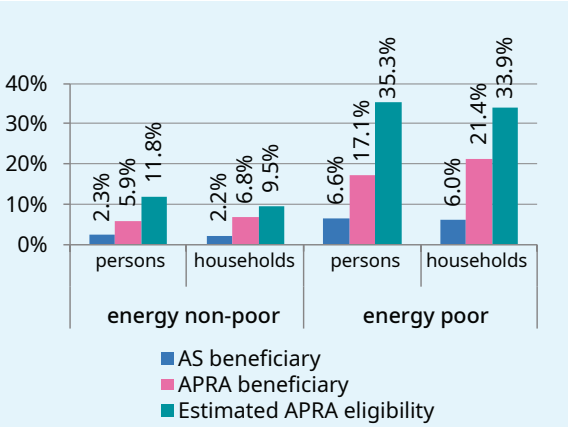
share of energy expenditure > double median (2M)



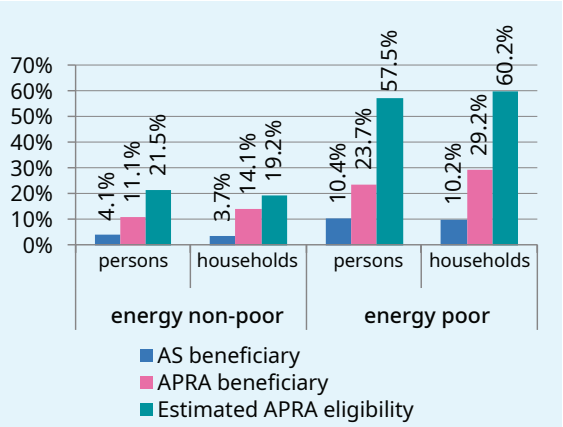
In the case of the cold period of the year (December, January-April) there are more pronounced proportion of both APRA beneficiaries and those estimated to be eligible. These proportions are significantly higher when estimating energy poverty compared to twice the median share of energy expenditure in disposable income.

Figure 39. **ACCESS TO SOCIAL SUPPORT AND ESTIMATED ELIGIBILITY IN CORRELATION WITH ENERGY POVERTY, COLD PERIOD (DECEMBER, JANUARY-APRIL), %**

expenditures for energy >10% of disposable income



share of energy expenditure > double median (2M)

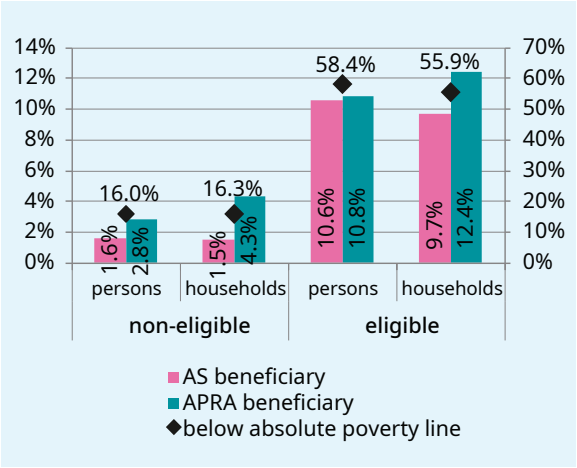


In case of households considered eligible for APRA throughout the year, the shares of those who de facto benefit from both AS and APRA are about 10%, both households and individuals. In the case of analyzing the situation only with reference to the cold period of the year, about 1/3 of eligible households (27.9% persons) benefited from APRA support, and about 12% households and persons from AS.

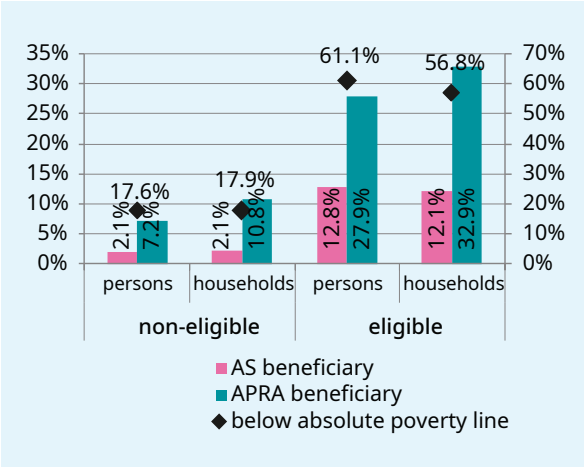
It should be mentioned that among the households estimated as eligible by APRA, the incidence of absolute poverty is particularly pronounced, registering about 56% of households (60% persons). In the case of those not eligible for APRA, the incidence of poverty is about 16% per year and almost 18% during the cold period of the year.

Figure 40. **ESTIMATED ELIGIBILITY IN CORRELATION WITH SOCIAL SUPPORT AND POVERTY, %**

Total year



Cold period: December, January-April



The analysis of eligibility and coverage with APRA based on the selected international approaches is presented below.

Over 10% approach

Estimates based on the HBS by application of the *"energy expenses over 10% of disposable income"* approach showed that in 2020 over ¼ (or 25,5%) of households were eligible for APRA. Among the energy-poor households, the share of those eligible for this benefit was 36.4% and 11% of the non-energy-poor. It should be noted that the situation varies insignificantly if we analyze the eligibility for APRA only in the cold period of the year (December, January-April). Thus, the share of households eligible for the respective benefit being 25.7% of the total households, of which 35.3% of the energy-poor households were eligible and 11.8% of the non-energy-poor households (see Figure 41).

The analysis of the coverage of households with APRA shows that, during the reference year, only 4.9% of households were covered with this benefit, or 6.9% of energy-poor households and 2.2% of non-energy-poor households. The differences are significantly accentuated in the case of the analysis of the APRA coverage of households in the cold period of the year. Thus, 12.6% of households were covered by APRA. In the case of energy-poor households only 17.1% were covered by this benefit and in the case of non-energy-poor households it was 5.9% (see Figure 42).

Figure 41. **ENERGY POVERTY "OVER 10%" AND APRA ELIGIBILITY**

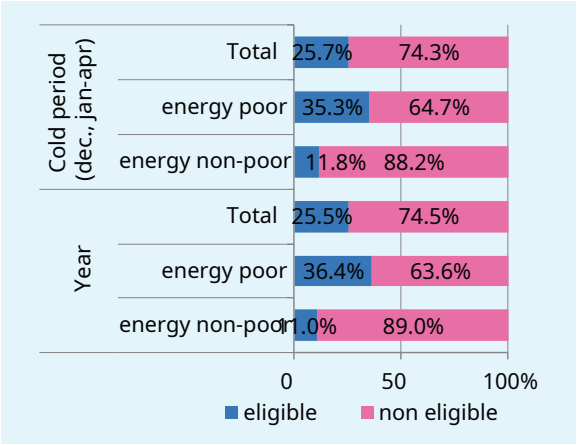
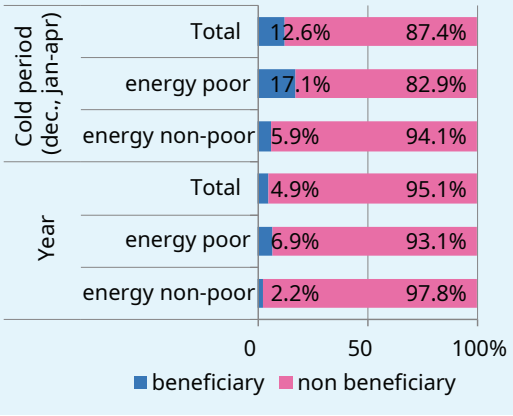


Figure 42. **ENERGY POVERTY "OVER 10%" AND APRA COVERAGE**



Double the weight of the median approach

Estimations with the application of the *"energy expenses weight in total income are twice as median"* approach showed that in 2020 eligible for APRA were over than 1/2 of the energy poor households (53.7%) and over than 1/5 (21.7%) of the non-energy poor households. As in the case of the "over 10% approach" analyzed above, the situation remains practically unchanged if we analyze the eligibility of households for APRA only for the cold period of the year, the share of energy-poor households being 57.5% and 21.7 % of non-energy poor households (see Figure 43).

Regarding the coverage with APRA, the data show that, during the reference year, only 8.9% of the energy-poor households and 4.3% of the non-energy-poor households were covered by this benefit. Significant differences are observed in the coverage with APRA in the case of the analysis during the cold period of the year, the share of energy-poor households increasing being 23.7% and 11.1% of non-energy-poor households (see Figure 44).

Figure 43. **ENERGY POVERTY "DOUBLE THE WEIGHT OF MEDIAN APPROACH" AND APRA ELIGIBILITY**

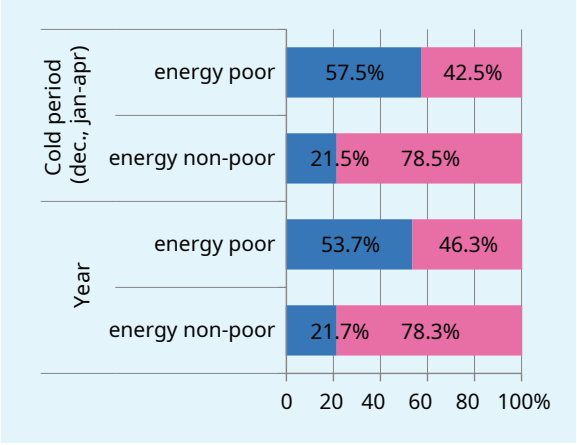
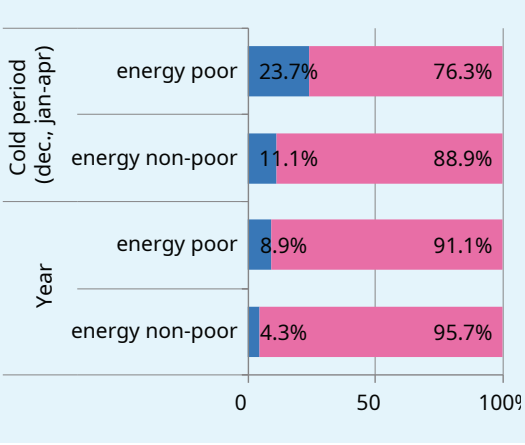


Figure 44. **ENERGY POVERTY "DOUBLE THE WEIGHT OF MEDIAN APPROACH" AND APRA COVERAGE**



Energy consumption and income correlation approach

According to estimates by application *"Energy consumption and income correlation"* approach, over 2/3 (or 63%) of the energy-poor households and over 1/5 (21.8%) of the non-energy poor households were eligible for the APRA in 2020. It should be noted that the analysis of eligibility for APRA only for the cold period of the year shows that the share of energy-poor households increases up to 72.5%, while non-energy-poor households decrease insignificantly, amounting to 20.8%. (see Figure 45).

Regarding the coverage with APRA, the data show that, during the reference year, only 7.9% of the energy-poor households and 4.6% of the non-energy-poor households were covered by this benefit. Significant increases are observed in the coverage with APRA in the case of the analysis during the cold period of the year, the share of energy-poor households being 19.3% and 11.8% of non-energy-poor households (see Figure 46).

Figure 45. **ENERGY POVERTY "ENERGY CONSUMPTION AND INCOME CORRELATION APPROACH" AND APRA ELIGIBILITY**

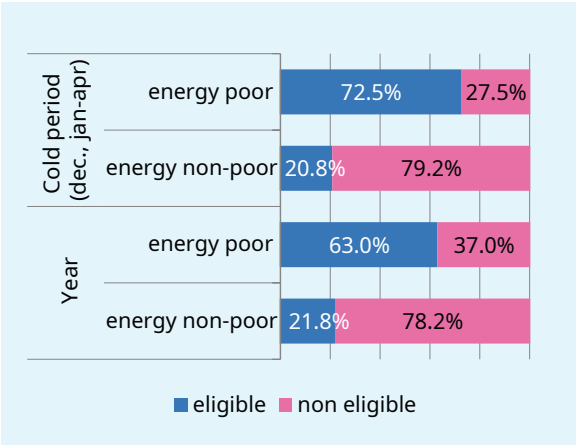
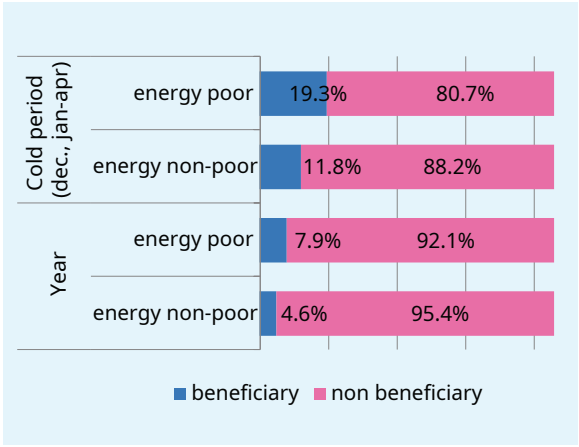


Figure 46. **ENERGY POVERTY "ENERGY CONSUMPTION AND INCOME CORRELATION APPROACH" AND APRA COVERAGE**



In conclusion, we can say that all 3 analyzed approaches suggest the need to revise the current mechanism of APRA grating to increase the inclusion in this support of the energy-poor households.

IV.2.1.2. On-bill Financing Mechanism

The on-bill financing mechanism introduced in November 2021 is not an energy poverty intervention measure, and not even a mechanism targeting income poverty, since it has been applied to all natural gas consumers and households with district heating as their main heating source, irrespective of their exposure to poverty. Despite the on-bill compensations mechanism already being provisioned with the option for consumers to "unsubscribe" from the compensation provided by the Government, still the number of such "unsubscriptions" is extremely low, which means that most of the allocated resources are spent on households that are not affected by Energy or Income Poverty.

It is proposed that the application of the mechanism is not extended beyond April 2022, while in the future, it is suggested to channel such resources to support only households affected by poverty through existing social protection mechanisms, such as APRA and Social Aid.

IV.2.2. Proposals for Adjustment of Support Mechanisms

Monetary and energy poverty is more accentuated in rural areas. The analysis of the profile of the beneficiaries of Social Aid and APRA based on data from SIAAS, showed that the most affected by poverty are families/households in rural areas, which most often call for support from the state. This is confirmed by the HBS data on the absolute poverty situation, the rate of which in rural areas in 2020 was over 35%, 2.5 times higher than in urban areas. The data also show a more accentuated vulnerability of rural households to energy poverty. They perform not only lower incomes but also higher shares of energy expenditure in relation to disposable income compared to urban households. The analysis of the situation based on the three approaches (over 10%; double weight of median; energy consumption and income correlation) also reflects on a higher incidence of energy poverty for rural households than for urban ones.

There are several applicants for support in the northern part of the country. From a geographical perspective, SIAAS data show that the most affected by poverty is the northern part of the country, where are concentrated the most applicants and beneficiaries of Social Assistance and APRA . The most significant share among them belongs to people over 60+ (retirees), followed by people with disabilities. About 4/5 in total the applicants of these social benefits are women. The vulnerability of the elderly and people with disabilities in rural areas, and especially of women to poverty, is also confirmed by the NBS data on the aging population, according to which in 2021 the aging coefficient for women was 25.8%, being higher by 7.1 percent points compared to that of men 18,9%[58]. At the same time, according to NSIH data, at the beginning of 2022 year, women constituted more than 2/3 of the total number of pensioners, 69.1% of the total number of pensioners for retirement pensions and 50.7% of the total number of beneficiaries of disability pensions. The average pension amount of women in the agricultural sector is 25.5% lower than that of the non-agricultural sector[59] and 24.3% lower than the average pension amount in the country at that time[60]. At the same time, the average amount of the disability pension in the analyzed period was 1,736.9 lei compared to 2,578.5 lei for total retirees[61], covering the minimum subsistence level in the country in proportion of over 70% and over 85% in the rural area[62].

Energy expenses are significantly dependent on the heating source of the house. The data also show that energy poverty in Moldova varies depending on the types of heating used by households and their incomes. Low-income households also have the lowest heating costs, because they tend to reduce them to the maximum as they cannot cover them. The analysis of energy poverty by type of main heating source according to the three approaches (over 10%; double weight of median; energy consumption and income correlation) showed a higher incidence for

58 BNS. Population aging coefficient, at the beginning of 2014-2021. Statistical database. **https://statbank.statistica.md/PxWeb/pxweb/ro/20%20Populatia%20si%20procesele%20demografice/20%20Populatia%20si%20procesele%20demografice__POPrec__POP010/POP011600rcl.px/?rxid=b2ff27d7-0b96-43c9-934b-42e1a2a9a774**

59 NBS (2022). Statistical portrait of women and men in the Republic of Moldova. **https://statistica.gov.md/newsview.php?l=ro&idc=168&id=7319**

60 Estimates based on NBS data. Retirees and the average size of the established monthly pension, by categories of beneficiaries and quarters, 2015-2022. Statistical database. **https://statbank.statistica.md/PxWeb/pxweb/ro/30%20Statistica%20sociala/30%20Statistica%20sociala__09%20PRO/PRO010080trim.px/?rxid=9a62a0d7-86c4-45da-b7e4-fecc26003802**

61 Ibidem

62 NBS (2021). People with disabilities in the Republic of Moldova in 2020. **https://statistica.gov.md/newsview.php?l=ro&idc=168&id=7194**

households using fireplaces with wood, coal, oil, and those using heaters, convectors and air conditioning.

Energy poverty is directly correlated with absolute (monetary) poverty, with certain specific elements that need to be addressed differently. Of the households below the absolute poverty line, with energy expenditure above 10% of disposable income per adult equivalent, the most affected by energy poverty are those that use natural gas heating (autonomous systems and gas stoves). Of the households below the absolute poverty line with energy expenditure, more than double the median share of energy expenditure in disposable income, as well as low-income households, below 9% of the distribution per adult equivalent (energy consumption and income correlation), most affected by poverty households use heaters, convectors and air conditioning.

Existing support mechanisms need to be reviewed and adjusted for more effective targeting of vulnerable groups. The analysis shows that although the state has made available to the population a series of support mechanisms designed to reduce the burden of energy costs during the cold season, and also to reduce the shock caused by the increase in gas prices in 2021, they are insufficiently adapted to capture and reduce the risk of energy poverty that is distinct from monetary poverty. Thus, the analysis of APRA according to HBS and the three approaches (over 10%; double weight of median; energy consumption and income correlation) reflected on the need to review and adapt this mechanism for better capture and targeted protection of energy-poor households. It also needs to revise the current mechanism for compensating for price differences on the bill for natural gas/thermal energy (introduced at the end of 2021 as an emerging measure), which is implemented in parallel with APRA, access to which is based on universal principles without any elements of targeting to those vulnerable to energy poverty.

The current definition of energy poverty in the regulatory framework needs to be revised together with the development of tools for monitoring and evaluating its implementation. Although national energy efficiency legislation contains a definition of energy poverty which meets all the elements of the latest European Commission Recommendations on energy poverty[63], it is not used in the regulatory framework for energy and social protection. At the same time, its implementation cannot be monitored and evaluated due to the lack of a set of indicators and methodologies for measurement, although Moldova has assumed a number of international obligations in this regard, including the 2030 Agenda and its Sustainable Development Goals. All of these are arguments in favor of introducing a clearer definition of energy poverty in the regulatory framework for energy efficiency: "*A situation in which households are unable to access essential energy services, where adequate warmth, cooling, lighting, and energy to power appliances are essential services that underpin a decent standard of living and health*", which to being accompanied by a framework of M&E indicators to monitor its implementation in related national legislation, as well as the evolution of the phenomenon at national level, including an international comparability.

The analysis showed that ***in defining the new mechanism for targeting state social support for energy poverty, a specific approach is needed*** that focuses on: (i) the profile of energy-poor households; (ii) their place of residence; (iii) the main sources of heating used by them; and (iv) the amount of energy income and expenditure of households. At the current stage, APRA is an appropriate model in terms of management capacity, access and cost-effectiveness, which can

63 Commission Recommendation (EU) 2020/1563 of 14 October 2020 on energy poverty.
https://eur-lex.europa.eu/legal-content/RO/TXT/HTML/?uri=CELEX:32020H1563&from=EN#d1e32-40-1

be adapted and streamlined for the incorporation of the new targeting mechanism. To this end, a number of consistent actions could be implemented, namely:

- Maintaining the mechanism for granting APRA at the same time as the Social Assistance, because it is more efficient in administration for the territorial social assistance structures, but also more suitable for support applicants, implementing the "single-window" principle. At the same time, it is necessary to complete the single application for Social Assistance and APRA with fields/indicators for collecting data from requesting families/households on the main energy sources used for heating the house and hot water, the types of electrical equipment used in the household, as well as data on expenditures made for this purpose;

- The transition, in the granting of APRA, from fixed-amount benefit to differentiated value as in the case of Social Aid, but with the application of the GMMI for energy resources and proxy indicators, complemented by energy efficiency indicators;

- Anchoring and adjusting the value of the current GMMI for Social Aid and APRA to the subsistence minimum[64], which can be done annually, gradually (for example in 2-3 years) until it is 100% covered. In the case of APRA, the transition to GMMI with the minimum subsistence level is justified by the fact that its structure, according to the Regulation[65] and the Calculation Methodological Guide[66][9], includes the energy sources used for heating the house (indicator group 045): central heating, gas heating, and so on. These groups could be supplemented later (including for HBS and other heating sources, for example heat supply from an isolated system for a block or group of blocks). At the same time, the transition to anchoring GMMI to the minimum of existence could cover other social shocks in the future.

- Making changes to the regulatory framework and calculation of the subsistence minimum so that it can be produced by the National Bureau of Statistics on a quarterly basis.

- Updating the multiplier for the GMMI in APRA taking into account the evolution of the price increase. It is proposed that it be calculated as the ratio between consumption in the cold and hot period of the year.

- The profile of the applicant/beneficiary (pensioners, including the single elderly, people with disabilities, etc.) should be taken into account in establishing the targeted support within APRA, and it is possible to increase the equivalent adult coefficient for people with a high risk of energy poverty (such as single people).

- Reallocating to APRA the resources of the current mechanism for compensating the price differences on the bill for natural gas/thermal energy, to ensure the principles of directing public resources to the energy poor, as well as avoiding duplication of payments to the same beneficiaries. In this context, the local authorities of Chisinau and Balti municipalities will develop and apply mechanisms to verify and avoid duplication of payments with APRA.

- Beneficiaries of the APRA program could be considered eligible for various complementary forms of energy efficiency support: for example, subsidized energy audit services, national "scrap" programs, or energy investment guarantee and/or subsidy programs renewable

64 Law no. 152/2012, regarding the minimum existence. **https://www.legis.md/cautare/getResults?doc_id=3464&lang=ro**

65 GD. 285/2013, for the approval of the Regulation on how to calculate the size of the subsistence minimum. **https://www.legis.md/search/getResults?doc_id=19426&lang=en**

66 MLSPF Order no. 147/2013, on the approval of the Methodological Guide on how to calculate the size of the subsistence minimum. **https://www.legis.md/search/getResults?doc_id=12102&lang=en**

produced at the place of consumption, etc. To this end, it would be necessary to create a database with vulnerable consumers in order to improve the record in this area.

- It would be necessary to make adjustments to the tax legislation by reintroducing VAT on household consumers, with the possibility of a refund, depending on the consumption of the beneficiary (including APRA beneficiaries). This would allow the accumulation of additional resources to the budget, which could be allocated to the Social Aid and APRA program, but also to finance the Energy Efficiency component of the National Fund for Regional and Local Development.