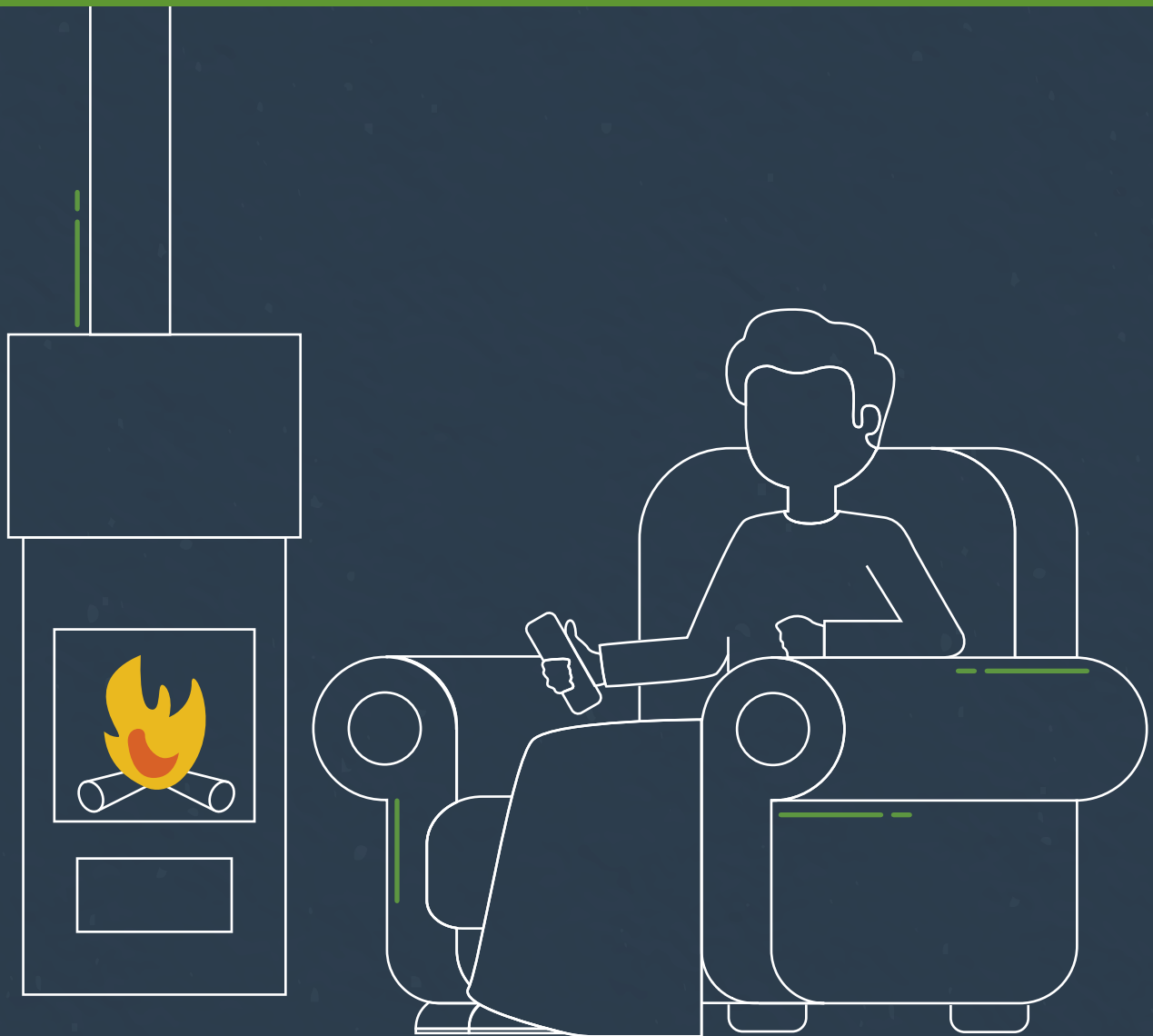


ENERGY POVERTY

Guidance for State Policy and Public Discourse in the Time of Reform

Georgia | Moldova | Ukraine | Romania



Energy Poverty

Guidance for State Policy and Public Discourse in the Time of Reforms

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Energy Poverty – Guidance for State Policy and Public Discourse in the Time of Reforms

Introduction

Energy Poverty is becoming one of the important aspects of social life in Europe. Many households have difficulty in heating their homes and many are having difficulty in paying their energy bills due to growing energy tariffs. It is estimated that more than 50 million households in the European Union are experiencing energy poverty¹.

Eastern Partnership (EaP) countries that are on the earlier stages of their energy transformation, face diverse challenges related to energy supply and consumption. Within the reforms under Energy Community (EnC) membership, the states have to introduce competitive energy markets, improve access to clean, secure and affordable energy sources, protect consumers' rights, implement energy efficiency measures and etc. Many of those activities are directly or indirectly related to Energy Poverty (EP). Countries have to implement measures to reduce and eventually eliminate energy poverty as well.

Addressing the EP will require a proper definition of the problem based on objective indicators, and a policy framework for addressing it, that will be adequate to existing socio-economic conditions and acceptable to governments and population in each of concerned countries. It also requires consensus of stakeholders on the current state of EP and on feasible measures for addressing the issue.

In this process, coordination, experience sharing and consultations between countries may play a very important and practical role. This research paper intends to provide the factual basis, logical framework and recommendations for state policy and public discourse on energy poverty issues based on the country cases from Georgia, Moldova, Ukraine and Romania.

The paper starts with the definition of the concept of EP, its indicators and drivers. Then, it shortly reviews existing legislation in the EU and requirements of particular directives to be implemented under Association Agreement and EnC by the countries. The review of directives is followed up by a thematic framework for EP and indicators for its preliminary assessment. Based on this framework and indicators, 4 country cases are described with more in-depth analysis and recommendations for policy makers.

Energy Poverty is a relatively new concept for the EU and especially for the countries outside EU. There is no unified definition or a set of indicators to measure the problem. Data availability and access to information poses more problems nevertheless it is important to start the research and analysis in order to be prepared for future developments.

What is Energy Poverty?

Energy Poverty is being defined as a situation, when individuals or households are not able to adequately heat their homes, or receive other required energy services at an affordable price².

Energy Poverty is a relatively new concept for academic and policy circles. There have been debates if energy poverty was different from income poverty and required separate treatment. The establishment of a clear definition however not only necessitated the creation of new state policy, but it also opened the path for scientific debate over the causes, components, symptoms and consequences of domestic energy deprivation³.

¹ <https://www.energypoverty.eu/about/what-energy-poverty>

² Insight_E – Energy Poverty and vulnerable consumers in the energy sector across the EU, 2015

³ Stefan Bouzarovski – Energy poverty, 2018

Energy Poverty has received a significant attention as a result of its extensive impact on human well-being and health. The inability to access modern fuels at home forced households to rely on open fires, which in turn led to high levels of indoor air pollution. According to the World Health Organization (WHO), each year, close to 4 million people die prematurely from illness attributable to household air pollution from inefficient cooking practices using polluting stoves paired with solid fuels and kerosene⁴.

Access to modern energy sources is one component of Energy poverty, another important aspect is its affordability. Households that spend high share of income on energy are considered energy poor, as well as households, whose energy expenditures are insufficient, meaning, that they do not consume adequate amount of energy in avoidance of high expenditures.

Three main components of energy poverty are:

- Access to modern clean energy
- low average household income compared to energy prices
- high/growing energy prices;
- Inefficient energy performance of buildings, including thermal insulation, heating systems and equipment

More broadly, Drivers that directly or indirectly impact the affordability of household energy services, and could lead to energy poverty include:

Socio-political systems and infrastructure - previous and current political and economic systems. It is an important influencing factor of energy market development, institutional structures, heating infrastructure, dwelling stock and tenure, and energy supply. Particularly legacies of communist era centrally planned economies. This is a strong determinant of building efficiency, energy systems, policy framework, etc. Electricity and gas networks are strong determinant as well.

Market system -This driver represents the type of energy market, and the extent of liberalization and level of competition, which can have an important bearing on the choice of energy service tariffs /products, and the type of interventions for assisting with energy affordability. There is also a clear link between market competitiveness, tariff choice, and type of specific tariffs under different regimes e.g. regulated prices versus social tariffs.

Climate - in long term this driver determines energy demand, particularly for heating and cooling. It also influences the level of investment in / sufficiency of building fabric efficiency and heating system type.

Economic component - Income - This driver can influence the level of energy service provision, depending on energy costs as a share of income. It also may determine the tenure of a household, the dwelling size, and any additional support that might be available through policy interventions.

Policy framework - This driver represents the policy framework that is in place, explicitly targeted at supporting vulnerable consumers and / or addressing energy poverty. This strongly determines the type of interventions that are put in place. Recognition of the energy poverty challenge is a key driver of related policies, whether that be how social or energy policy is formulated – and resulting interventions. This in turn is informed by socio-political systems⁵.

Energy poverty does not fully overlap with income poverty, although many low-income households are also energy poor. Energy poverty is a useful concept for targeting groups that suffer financial pressure due to energy bills, but are not considered poor under the general poverty definitions.

Energy Poverty in the EU – Existing legislation and initiatives

As noted by the European Commission (EC), a single definition of energy poverty does not exist across the European Union. According to the EC, energy poverty is sometimes described as the ‘inability to keep homes adequately warm’

The European Commission addressed the concept of Energy Poverty (EP) for the first time in 2009, with the publication of Directives 2009/72/EC and 2009/73/EC, which instructed Member States to develop national action plans or other appropriate frameworks to tackle EP.

According to the electricity and gas directives - 2009/72/EC and 2009/73/EC “Energy poverty is a growing problem in the Community. Member States which are affected and which have not yet done so should therefore develop national action plans or other appropriate frameworks to tackle energy poverty, aiming at decreasing the number of people suffering such situation. In any event, Member States should ensure the necessary energy supply for vulnerable customers. In doing so, an integrated approach, such as in the framework of social policy, could be used and measures could include social policies or energy efficiency improvements for housing. At the very least, this Directive should allow national policies in favor of vulnerable customers”.⁶ So, the directives acknowledge the existence of Energy Poverty and say that, protection of vulnerable consumers are minimum requirements to eliminate it. Though the EP is a broader concept than vulnerable customers.

New ‘Clean Energy for all Europeans’ package elaborates the issue further⁷. It consists of eight legislative proposals targeting a variety of sectors: energy efficiency, energy performance of buildings, renewable energy, electricity market redesign, governance rules for the Energy Union, energy security and eco-design. All these legislative proposals make special accent on tackling energy poverty in relation to energy efficiency. After political agreement by the Council and the European Parliament in 2018 and early 2019, enabling all of the new rules to be in force by mid-2019, EU countries have 1-2 years to transpose the new directives into national law. It is expected, that changes will bring considerable benefits from a consumer perspective, from an environmental perspective, and from an economic perspective⁸.

Another important new initiative is Energy Poverty Observatory (EPOV), a 40 months project, which is a part of the European Commission’s policy efforts to address energy poverty across EU countries. EPOV aims to improve the measuring, monitoring and sharing the best practice on energy poverty. The Observatory provides a range of useful resources, including an indicator dashboard, evidence repository, catalogue of practical policies and measures, training material, members’ directory, and discussion forums⁹. It is expected that the EPOV will become a decision support tool for the significant amount of new European Union-wide energy policy, regulation and legislation that will be developed In the near future¹⁰.

All these directives and initiatives create a framework to better understand the issue and start actions to eliminate Energy Poverty. It is important to understand however, that Policies on energy poverty and vulnerable consumers require different approaches. Vulnerable consumers (who are electricity and gas consumers according to the EU Legislation) are an important part of the energy poverty, however energy poverty is not limited to this category.

Energy assistance to socially vulnerable consumers can be considered as a short-term measure in the process of liberalization of energy markets. In contrast, energy poverty is related to a number of factors, like geographical-territorial areas (climatic zones, clean energy access), conditions of the distribution network (security, quality of supply), housing type and energy efficiency of building stock, share of energy expenditure in total income and etc. which requires complex approach and is a subject of long term policy. State Energy Policy should be targeted at addressing and gradual elimination of energy poverty.

⁶ 2009/72/EC ; 2009/73/EC

⁷ <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans>

⁸ H. Thomson, S. Bouzarovski, Addressing Energy Poverty in the European Union: State of Play and Action, 2018

⁹ <https://www.energypoverty.eu/about/role-and-mission>

¹⁰ H. Thomson, S. Bouzarovski, 2018

Energy Poverty Research Framework

Sometimes there is no clear distinction made between the concepts of energy poverty and vulnerable consumers and in the literature these terms are being used interchangeably. Energy Poverty is often defined in the literature as a situation, when individuals or households are not able to adequately heat their homes or provide other required energy services at an affordable cost¹¹.

The concept of vulnerability is one of the key components of the EU Legislation and market rules. The research document of the European Commission defines “vulnerable consumer” as: “A consumer, who, as a result of socio-demographic characteristics, behavioral characteristics, personal situation, or market environment:

- is at higher risk of experiencing negative outcomes in the market;
- has limited ability to maximize their well-being;
- has difficulty in obtaining or assimilating information;
- is less able to buy, choose or access suitable products; or
- Is more susceptible to certain marketing practices¹².

Vulnerable consumers (who are electricity and gas consumers according to the EU Legislation) are an important part of the energy poverty, however energy poverty is not limited to this category. Energy poverty can be related to the geographical-territorial areas (climatic zones, clean energy access and related health issues), conditions of the distribution network (security, quality of supply), housing type (inefficient building stock), energy expenditure shares in total revenues and other factors, which requires complex approach.

We define “**Energy Poverty as the state where consumers are deprived of possibility to receive clean energy and/or to satisfy the basic energy needs continuously, safely, and at an affordable price**” (WEG, 2018)¹³.

EP and consumer vulnerability require different policies. EP is mostly the subject of energy policy or e.g. regional policy addressing the groups of population under similar energy supply conditions. Vulnerable consumers are mostly related to social policy and social support schemes. Energy assistance for socially vulnerable consumers can be considered as a short-term measure in the process of liberalization of energy markets. In contrast, EP is related to number of factors which requires complex approach and is a subject of long-term energy policy. State Energy Policy should be targeted at addressing and gradual elimination of EP.

The table below illustrates the suggested treatment of differences between the notions of vulnerable customer and EP.

Table 1: Energy Poverty and Vulnerable Consumers

Term	Vulnerable Customer	Energy Poverty
Individual vs class or group	Individual Customer of electricity and/or gas network or a person in specific conditions	A group of consumers or a specific case considered as a representation of consumer class
Electricity and gas customers vs general energy conditions	An electricity and/or natural gas customer in relation to Electricity and Gas Directives	Refers to energy conditions in a more general sense in relation to general energy policy, including regional etc.

¹¹ Insight_E “Energy Poverty and vulnerable consumers in the energy sector across the EU”, 2015

¹² European Commission “Consumer Vulnerability across key markets in the European Union”, 2016

¹³ WEG “Energy Poverty and Vulnerable Consumers in Georgia” 2018

Term	Vulnerable Customer	Energy Poverty
Economic vs. technical	Financial/Economic affordability	technical availability of clean energy or excessive expense due to technical conditions (e.g. poor dwelling)
Examples	Poor families at social welfare support list Handicapped people unable to e.g. switch the suppliers Temporary health conditions requiring special care	Households in non-electrified areas Households in non-gasified areas using non-clean fuel in health-damaging conditions Households with excessive energy expenses in typical inadequate dwellings,
Types of policies and measures	Social support schemes targeted to individuals <ul style="list-style-type: none"> - Financial support - Nonfinancial support 	State energy policies and programs targeted to elimination of conditions leading to energy poverty (in an area or a group of population). EE policies, RE alternatives, network extension and improvement, etc.
Examples of measures	Electricity or gas vouchers Social tariffs Targeted information measures Individual EE measure Etc.	Programs for gasification and electrification Cheap loans for building insulation and other EE programs Oversight of network operations - improvement of supply quality and service conditions. Etc.

For the purpose of this paper, the preliminary assessment of Energy Poverty in the countries is based on the following indicators:

Table 2: Indicators for preliminary assessment of Energy Poverty

Indicator	Description
1. Energy Access	Access to modern, clean energy sources, including Natural Gas, Electricity and modern biofuel technologies – share of the population that has access to modern energy sources
2. Energy Affordability	Energy Affordability Energy Tariffs, household income and their relation. Share of energy expenses in disposable income, arrears on utility bills.
3. Safety of supply	Extent and cases of energy poverty where consumers are receiving energy services with poor quality or without adequate safety. human casualties, severe injuries, and material and financial damages caused by power cuts, voltage and power fluctuations, etc.
4. Buildings energy efficiency	Building stock and their energy efficiency. Extent and cases of energy poverty where Consumers have to pay excessive amounts due to poor quality or condition of dwellings.

Summary of Main Findings

EP is a new concept for Georgia, Ukraine, Moldova and Romania. None of the countries have official definitions, however, various ways and approaches are being used to describe the phenomenon. For the purpose of this report, Energy Access, Energy Affordability, Security of Supply and Buildings Energy Efficiency will be used for preliminary assessment of the EP.

To start with the access, the data shows, that the access to clean energy sources, and electricity in particular, is not highly problematic for the countries concerned. Almost all territories are electrified, excluding some minor remote settlements.

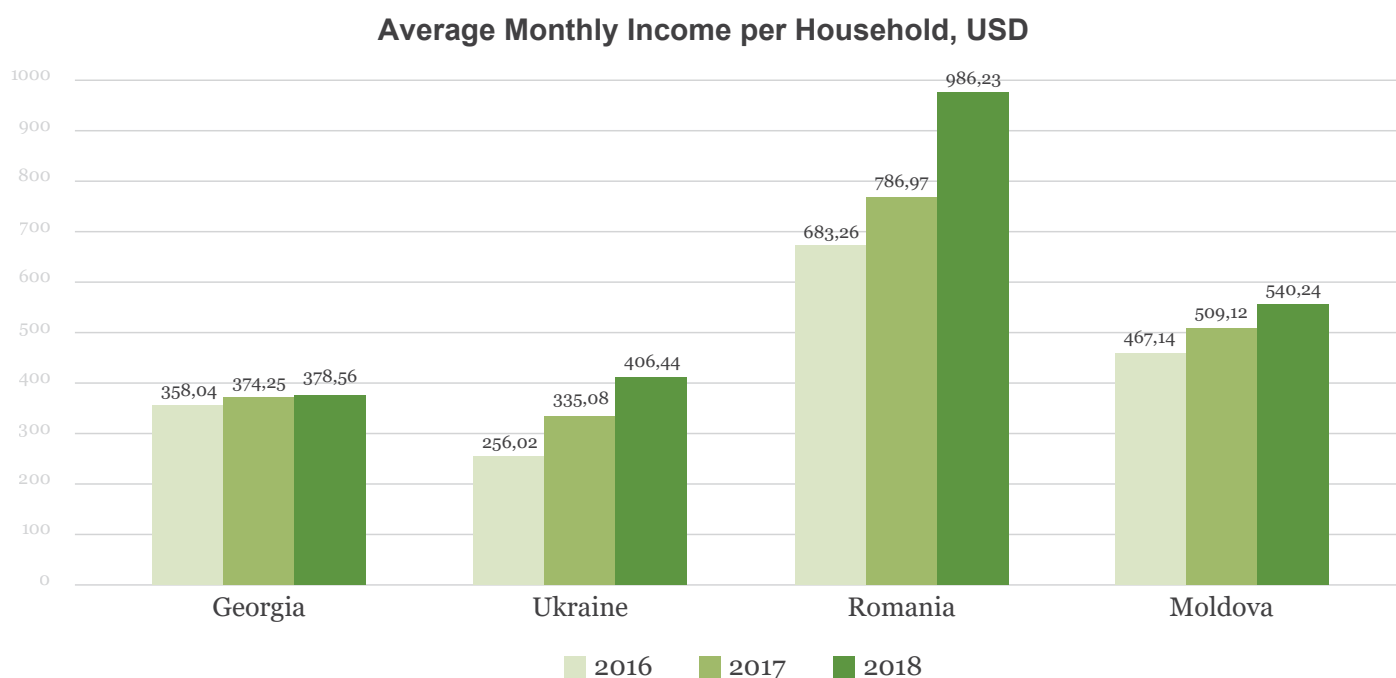
Access to gas is much more limited, approx. 33% of the households are connected to the natural gas grid in Romania, and 68 %- in Georgia. This number is higher for Moldova (90%) and Ukraine (82.5%). The main problem with the natural gas however, is that households in some locations are either not connected to the grid or do not consume it, even though, it is technically accessible. This is due to connection costs and need of investments (buying gas stoves, heaters and etc). For example, in the rural areas of Romania 82% of the population uses wood for heating, whereas 12% of the homes in the urban areas use firewood for the same purpose. 10% of the households in Romania combine wood with gas when heating their homes. In Georgia, Wood is mainly used for heating, 45% of the population uses it as a heating sauce. Firewood consumption is especially high in rural areas and riches 82% of total firewood consumed. Firewood consumption is high in Moldova as well. In 2015, households in Moldova consumed more fuelwood than natural gas and electricity combined, they spent more than 100 million euros on firewood. 90% of fuelwood consumed is used for heating¹⁴.

The main problem with firewood consumption is related to indoor air pollution and related diseases, as wood is mostly burn in non-efficient woodstoves.

Another important aspect of EP is the share of energy expenses in total household expenditures. Income levels in all four countries have been increasing in past several year, and energy tariffs are not high compared to the EU member states, however, population is still struggling with paying energy bills.

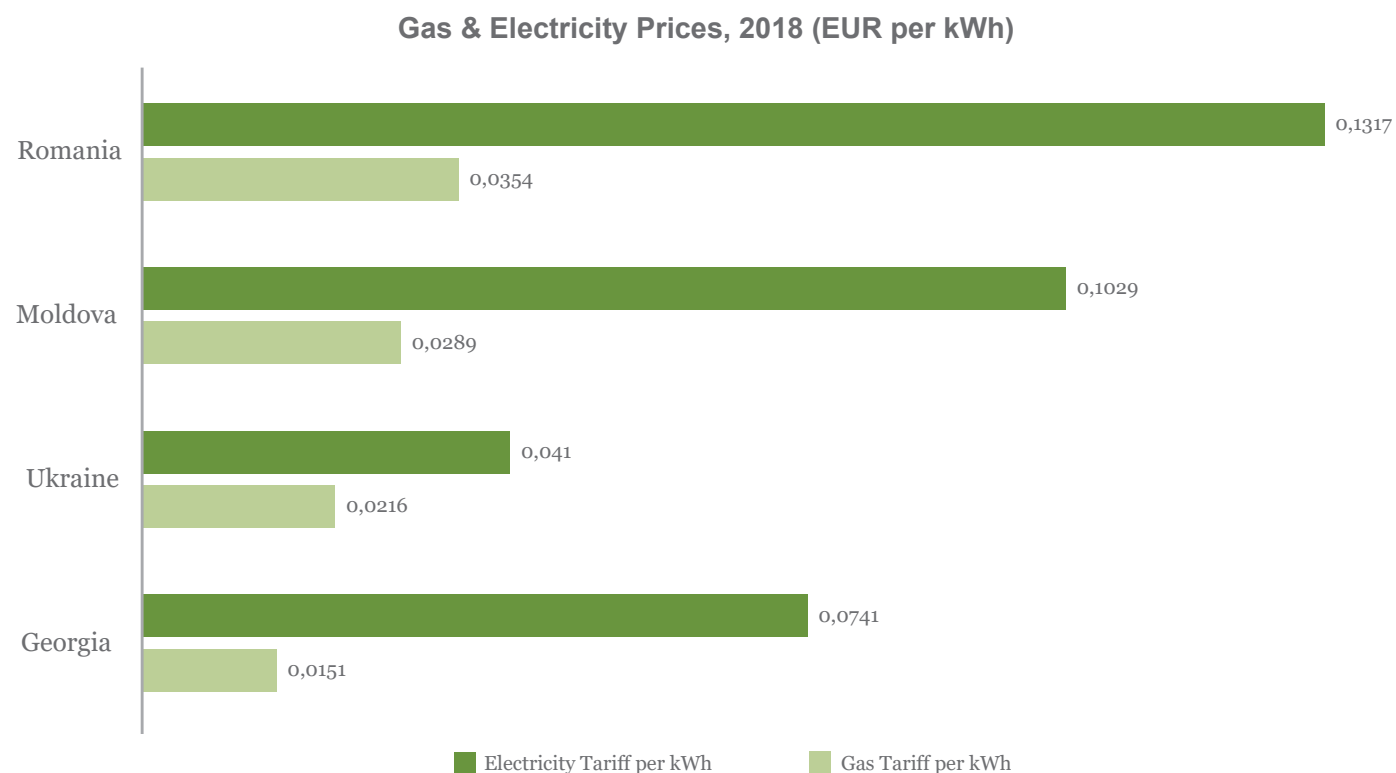
The graphs below show the electricity and gas prices in all four countries and income of the households:

Graph 1: Average monthly income per household



¹⁴ <https://www.eu4energy.iea.org/Documents/moldova-Infographic-Final.pdf>

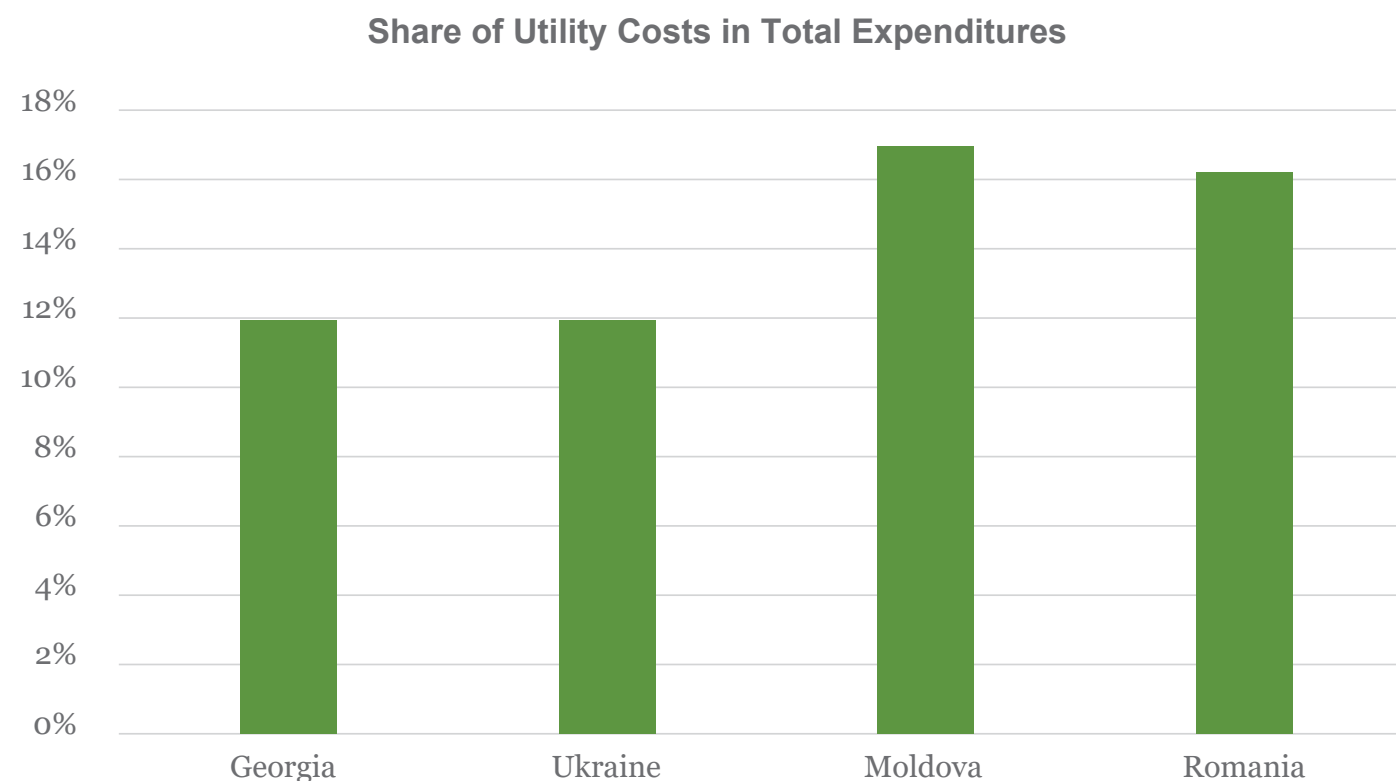
Graph 2: electricity and gas tariffs



The share of housing utilities' and energy costs in total household expenditures varies from 12% to 17% among countries (Georgia 12%, Ukraine 12%, Moldova 17%, and Romania 16.2%).

Romania, as the EU member state has more data available on the issue. In 2018, the percentage of the energy poor was: Twice the National Median (2M) – approx. 13%; Low Income High Cost (LIHC) – 12%; Hidden Energy Poverty (M/2) – 15.5%. According to EU official data, in 2017, 15, 9% of the Romanian population had arrears on utility bills; whereas the percentage of the population that was unable to keep their house adequately warm was 9.6% in 2018. Energy bills become especially heavy burden for the population in winter, when heating season begins.

Graph 3: Share of Housing and energy costs in total expenditures



It is interesting, that utility related expenses are of the greatest concerns for the public. For example, in Ukraine, the rise of tariffs for utilities is perceived to be the third biggest problem for the country after Military conflict in Eastern Ukraine and the low level of salaries or pensions. The same pattern is evident in Georgia, according to the NDI Public Attitudes Survey conducted in July 2019, 62% of the population mention the cost of utilities as the biggest monthly expense for their household.¹⁵ This happens despite the fact, that in real terms (corrected with the inflation) the energy tariffs are diminishing and in 2019 are by about 15-20% in Georgia below the 2009 levels while the income levels grow and therefore and the affordability of energy has increased significantly over this period.

This indicates the fact, that issues related to energy tariffs might be highly politicized and used for populist reasons, especially in pre-election periods, when reduction of energy tariffs are promised to the citizens without proper analysis. This may be also partly a matter of budget management by population making it difficult to properly plan for seasonal increases in energy bills. Energy affordability is related to countries poor economic development rather than energy tariffs.

EP is also related to electricity/gas safety issues. Safety of electricity supply is an important matter to be considered in Georgia. According to the study conducted by WEG in 2018, electricity outages and voltage fluctuations in certain regions of Georgia were problematic; Bad weather conditions play a major role in supply interruption. Voltage fluctuations damaged home appliances and led to extra costs for households. Gas appliances are subject of another big concern. Because of the nonexistent regulations, poorly installed gas water heaters and stoves have led to gas leaks and poor combustion resulting in poisoning, explosion and human casualties. Between 2016 and 2018, 86 people died in explosions and from intoxication caused by natural gas leaks and 285 were poisoned in Tbilisi¹⁶. This is a bigger problem than EP, but policies on EP elimination should refer to this issue as well.

Thermal characteristics of buildings and the low level of energy efficiency is another important aspect to consider while discussing the EP. Almost 50% of the housing stock in Romania is made of old, low quality wood-based material; the rest is building brick or prefab. Due to poor construction legislation, the inefficiency of the building stock in Romania remains high. Building stock is a problem for Ukraine as well, majority of buildings were built in the 1960s-1980s, and they have not been designed to conserve energy or facilitate the rational use of energy. In some regions of Ukraine, the consumption of heat in the buildings exceeds the figures of the EU average by more than 60%. The situation is similar in Moldova and Georgia as well.

Support mechanisms

Countries have different mechanisms to provide financial support to citizens or consumers in need. These are mainly integrated in support schemes for socially vulnerable people.

For example, even though Georgia's legislation does not define the term "vulnerable consumer" and "vulnerability", there are several social assistance schemes in place that either include electricity and natural gas tariff subsidization, or vouchers and special purpose programs (for high mountainous settlements etc). In 2018, more than \$12 mln. was spent on energy subsidies from national government and Tbilisi municipality budgets (does not include data from local municipalities except Tbilisi). It is also noteworthy that, gas and electricity tariffs are subsidized for household consumers in Georgia.

In Ukraine, Government provides two main forms of direct assistance to the vulnerable consumers - abatements and subsidies. The abatements may be awarded to separate categories of citizens on an individual basis as a discount in payment for actual consumption of the utility services. The subsidy is an irretrievable monetary aid purposed to support the low-income families, which compensates the part of housing and utility services costs. To be eligible for the subsidy, the maximum income per family member should not exceed \$205.29, while the utility bills should form at least 22.06% of this amount per person. In 2018, 2,673 bln. was spend on energy subsidies. 43.5% of the population received the support from government.

In Moldova, The actual mechanism of social aid designed to cope with some energy related costs, is envi-

¹⁵ <https://caucasusbarometer.org/en/nj2019ge/HHEXPUTL/>

¹⁶ <https://agenda.ge/en/news/2019/2905>

sioned in the Social Aid Law. The law provides specific criteria of eligibility for the disadvantaged families that are entitled to state aid during 5 months of heating– from November till March. The families that can benefit from the state aid include pensioners; persons with disabilities; registered unemployed; pregnant or recently given birth women; caretaker of a family member that needs a third party assistance; persons with incomes from specific agriculture activities (Art. 5). The amount of the social payment is calculated by comparing the overall global income of the family and the monthly guaranteed income per each member of the family. The amount set to be paid until 2019 was USD 20.2 per month. In October 2019, the government announced the increasing of this amount to up to USD 28.8.

As for Romania, the legislation recognizes indiscriminately three categories of vulnerable energy customers: the elderly, the ill impaired and the poor. The financial measures available are of two kinds: heating benefits and social tariffs for electricity. The heating benefits regulation adds another category of energy poor: the “single person/family, who is unable to maintain the dwelling in adequate temperature conditions, namely a temperature of 21°C” and whose income limits are placed within certain thresholds stipulated by the law. During the heating season (November through March) compensations reach a maximum of USD 55.6/month for electricity, USD 60.2/month for gas and USD 12.5/month for solid fuels. Largest amounts of benefits are allocated to those who have the highest expenses with energy, therefore, the most energy inefficient households.

The table below summarizes existing financial and non-financial support schemes for vulnerable consumers, types of subsidies and budget spending.

Table 3: Support schemes for Vulnerable Consumers

Country	% of the population receiving financial support	Types of existing financial support Schemes	Payed energy Subsidies (USD)	Existing non-financial support schemes
Georgia	10%	Tariff subsidization Heating Vouchers	12 mln. (2018)	-
Ukraine	43,5%	Abatements Subsidies	2,673 bln (2018)	Prohibition from disconnection of heating systems during heating season
Moldova	not quantified	social assistance for “the cold months”	not quantified	-
Romania	4.6%	Heating benefits social tariffs for electricity	not quantified	Prohibition from disconnection minimizing disruptions, appoint a third party as an interface

EP still needs to be embedded in public policy of all countries with clear distinction with general social vulnerability. None of the countries considered have long term strategies or policies to eliminate EP. Energy issues are mainly discussed in relation to tariffs and subsidies. Energy tariffs are believed to have the biggest impact on population, and therefore are considered the most sensitive issue. The tariff level is widely considered to be an indicator of energy policy of the government and reduction in tariff is being considered as the welcome development irrespective to the cost paid by the society as a whole for such reduction. Actual or potential tariff increases cause a hot political debate and governments are reluctant to go in this direction without compelling necessity. Regulatory independence is still affected by political considerations and does not allow to eliminate tariff subsidization and to shift the emphasis towards economic development and growth in incomes.

As a result, the tariffs are subsidized which means that the public good is being used to keep the consumer prices low compared to the natural market value and full cost recovery level. Tariff subsidization is conducted under the declared objective of consumer protection; however, this is not targeted specifically to the vulnera-

ble customers but on the contrary benefits most those who consume more of energy – the rich. Another form of subsidization is cross-subsidy, tariffs for businesses are higher in some countries than household tariffs, which is also damaging for the economy and restrains its development and therefore growth in household incomes.

Subsidies also contribute to inefficient consumption. This is especially evident in Ukraine, where the residents of subsidized individual homes increase their consumption of gas by 73% following receiving the subsidy, and the residents of multi-apartment buildings show increase of 23%. The same is observed in Georgia, In Tbilisi, where electricity subsidies are higher than in the regions, electricity consumption is twice as much, compared to other municipalities. A similar disproportion can be observed also in the gas consumption Families receiving gas subsidy (in Mtskheta-Mtianeti Region, Kazbegi/Dusheti municipality) have the highest consumption (40-62 GEL / 72-110 m³).

Subsidies sometimes are not distributed fairly. For example, Existing structure of energy subsidies in Georgia provides much higher level of assistance to some customers than to others. Vulnerable consumers in Tbilisi are in more preferable situation than vulnerable customers in the regions. In some cases, it encourages disproportionate consumption of energy. The efficiency of existing assistance schemes deserves a more detailed analysis.

To consider all above mentioned problems and circumstances, it is important for the country governments to:

- Introduce the concept of Energy Poverty in National Legislation and start developing the policies for its gradual elimination
- Improve statistics and make energy related data more transparent and easily available
- Review the existing support schemes and modify so that they are more targeted to vulnerable household and do not result in wasting energy and public good for the support of those not needing it.
- Promote energy efficiency measures for support of vulnerable consumers and for elimination of energy poverty
- Conduct awareness raising and informational campaigns to increase the acceptance of sound evidence based policies versus populist tariff subsidization
- Introduce and enforce safety and supply security and safety policies and standards to assure uninterrupted and safe provision of energy service to all categories of vulnerable customers
- Develop the clean biomass and other alternative options in combination with energy efficiency for the supply of remote areas where (gas) network development is not economical

ENERGY POVERTY

Situation, when individuals or households are not able to adequately heat their homes, or receive other required energy services at an affordable price.



Have trouble in: Heating homes in winter - Cooling homes in summer

Number of Households in Georgia, Moldova, Ukraine and Romania:



Live in old buildings with low level of energy efficiency



Use fire wood in a way that leads to indoor air pollution and related health problems.



Have to borrow money for utility bills

They are under Energy Poverty!



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ENERGY POVERTY

Share of Housing and utility costs in total household expenditures
In Georgia, Moldova, Ukraine, Romania

100%

12%



Georgia

17%



Moldova

12%



Ukraine

16%



Romania

Households report having trouble paying energy bills in winter.

ENERGY POVERTY

In Georgia, Moldova, Ukraine, Romania



Countries have different mechanisms to provide financial support to the consumers in need. These include:

- Tariff Subsidization
- Heating vouchers
- Abatements
- Social Tariffs
- Etc

Budget spending could be more efficient.

Countries need long term strategies to eliminate Energy Poverty.



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ENERGY POVERTY

In Georgia, Moldova,
Ukraine, Romania

Percentage of the population
receiving financial energy support

Ukraine – 43.5%
Georgia – 10%
Romania – 4.6%
Moldova - not quantified



Subsidies often contribute to inefficient consumption

Improvements are needed to make subsidies more targeted and fair.

Country Cases

Energy Poverty in Georgia

*Tutana Kvaratskhelia
Murman Margvelashvili*

Introduction

Georgian Energy Sector is undergoing major reforms under Association Agreement and Energy Community Membership. The main goal of the reforms is to improve country's Energy Security and consumers well-being through creating new legislative framework, liberalize energy markets, protect consumer's right etc.

During the process, Draft Law of Georgia on Energy and Water Supply was developed by the Energy Community Secretariat. The law creates a basis for energy sector reform and defines general structure of the market. Completely new institutions will be introduced once the new Energy and Water Supply Law is enacted. Firstly, unbundling at the transmission and distribution level should be carried out. Supply and distribution activities should be separated. Consumers will have a right to choose their supplier freely based on the prices or the quality of electricity/natural gas or service. Switching of consumers from one supplier to another will facilitate the competition at the retail market and once this instrument is executed successfully, this leads to decreasing the prices of electricity and natural gas.

One of the major issues in this process refers to Energy Poverty (EP) and Vulnerable Consumers, which involves a big number of population considering general-social economic situation in Georgia.

The report below analyzes the existing situation in the country, making emphasis on energy poverty and tries to develop recommendations for policy makers to consider in the reform process and contribute to successful implementation of the process.

Preliminary assessment of energy poverty in Georgia

Energy poverty is a new concept for Georgian policy discourse and there is not much research and analysis done in this direction. However, existing statistical data gives us an opportunity to make preliminary assessments of the scale and importance of the problem.

EP has two main aspects. Access to modern energy sources and - affordability. According to the statistics, 99% of Georgian population has access to electricity and 68% to - natural gas. Households mostly use natural gas and firewood for heating, cooking and hot water. Share of natural gas in total energy consumption for households is 52.8%, firewood – 29, 9% and electricity - 16.4%. Firewood consumption is especially high in rural areas and reaches 82% of total firewood consumed.

There are some features of household energy consumption:

- Individual central heating systems and/or individual heating facilities are used for heating in Georgia. Natural gas is used for the individual central system and natural gas, electricity, firewood, agricultural wastes and solid or liquid fuels are used for individual facilities.
- The population heats only a small part of the total living space in cold weather. Mostly only 20 m² or less are heated. 44.5% of the population uses natural gas, 45, 8% - firewood and agricultural waste, and 6.4% - electricity for heating.
- Cooking methods in the households involve cookers and the ovens. In both cases, mainly the natural gas and firewood are used.

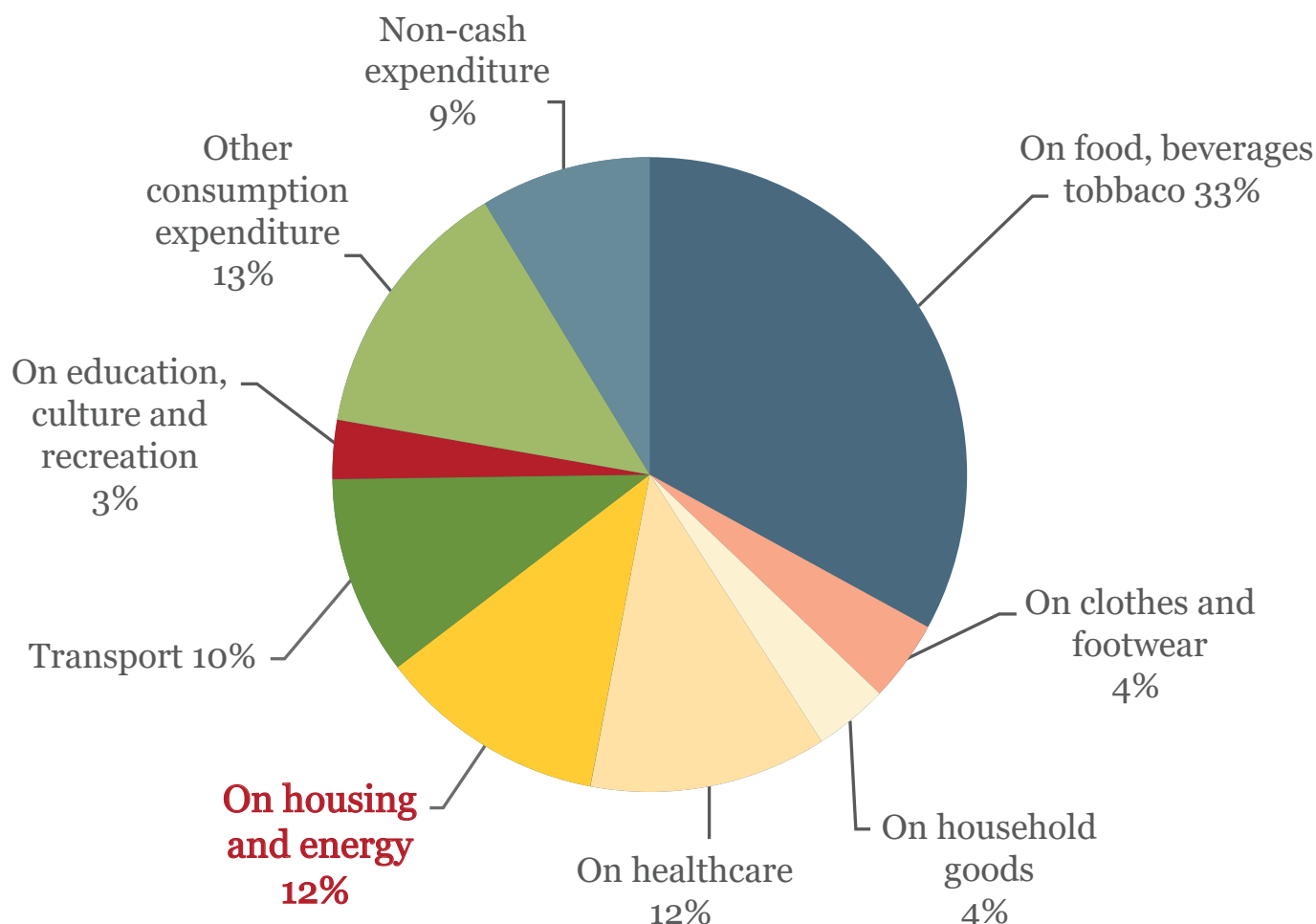
Analysis of energy consumption data indicates that the share of firewood in heating and cooking is high and nearly half of the population depend on it. Burning the wood in the inefficient wood stoves could be considered as a source of energy poverty, which is a result of the lack of modern energy sources. Use firewood and open fires for heating and cooking cause indoor air pollution and is in correlation with respiratory diseases, cardiovascular and eye problems. According to the WHO statistics, in 2015 1.3 million people died with this reason, most of them are women and children.¹⁷ Although there is no data available in Georgia on the diseases caused by indoor air pollution, firewood consumption for heating and cooking is high. Poorly vented cook stoves have been stated as having the same adverse health impacts as smoking two packs of cigarettes a day.¹⁸

If Inadequate Heating is a problem in winter, the situation is even less satisfying in summer as only 9% of total dwellings are equipped with air conditioning systems in Georgia. The average duration of cooling does not exceed 5 hours per day¹⁹. Considering the fact, that number of hot days increases due to the climate change and the demand for cooling grows, country is facing another important challenge to overcome.

Income and share of energy expenditures

According to the National Statistics Office of Georgia (Geostat), the average monthly income of the population of Georgia in 2017 amounted to USD 95.1 per capita and USD 333.1 per household. Utility costs were 12% of total expenses²⁰ and exceeded the cost of clothing (4%) transport (10%) or education (4%).

Graph 1: Household Expenditures in Georgia²¹



¹⁷ Stefan Bouzarovski "Energy Poverty" 2018

¹⁸ <https://bit.ly/2VkpMPu>

¹⁹ http://geostat.ge/cms/site_images/_files/georgian/Energy/Capture_2017.pdf

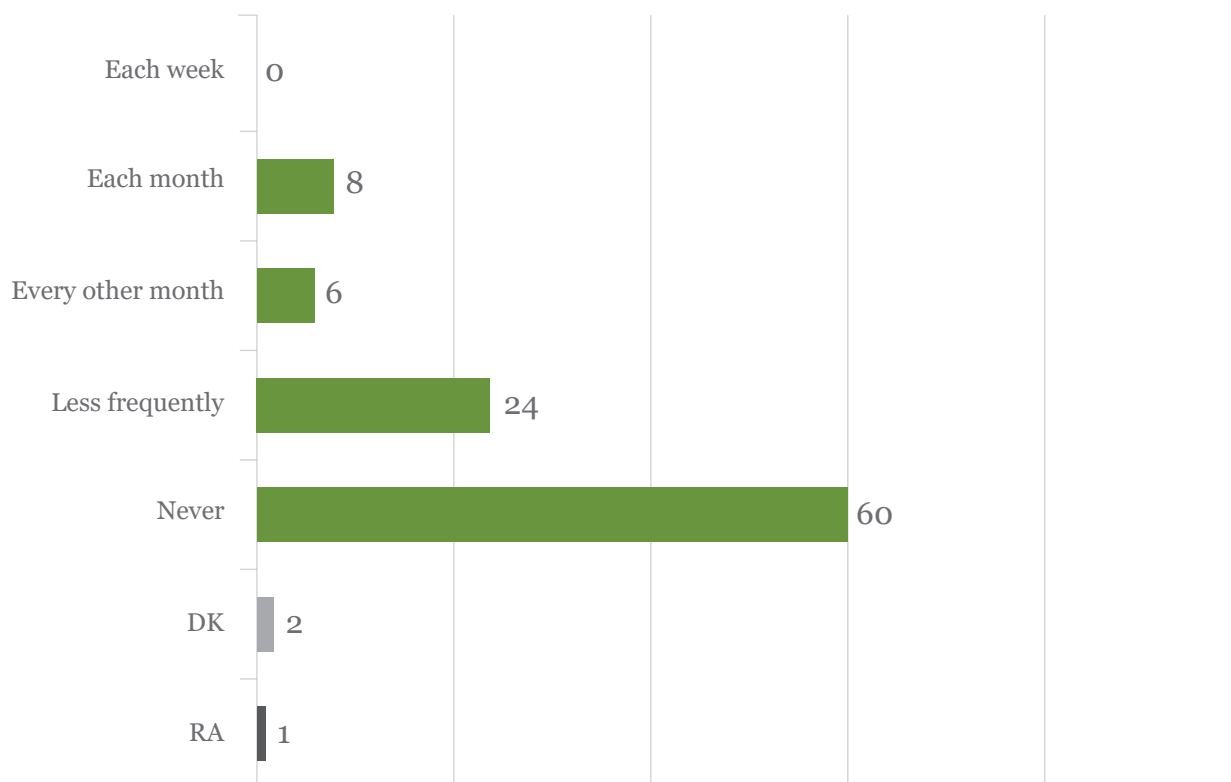
²⁰ Includes expenditures on the house, water, electricity, gas and other heaters

²¹ Geostat

Energy costs significantly differ during seasons. In winter months, energy expenditures are twice as high as the summer months' expenditures. For example, according to the data of 2015, natural gas payments in summer months were USD 6.9 and USD 33.1 in winter period. Electricity expenditure in summer was USD 9.7 and USD 16.7 is in winter. In addition, heating is not often turned on for 24 hours.²²

Considering the existing social situation in the country, energy bills in the winter months are heavy burden for the population. According to the data of 2017, 22% of Georgian population has an income less than USD 94.2 and 8% has less than USD 37.6. In 2017 Almost 40% of the population borrowed money from time to time to pay utility payments (8% every month, 6% every second month, 24% less often).²³

Graph 2: Frequency of borrowing money for utilities – Georgia



Most recent surveys also highlight the issues of energy expenditures. According to the NDI Public Attitudes survey conducted in July 2019, 62% of the population mention cost of utilities as the biggest monthly expenses for their household.²⁴

²² Winrok International Georgia “Knowledge, Attitude and Behavior Baseline Survey”, 2015

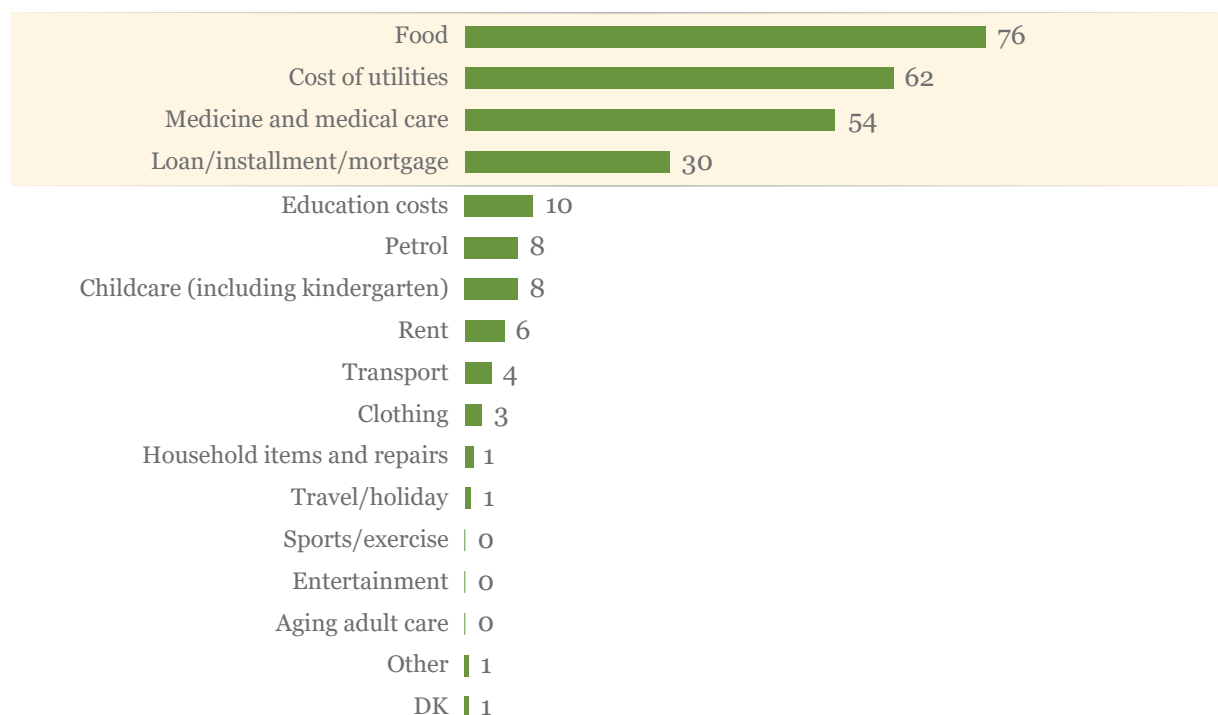
²³ CRRC –Caucasus Barometer, 2017

²⁴ <https://caucasusbarometer.org/en/nj2019ge/HHEXPUTL/>

Graph 3: Household Expenses

Household expenses

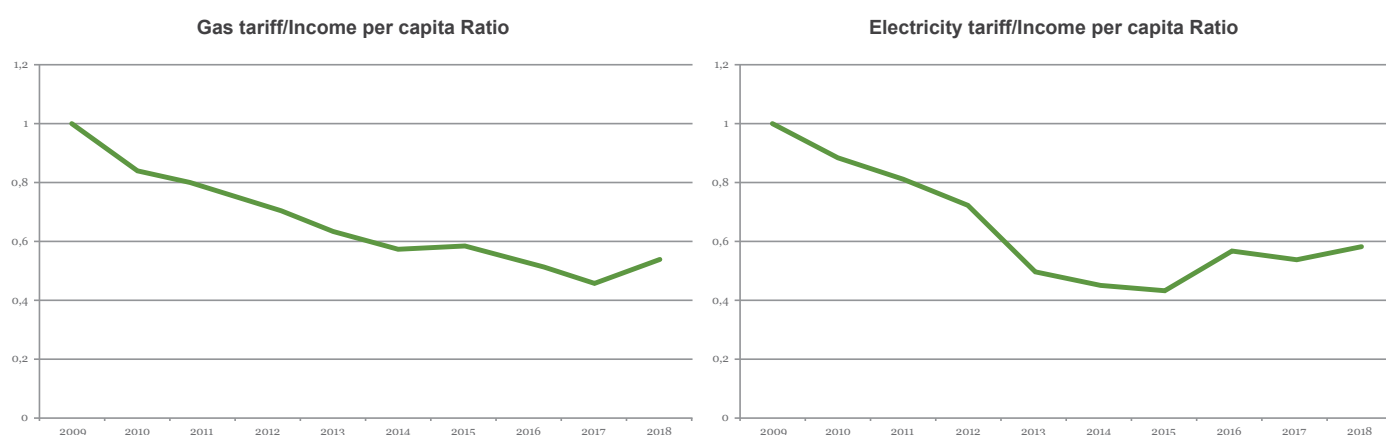
What are the biggest monthly expenses for your household? Up to 3 answers (q34)



Focus groups conducted by WEG in 2018 reveal, that Energy expenditures do not exceed 10% of total income in summer months but reach up to 20-25% of the income in winter, and as mentioned earlier, households do not heat their homes fully and do not use air conditioning in summer. Saving energy often comes at the cost of personal comfort and well-being.

This happens despite the fact, that in real terms (corrected with the inflation) the energy tariffs are below the 2009 levels by about 15-20%. The affordability of energy has increased significantly over this period. The graph 4 and 5 show that gas and electricity have become 40-50% more affordable to the population compared to 2009 levels. Assuming the same level of consumption.

Graph 4 and 5: Normalized ratio of energy bills to average personal income in Georgia 2009-2018



From the graphs above one can conclude that:- *The real (inflation-corrected) incomes of households increase gradually while the tariff levels remain relatively stable, leading to increased affordability of energy over time*

Electricity and gas tariffs are subsidized in Georgia and even more, in the gas sector there is a wide cross-subsidization between consumer categories. In general, the tariff for households is subsidized by the businesses,

and other legal persons including public sector. There are two major sources of tariff subsidization: Cheap electricity coming from state owned Enguri/Vardnili HPP cascade that as a result does not receive the full amount necessary for its full-scale rehabilitation and maintenance;

Another source is the cheap gas received by Georgia under the host government agreement on South Caucasus Pipeline (SCP). This gas is used as “Social gas” provided to households and to thermal power plants at below the regional prices and thus allows to keep the electricity and gas tariffs for households low irrespective to various external factors. The recent extension of the SCP and increased gas flows from Azerbaijan through Southern Gas Corridor, promise to increase the amount of the transit gas and in case of preserving the previous policies will allow the state to subsidize further the electricity and gas prices.

Tariff (per kWh or m³) subsidization is being considered as the measure for protection of vulnerable customers, however it has actually the reverse effect by diverting the public good to higher consumers i.e. mostly to wealthier people.

Electricity Safety issues

Safety of electricity supply is also an important issue to be considered in Georgia. According to the study conducted by WEG in 2018, electricity outages and voltage fluctuations in certain regions of Georgia are problematic; Bad weather conditions play a major role in supply interruption. Respondents of Focus Groups indicate that they have to turn off electric equipment in bad weather to avoid extra costs.²⁵

The safety issue is highlighted by the representative of Distribution Companies (Energo-Pro in particular) as well. According to company representative, in 1990-ies chaotic constructions of houses were common practice in Georgia, which resulted in a situation when some people in the regions live almost under the transmission power lines.

Another problem is related to protected areas, where tree trimming operations or cuts are not allowed. The distribution lines in these areas impose serious danger and life risks to population walking nearby and also largely contribute to power cuts and blackouts, especially in winter period. The cutting permits should be issued by the state, which is a complicated procedure, and even if the permits are issued, there are no many companies available on the market, who would perform such activities. This situation leads to the conclusion that energy poverty related issues are complex and need substantive research.

Gas appliances are subject of another big concern. Because of the nonexistent regulations, poorly installed gas water heaters and stoves lead to gas leak, poisoning, explosion and human casualties. Between 2016 and 2018, 86 people died in explosions and intoxication caused by natural gas leaks and 285 were poisoned in Tbilisi²⁶. This is a bigger problem than EP, but policies on EP elimination should refer to this issue as well.

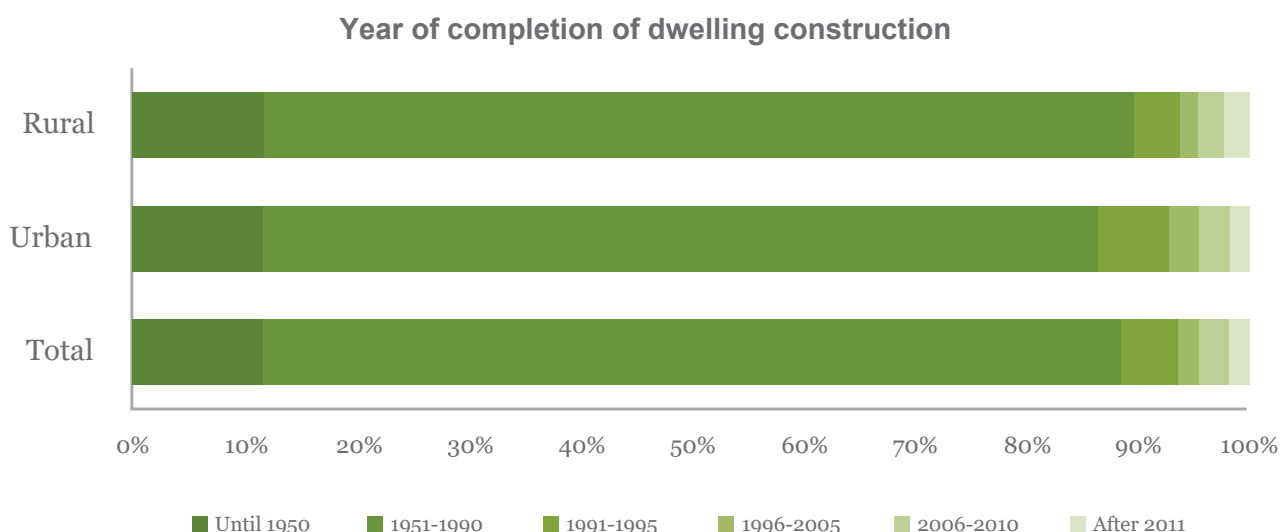
Energy efficiency in buildings

Thermal characteristics of buildings are one of the most important factors in energy poverty. Most of the housing in Georgia (76.7%) was constructed in 1951-1990. The main problem related to buildings is low energy efficiency. From the 1960s, Intensive construction of 5-storied multi-apartment buildings, so called “khrushchovkas” started in the country. Their engineering and construction criteria were based on the policy of the government that aimed to meet the minimum living standards of the population. 45% built in this period are poor, because the comfort and sanitary-hygienic criteria were minimal.

²⁵ WEG, 2018

²⁶ <https://agenda.ge/en/news/2019/2905>

Graph 6. Year of Completion of dwelling construction in Georgia²⁷



It is noteworthy that the energy consumption of the buildings built in the early 2000s is even higher due to the high shares of the windows on the outer walls. Low energy efficiency in buildings increases the amount of energy consumed and respective costs.

Existing Policy and schemes to protect vulnerable consumers

Vulnerable Consumers are one of the main part of the energy poverty. The existing primary/secondary legislation in Georgia doesn't define the term „vulnerable consumer“ or „vulnerability“.

Law of Georgia on Social Assistance which has been adopted by the Parliament of Georgia in 2006 envisages some categories of socially vulnerable persons that are the subject of some financial supports/aids of the Government. This Law applies to persons who are in need of special care and are residents of Georgia legally, and to deprived families and homeless persons. Orphans and children without parental care, persons with disabilities, persons of full legal age with limited capabilities and without family care, persons without breadwinner and homeless children. As per deprived families, this law states that a deprived family is a person or group of persons permanently residing in a separate place of residence, who lead joint household activities and whose social and economic conditions are below the level determined by the Government of Georgia. Above-mentioned level (poverty rate) is calculated according to the legislation.

Draft Law of Georgia on Energy and Water Supply developed by the Energy Community Secretariat creates a basis for energy sector reform and defines general structure of the market. Completely new institutions will be introduced once the new Energy and Water Supply Law is enacted.

The Draft Law envisages the definition of Vulnerable Consumer. According to the Article 3 of the draft Law of Georgia on Energy and Water Supply, „Vulnerable Consumer“ is a household consumer which due to his/her status or conditions is authorized to use the system and/or receive electricity and/or natural gas under special conditions in accordance with the provisions of the legislation. Nevertheless, proposed definition is quite general and vague and doesn't include the criteria for recognizing a person as a vulnerable consumer.

In spite of the fact that there is no formal definition of vulnerable customers, there are several social assistance schemes in place that either include electricity and natural gas as one of the components, or is specifically targeted to subsidize the electricity or gas consumption by certain categories of consumers, or alternatively uses energy subsidies as a tool for providing special regional incentives and has demographic or other objectives.

The Social Subsistence System of Georgia is main tool to cope with the issues related to socially vulnerable

²⁷ Geostat, 2019

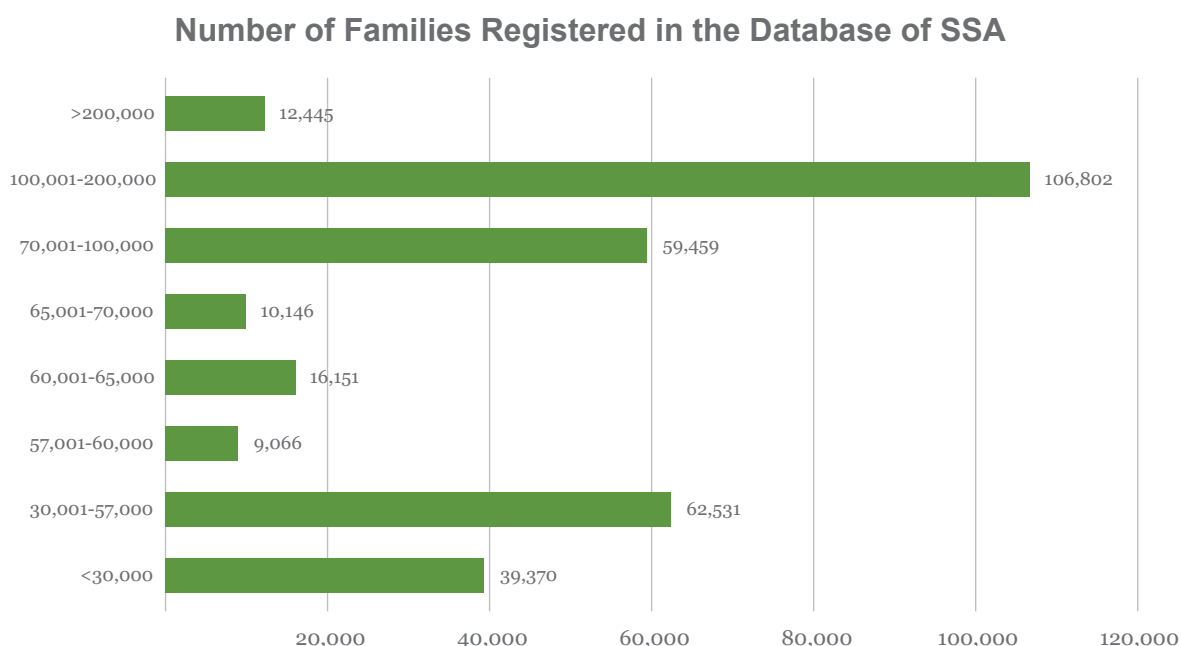
part of the population. In 2014 the Government of Georgia adopted the Resolution N758 on Approving the Methodology of Assessment of Socio-Economic Conditions of Socially Unprotected Families (Households) based on which the families are recognized as unprotected families and are the subjects of financial support from the Government. This Resolution implies the formula for calculating various indexes necessary for making legally justified and reasonable decision.

The main targeted assistance program for socially unprotected population is Pecuniary Social Assistance (“Subsistence allowance”). At the first stage, the benefits were granted to the families registered in the “unified database of socially vulnerable families” (SSA database) and their family rating score did not exceed 52,000 units. Later in 2015, as a result of the support scheme and methodology modification, the assistance was renewed and changed as follows:

- Households with the rating score below 30001 - 60 GEL for every member of the family;
- Households with the rating score 30001 - 57001 – 50 GEL for every member of the family;
- Households with the rating score 57001 - 60001 – 40 GEL for every member of the family;
- Households with the rating score 60001 - 65001 – 30 GEL for every member of the family;
- Households with the rating score less than 100 001 – 50 GEL for every member of the family, under the age of 16.

As of July 2019, 315 970 families (949 263 persons) are registered in The SSA Database. The lower the rating score, more socially vulnerable the household is.

Graph 7: Families registered in the SSA data base



The rating score is also used for the provision of indirect financial aid, namely to mitigate the burden of utility bills. There are several utility subsidy programs in Georgia financed by the Ministry of Internally Displaced Persons from the Occupied Territories, Labor, Health and Social Affairs of Georgia (MoLHSA) or local municipalities. The aim of the programs is to provide assistance for targeted groups including socially vulnerable families, people who live in mountainous regions and in the villages are near occupation border line. These subsidies are provided from National Budget and/or Municipal budgets. The main schemes of subsidies include:

- **Socially vulnerable families in Georgia** (excluding Tbilisi) under the rating score 70 000 – receive 0.039 GEL/kWh tariff subsidy on electricity. Number of such families is 65,907 receiving about 3.58 GEL subsidy on electricity per month. Financed by MoLHSA
- **Socially vulnerable families in Tbilisi Municipality** Families with rating score up to 70 000 receive 106 GEL per family in November, December, January, February and March. And families from rating score 70 001-200 000 receive GEL 20 per month (5 months in total). The subsidy is covers Electricity supply, waste disposal and cleaning service and water supply. Number of beneficiaries amount-

ed 45 000 families in 2019 and GEL 7 338 420 was allocated from Municipal budget

- **Mountainous Settlements** – from 2015, families living in the high mountain regions receive 50% discount on electricity tariff up to 200 kWh consumption. According to 2019 data, Number of such families is 80,256 receiving about USD 3.5 subsidy per month. If a family lives in a mountainous area and at the same time is registered in the SSA Database as socially unprotected, it does not receive both subsidy. Such family Receives subsidy of Mountainous settlement. Financed by MoLHSA
- **Families with 4 or more children under the rating score 300 000** – from July 2019, family receives 20 GEL if it is registered in the SSA database has rating score under 300 000 and has 4 children, in case of extra child fee increases for USD 3.5 per child. The number of such families is 270. Total budget for this scheme is 3.5 mln. In 2019. Financed by MoLHSA

As for the natural gas, there are no such unified schemes, however, two support mechanisms can be identified. To be more specific:

1. Mountainous Settlements in Kazbegi and Dusheti Municipality (5700 beneficiaries) receive 700 m³ gas for free per month from October 15 till May 15
2. Residents living in the villages near occupation border line (13 000 beneficiaries) receive USD 70 Subsidy from Government of Georgia in winter as heating allowance.

The table below summarizes existing subsidy schemes in Georgia. Number of beneficiaries and Money spent from National or Tbilisi Municipality Budget.

Table 1: Existing subsidy schemes in Georgia

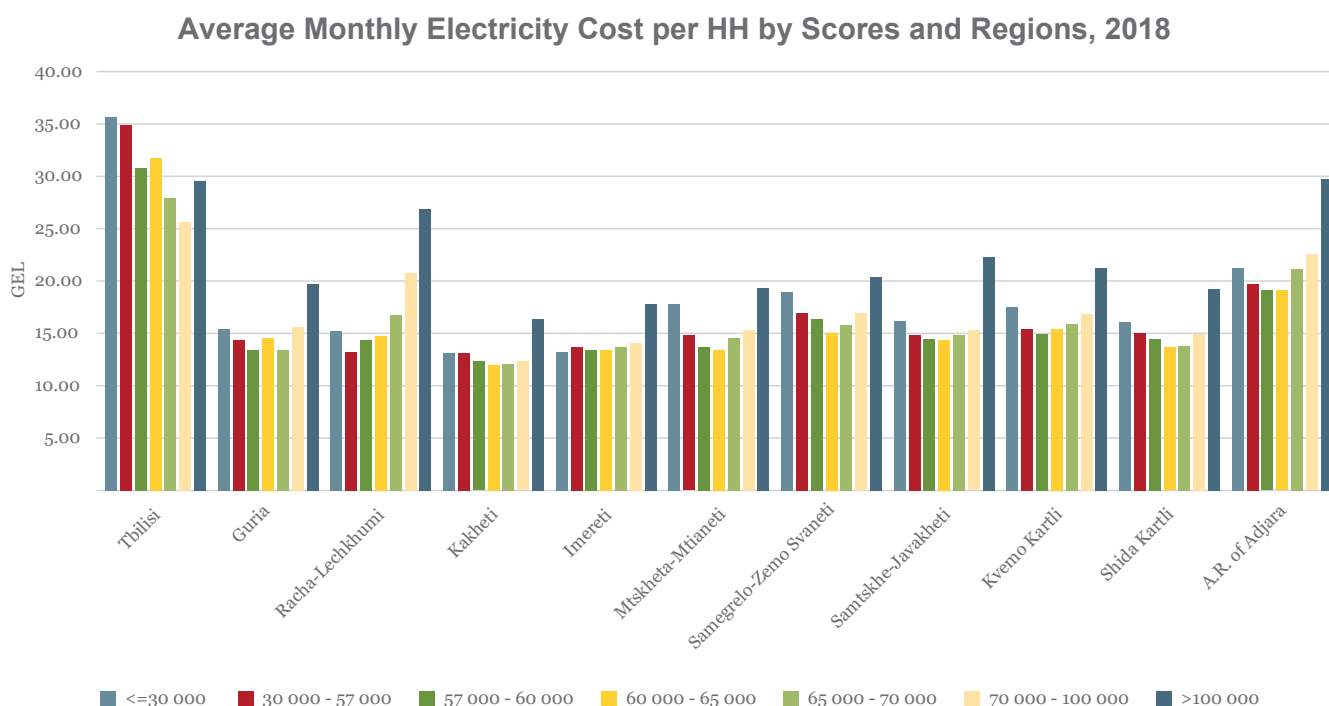
Subsidy Scheme (2018)	Number of households	Subsidy per household	Total in USD
Electricity			
Socially vulnerable families under 70 000 score in Tbilisi	45,000	USD 37	2 560 420
Socially vulnerable families from 71 000 to 200 000 score in Tbilisi		USD 7	
Socially vulnerable families under 70 001 score in Georgia (excluding Tbilisi) – Electricity subsidy	60,500	0.013 USD / kWh electricity consumed	947 472
High Mountainous Settlements	67,000	50% subsidy for electricity consumed (up to 100 kWh)	3 259 681
Families with 4 or more children under 300 000 score– From 2019	270	USD 7 per family - USD 3.5 per child	1 221 172
Natural Gas			
Kazbegi-Dusheti municipality (gas subsidy)	5,700	700 m ³ per month from October 15 - May 15 annually	2 569 101
Villages near the occupation dividing line (cash payment)	13 000	USD 70 annually	910 087

In 2017, Approx. 33 mln. GEL (USD 11.5 mln.) was spent on energy subsidies. It includes tariff subsidization and heating vouchers, however, as mentioned earlier, gas and partially electricity tariffs are subsidized for all citizens in Georgia.

Although there have been no assessment conducted of existing subsidy schemes, some interesting points can be identified from the energy consumption data. For example, the graph below shows the average monthly cost of electricity paid by vulnerable household by regions (differentiated by rating scores).

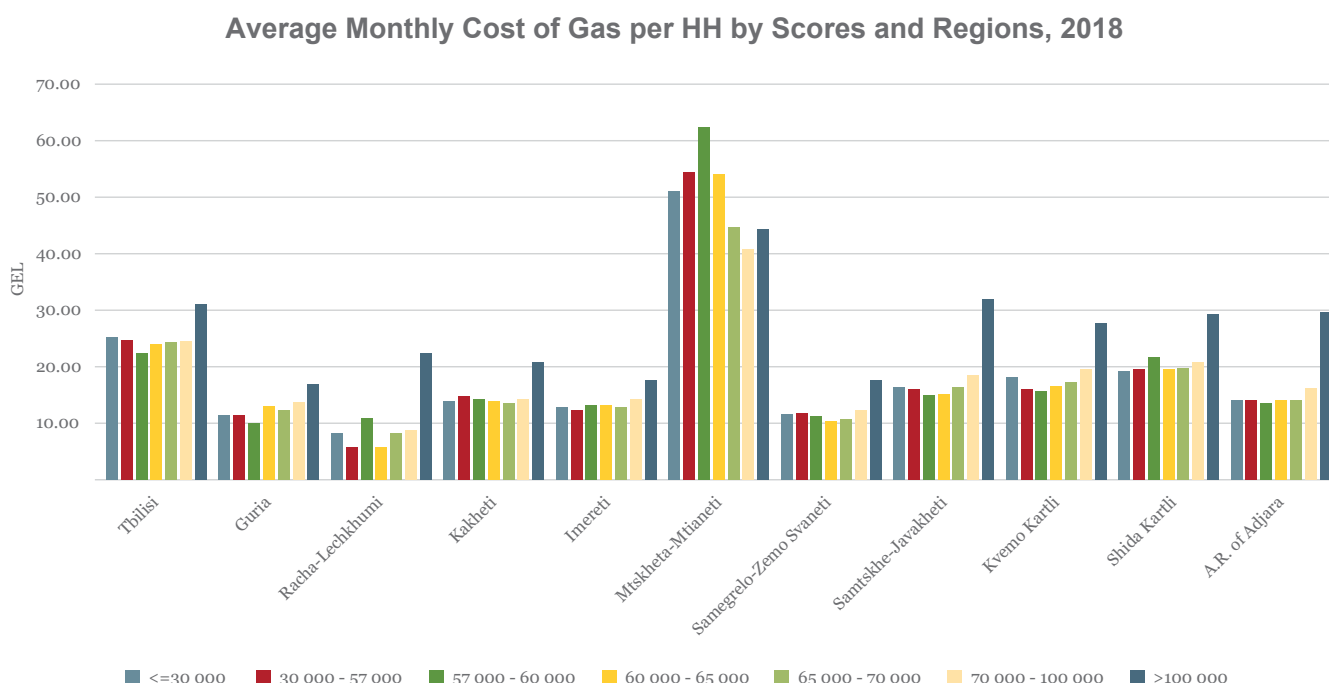
Average monthly electricity cost per household ranges from USD 4.1 (~ EUR 4) (which is approximately 75 kWh electricity consumed) to USD 12.5 (184 kWh). The highest monthly electricity costs /consumption have the families living in Tbilisi (9-12.5 USD/140-184 kWh), for other regions, the consumption patterns and therefore costs paid for electricity are more or less same. The reason why Electricity consumption in Tbilisi is twice as much as in other municipalities, can be in existing subsidy schemes, according to which, Families in Tbilisi receive bigger subsidy (~USD 185 in a year) than families in the region (~USD 15.7 in a year).

Graph 8: Average monthly electricity expenditures



This is also true for gas consumption. Families receiving gas subsidy (in Mtskheta-Mtianeti Region, kazbegi/dusheti municipality) have the highest consumption (14-21.6 USD / 72-110 m³).

Graph 9: Average monthly gas expenditures



Therefore the existing structure of energy subsidies in Georgia is not equitable – providing much higher subsistence level to Tbilisi residents compared to regions, even in Tbilisi consumers does not have the flexibility of optimization between electricity and gas use and encourages excessive energy use by population compared to other categories of vulnerable customers.

Recommendations

Policies on energy poverty and vulnerable consumers requires different approaches. Vulnerable consumers (who are electricity and gas consumers according to the EU Legislation) are an important part of the energy poverty, however energy poverty is not limited to this category.

Energy poverty is the subject of energy policy, while socially vulnerable consumers are related to social policy. Energy assistance for socially vulnerable consumers can be considered as a short-term measure in the process of liberalization of energy markets. In the long term, it is desirable to divide energy and social issues from each other and allow the citizens to use social allowances according to their own priorities.

In contrast, energy poverty is related to the geographical-territorial areas (climatic zones, clean energy access), conditions of the distribution network (security, quality of supply), housing type (inefficient buildings), energy expenditure shares in total revenues and other factors, which requires complex approach.

State Energy Policy should be targeted at addressing and gradual elimination of energy poverty. Therefore, it is recommended to develop official definition of EP and incorporate it to the existing legislation. We suggest the following definition: “Energy Poverty - the state where consumers are deprived of possibility to receive electricity and/or to satisfy the basic energy needs continuously, safely, and at affordable price”. The legislation should also state that, country has to develop measures for gradual elimination of energy poverty”.

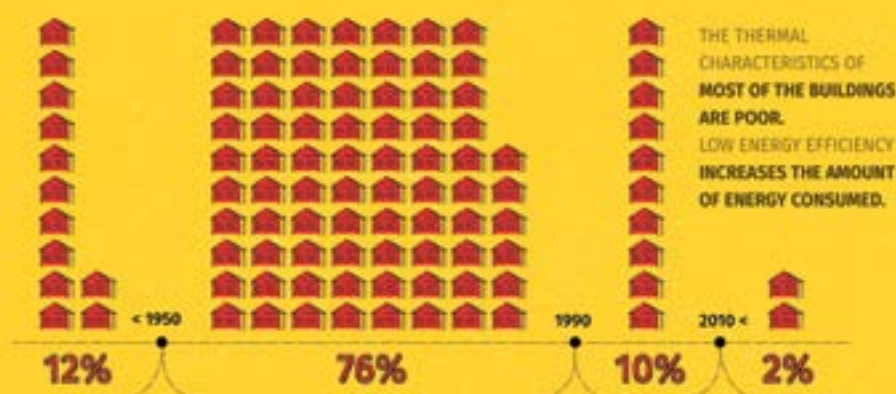
The specific parameters of Energy Poverty can be defined later by sub laws, based on agreements between GNERC and MoESD with the account of current social-economic realities. However such a provision would define a general goal for the fragmentary attempts that are already being taken for elimination of energy poverty.

- After introducing the general definition of energy poverty, it is important to conduct an empirical study based on pre-defined indicators. A combination of expenditure based and consensus-based indicators can be used.
- After a study of energy poverty, a long-term program of gradual elimination should be developed. Long-term support measures should be linked to factors that cause energy poverty. For example, if the energy poverty is caused by inability to pay the bills, the vouchers may be offered, but if the main cause of energy poverty is low energy efficiency in buildings, the vouchers will not be an efficient solution.
- The current subsidy schemes should be reviewed and their effectiveness should be evaluated. Electricity voucher for the socially vulnerable population in the winter months should be used for natural gas as well.
- Information campaign and awareness raising on energy efficiency and energy poverty should be equally directed at socially vulnerable consumers and population living in the rural areas. For the population living in the rural areas, special attention should be made on the harmful characteristics of the inefficient wood stoves and explained that firewood consumption cannot always be considered safe. Women should be singled out as main target groups regarding the firewood consumption.

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YEAR OF COMPLETION OF DWELLING CONSTRUCTION IN GEORGIA



45%

OF HOUSEHOLDS USE FIRE WOOD FOR HEATING IN GEORGIA.

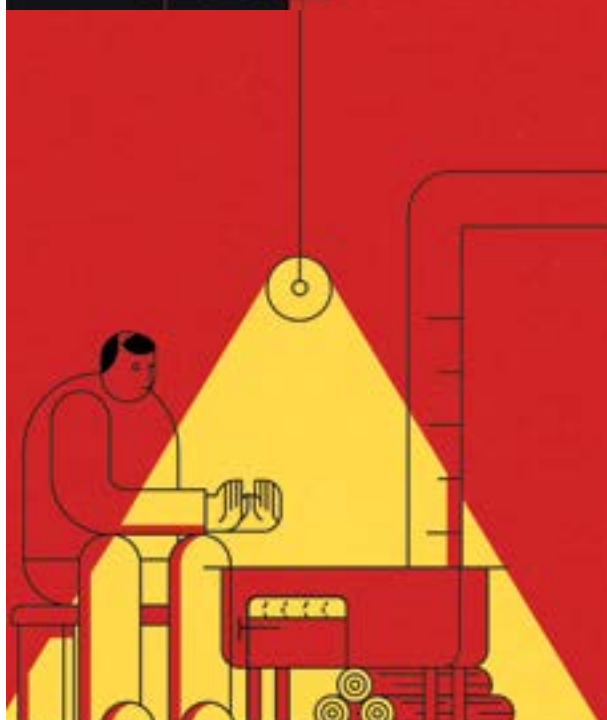
OPEN FIRES CAUSE INDOOR AIR POLLUTION
DAMAGING:



OPEN FIRES DISPROPORTIONALLY HURT WOMEN AND CHILDREN.



POORLY VENTED
COOK STOVES
HAVE BEEN STATED AS HAVING THE SAME ADVERSE HEALTH IMPACTS AS SMOKING TWO PACKS OF CIGARETTES A DAY.



THE POPULATION OF GEORGIA

**HEATS ONLY A SMALL PART
OF THE TOTAL LIVING SPACE
IN COLD WEATHER.**

**MOSTLY ONLY 20M²
OR LESS ARE HEATED**

**COST OF ELECTRICITY AND NATURAL GAS
IS PARTIALLY SUBSIDIZED
FOR HOUSEHOLDS IN GEORGIA**

**BESIDES, IN 2018
MORE THAN 33 MLN.
ENERGY SUBSIDIES WERE PROVIDED
FROM NATIONAL AND/OR MUNICIPAL
BUDGETS.**

ENERGY POVERTY

DEPENDS ON:

**ACCESS TO
CLEAN ENERGY**

**ENERGY TARIFF AND
HOUSEHOLD INCOME**

**ENERGY EFFICIENCY
OF BUILDING**

A family might not be a socially vulnerable,
but be an energy poor. Energy poverty differs from income poverty.

Sergii Balan

General Manager for Energy Sector Development, DiXi Group

Denys Nazarenko

General Manager of Educational Programs, DiXi Group

Introduction

Euro Maydan, or the Revolution of Dignity, as a result of which the political power has turned to the pro-European political forces, gave a powerful momentum to the social and economic reforms in Ukraine. Transformations in energy sector were among priorities of this modernization due to a set of factors, the most important being that since 2011 Ukraine has been a party to the Treaty establishing the Energy Community and further the EU – Ukraine Association agreement, which predetermined a relatively clear direction and fundamental goals for market reforms. Another crucial factor that has triggered radical changes in the energy sector was the military and economic confrontation with the Russian Federation, which eventually led Ukraine to cease purchasing Russian gas since November 25, 2015, and gave start to a structural reform in the gas sector in general. The most important and most sensitive to the population consequence of this reform though was a rapid move to adjust the energy prices, mainly on natural gas and electricity, closer to an economically justified market level.

This increase in energy prices during 2015-2018 was caused by abolishing the practice of subsidizing of some consumers at the expense of others (mainly, households at the expense of the industry), a first step for the preparation to the liberalization reforms in energy markets. Due to this, energy prices and tariffs for the population spiked, all data compared to the previous year:

- In 2015, – for electricity (by 66.9 %), for natural gas (by 273 %), for hot water and heating (by 78.4 %) ²⁸;
- In 2016, – for electricity (by 60 %), for natural gas (by 42 %), for hot water and heating (by 88 %) ²⁹;
- In 2017, – for electricity (by 28.1 %), for natural gas (by 1.2 %), for hot water and heating (by 3.5 %) ³⁰;
and
- In 2018, – for natural gas (by 22.9 %), for hot water and heating (by 3.5 %).

Most recently, this process has slowed down only slightly: as at May 2019, compared to December 2018, the electricity tariff remained unchanged, while the natural gas price for the households has even decreased (by 4.2%) ³¹.

There are many factors that caused transformation of the energy poverty into one of the most important and urgent problems in Ukraine. First of all, a rapid adjustment of the energy prices closer to market levels without an appropriate improvement in living standards and real incomes of the households, objectively resulted in downgrading of a substantial part of society to the low-income category. The government of Ukraine, as will be shown below, endeavors to protect the most vulnerable consumers through providing subsidies covering utilities and energy services. Although these steps are pursued to mitigate the process and produce some social relief, the biggest flaw of this policy lies in the lack of sustainability. Extremely large amounts of related expenditures of the State Budget is also a significant factor to consider.

²⁸ Consumer price indices for goods and services (compared to December last year), State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/operativ/operativ2010/ct/is_c/arh_isc/arh_iscgr10_u.html

²⁹ Ibid

³⁰ Ibid

³¹ Consumer price indices for goods and services in 2019 (compare to December last year). State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/operativ/operativ2019/ct/is_c/is_c_u/isc2019gr_u.html

Another aspect reinforcing the energy poverty is the reluctance of the government in creating tools and measures needed for a large-scale improvement of energy efficiency of housing in Ukraine. Although a large-scale energy saving and energy efficiency reform was launched with the adoption of a package of framework laws in 2017, its real effects and results will only be felt in the medium and long run, and even then may not gain proper influence due to the incomplete, slow and inaccurate implementation of the relevant EU legislation. Another structural flaw of the state policy on fighting the energy poverty lies in its inconsistency. Ukraine holds a relatively favorable position of rather enabling climate and geography preconditions, it is endowed with considerable availability of resources for extraction and generation of energy, production and import of various types of energy. And yet, as will be shown, the energy poverty in Ukraine is an important viable problem, which means that it may be triggered more by the social and financial causes than those purely related to energy availability. Therefore, the state policy on combatting the energy poverty should be taking comprehensive but above all social approach, and focus not only on the energy needs of the consumers but also on their financial ability to pay fully and in timely manner for the consumption sufficing their needs.

In fact, the Ukrainian government generally pursues social-oriented policy, and often does so in excessive manner, for instance by reducing investments for the sake of social security. And yet, these policies as a rule are being implemented in a highly ineffective, non-stimulating and corruption-enabling way, also not taking into account the complexity of the issue of the energy poverty, while focusing exclusively on direct subsidies compensating for consumption of the natural gas, electricity and heating for the population.

Although Ukraine's laws and regulations lack definitive term for the energy poverty, some general approaches in the most recent developments of the legislation have been elaborated towards identifying people in the need of the social support specifically in the markets of electricity and natural gas. More broadly, the term of "energy poverty" is becoming increasingly used in the expert discourse and as the subject for comparative studies researching the issue in the regional context or as compared to the European Union.

Preliminary assessment of the energy poverty

In general, expenses related to the high cost of utilities and energy services consistently represent one of the greatest concerns to the Ukrainian public. Thus, as of the fall of 2018, the most troublesome problems for Ukrainians were the military conflict in the East of Ukraine, low wages and pensions, and the rise of the utilities prices and tariffs. As at June 2019, top three issues showed now change.

Table 1: The results of the national sociology survey on the most important issues for the respondents

Issues ranged according to the importance for the respondents	Share of respondents indicated the issue as important for them as at:	
	28.09 - 16.10. 2018 ³²	14.06-19.06.2019 ³³
Military conflict in the Eastern Ukraine	54.4	54.3
Low level of salary or pension	54.1	45.5
Rise of tariffs for utilities	48.1	36.6
Rise of prices for basic goods, inflation	34.9	25.1
Bribery and corruption in the central government	25.5	21.9
Corruption in the courts, police, prosecutor's office	--	20.7
Absence of work, unemployment	26.8	19.6
Inability to receive medical care of decent quality	19	15.5
Inability to receive education of decent quality	4.1	6.1

³² Electoral views and disturbing Ukraine's population the most, autumn 2018, Sociological group «Rating». See more: http://ratinggroup.ua/research/ukraine/elektoralnye_nastroeniya_i_problemy_naibolee_volnuyuschih_naselenie_ukrainy_osen_2018.html

³³ Electoral situation in Ukraine, the Committee of the Voters of Ukraine. See more: http://www.cvu.org.ua/uploads/Prezent_UA_PRESS.PPTX

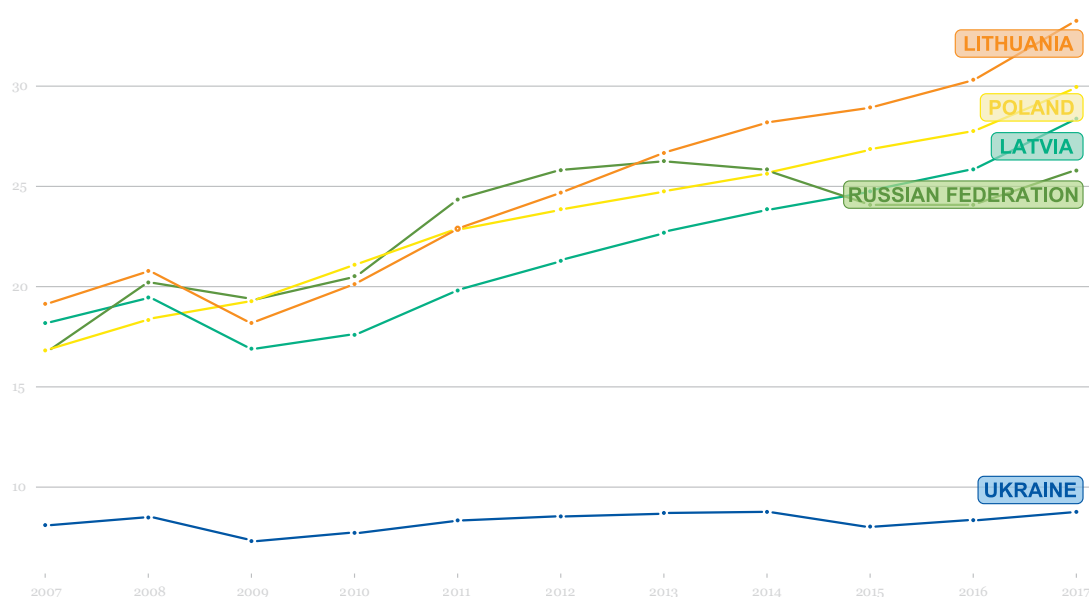
Issues ranged according to the importance for the respondents	Share of respondents indicated the issue as important for them as at:	
	28.09 - 16.10. 2018	14.06-19.06.2019
Unfavorable conditions for the development of small and medium-sized businesses (large taxes, etc.)	6.9	5.9
Rise in crime, insecurity in the streets	9.8	5.6
Lack of freedom and democracy	--	3.1

It is easy to see that three out of four problems perceived most painfully for the Ukrainian society are directly or indirectly connected to the energy poverty. Therefore, aside of the military conflict and the endangered national security caused by the annexation and occupation of the Ukrainian territory by Russia, the energy poverty may well be considered as the greatest social problem in Ukraine, although it manifests itself in various aspects.

The population shows to expect active actions and quick results in reducing utility tariffs from the President of Ukraine, whose powers in fact are in no way connected to the government's or parliament's economic policies, instead are limited to foreign policy and security. A poll conducted in June 2019 has shown that the *"reduction of tariffs"* (38%) is the second only to the *"ceasefire in the Donbas"* (50%) in the actions, which the respondents expect from the newly elected President³⁴. Such a situation may indicate both an insufficient level of education of the population regarding the distribution of political power and responsibilities in the government, as well as a belief in the President's ability to influence the utility tariffs in an informal manner, and thus implies significant doubts in the rule of law in Ukraine. In any case, data shows that the **problem of paying for utilities and energy services is perceived by the population as a pressing issue.**

The evaluation of the income level of the population implies the consideration of the population's aggregated incomes and the level of inflation in the country. The GDP level based on purchasing power parity (which recons on the cost of living and the level of inflation in the country) during 2007-2017 in Ukraine had either negative or insignificant positive dynamics with a minimum of USD 7,263.4 in 2009 and a maximum of USD 8,710.8 in 2014. For comparison, the GDP per capita based on purchasing power parity of the post-socialist countries of the EU, starting with the level already several times higher than that of Ukraine in 2007, continued to grow at a significant pace, and during the same period increased on average by 1.5 times.

Graph 1: GDP per capita, PPP (current international \$)



Source: The World Bank

³⁴ Monitoring of the voting views of the Ukrainians, June 08-12, 2019, Sociological group "Rating".

See more: http://ratinggroup.ua/getfile/363/rg_ua_monitoring_062019_press.pdf

³⁵ World Bank database. Source: <https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?end=2017&locations=UA-RU-PL-LT-LV&start=2007>

And yet, according to the State Statistics Service of Ukraine, an average share of households' expenses covering the utilities goods and services in 2015-2016 remained, if not insignificant, at least not decisive (it amounted to 9.8%, 11.1% in 2015 and 2016, respectively³⁶). Maintaining this indicator at a relatively stable level against the backdrop of a substantial rise in prices for energy and utilities services was largely possible for the government through increasing the number of subsidized households (approximately 42.3% of the total number of households in Ukraine at Q1 2017).

Here, two factors have had the largest impact: since the energy-related expenses grew materially faster than the rest of the living costs, the threshold for awarding the subsidy (then – 15% or more of a household's total budget is spent for energy and housing services) became easier to surpass by many, and in the same time, the Cabinet of Ministers has decided to soften significantly the requirements for applying for such social benefits. Thus, the number of households receiving the subsidies surged as the result. This was the way for the government to move from non-transparent subsidizing the whole population through keeping the prices artificially low for all consumers and supporting tremendous deficit of JSC “Naftogaz of Ukraine” (also – Naftogaz) away to personalized social benefits to those applicants who proved their complicated financial condition. Nevertheless, in 2018 and 2019, as a result of a set of factors the number of such aided households has been steadily decreasing.

However, the process of optimization of such subsidies recipients in Ukraine, which was conducted in several waves from 2016 to 2018, has resulted in a viable increase in the average percentage of household expenditures for housing, water, electricity and gas payments: according to the State Statistics Service of Ukraine, in 2016 it amounted to as much as 16%, in 2017 – to 17% and slightly dropped to 15.2%³⁷ in 2018. It is noteworthy that the difference of this indicator for the citizens living in the urban areas on average is higher by 2% than that for inhabitants of rural areas³⁸. **In subsequent periods, households' expenditures on housing, water, electricity, gas and other types of fuels has largely stabilized and amounted to 13.4% and 13.5% of total household expenditures in 2017 and 2018, respectively.** In absolute numbers, this figure amounted to UAH 833 and UAH 1,001 per month, or approximately USD 31 and USD 37 per month, respectively³⁹ (all amounts in USD are calculated according to average yearly exchange rate by the National Bank of Ukraine).

Growing arrears for the payment for the utilities is traditionally considered to be another indirect indicator and the consequence of energy poverty. According to the State Statistics Service of Ukraine, at the beginning of 2015, the level of payments for utilities equaled to 95.45% of total value of all consumed services, while at the beginning of 2017 it has dropped to 72.6% (for example, in January 2016 this figure was as poor as 56.8%). The most recent data as of January 2019 shows a permanently insufficient payments discipline at the level of 71.8%⁴⁰.

A more detailed analysis of the available statistical information shows that the lowest level of payments for accrued amounts is observed in January, February and March, while in the summer months and in September, the population pays more than it is accrued⁴¹. This data suggests that in most cases the consumers of utilities services are ready and willing to pay their bills in full, but a significant increase in the accrued amounts during the heating period leads to the inability of many to do so in time.

Given that the average level of payment for utilities in Ukraine for the first half of 2019 amounted to about 80%, and the highest average payment rates are reported for such services as centralized supply of cold water, wastewater and household waste disposal (94% and 92%, respectively), Ukrainian consumers seem to have

³⁶ Expenses and available resources of households in Ukraine in 2016, State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2017/zb/07/zv_vrdu2016pdf.zip

³⁷ The structure of total households' expenses, State Statistics Service of Ukraine. See more: https://ukrstat.org/uk/operativ/operativ2007/gdvdg_rik/dvdg_u/str_vut2010_u.htm

³⁸ The structure of total households' expenses, State Statistics Service of Ukraine. See more: https://ukrstat.org/uk/operativ/operativ2018/gdvdg/Arh_vrdu_u.htm

³⁹ Expenses and available resources of households in Ukraine in 2018, State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2019/zv/06/zv_vrdu2018.pdf

⁴⁰ On the population's payment for the housing and utilities services in January 2019. See more: <http://www.ukrstat.gov.ua/express/expr2019/02/28.pdf>

⁴¹ Analysis of payment discipline for utilities services in Ukraine. See more: <https://feao.org.ua/wp-content/uploads/2018/10/2018-10-24.oplata-zhkh.pdf>

the greatest difficulty paying for energy services, above all for gas supply, supply of heat and hot water. Indeed, the lowest average payment rate is reported for natural gas supply services - 76%. In absolute numbers, for the specified period the average level of arrears by type of services was:

- for the supply of natural gas - about UAH 16 billion (or approximately USD 590 million);
- for centralized heating and hot water supply - about UAH 13 billion (or approximately USD 480 million);
- for centralized supply of cold water and wastewater disposal- UAH 2 billion (or approximately USD 7 million);
- for the maintenance of buildings and structures and adjoining territories – UAH 3.5 billion (or approximately USD 13 million);
- for the disposal of household waste – UAH 0.4 billion (or approximately USD 15 million)⁴².

It is noteworthy, however, that the data for the first half of 2019 show a significant positive trend in debt repayment for natural gas supply, district heating and hot water supply (payment rates were 105% and 103.4%, respectively)⁴³. This tendency may be explained primarily due to the risk for consumers with outstanding debt to lose the right to receive a subsidy for the payment of housing and communal services, as provided by the rules for calculating subsidies introduced in the monetization process.

Assessing the actual number of Ukrainians in a state of energy poverty is a rather hard exercise to perform, both because of the lack of formalized criteria, and due to the general complex social and economic situation. Nevertheless, if one applies the most important criterion, namely, the inability to maintain a sufficient housing temperature, the bi-annual research of the State Statistics Service of Ukraine “Self-Assessment by Households of Availability of Certain Goods and Services” may provide some valuable insights. As of 2013, 11% of households in Ukraine have admitted they had the problem of maintaining the proper temperature in winter⁴⁴. As a result of the start of the process of bringing the energy cost to an economically justified level, in 2015 this figure has more than doubled up to 25%⁴⁵. To put these figures to the context, the Eurostat data shows that in the same year, the average value of this indicator for the EU was only 9.4%⁴⁶. The next study, which took place in 2017, showed a further increase of this indicator, which reached up to 29%⁴⁷, while the EU figure has slightly fell in 2017 and accounted only to 7.8%.

At the same time at the regional level, less economically potent Zakarpatska, Kherson and Ivano-Frankivsk regions were reported to host the largest share of such households (ranging from 50% to 89% of households), while the lowest level was associated with the regions with relatively better economic development indicators – Kyiv city, Kyiv and Zhytomyr regions (from 6% to 10%). Such a division generally suggests that the greater weight of financial and organizational capabilities for implementing the energy-efficient measures in comparison with purely climatic factors, when the preconditions for energy poverty are concerned. Similar conclusions can also be drawn from analyzing this indicator in the EU Member States: while the lowest values systematically scored by relatively richer, albeit northern countries (in 2017 – Luxembourg 1.9%, Finland 2.0%, the Netherlands 2.4%), those countries with relatively lower GDP seem the poorest in ability to maintain adequate temperature in their houses (Bulgaria 36.5%, Greece 25.7%, Lithuania 28.9%).

In terms of types of fuels consumed by households in Ukraine, 54.9% of all energy resources is represented by natural gas, which also has the largest share in all imports of energy resources. At the same time, according to “Naftogaz of Ukraine”, a state-owned monopoly company that is indirectly responsible for gas supplies for

⁴² On the payment for the utilities services by the population. Express issues. State Statistics Service of Ukraine. See more: <http://www.ukrstat.gov.ua/>

⁴³ On the payment for the utilities services by the population in June 2019. Express issues. State Statistics Service of Ukraine. See more: <http://www.ukrstat.gov.ua/express/expr2019/07/105.pdf>

⁴⁴ Self-Assessment by Households of Availability of Certain Goods and Services, State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2014/dop/04/dod_sdgt_13w.zip

⁴⁵ Self-Assessment by Households of Availability of Certain Goods and Services, State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2017/dop/07/dop_sdrd2016.pdf.

⁴⁶ Inability to keep home adequately warm - EU-SILC survey, Eurostat. See more: http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=ilc_mdso1&lang=en

⁴⁷ Self-Assessment by Households of Availability of Certain Goods and Services (based on random inspection of the living conditions) in 2017. State Statistics Service of Ukraine. See more: http://www.ukrstat.gov.ua/operativ/operativ2018/gdvdg/Arh_sdgt_dtp_u.htm

the needs of population in Ukraine, during 2018, the total consumption of natural gas in Ukraine increased by 1.3% (from 31.9 bcm to 32.3 bcm). At the same time, direct consumption of gas by the population decreased by 0.6 bcm or by 5.4%, which may be caused by the reduction of subsidy recipients as a result of their stronger verification and strengthening of the requirements for the applicants, lowering of social norms for the subsidies (the actual amount of assistance has shrunk since May 1, 2018, for about 10%), as well as an increase in the final gas price for the population by 22.9% starting November 2018. However, over the same period, the usage of natural gas by heat producing enterprises for budgetary and religious organizations and for the general population has increased by the same 0.6 bcm⁴⁸.

Energy Access

The access to the modern energy sources represents comparatively less painful aspect of energy poverty assessment. An extensive energy infrastructure and resulted from it nearly universal access to the grids and networks, a heritage from Soviet times, still secures at least technical ease of getting connected to the energy. Out of 14,935 thousand households registered in Ukraine in 2018⁴⁹, 12,322 thousand have had connection to the gas networks⁵⁰. Moreover, within three last years, this number has been relatively stable, showing only moderate growth of less than 100 new households' connections each year. The main guarantor of this situation is the national energy regulator introduced by the recent gas and electricity market reforms.

In the course of implementation of the Third Energy Package in Ukraine, in 2017 an independent energy regulator - the National Energy and Utilities Regulatory Commission (hereinafter – the NEURC), was set to be created as a deeply reformed body, which independence is now protected by a dedicated bill. In 2018, 5 out of 7 members to the NEURC have been selected as a result of a competitive tender, and the agency has become functional, although understaffed.

The relevant law stipulates that among the main tasks of the NEURC there is protection of the rights of consumers of goods and services in the sector of energy and utilities⁵¹. Thus, the energy regulator is the only government body that is directly obliged to ensure unhindered access of all consumers to modern energy sources (natural gas and electricity). Taking into account the full compliance of the Law of Ukraine "On the NEURC" to the EU energy legislation, one should expect that such access will be provided properly.

However, the independence and even the ability of the NEURC to carry out its functions, including the provision of such access, is threatened by legal uncertainty associated with the decision of the Constitutional Court of Ukraine of June 13, 2019⁵² finding certain provisions of the mentioned law unconstitutional, which could potentially block its activities.

Currently, Article 19.2 of the NEURC Law provides for a clear obligation of the DSO and TSO at the request of a natural gas market participant (including the consumers) to provide them with an access to the gas transmission or gas distribution system. This connection may be performed in accordance with a relatively simple and defined procedure, namely on the basis of a set of documents, which includes the permission of the operator of the gas transportation or gas distribution system for such a connection, the developed technical documentation on the successful carrying out the preparatory and construction works. Detailed procedures are defined in the GDS Code⁵³. Thus, the right of any domestic or non-residential consumer to access gas services is guaranteed by law, but in practice it is not always easy for citizens to use such right.

A distinctive feature of the procedure for providing new customers with access to gas distribution networks, and hence to gas services, is the difference in a standard and non-standard connection in Ukraine. Connecting the customer's gas equipment to the gas supply point of no longer than 25 meters for rural and 10 meters

⁴⁸ Naftogaz of Ukraine 2018 annual report.

See more: <http://www.naftogaz.com/files/Zvity/Annual-Report-2018-ukr.pdf>

⁴⁹ State Statistics Service of Ukraine. Social and Demographic Characteristics of the Households in Ukraine in 2018.

See more: http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/07/zb_sdhd2018pdf.pdf

⁵⁰ The NEURC Annual Report 2018.

See more: https://www.nerc.gov.ua/data/filearch/Catalog3/Richnyi_zvit_NKREKP_2018.pdf

⁵¹ The NEURC Law, Art. 3.2, 3.4. See more: <https://zakon.rada.gov.ua/laws/show/1540-19/print> Article 3 It. 2, 4

⁵² <http://www.ccu.gov.ua/novyna/ksu-vyznav-nekonstytuciynomy-okremi-polozhennya-zakonu-ukrayiny-pro-nacjonalnu-komisiyu-shcho>

⁵³ Gas distribution code of Ukraine. See more: <https://zakon.rada.gov.ua/laws/show/z1379-15>

for urban areas and for facilities with a capacity of up to 16 cubic m of gas per hour is considered a standard one, while all larger connections are considered non-standard. The significant risk to consumers' capacity to access to the gas services lies in is that the maximum fee for such a service to be paid by the consumer is set by the NEURC only with regard to the standard connections, leaving the fees for the non-standard ones only slightly regulated⁵⁴. It is worth noting that the connection to the gas networks of multiapartment buildings, blocks of private homes or townhouses often significantly exceeds the capacity and distance thresholds established for standard connections, which means that distribution network operators have the opportunity to influence the connection price for the most important connections, while consumers are not provided with the proper remedies to protect their rights by the regulator. It should be noted that the share of non-standard connections in the total number of all such operations among all categories of consumers has increased over the past four years: 2015 - 32%, 2016 - 48%, 2017 - 58%, 2018 - 61%. In general, in 2018, the share of standard connections in domestic consumers was 40%, and in non-residential ones - 26%. Of all the connections made in 2018, 4,242 once were identified as standard and 6,704 as non-standard ones. Also, a large number of journalistic investigations reveal corruption schemes based on the monopoly position of regional gas companies in designing and issuing technical specifications for connections to the gas networks, which are often abused by such companies^{55, 56}.

According to the data of the World Bank, aside of minor fluctuations, Ukraine shows 100% coverage of its population with the access to the electricity within all the years of monitoring⁵⁷. While Ukraine struggles to get up in Doing Business rating by World Bank considerably because of complicated procedure for getting electricity for the entrepreneurs (this was assessed to take up to 281 days and cost up to more than 400 per cent of income per capita⁵⁸), the access for the population is guaranteed by the energy regulator the same way as in gas market.

In terms of the possibility and ease of access to electricity supply services, the situation in Ukraine is broadly similar to the one described for access to the gas, but may be characterized as slightly better, at least in terms of fees for such connection. Starting from 2018, the procedure for connecting to transmission networks and distribution systems of electric networks is regulated by the NEURC's regulations adopted in pursuance of the Law of Ukraine "On the Electricity Market"⁵⁹, namely the Code of Transmission System⁶⁰ and Code of Distribution Systems⁶¹, respectively. At the end of 2018, after consultation with the Energy Community Secretariat and after approval by the Antimonopoly Committee of Ukraine, the Methodology for the formation of the fee for connecting to the transmission system and distribution systems was approved⁶². This methodology has established a more transparent and non-discriminatory terms for determining the fee for connecting the consumers to the transmission system and distribution systems. In accordance with the above methodology, the NEURC calculates and approves for all distribution system operators the fees for both the standard connection⁶³, and the rates for non-standard connection for each territorial unit of all distribution system operators⁶⁴. Thus, the energy regulator has limited the maximum amount of non-standard connection fees, which essentially protects the interests of electricity consumers and facilitates access to such services for the most vulnerable and least protected categories of consumers.

⁵⁴ In 2019, according to the NEURC, this fee ranged from UAH 11,700 to UAH 18,860 (or USD 565 on average), depending on the type of the gas equipment, specifics of local area and the network available for connection .

⁵⁵ Bribes in Kyivgaz or how much you will unofficially pay for a single document, Narodna Pravda. See more: <https://narodna-pravda.ua/2019/03/26/vzyatky-v-kyevgaze-skolko-nuzhno-dat-na-lapu-za-odnu-bumazhku-smy/>

⁵⁶ Chief engineer of Donetskoblغاز's branch was caught on receiving UAH 17 thousand, Censor.net.ua. See more: https://censor.net.ua/ua/photo_news/3090599/na_habari_v_17_tys_grn_vykryto_golovno_injenera_odno-go_z_upravlin_pat_donetskoblغاز_foto

⁵⁷ World Bank data. See more: <https://data.worldbank.org/indicator/EG.ELC.ACCS.ZS?locations=UA>

⁵⁸ World Bank Doing Business 2019, Ukraine. See more: <https://www.doingbusiness.org/content/dam/doingBusiness/country/u/ukraine/UKR.pdf>

⁵⁹ <https://zakon.rada.gov.ua/laws/show/2019-19>

⁶⁰ The NEURC Resolution dated 14.03.2018 № 309 «On Approval of Transportation Network Code»

⁶¹ The NEURC Resolution dated 14.03.2018 № 310 «On Approval of Distribution Network Code»

⁶² The NEURC Resolution dated 18.12.2018 № 1965 «On Approval of Pricing Methodology for Connection to the Transportation and Distribution Networks»

⁶³ The NEURC Resolution dated 28.12.2018 № 2068 «On Approval of Fees for Standard Connection in 2019»

⁶⁴ The NEURC Resolution dated 28.12.2018 № 2069 «On Approval of Fees for Non-Standard Capacity Connection and Fees for Lineal Part of Connection in 2019»

Energy Efficiency of Buildings

The poor energy performance of buildings stock is one of the main causes of energy poverty, while energy efficiency measures in the Member States of the European Union are fundamental to overcoming it. The positive experience of these countries proves that reducing energy poverty first of all should be based on the support of vulnerable consumers in improving energy efficiency of buildings, namely through modernization of housing stock, larger shift to use of renewable energy sources by the vulnerable consumers, etc.

While analyzing the state of energy efficiency of buildings in Ukraine, it should be noted that as of January 1, 2019, the country's total housing stock amounted to 993.3 million square m, of which 605.5 million square m are located in urban areas and 387.8 million square m - in rural ones⁶⁵. However, since the largest share of the multistory buildings in Ukraine were built in the 1960s-1980s, they have not been designed to conserve energy or facilitate rational use of energy. Therefore, local standards of energy consumption are roughly twice as large as in neighboring Poland (80 kWh and 40 kWh per square m, respectively), while the real consumption may reach as much as 240 kWh per square m⁶⁶. At the same time, in some regions of Ukraine, the consumption of heat in the buildings exceeds the figures of the EU average by more than 60%.

According to certain calculations, the financial resources needed to modernize the buildings stock in Ukraine are very high. If the complex energy modernization of the housing stock in the post-Soviet EU Member States cost an average of about EUR 150 - 170 per square m of living space, than in Ukraine, despite cheaper labor force and advanced modern technologies, at least EUR 100 billion of investment is needed for the modernization of entire housing stock of approximately 1 billion square m of total living area⁶⁷, if to roughly assess local relevant average cost of EUR 100 per square m. Quite inadequately to such demand, in the 2017 State Budget, the expenses for housing and communal services subsidies hit the amount of UAH 70 billion or approximately USD 2.6 billion, while those directed to finance the energy efficiency measures amounted to only UAH 800 million or slightly less than USD 30 million. In 2018 and 2019, the situation saw no change, except that total expenditures on the subsidies were reduced, and the social benefits began to be provided in cash.

At the same time, as a direct result of the implementation of the Association Agreement between Ukraine and the EU and cooperation within the framework of the Energy Community, Ukrainian Parliament and Government have made significant progress in approximating and harmonizing the national energy efficiency legislation with the provisions of respective *acquis communautaire*, primarily the framework Energy Efficiency Directive 2012/27/EU, Directive 2010/30/EC on Energy Labeling, Directive 2010/31/EC on Energy Performance of Buildings. Thus, during 2017 the framework laws for large-scale energy modernization in Ukraine were adopted:

- "On the Energy Efficiency Fund", which will promote the implementation of incentive and support measures for improving energy efficiency of buildings and energy saving;
- "On Energy Efficiency of Buildings", which envisages promotion of energy efficiency of buildings, certification of energy efficiency of construction projects and existing buildings by energy efficiency classes, assessment of compliance with the minimum requirements for energy efficiency of buildings, development of recommendations for raising the level energy efficiency of a building that takes into account local climatic conditions and is technically and economically feasible;
- "On Commercial Metering of Thermal Energy and Hot Water Supply", which lays down the rules for commercial metering and rational use of fuel, energy and water resources, and introduces the principle that an individual consumer should only be obliged to pay for those volumes of utilities services that he or she actually consumed.

In 2017-2018, the responsible authorities among the Ukrainian executive bodies have been busy developing and adopting the necessary secondary norms provided for by the mentioned laws. The 2018 monitoring report on progress in implementing the Association Agreement with the EU in energy, prepared by a coalition of local NGOs, generally assessed the Government's work as satisfactory, although both on legislative and regulatory level there were reported gaps, where important norms of the EU energy efficiency legislation have

⁶⁵ Housing Stock of Ukraine by Regions in 2018. The State Statistics Service of Ukraine.

See more: http://www.ukrstat.gov.ua/operativ/operativ2019/zf/zhytl_fond/zhytlofond_zh%20reg_18.xls:

⁶⁶ https://biz.censor.net.ua/columns/3025740/enenrgomodernzatsya_rinok_na_50_mlyardv_dolarv

⁶⁷ <https://bio.ukr.bio.ua/news/18321/>

not been adopted in full⁶⁸.

The policies and mechanisms on protection of vulnerable consumers available in Ukraine

• Ukrainian legislative definition of the “vulnerable consumers”

The term “vulnerable consumers” is relatively new to the Ukrainian legislation. For the first time, it was enshrined in the Law “On the Natural Gas Market” (adopted in 2015) and defined as *“household consumers entitled to the state assistance in accordance with the procedure established by the Cabinet of Ministers of Ukraine”*. The protection of vulnerable consumers is defined by the Law as one of the main tasks of the regulator in the natural gas market, while Article 16 of the aforementioned Law is entirely devoted to the protection of vulnerable consumers.

In accordance with the Law, the Cabinet of Ministers of Ukraine is obliged to set criteria for the classification of consumers as vulnerable. Vulnerable consumers are entitled to a subsidy reimbursing the expenses for consumed natural gas and to other targeted assistance provided in the manner established by the Cabinet of Ministers of Ukraine. The procedure for protecting vulnerable consumers has to: 1) identify categories of vulnerable consumers; 2) determine how such consumers are accounted; 3) determine the measures for monitoring and state control based on the fact of persons belonging to the category of vulnerable consumers; 4) set forth special measures for the protection of vulnerable consumers regarding disconnection during critical periods in order to maintain the needs of such consumers in natural gas; 5) envisage the amount of personalized assistance for the vulnerable consumers. Such personalized assistance should be provided to vulnerable consumers in a manner that ensures its intended use.

The Law “On the Electricity Market”, as adopted in 2017, takes a slightly different approach in determining the “vulnerable consumers”: *“household consumers defined in line with procedure established by the Cabinet of Ministers of Ukraine that are entitled to the assistance laid down by the law for the reimbursement of expenses related to payment of consumed electric energy and / or entitled to protection from disconnection in certain periods”*. Here, the legislator broadens the interpretation by adding the criterion of uninterrupted access of such consumers to the network to the earlier criterion of income. Among other things, a primary task of the electricity market regulator is to protect the vulnerable consumers. The regulator is further vested with the powers to take part in protecting of the vulnerable consumers of electric services, in particular by accounting in its regulations for specific stance of the market participants towards such customers.

Article 57 of the Law “On the Electricity Market” foresees certain remedies available to the vulnerable consumers on the electricity market, namely a prohibition for the electricity suppliers to cut off the power supply to vulnerable consumers. Article 61 of the same Law, which is entirely devoted to the protection of vulnerable consumers, specifies that electricity supply to vulnerable consumers is carried out by the universal service supplier (USS) in accordance with this Law and the rules of the retail market.

The stability, proper quality and availability of electricity supply to the consumers, including the vulnerable ones, are in the public interest that the Cabinet of Ministers of Ukraine can provide by imposing the Public Service Obligations (PSOs) on market participants. The service supplier is obligated to keep track of consumers who are provided with the services, including the vulnerable consumers. But at the same time, service suppliers have the right to receive compensation for the costs of providing the services to the vulnerable consumers in accordance with the legislation in the manner prescribed by the Cabinet of Ministers of Ukraine.

Ukrainian legislation is often characterized by volatility and eclecticism, which manifests itself in particular in regulating the rights of vulnerable consumers protection. Approved by the Order of the Cabinet of Ministers of Ukraine in 2017, the Concept of State Policy on Consumer Rights Protection until 2020 among its main tasks provides for the necessity to address with specific focus the protection of the rights of vulnerable categories of consumers, in particular people with intellectual and physical disabilities. Hence, the mental

⁶⁸ <http://dixigroup.org/storage/files/2019-04-26/dixi-association-2019-eng-web.pdf>

and physical conditions, according to the government, are also signs of vulnerability when it comes to housing and utility services household consumers.

It is therefore safe to state that in Ukrainian legislation there is no universal definition of the concept of “vulnerable consumers” because in each market there are sectoral peculiarities that determine the specific content of this concept in each particular situation. However, income level or the ability to pay for consumed resources is the basic criterion, contained in all definitions.

Mechanisms for support of vulnerable consumers

There is no dedicated policy implemented in Ukraine to reduce the number of vulnerable consumers in energy markets. Instead, the government of Ukraine adopted a Poverty Reduction Strategy, which envisages improving the quality and accessibility of social services for vulnerable groups. However, this strategy is too general and does not contain a detailed action plan to fight the poverty in the energy dimension.

The data from the expenditure part of the State Budget provides the most illustrative evidence of the priorities of the system of vulnerable consumers’ protection in Ukraine: the 2019 State Budget envisages UAH 55 billion to cover utilities services abatements and subsidies, while also allocating as low as UAH 0.4 billion to finance the program “warm loans”, aimed at improving energy efficiency of residential buildings. This situation persists for years, paving the way for constant sustaining a significant number of Ukrainian citizens in the state of energy poverty.

Another viable problem is significant wearing-out of the energy infrastructure and networks. As a result of the Ukrainian governments’ maintaining the gas and electricity prices below the market level for the whole population for many years thus often leaving the operators without resources for renovation and maintenance, 60% of boiler houses in Ukraine have expired their term, and 20% of the networks are completely worn out. It is clear that in this situation losses in the heat supply system are very high and they continue to distort the data on volumes of energy consumption in Ukraine and also increase the state budget expenditures for covering the inefficient gas and electricity consumption.

Ukrainian legislation provides for two main forms of direct assistance to the vulnerable consumers - abatements and subsidies. In Ukraine, the social aid in energy sector is provided through under the regulation of about 50 legislative and regulatory acts. In line with the Resolution of the Cabinet of Ministers of Ukraine No. 117 dated 29.01.2003, the Unified State Automated Register of Persons Eligible for Benefits (EDARP) was created. The main purpose of this register is to establish in Ukraine a clear record of data on categories of the population eligible for the social benefits, as well as to introduce a system of personalized settlements with the companies and enterprises providing of services under subsidies prices.

The Decree of the Cabinet of Ministers of Ukraine No. 256 of March 4, 2002 “On Approving the Procedure for Financing Local Budget Expenditures for Effecting the Measures for Implementation of State Programs of Social Protection of the Population through Subsidies from the State Budget” the local offices of the Labor and Social Protection Service are vested with the responsibility to keep records of the personalized information on the citizens receiving the social benefits and to function as the main spending units of local budgets aimed at providing social aid to certain categories of citizens.

The largest categories enjoying the abatements are the war veterans; veterans of labor; citizens affected by the Chornobyl disaster; veterans of military service and veterans of law enforcement agencies; children of war; disabled people; rehabilitated persons. Persons who are entitled to benefits under several laws of Ukraine enjoy a specific abatement under one of them of their choice.

According to the legislation of Ukraine, the basis for granting privileges for the payment of housing and communal services is a certificate indicating to which privileged category the person belongs, what discount for payment for housing and communal services it is entitled to. In case of preferential payment for the services in the bills sent to the residents the payment of the service fee is indicated already adjusted for the discount (for example, in case of war veterans it is a 50 percent discount within the limits of social norms).

There are many varieties of abatements. The most common types of them are discounts on payment for

housing and communal services, telephone landline service, subsidized purchase of solid fuel for home heating and liquefied gas for domestic use, free urban and suburban fares. Benefits for payment of housing and communal services are provided within the limits established by the Resolution of the Cabinet of Ministers of Ukraine No. 409 “On Establishing State Social Standards in the Housing and Communal Services” dated August 6, 2014.

A more targeted approach to providing abatements has been implemented towards certain categories of receivers, namely the eligibility for benefits is determined based on family income level. At the same time, the aided persons are provided with the abatement via service providers during six months after certification of eligibility. Since the beginning of 2016, in order to determine the eligibility, the households with the working and working-age persons should apply to the local offices at the place of registration in the EDARP and submit a declaration of its income for the six months preceding the month of application.

The Law of Ukraine “On Amendments to the Law of Ukraine” On the Status of War Veterans, Guarantees of their Social Protection “on Strengthening the Social Protection of Participants in the Anti-Terrorist Operation, Participants in the Revolution of Dignity and Members of Families of Such Persons”, No. 2203-VIII dated 14.11.2017, which came into force as of February 24, 2018, has laid forth regulation of the status of the victims of the Revolution of Dignity. According to its norms, such persons are now eligible to enjoy the privileges stipulated by Article 12 of the Law of Ukraine “On the Status of War Veterans, Guarantees of their Social Protection”, namely a 75% discount in payments for the use of electric and thermal energy within the limits stipulated by the current legislation.

The abatements may be awarded to the separate categories of citizens on an individual basis by the law as a discount in payment for the actual consumption of the utility services. It is applied to the volumes within the established consumption norms (if consumption is metered) or for the whole volume of such norms (if no metering equipment is installed). When such abatement is applied, the assisted person is exempted from paying part of the cost of the services, whereas the state pays the subsidized portion of the cost to the service supplier.

The subsidy is an irretrievable monetary aid purposed to support the low-income families, which compensates part of the cost of housing and utility services⁶⁹. The subsidy in fact represents a difference between the amount of actual payment and the sum to be paid by the household when receiving such a right for the subsidy. The Cabinet of Ministers of Ukraine has first introduced the subsidies by its Resolution dated October 21, 1995 No. 848 “On Simplification of Granting of Subsidies for Reimbursement for Housing and Utility Services, Purchase of Liquefied Gas, Solid and Liquid Stove Fuel”. Unlike the abatements, the subsidy is not individual but is paid to a household (a family).

The calculation of the amount of subsidy is performed on case by case basis (respective procedure is prescribed in the Resolution of the Cabinet of the Ministers dated April 27, 2016 No. 319), and requires two key inputs to compute - the monthly income per family member and the cost paid for utilities. The formula for calculating the amount of subsidy is based on the relation of the family income level measured as two minimal living wage per person and the expenses under 15% of the total income of that family. The subsidy is therefore calculated as follows: the average monthly income of a family is divided by the number of people registered in a shared real estate and so the average monthly income per person is determined. This income is then divided by the minimal living wage (from January 2018 - UAH 1700 or USD 62.5⁷⁰), is further divided by a base factor of 2 and is multiplied by 15%. The base assumptions in the formula are the ratio in which a family with income at the level of two minimal living wages per person spends 15% of their total income for the utilities. This relation is then applied to a specific family with a specific income.⁷¹ The total income of the family includes all types of income, except for assistance to the orphans and children deprived of parental care, as well as the assistance to the internally displaced persons, which generally relates to the armed conflict with the Russian Federation.

Until May 2015, the amount of the subsidy used to be proportional to the level of expenses: a greater share of

⁶⁹ Resolution of the Cabinet of Ministers of Ukraine «Simplification of Granting of Subsidies for Reimbursement for Housing and Utility Services, Purchase of Liquefied Gas, Solid and Liquid Stove Fuel» dated 21.10.1995 No. 848. See more: <http://zakon5.rada.gov.ua/laws/show/848-95-п>

⁷⁰ Calculated according to average yearly exchange rate by the National Bank of Ukraine

⁷¹ How to calculate the amount of a subsidy // <https://teplo.gov.ua/subsidies/yak-rozrakhovuietsia-rozmir-subsydii>

household income spent to utility services allowed for the higher subsidy to be allocated. Under such a system, the applicant has always been tempted to increase amount of services consumed, or at least there were no incentives to consume energy more efficiently.

In 1998 to 2010, the majority of households were eligible for a subsidy when the expenditures on utilities exceeded 20% of income⁷². However, in July 2010, this threshold was reduced to 15%. According to the expert assessment prepared in 2016, the system of providing the subsidies in Ukraine allows it for the most people to pay for utilities from 9% to 16% of their monthly income⁷³, and for those 9% the poorest – to pay less than 7%. Moreover, these figures are representative for the heating season only, while in terms of total annual income (given that the heating season in Ukraine lasts for 6 months), the amount of actual payments for housing services is as low as 5-8% for most citizens and about 2% for the least wealthy.⁷⁴

As of 2018, there were 14,934.9 thousand households in Ukraine⁷⁵. Of these, in January-December 2018, the subsidies for the payment of housing and utility services were allocated to 3,916.8 thousand, in January 2019 – 3,649.0 thousand, in March 2019 – 3,897.6 thousand. According to the statistical service, the average size of the subsidy per household in February 2019 decreased by 0.7% compared to the corresponding period in 2018 and amounted to UAH 998.6 (USD 36)⁷⁶.

According to the data of the NEURC as received from the natural gas suppliers under PSO as of January 1, 2019, there were 12,355,873 household consumers of natural gas in Ukraine, of which 4,586,654 were allocated with the abatements or subsidies⁷⁷. It should be noted however, that not all recipients of subsidies use the supplied natural gas.

According to the State Statistics Service, during 2018, 7,471.5 thousand households has applied for subsidies to cover the costs of housing and communal services, which is by 8.9% less than in 2017. At that, the households in urban areas accounted for 66.5% of these applications, and in rural areas - 33.5%. In 2018, the subsidies were allocated to 6,537.7 thousand households (including those who applied in 2017 but were only allocated in 2018 and those continued receivers), including 4,515.7 thousand in urban areas, and in rural areas – 2,022.0 thousand. Compared to the corresponding period of 2017, the number of such households decreased by 25.8%. In 2016, over 60% of the country's population claimed subsidies.

In March 2019, the Minister of Social Policy Andrii Reva said that the maximum subsidy amount allocated in Ukraine was UAH 24 thousand (USD 880). At the same time, the average size of such subsidy to pay utility services in Ukraine at that time amounted to UAH 1,681. (USD 62).

Since February 2019, the subsidy is not allocated and its validity for the next period is not prolonged if the citizens maintain arrears for utility services for more than one month, and such a debt exceeds UAH 340⁷⁸. At that, the social welfare departments will ignore questionable extra charges imposed by the gas suppliers in 2018-2019 heating season during so-called ensuring the standard conditions⁷⁹. Another basis for denying the subsidy application is a one-time purchase or paid services (construction, repair, communication) by the applying family for a sum exceeding UAH 50 thousand for a period of 12 months prior to the application.

⁷² Resolution of the Cabinet of Ministers of Ukraine “On New Amount of Expenses for Payment for Housing and Utility Services, Purchase of Liquefied Gas, Solid and Liquid Stove Fuel in Case of Subsidy Allocation ” dated 27.07.1998 No. 1156 .

⁷³ The regulations by the Cabinet of Ministers governing the procedure of allocation of the subsidies set forth that the citizens should not be required to pay more than 15% of their official income if each household member receives at least 2 minimal living allowance (in 2015 the latter amounted to UAH 1921 - 2102 per month). The lower income for a household member also brings the share of the mandatory payment for the utilities services down respectively.

⁷⁴ 9 facts on the system of subsidies in Ukraine and «true» price of natural gas for the population, VoxUkraine. See more: <https://voxukraine.org/uk/9-factiv-pro-sytemu-subsidiy/>

⁷⁵ State Statistics Service of Ukraine. Social and Demographic Characteristics of the Households in Ukraine in 2018 // http://www.ukrstat.gov.ua/druk/publicat/kat_u/2018/zb/07/zb_sdhd2018pdf.pdf

⁷⁶ The State Statistics Service indicates the number of subsidies receivers // <https://www.rbc.ua/ukr/news/goss-tat-nazval-kolichestvo-poluchateley-subsidiy-1553095651.html>

⁷⁷ The reply by the NEURC to the information request of DiXi Group NGO №4780/16.2/7-19 dated 26.04.2019

⁷⁸ A debt over UAH 340 will deny people from subsidies // <https://www.ukrinform.ua/rubric-society/2639978-zaborg-ponad-340-griven-ukraincam-vidmovlatimut-u-subsidii.html>

⁷⁹ 5 questions about the subsidies // <https://teplo.gov.ua/news/219-5-zapytan-pro-subsydiy>

Monetization of subsidies on the level of consumers, a fundamental reform in subsidies, began in Ukraine starting from March 1, 2019, while the first stage of that process, monetization on the level of service providers introduced in 2018, has failed to deliver viable outcomes. This led to that such assistance began to be paid in cash and credited to bank accounts of the consumers or in cash. The entire amount of the assistance from the government is directed to the bank account of the receiver opened with a state bank under a special regime of appropriation of the funds received thereto, meaning that the funds will be primarily directed at paying for the services for consumed gas, heat, electricity and water. Should the family have acted to save the energy, the balance of the account can be used at their own discretion following the end of the heating season. The amount of money saved thus depends solely on the behavior of the family. The biggest savings may be made by those families with the energy-efficient, well-insulated house, meters and energy-efficient boiler.

The sizes of the direct state support for vulnerable consumers

Official statistics in Ukraine declares that the average monthly expenses associated with housing services, water, electricity, gas supply and other fuel in 2015 amounted to 11.7% of total consumer spending, in 2016 – to 16% of consumer spending. And in 2017 – 17%. According to the State Statistics Service, in 2018, an average household in Ukraine spent 15.2% on payment for housing and utility services, while only 1% of consumers' spending were made towards education and about 3.7 – 4.2% were associated with healthcare⁸⁰.

In the 2019 State Budget, UAH 20 billion is foreseen for the covering the housing and utilities abatements and subsidies in cash. Another UAH 35,1 billion is provided for transfer to the local budgets in order to provide benefits and housing subsidies to the population for housing and utility services payment as well. Thus, only direct support for vulnerable consumers sums up to UAH 55 billion or 4.9% of all budget expenditures for 2019. The 2018 State Budget provided UAH 70 billion for the payment of abatements and subsidies to compensate the housing and utility services related expenses to the citizens.

As at 2016, out of the least wealthy population, 58.3% is covered by some kind of the social assistance programs, while only 41% of social programs funds (excluding housing subsidies) are used to help meet the needs of such a population category. At the same time, only 25% of the recipients of all types of social support belonged to the category defined as poor⁸¹. According to Ukrainian legislation, poverty means inability to maintain a lifestyle inherent in a particular society in a particular period⁸².

The sizes of the indirect state support for vulnerable consumers

The direct costs of paying benefits and subsidies to the vulnerable consumers should be reckoned alongside of the amount of indirect costs that arise, for example, when natural gas and electricity is sold to the household customers at regulated below-market prices. This amount may be counted as income missed by the mining and power generating companies from which they could have paid taxes and invest in geological exploration and extraction of minerals.

Until recently, in Ukraine, the price of gas for household (non-commercial) consumers and producers of heat energy for the needs of the population that is subject to government regulation, was lower than the price of gas for commercial enterprises. In 2014 – 2018, the gas price for household consumers might be as low as 20% of the price for industrial enterprises, although for a short period of time in 2019, the price for the households exceeded that for the industry. The same situation exists on electricity market, too. In Ukraine, the final tariff for the population is less than twice that of the final tariff for the industrial consumption. The price of electricity paid by the population as commodity is on average 20 less. According to Eurostat referenced by the NEURC, the situation is reversed in most EU countries, and the final tariff for the population is higher than the final tariff for the industry. The biggest difference is reported in Denmark, where the tariff for the

⁸⁰ The structure of total expenditures of the households (2010-2018) // http://www.ukrstat.gov.ua/operativ/operativ2007/gdvdg_rik/dvdg_u/str_vut2010_u.htm

⁸¹ Resolution of the Cabinet of Ministers of Ukraine «On Approval of the Strategy on Combating Poverty» № 161-p dated 16.03.2016

⁸² Joined Order of the Ministry of Social Policy, Ministry of Economic Development, Ministry of Finance, the State Statistics Service and the National Academy of Science «On Approval of the Methodology for Complex Assessment of Poverty» dated 18.05.2017 No. 827/403/507/113/232.

population is three times the tariff for the industry⁸³.

Although the lower price applies without differentiation to all household consumers and therefore may not be considered as a tool for direct support of vulnerable consumers, the very existence of different prices for industry and household sector is substantiated by the public policy supporting the poor (and therefore vulnerable) consumers. The government seeks to keep the price for households possibly low and until very recently has opposed introduction of market pricing in gas and electricity markets. Nevertheless, such approach taken to support the low-income citizens in practice allows relatively well-off consumers who are able to pay a fair market price to continue to pay subsidies energy price. This imperfect approach causes the state budget funds to be spent inefficiently, and substantiates an urgent need to improve the mechanisms of the vulnerable consumers protection.

According to expert opinion, within 2005-2015 the amount of losses made by Naftogaz amounted to UAH 620 bn (of which UAH 400 bn are related to with sales of gas to the households and UAH 170 bn – that to the heating companies, both under deliberately lowered prices)⁸⁴. The ratio of direct and indirect subsidies to GDP in 2009 was 11.2%. The main reason for such situation were the potential and real losses of Naftogaz suffered from the sale of natural gas to subsidies categories of consumers and costs allocated to support the banking system stability. In 2010, this indicator dropped to 10% of GDP, after which it began to grow again topping at 14.1% of GDP in 2014. In 2013, Naftogaz's net loss was UAH 18.8 billion, and in 2014 it hit UAH 90 billion. The company's cash deficit was covered by the State Budget of Ukraine. In 2014, Naftogaz's deficit equaled to 5.7% of the nation's GDP, which exceeded the State Budget deficit (5.1% of GDP)⁸⁵. As a result of the government's active efforts to introduce monetization of the subsidies, verification of the recipients and the long-term trend to reduce gas prices, by mid-2019, Naftogaz's losses from the difference in gas prices have decreased to zero.

The associated costs for the supply of natural gas at lower than market prices included interest on loans made to compensate for these losses. Tax losses from the sale of natural gas by gas producing companies Ukrgezvydobuvannya and Chernomornaftogaz were estimated at UAH 226 billion in 2005-2015. Selling of domestic sovereign bonds as part of Naftogaz's authorized capital, through which the government offset its losses, was estimated at further UAH 180.8 billion UAH. According to the estimates of PJSC "Ukrgezvydobuvannya", the total amount of compensation for carrying out the special obligations for the period from 01 October 2015 to 31 December 2017 amounted to UAH 74.8 billion. According to Naftogaz board chairman A. Kobolev, the current scheme of imposing special obligations is damaging to all the state, consumers and market development, while maintaining this scheme over the past two years has cost over UAH 110 billion⁸⁶. Naftogaz incurred a loss of UAH 2.9 billion from the sale of gas to consumers under PSO and made profit from the sale of gas to other consumers at unregulated prices - almost UAH 8.0 billion, a 1.5 times increase over 2017⁸⁷.

Social norms of consumption of energy resources

The situation is furthermore complicated by the fact that some consumers do not have meters for the consumption of energy resources installed, and therefore their consumption is not measured but estimated based on consumption norms loosely defined by the Cabinet of Ministers. Almost all gas (94%), which goes directly to the population, is accounted through the individual or building meters. However, abuse is possible with regard to the remaining 6% of gas (about 0.7 bcm per year), which under state regulated gas prices for the population may serve as a subject of price arbitrage for gas supply companies, as 3.3 million apartments in

⁸³ How much the population really pays for the electricity

// https://biz.censor.net.ua/resonance/3143497/sklki_naselennya_realno_platit_za_elektroenergiyu

⁸⁴ Ukraine's fight against corruption: the economic front

// http://www.ier.com.ua/files/publications/Policy_papers/IER/2018/Anticorruption_Report_EN.pdf

⁸⁵ State Budget deficit equaled to 5.1% GDP – Ministry of Finance", UNIAN, 13 March 2015 // <https://economics.unian.ua/finance/1055278-defitsitderjbyudjetu-za-rik-stanoviv-78-milyardiv-griven-umanskiy.html>

⁸⁶ Ukrgezvydobuvannya and Naftogaz appeal to the Cabinet of Ministers for compensation of expenses related to the fulfillment of special obligations, 23.01.2018 // <http://www.naftogaz.com/www/3/nakweb.nsf/o/81124715DAB-DC9CFC225821E002482E9?OpenDocument&year=2018&month=01&nt=%D0%9D%D0%BE%D0%B2%D0%B8%D0%BD%D0%B8&>

⁸⁷ In 2018, Naftogaz made UAH 13.6 billion of net profit 23.04.2019 // <http://www.naftogaz.com/www/3/nakweb.nsf/o/F74766DEBAA8F44AC22583E5005BF5BF?OpenDocument&year=2019&month=04&nt=%D0%9D%D0%BE%D0%B2%D0%B8%D0%BD%D0%B8&>

Ukraine lacks gas metering equipment with further 1.8 having gas meters with expired term of use⁸⁸.

As the result of insufficient number of meters and poor performance of the heat suppliers the energy consumption of the housing stock in Ukraine is extremely inefficient and is estimated at the level of 250 kWh per 1 sq. m vs 120 kWh per 1 sq. m in average in the EU. This inefficiency is partially offset by those consumers who do not have meters: in the absence of heat meter equipment, the consumption norm for the end consumers is on average 27% higher than the actual consumption of the households with metered heat supply.⁸⁹

In Ukraine, the government establishes the universal estimated social standards of volume of utility services for all consumers, and the amount of the subsidy is calculated within the limits of such standards. In addition, these norms are used to assess the costs of consumed services by those households not equipped with metering devices for gas, water, electricity and use the estimations of costs per unit of living space (heating gas) or a person living in household (water, gas for cooking, electricity) as basis for calculation.

Such estimated norms of service consumption were significantly reduced in 2014, and in 2017-2019 they have been lowered even further and the calculation algorithm for gas amount has been adjusted, too. As a result, “subsidized” gas supply standards for purposes “other than heating” were half as high as those set for the payment of similar unmetered services during the heating season of 2015-16 meter. In practice, a household that did not have a gas meter and cooked food on a gas stove would have been paying for 4.4 m³ of gas per month, while the amount of gas subsidy for the same household would have been calculated based on consumption standard of 6m³.

Since May 1, 2017, the amount of the subsidy for natural gas for individual heating is calculated for since October 16 to April 15. When calculating payments for the housing and communal services (including individual gas heating), for which the state provides benefits and grants, adjustment coefficients, social norms and standards are applied. The social norm determines the housing area, for which the receiver is entitled for the subsidy or abatement. The social standard for individual natural gas heating represents a base level of use of cubic meters of natural gas per square meter of floor area per months, which used to equal to 4,5, and was decreased in May 2019 to 4 (according to the Resolution of the Cabinet of Ministers of Ukraine No. 1176 dated 27.12.2018).

This however is a base standard, to which the adjustment coefficients will be applied, which differ from region to region and also depend on the type of particular building. In October 1, 2014 to November 2, 2015, the adjustment coefficient used to depend on the type of house - private (individual) or multi-apartment, and since then it takes account on the number of floors of the building. Therefore, the social standard determines what area you can receive the the abatement (or subsidy), and the social standard and the correction factor - the amount of natural gas per 1 square meter. m of this area⁹⁰.

CONCLUSIONS AND RECOMMENDATIONS

In conditions of limited resources, the government always has the choice - to live by taxpayers' principal using subsidies, or invest in energy conservation and energy efficiency. An important fact is that because of the economic unjustified nature and grossly ineffective mechanism of such payments, the increase in the cost of subsidies to the population does not yield any positive long-term effect. In the same time, this move claimed a significant part of the budgetary spending, which otherwise might be utilized for capital investments, other social needs or improving the national security, which Ukraine so desperately needs in these times of hardship. The current system of energy and utilities subsidies generally directs huge amount of financial resources to waste. Thus, despite all funds spent to cover consumption of energy and utilities services of low-income citizens during the years of Ukraine's independence, the number of vulnerable consumers does not decrease. Not surprisingly, according to Naftogaz, the residents of subsidized individual homes increase their consumption of gas by use 73% following receiving the subsidy, and the residents of multiapartment buildings

⁸⁸ Consumers without meters will be punished: gas bills will double <https://www.obozrevatel.com/ukr/economics/ukraintsiv-bez-lichilnikiv-pokarayut-grivneyu-sumi-za-gaz-virostut-do-dvoh-raziv.htm>

⁸⁹ Ukrainians are being heated and cheated as heat bills are issued arbitrary. Dzerkalo Tyzhnya. See more: https://dt.ua/energy_market/ukrayinciv-nagrivayut-rahuyuchi-teplo-na-oko-.html

⁹⁰ How to calculate the abatement and subsidy // <https://104.ua/ua/news/id/informacija-dlja-pilgovikov-18319>

show increase of 23%.

Thus, all the costs of direct subsidies and indirect benefits for the population that have no personalized recipient tend to be spent inefficiently and make virtually no contribution to combating the energy poverty in Ukraine. Instead of reducing energy consumption, increasing mining and enhancing the efficiency of use of available resources, the government continues to cover the costs of household consumers, thereby depriving themselves of the resources for the development of energy efficient technologies, investments in the introduction of renewable energy sources, improving energy efficiency and decreasing reliance on the energy imports. The social support system for vulnerable people in Ukraine needs to be improved, enhancing its impact on poverty reduction.

As the results of first stage of deep reformation on the energy markets, about 1/3 of households in Ukraine are entitled to receive a subsidy. Although the current system represents a significant progress compared to the former approach of undifferentiated subsidizing of the whole society through universally and artificially low energy prices, it clearly still requires further fundamental improvement towards more targeted and incentivizing model.

Systematic and result-oriented state policy addressing the issue of the energy poverty in Ukraine should foresee a deep and grounded research into the particular reasons and peculiarities of this very multifaceted but acute problem. As the very first and specific output of this policy research, a comprehensive definition of energy poverty should be provided in the Ukrainian legislation. Importantly, this definition should both take note of and correspond closely to the applicable approaches elaborated in the EU, but also accommodate fully to the local specifics and context of social landscape and outlook of the Ukrainian society.

In order to fight the energy and, more broadly, general poverty in Ukraine in more sustainable and effective manner, the government has to, first of all, do an about-face in its priorities in financing energy subsidies as compared to financing the energy-saving programs. The situation in which programs to increase energy efficiency amount only to 1/20 of the volume of subsidies that generally creates no incentives to rationalize consumption and invest into energy saving is deliberately doomed to continuous replication. In practical terms, proper and speedy launch of the national Energy Efficiency Fund in Ukraine potentially offering significant financial resource for the nation-wide energy modernization of the housing stock might gain significant benefits, and thus the government should facilitate this ongoing process as much as possible.

Impersonalized subsidies and abatements should be fully and effectively replaced as soon as possible with the targeted cash support of the verified vulnerable consumers, which allows and incentivizes them to save and use the saved funds for personal needs not related to payment of utilities. Since the subsidy monetization reform has commenced earlier this year, the role of the government turns from initiating the changes to maintaining it in force and further improving its mechanics. Currently, some of the subsidies are already monetized at the end-user level and since March 1, 2019, consumers have received cash payments. The government estimates monetization of abatements to start on October 1. Given the extremely complicated system of social support in Ukraine, as well as the considerable number of beneficiaries, the monetization of abatements will significantly reduce the state budget expenditures and stimulate this part of vulnerable consumers to save energy resources. In parallel to these efforts, the government should viably improve and diversify its approaches to communicating the actual stage of reforms and its anticipated positive results to the wide public.

The government should review the social standards of gas use for heating, heating water and cooking in order to bring them to the economic level and to accommodate for the reasonable claims of the heat suppliers. Experts also suggest introducing the control over the basic indoor temperature indices. Taking account of the recommendations by the NEURC⁹¹, the government should be focused on helping the low-income citizens in paying for maintaining reasonably comfortable temperature of 18oC (or 20oC for the corner apartments), within the budgetary constraints and with the purpose of stimulating the saving of heat⁹².

Furthermore, it is worthwhile to facilitate carrying out the energy audits on the nation-wide scale in Ukraine

⁹¹ Quality parameters of centralized heat supply and hot water supply, the NEURC // <http://www.nerc.gov.ua/?id=19518>

⁹² 9 facts on the system of subsidies in Ukraine and «true» price of natural gas for the population, VoxUkraine. See more: <https://voxukraine.org/uk/9-factiv-pro-sytemu-subsidiy/>

to inventory the country's housing stock and determine the energy efficiency class of the buildings. To do so, Ukraine needs to rectify the lack of implementation of Directive 2012/27/EU, specifically through placing an obligation of mandatory energy consumption certification upon the buildings and parts thereof when selling or renting for a long time, in addition to addressing some other concerns and opinions of the local experts and those of the Energy Community Secretariat. Proper large-scale housing stock audit will allow to take much more informed and adjusted approach to assigning subsidies based on the energy performance of a particular building. In order for such a system to encourage energy conservation, the government should first elaborate the energy consumption standards depending on the energy efficiency class of the building (the more efficient the house is, the lower the standard). Thereafter, the universally applicable standards should be set at the level of the middle class of energy efficiency (at this stage, residents of the energy-ineffective homes would be prompted to take measures to insulate their homes, and eventually be able to pay the bigger part of the utility costs in the future by themselves and requiring less government assistance). In the third stage, the standard should be set at the level of energy needs for the most efficient buildings.

In addition, more administrative efforts and fact-based assessment of the incomes of citizens are needed in order to categorize them as vulnerable. It is considered expedient to strengthen the verification of the income level of those applying for the subsidies, at least in terms of the number of registered real estate or cars owned. In addition, it is worthwhile to require and obtain more instruments for such control to be exercised by social assistance authorities, as is practiced in many other countries. For instance, individuals applying for a subsidy may be required to provide access to their bank account information as part of the procedure, and denying such an access would be reason to reject the subsidy request.

And lastly, it is critically important to accelerate installation of the commercial metering equipment, namely the individual gas and heat meters, as it is stipulated in the applicable national legislation. In order to do so, the Cabinet of Ministers and the Parliament should cooperate to introduce specific and easily enforceable measures of liability for the network operators and the service providers who are responsible for implementing this policy, as much as the gas supply tariffs set by the regulator provide for respective costs associated with installation of the meters. Furthermore, the law also allows to equip gas metering hardware for the public money out of the state budget, and those metering heat energy and water supply – for the money of the local budgets. The only viable mean of accelerating this reform might be introducing of an enforceable liability for violating the time schedule of meters installation by the responsible providers, namely lifting the delay in application of such penalty, which is currently in place.



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Energy Poverty in Moldova

Social Assistance vs. Technical Capacitation

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Introduction

Moldova’s legal framework in the energy sector has improved significantly in 2016-2018, but only marginally in mitigating ‘energy poverty’. Newly-adopted horizontal and sectoral legislation has put emphasis on the liberalization of the energy sector, correcting and balancing the positions of different stakeholders on the market, and requesting energy efficiency measures. Undertaking the EU energy acquis as part of the legal approximation to the European Union (EU) and Energy Community solidified the conditions for a better functioning of regulatory frameworks and more sustainable development of energy infrastructure. The changes were aimed at rehabilitating the functioning of the interconnected energy sub-sectors, with the expectation that the self-regulating capacities of the market will generate benefits for operators, policy certainty for the decision-makers and the regulatory body, and guarantees of energy supplies to consumers. The legislation only partially reflects the peculiarity of Moldovan market’s capacity to subsist because of the purchasing precarity of consumers, caused by low social payments and reduced financial resources of households.

Even if the legislation operates with the notion of a ‘vulnerable consumer’, it lacks plausible solutions that would target and solve the issue of ‘energy poverty’ that affects large sections of the population. Understood as a situation when *‘individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost’*⁹³, ‘energy poverty’ touches upon several interdependent elements. Firstly, low individual or households’ incomes undermine their financial ability to obtain energy-related facilities. Secondly, this type of poverty results from frequent episodes of the politicization of the tariff policy by the market regulatory body, which diminishes the predictability and sustainability of energy prices. Thirdly, the condition of energy poverty combines the inadequate energy efficiency in the maintaining of livelihood, which has only recently started to be addressed. The majority of these aspects are largely overlooked in the energy landscape of legislation and public policy in Moldova. Thus, this current paper aims at explaining the notions of ‘if’ and ‘how’ the state authorities define ‘energy poverty’ in the current normative and policy framework.

The starting point in examining the energy poverty represents an incursion into the national legal framework that governs the energy sector. Next, a set of indirect statistics features the manifestation of energy poverty. Subsequently, the particularities of the tariff policy are brought to attention. The description of the existing policies targeting socially related deficiencies to cope with energy prices follows. In conclusion, the paper tailors specific policy recommendations to address the issue in a comprehensive, systemic and sustainable manner.

⁹³ EU Energy Poverty Observatory, Addressing Energy Poverty in the European Union: State of Play and Action, August 2018, https://www.energypoverty.eu/sites/default/files/downloads/publications/18-08/paneureport2018_final_v3.pdf

Chapter 1. Legal aspects

Since the adoption of sectoral laws on gas and electricity in 2016, followed by others on energy in 2017 and energy efficiency in 2018, the Moldovan energy-related legal framework showed substantial progress. The ambitiousness of the introduced legislation lay in its intention to melt the existent monopolies, incentivize private investments in the sector and push for cleaner and more effective regulation. Notably, the concept of a ‘vulnerable consumer’ entered the juridical sphere of the relations between the state authorities and energy operators. However, the responsibility to support the people in need to deal with energy bills is correlated to social protection policies. Additionally, the framework energy legislation (Law on energy of 21.09.2017⁹⁴) delegates the competences to deliver assistance to vulnerable social groups to local public authorities. Contrary to the attempts to emphasize the need of qualitative and feasible energy deliveries, only the law on energy efficiency mentions ‘energy poverty’. This essence of this topic is, however, marginally approached with practical measures of prevention, apart from financial payments offered during wintertime.

The Energy Law, adopted in October 2017, envisages the state having to ensure that consumers are providing with qualitative energy in line with equality, transparency and non-discriminatory criteria (Art. 2, (e)). Concomitantly, the protection of all consumers represents another overarching state obligation (Art. 2, (f)). The main attributions in creating the conditions of energy supplies in a feasible and efficient manner are prescribed to local public administration. The latter has to allocate finances for improving energy delivery to consumers from within the jurisdiction of the specific local public authorities. Similarly, financial assistance is required for channeling compensations necessary for the payment of energy bills. For both augmenting the supply capacities and for compensating consumers in need, the local authorities should act strictly in the limits of their budget.

The provisions of the **Law on natural gas**⁹⁵ and **Law on electricity**⁹⁶, passed on the same day (May 27, 2016), bring several elements that are closer to ‘energy poverty’. In first place, the two laws introduce the concept of a ‘vulnerable consumer’, vaguely defining it as individuals who, according to social protection regulations, are qualified as an ‘underprivileged person or member of an underprivileged family’ (Art. 2). The same laws formulate several provisions (under Art. 84 and Art. 67 respectively) that explain what the special conditions are that the ‘vulnerable consumers’ can benefit from to reduce their energy precarity. Primarily, both laws reaffirm the idea that such a category of consumers are ‘protected under the social protection policies’, thereby transferring a significant share of responsibility to non-energy public sectors. Yet even the coverage of social protection policies should not hinder energy market interests and functionality. Partially, the responsibility to support the vulnerable individuals is partitioned with energy operators. However, there is no concrete obligation, only the right to use ‘mechanisms of support’ in order to prevent the cut off of gas or electricity supplies. This refers mainly to situations when payments for energy bills are delayed, meaning that consumers poorly handle the payments.

The examined legislation also demonstrates that the state authorities have no holistic approach to address the issues of energy poverty. By defining the ‘vulnerable consumers’, the state only limitedly acknowledges the existence of problematic social groups suffering a deprivation of energy. The responsibility for this group is shared between the local public authorities, which are constrained by their local budgets, and the significantly generalized policies of social protection. The companies from the sector can contribute as well, but rather as an act of good will than of some well-regulated commitments. The existing legislation does not require any secondary legislation (regulations) designed to help ‘vulnerable consumers’, and even less to deal deeper with the ‘energy poverty’. Consequently, there is no mechanism of measuring the negative effects of energy poverty on Moldovan citizens.

“Energy poverty” is expressly mentioned in the **Law on energy efficiency**⁹⁷ (July 2018). It defines energy poverty as lacking access to energy and related technologies or resulting from reduced purchasing power of the fuels to cook or of energy suppliers to use electricity or heating systems (Art. 3). The provided schemes of energy efficiency prioritize the measures with a social impact, which aim to counter energy poverty (Art. 8).

⁹⁴ Energy Law of 21.09.2017, <http://lex.justice.md/md/371969/>

⁹⁵ Natural Gas Law of 27.05.2016, <http://lex.justice.md/md/%20365664/>

⁹⁶ Electricity Law of 27.05.2016, <http://lex.justice.md/md/365659%20/>

⁹⁷ Energy Efficiency Law on 19.07.2018, <http://lex.justice.md/md/376829%20/>

The only plausible legal provisions that support citizens overcoming the payment pressure in energy filed lie in the **Social Aid Law of 2008**⁹⁸. This act introduces the notion of a “disadvantaged family” and limits its effects to the so-called “cold period of the year”. During this interval, the disadvantaged families can receive a fixed monthly payment. A specific article of 2018 regulation details the rules under which the social aid is offered (More details read in Chapter 4).

Furthermore, the provisions of the **Law on local authorities**, passed in December 2006⁹⁹, clarify the competences of authorities at the local level regarding the ensuring of social protection. On the one hand, the local councils¹⁰⁰ should contribute to the implementation of actions of social protection. On the other, they decide upon the individuals qualified as socially vulnerable in terms of living conditions (Art. 14, (y)). Along with the local councils, the law envisages that mayors have supervisory competences on measures related to social protection and social assistance, and individuals grouped as vulnerable social contingent (Art. 29, (j, r)). At the level of the council of the administrative territorial units (‘rayons’¹⁰¹) the responsibility consists of deciding the registration of socially vulnerable people that need the improvement of living conditions in line with the 2015 **Housing Law**.¹⁰²

The Housing Law specifies the conditions under which social housing is allocated for the poor categories of citizens, and refers to the restrictions that the individuals encounter with regards to residential blocs. To be eligible for receiving social housing, the monthly income of the family per each of the family member should not overcome the size of living subsistence, which accounted for approx. 90 EUR in 2018 (1891 MDL)¹⁰³, and no housing is available. The socially vulnerable groups are obliged to update the mayor’s office about the changes in income and are allowed to delay the payments for bills (which include energy payments as well) for no longer than six months. At the same time, the regulation on rented housing rejects the right to insulate the flats without authorization from the local public authorities. This can complicate the attempts to improve the energy consumption in residential blocks.

Neither the Law on Local Authorities nor the Housing Law adequately deal with the issue of ‘energy poverty’, or at least ‘vulnerable consumers’. However, the Social Aid Law envisages financial support to some categories of families, if eligible as “disadvantaged”, for the “cold period of the year”. The Law mainly addresses the heating needs rather than solving the much larger issue of “energy poverty”. The screened legislation shows that the state policy towards poor people is placed under the big umbrella of social protection measures and is not regulated as part of energy governance.

Still under draft is the new legislation that should replace the old Law on condominium and the provisions that impede the improvement of energy consumption in housing buildings. Only with 2/3 of the votes of the members of the owners’ association decision can be made, which because of ordinary migration or a simple lack of means can obstruct measures meant to cope with energy poverty.

Chapter 2. Preliminary assessment of energy poverty

The “energy poverty” of Moldova has visible social-economic reasons. The country’s slowly-growing economy has repercussions on the budget revenues and also on the incomes of citizens (See Figure 1), which increases the vulnerability against the prices for the energy services.

⁹⁸ Social Assistance Law of 13.06.2008, <http://lex.justice.md/viewdoc.php?id=329197&lang=1>

⁹⁹ Local Public Administration Law of 28.12.2006, http://lex.justice.md/document_rom.php?id=C8E304A4:037190E8

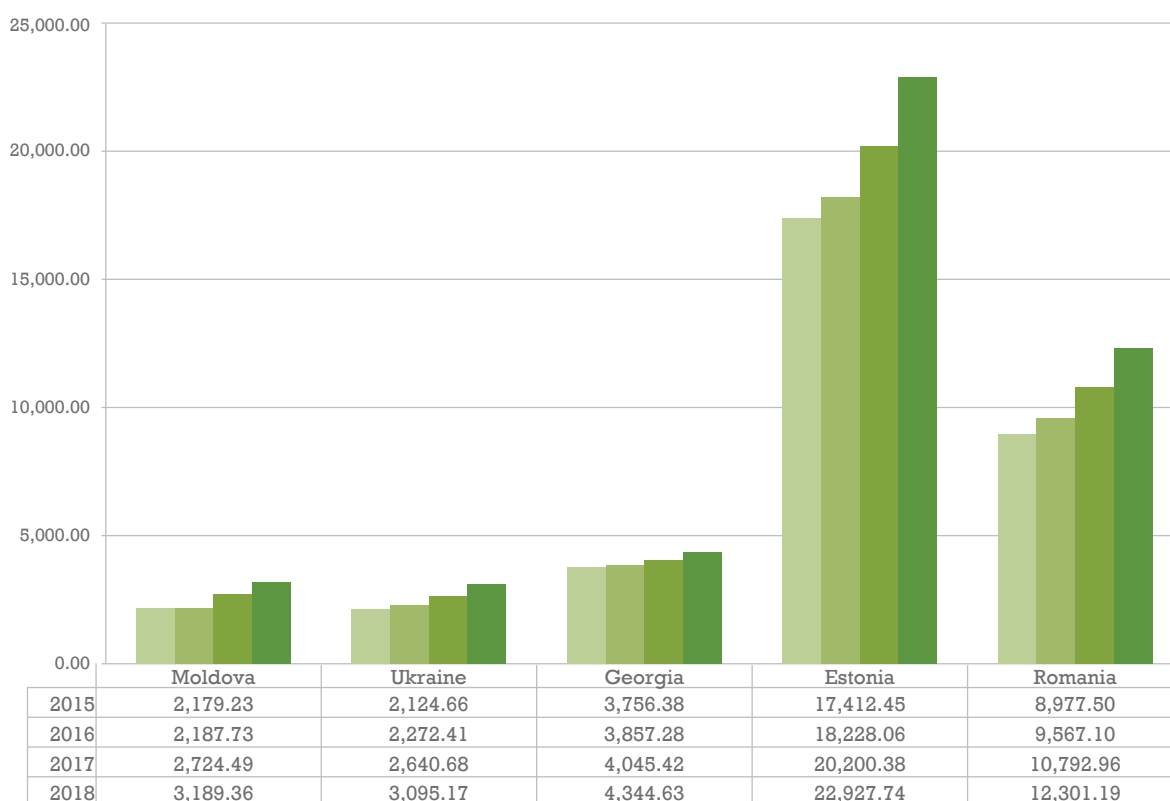
¹⁰⁰ Elected local bodies that plays a deliberating role in decision-making at the local level, in the limits of the local competences, and counter-balancing the mayor office.

¹⁰¹ Moldova is organized in 32 administrative territorial units.

¹⁰² Housing Law of 30.04.2015, <http://lex.justice.md/md/358764/>

¹⁰³ National Bureau of Statistics, Living subsistence in 2019, <http://statistica.gov.md/newsview.php?l=en&id=6329&idc=168>

Graph 1: GDP per capita, US dollars, 2015-2018



Source: World Bank

Though Moldova has higher tariffs than Ukraine and Georgia, the electricity prices are lower than in EU countries. Moreover, the afferent taxes for electricity paid by Moldovan households are significantly below the regional level (See Figures 2 and 3). This evidence indicates that the energy difficulty for the population results not from the high tariffs but rather from the performance of the national economy.

Graph 2: Electricity prices for households, 1st semester, 2015-2019, EUR/kWh



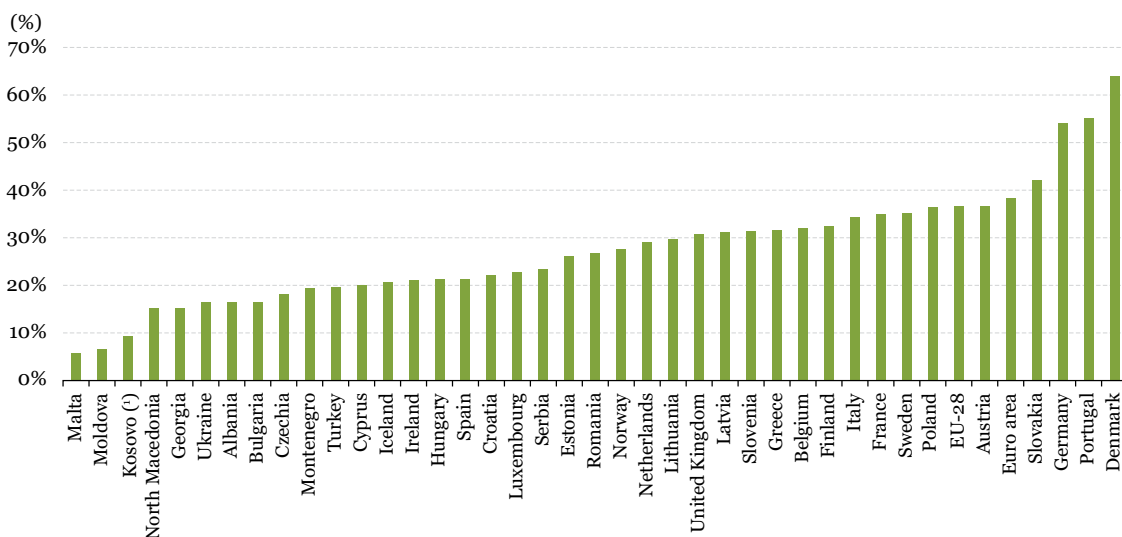
Source: Eurostat¹⁰⁴

¹⁰⁴ Households that consume more than 2 500 kWh and less than 5 000 kWh

Analyzed by tariffs for consumers, Moldova is below the European average of price for electricity. Additionally, according to the amount of additional taxes and levies for electricity, Moldova is placed better than the majority of EU and Western Balkan countries. Contrary to other countries in the region, Moldovan households do not pay any VAT for the consumption of electricity.¹⁰⁵ This considerably influences the tariffs that otherwise would be much higher (See Figure 3).

Graph 3. Taxes paid by households for electricity in EU-28, Western Balkans and the Associated countries, %

Share of taxes and levies paid by household consumers for the electricity, Second half 2018



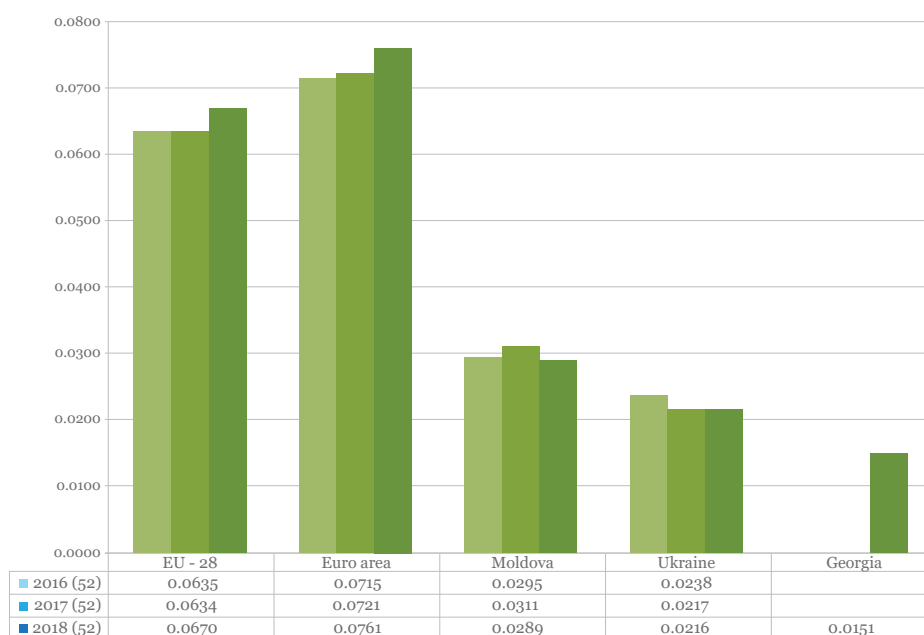
(°) This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo Declaration of independence.

Source: Eurostat (online data codes: nrg_pc_204)

eurostat

Compared to the prices and taxes for electricity, Moldovan consumers are facing VAT of 8% for the utilization of natural gas when compared with the EU average. The data also shows that the collateral taxes deducted from Moldova consumers are two times smaller than in Ukraine and Georgia, and even smaller than for the European households (See Figures 4 and 6). This sort of subvention keeps the price for 1000m³ smaller than it could be if a higher VAT is enforced.

Graph 4: Natural gas prices for households, 2nd semester, 2016-2018, EUR/kWh

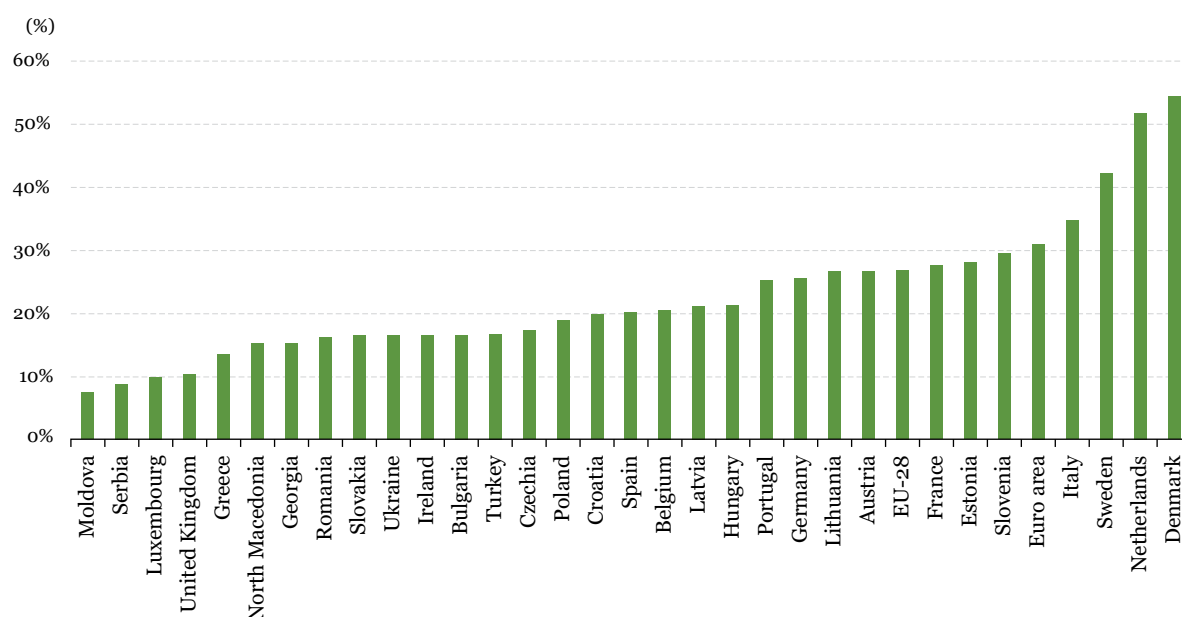


Source: Eurostat

¹⁰⁵ OECD, Energy Subsidy Reform in the Republic of Moldova, October 2018, https://www.oecd-ilibrary.org/environment/reforma-subven-iilor-energetice-in-republica-moldova_9789264306462-ro

Graph 5: Taxes paid by households for gas in EU-28, Western Balkans and the Associated countries, %

Share of taxes and levies paid by household consumers for the natural gas, Second half 2018

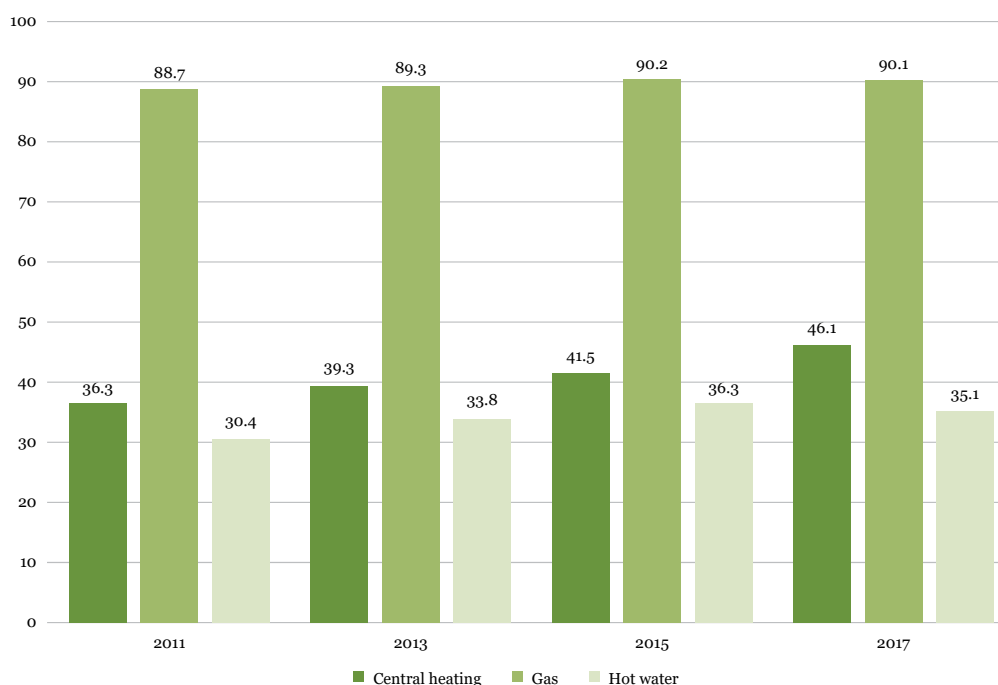


Source: Eurostat (online data codes: nrg_pc_202)



The available statistics underline a differentiated access to energy-related services. In 2017, the degree of access to gas reached 90% across the country, while half of this share is registered for centralized heating and hot water supplies (See Figure 6).

Graph 6: Access to central heating, gas and hot water in the total national stock of dwellings, %

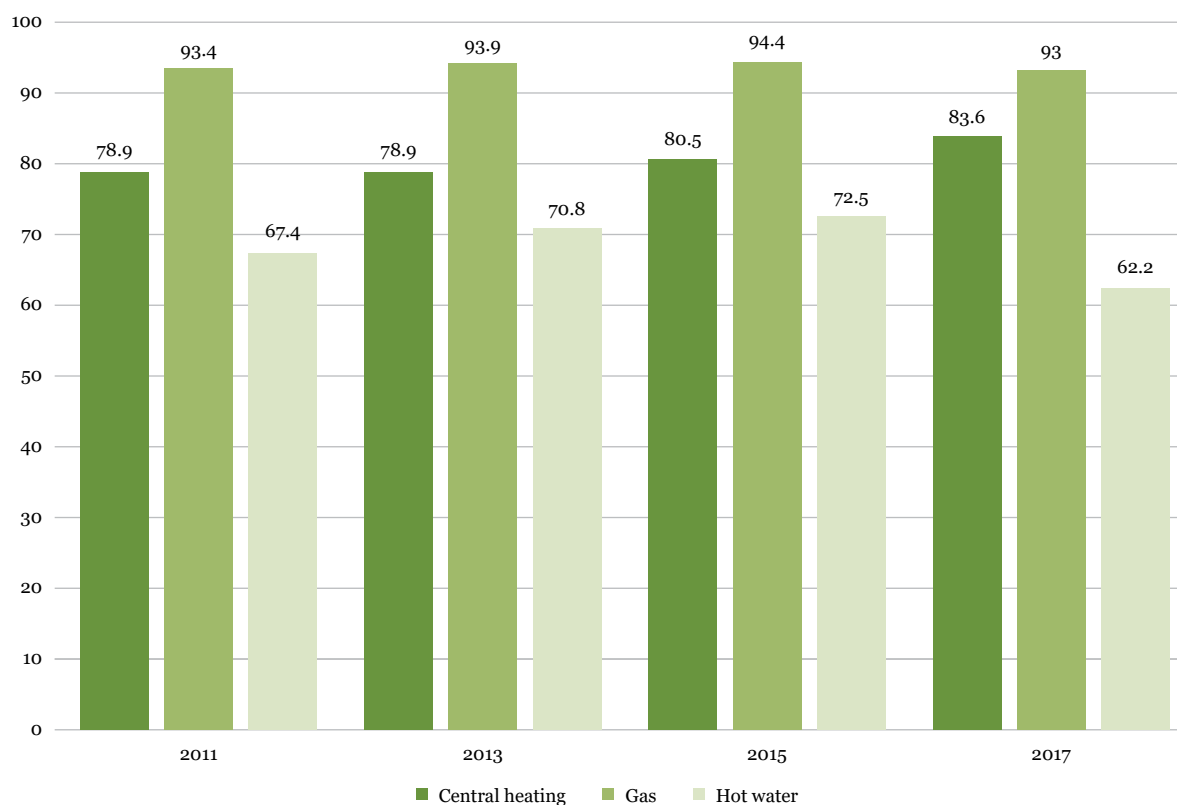


Source: National Bureau of Statistics

A considerable disparity between the degrees of access to the some of these services is visible between urban and rural areas.¹⁰⁶ Contrary to the even supply of natural gas, the availability of heating and hot water is sharply contrasted in homes in the rural part of the country (See the Figures 7 and 8).

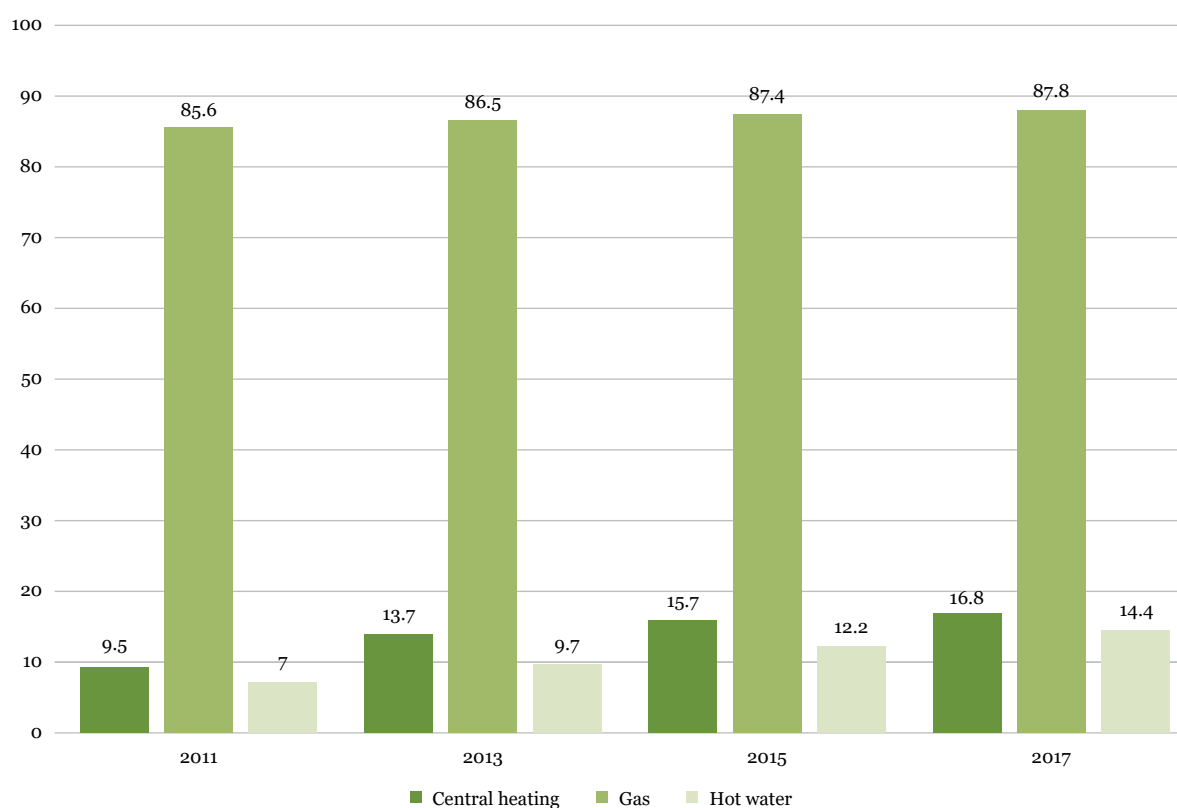
¹⁰⁶ According to the Population and Housing Census, carried out in 2014, Moldova's population of above 15 years old constitutes 2,1 million people - 752,000 people in the urban area and 1,374,287 people in the rural part. The total population accounts for 2,9 million people.

Graph 7: Access to central heating, gas and hot water in urban areas, %



Source: National Bureau of Statistics

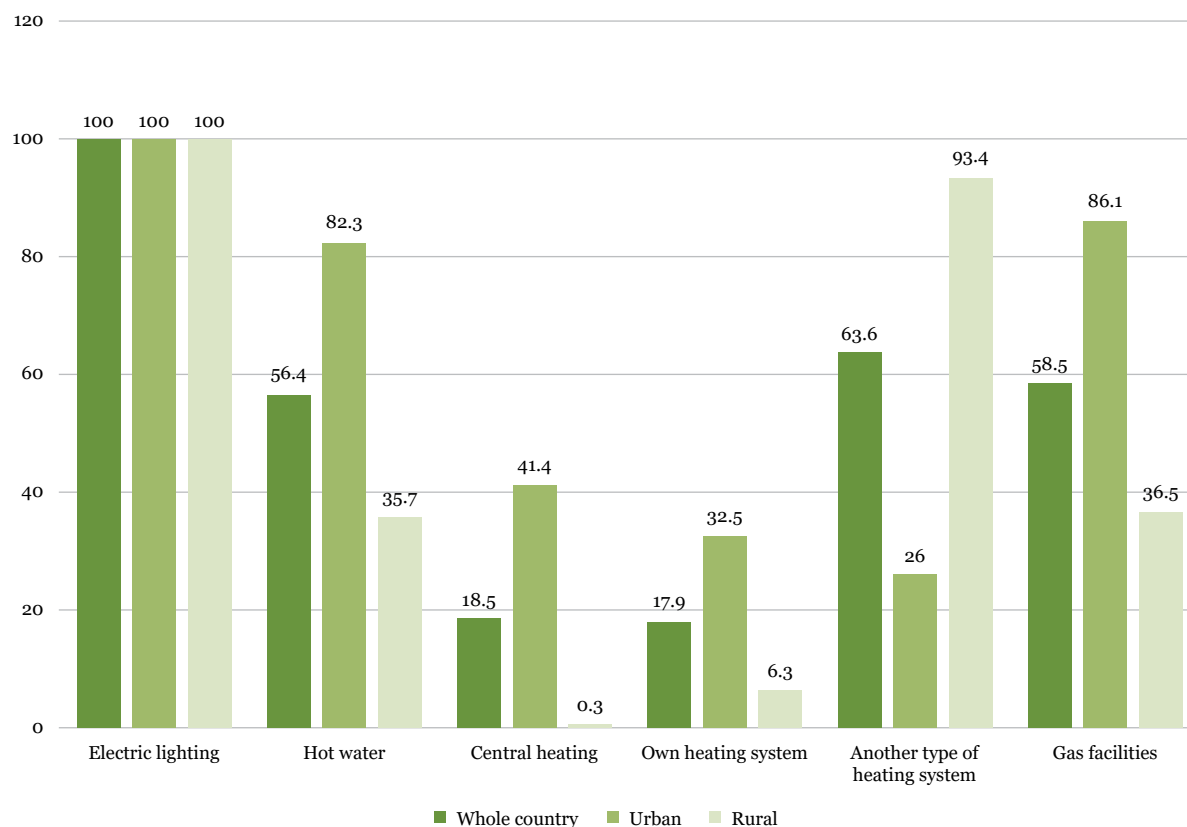
Graph 8: Access to central heating, gas and hot water in rural areas, %



Source: National Bureau of Statistics

Energy poverty can be also viewed through the access the equipment necessary to cook or heat. In this regard, the least equipped population is located in rural areas. This emphasizes the previously-described discrepancy between the villages and cities in terms of not only services but also the category of equipment that improve the living conditions (See Figures 9 and 10).

Graph 9: Dwellings' facilities related to energy supply by areas, %, 2018



Source: National Bureau of Statistics

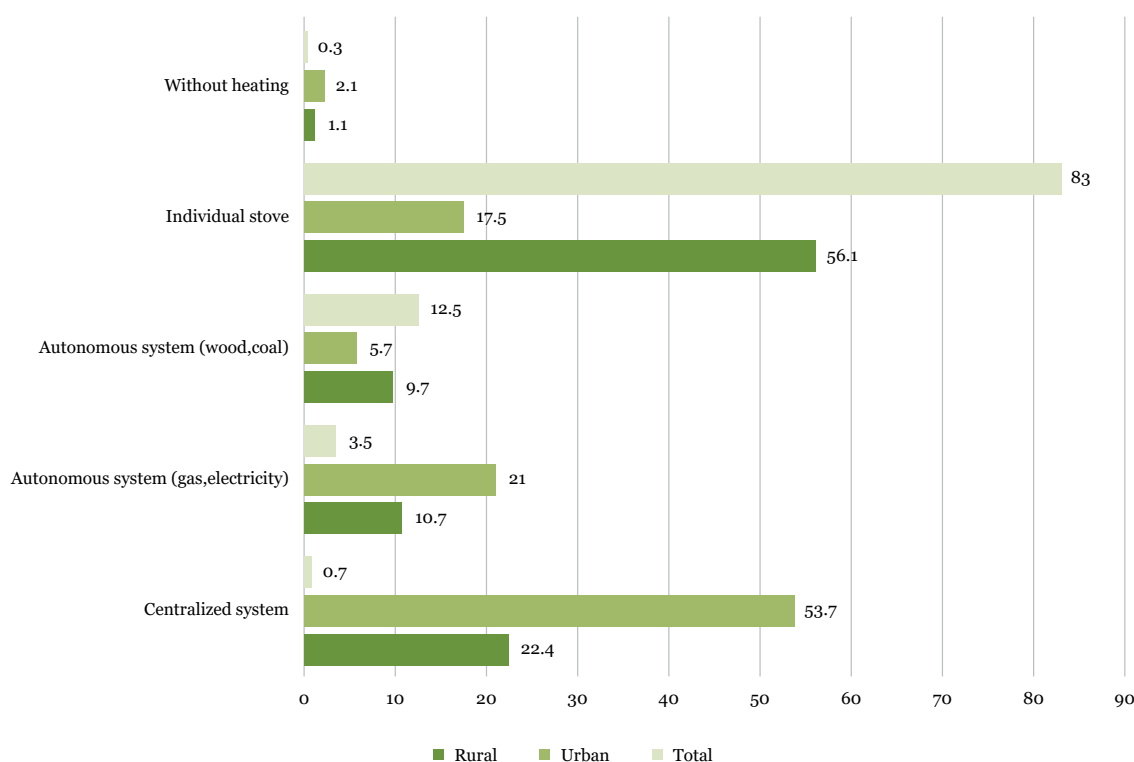
Graph 10: Access to house equipment, 2013-2018, %



Source: National Bureau of Statistics

By types of heating systems used by the households, individual stoves are the dominant type, account for 56% out of the total, followed by centralized systems (See the Figure 11)

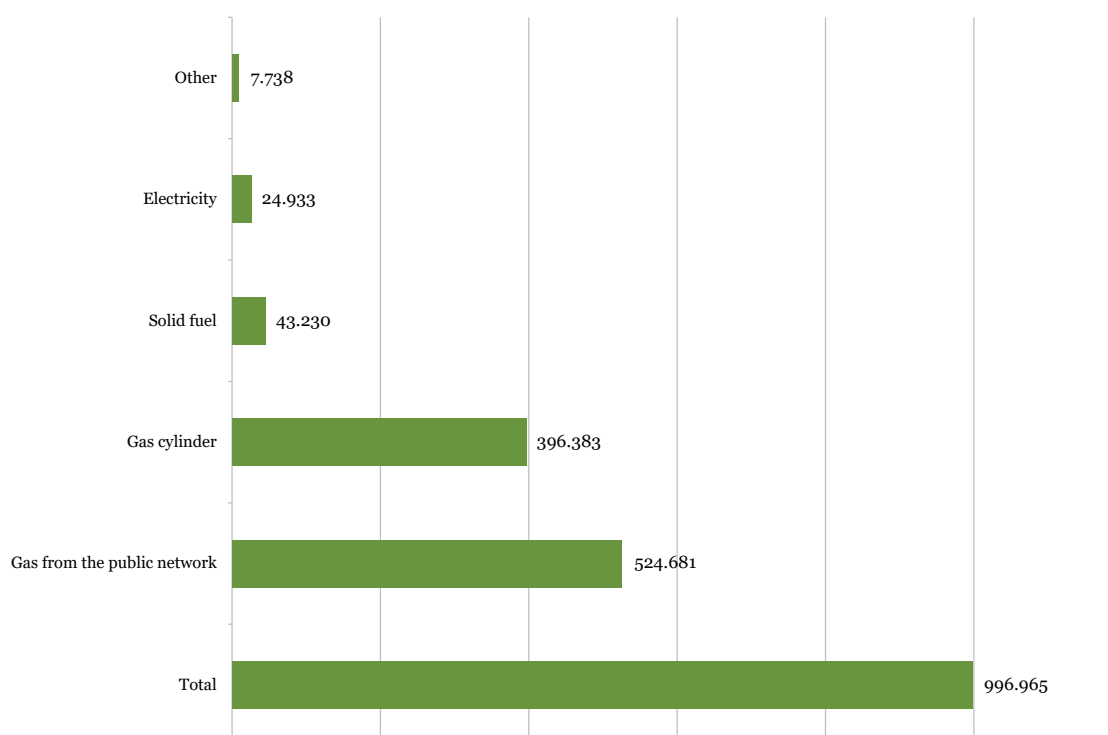
Graph 11: Types of used heating by the total dwellings, %



Source: National Bureau of Statistics¹⁰⁷

The vulnerability of the population is reflected in the fuel used to cook. The majority relies on supplies of gas through networks of distribution. However, 39.7% of households depend on cylinder gas, and smaller shares use solid fuel and electricity. Both the gas cylinder and the solid fuel are volatile fuels and thus put the consumers at a disadvantage and risk (See Figure 12). At the same time, the rural population has more diverse access to a large variety of sources from which energy is produced, which also includes waste from agricultural activity. In comparison, the urban population relies mainly on heat, coal, electricity and gas (See Table 1).

Graph 12: Type of fuel used for cooking in the stock of dwellings, numbers of dwellings, 2014



Source: Population and Housing Census 2014

¹⁰⁷ National Bureau of Statistics, Energy Consumption in Households, Results of the Survey on Energy Consumption, 2016, http://statistica.gov.md/public/files/publicatii_electronice/Consum_energie_gospoda/Consum_energie.pdf

Table 1. Average energy consumption in households that consumed energy source

	Total	Urban	Rural
Coal, kg	259,1	318	238,5
Natural gas, m3	566,9	534,5	649,5
Liquefied gas, liters	121,3	143,2	118,4
Diesel fuel, liters	5,6	0	5,7
Briquettes and pellets, kg	714,8	0	675,1
Firewood, m3	3,5	3,3	3,6
Wood waste, m3	2,6	0	2,6
Animal waste, m3	2,5	0	2,5
Agriculture waste, m3	2,3	0	2,3
Electricity, kWh	1495,2	1804,7	1280,2
Heat, Gcal	5,3	5,3	0

Source: Source: National Bureau of Statistics¹⁰⁸

Chapter 3. Tariff policy as a driver for ‘energy poverty’

High dependency on energy imports contributes to higher poverty related to the acquisition of energy-related services. The politicization of energy exports from Russia to Moldova, as well as the frequent devaluation of the national currency, maintains high pressure on energy consumers. This has affected the tariff policy for final consumers, and obviously put the social categories with weak purchasing power at a disadvantage.

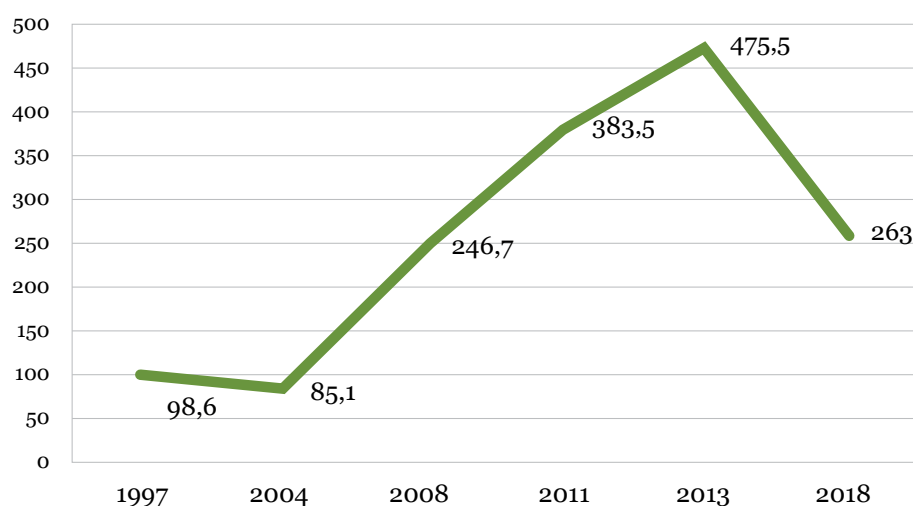
Starting from 2004-2005, the growth of prices (and subsequently tariffs) for energy supplies immediately impacted the most vulnerable consumers. Consequently, energy poverty started to deepen, in particular in the cold period of the year when the consumers from the largest urban areas (Chisinau, Balti) have to pay for gas and electricity and the heating¹⁰⁹.

The prices for gas showed the most nonlinear evolution (See Figure 13), and increased by almost five times in 2013 (475.5 USD/1000 m³) in comparison with 2004 (85.1 USD/1000 m³). Such instability in gas prices affected the poorest categories of society, taking into account the fact that salaries remained almost unchanged.

¹⁰⁸ National Bureau of Statistics, Energy Consumption in Households, Results of the Survey on Energy Consumption, 2016, http://statistica.gov.md/public/files/publicatii_electronice/Consum_energie_gospoda/Consum_energie.pdf

¹⁰⁹ According to ANRE's activity report for 2018, the price for the heating service reached up to 80 EUR/Gcal in 2018, <http://anre.md/files/raport/Raport%20anual%20de%20activitate%20%20%20ANRE%202018.pdf>

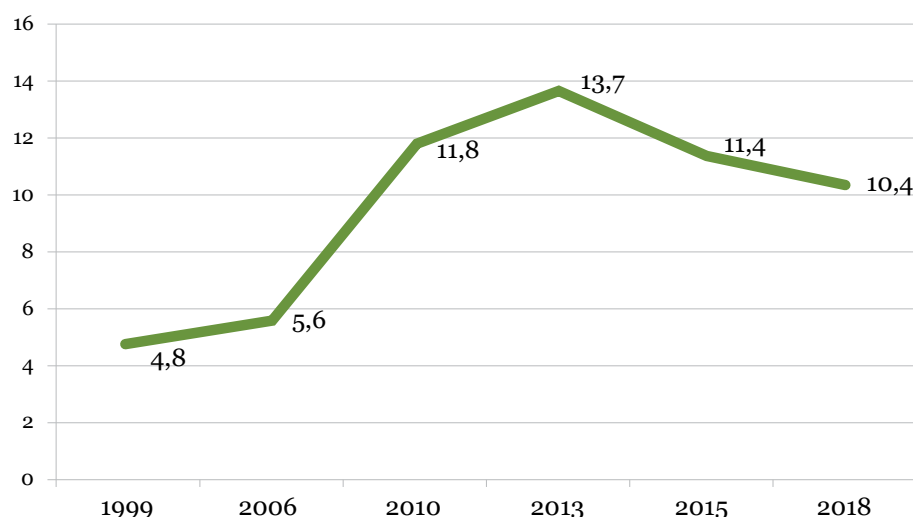
Graph 13: The evolution of gas prices (USD/1000m³)



Source: National Energy Regulatory Agency (ANRE)

Less dramatic growth has been registered for prices on electricity. Though they increased by more than half since 2005 (See Figure 14), electricity is more affordable and largely spread as a source of energy than gas used for the production of heat.

Graph 14: The variation of price for electricity, average price for final consumer, Cent USD/kWh

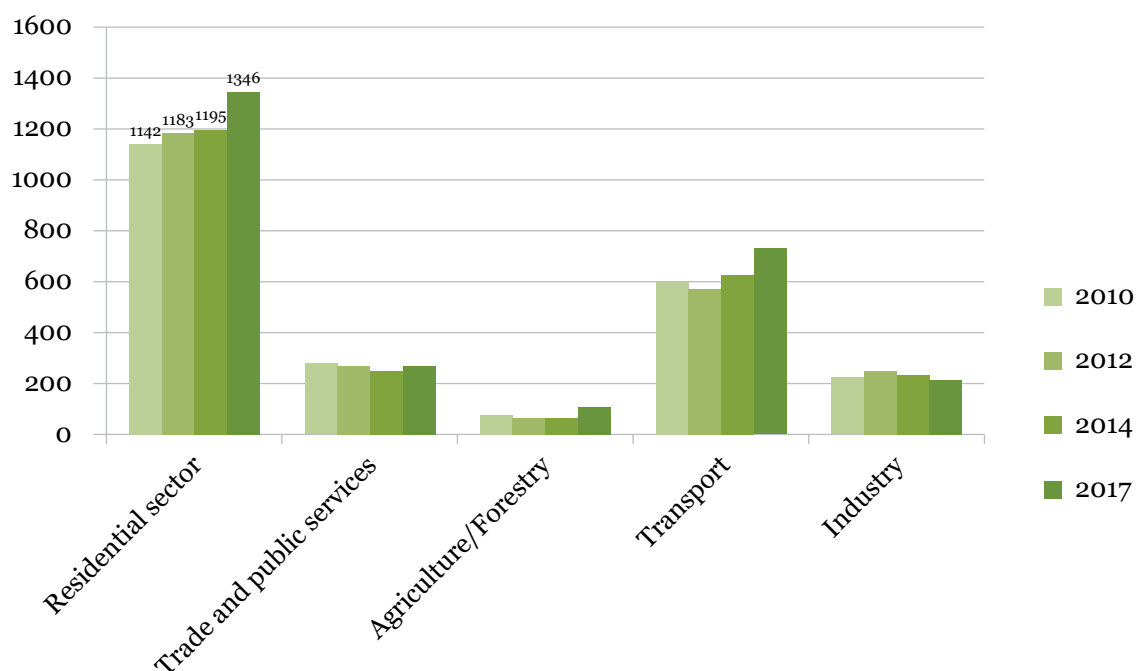


Source: National Energy Regulatory Agency (ANRE)

To complement the picture about the incidence and evolution of energy poverty, two types of indirect statistical data are suggested. These include the shares of energy consumption per sectors of the economy, and the shares of expenses channeled by households to cover some of their energy costs.

Primarily, the consumption of energy per sectors shows that the residential sector consumes the most (See Figure 15). Though this sector is not involved in any formal economic production which requires energy, the residential sector manages its energy consumption poorly. Transport is the second most energy intensive, followed by services, while industry and agriculture lag behind. The energy intensity of the residential sector has correlations with energy poverty in several ways. On the one hand, the more energy that is used by households, the higher the expenses become, which affects the costs for the population. On the other, being the most energy-thirsty sector, the residential complex is also the least energy efficient.

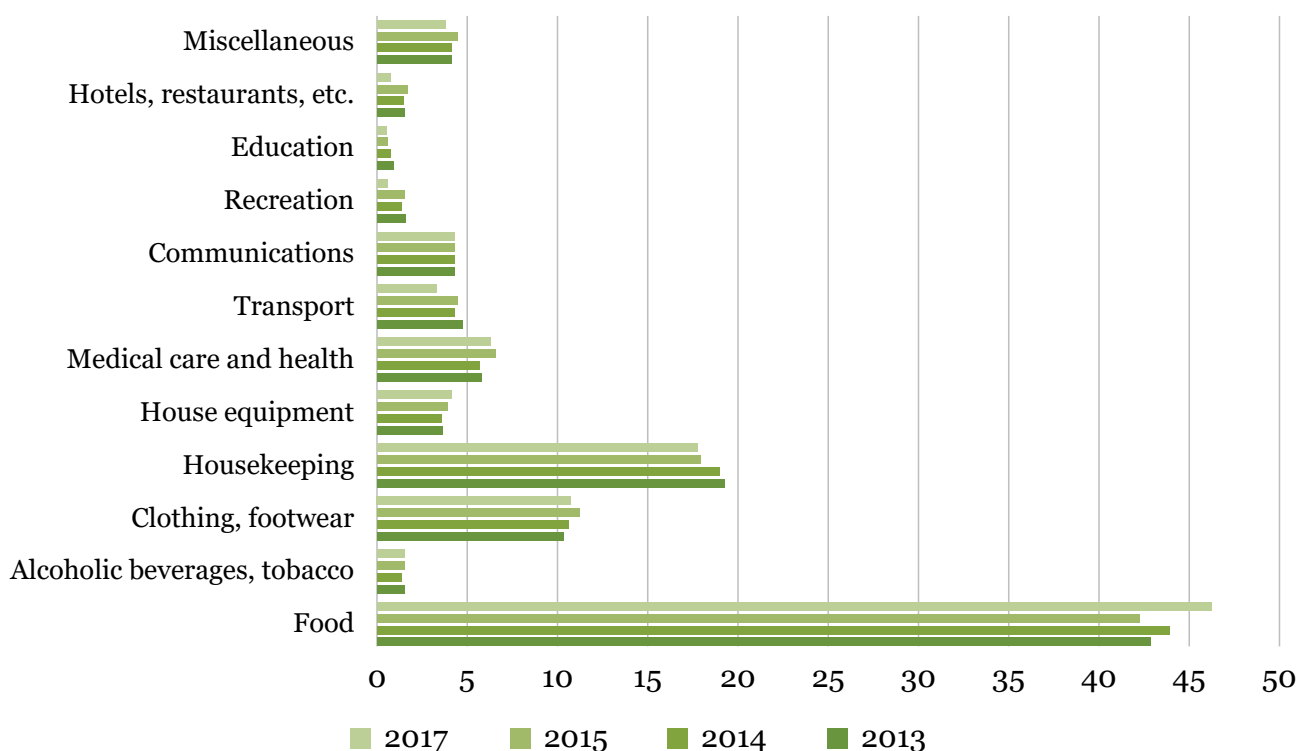
Graph 15: Energy balance, thousands of tones of oil equivalent



Source: National Energy Regulatory Agency (ANRE)

A deeper look at the budget of the households reveals that costs for energy services retain a significant part of the incomes per family. After the expenditures for food purchasing, individuals spend about 17% of their incomes on costs related to housekeeping (See Figure 16).

Graph 16: Structure of consumption expenditures of households, by area, %



Source: National Bureau of Statistics

Notably, the share of expenses for housekeeping corresponding to January-April period (first quarter) is less costly than the much warmer period of May to August (2nd quarter). This can partially be explained by the fact that many families accumulate energy-related debts in cold weather and pay them during the summer (See the Table below).

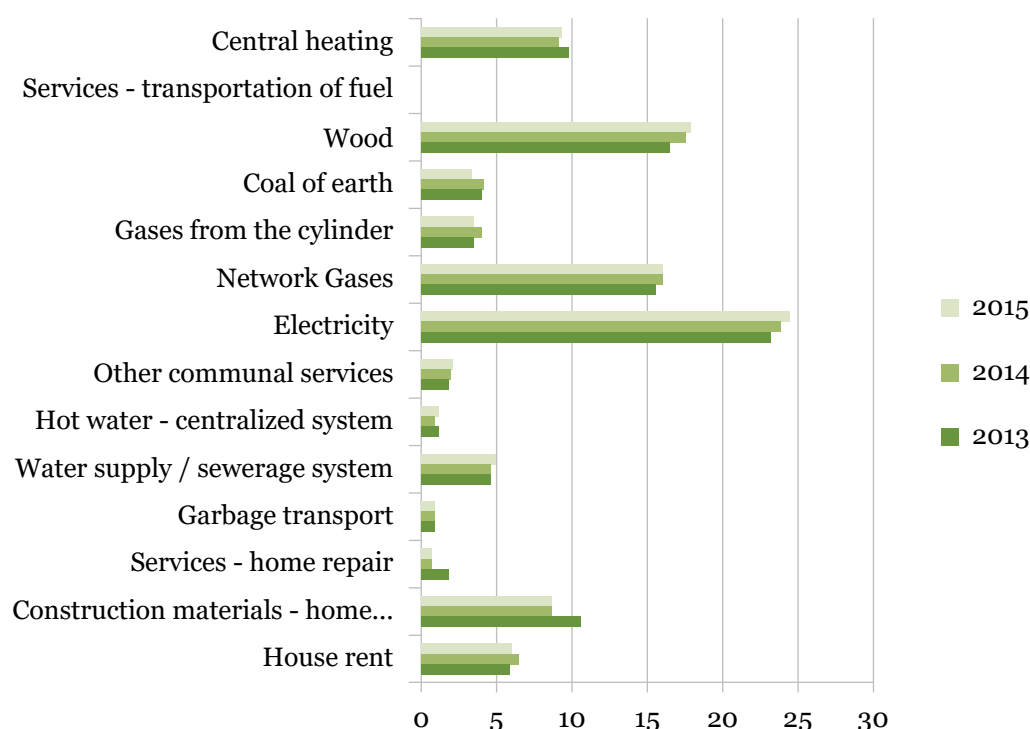
Table 2: Share of housekeeping costs out of total monthly expenses per person, %, thousands MDL

	1 st Quarter		2 nd Quarter	
	Total, expenses	Household	Total, expenses	Household
	(MDL, thousands, per person)	maintenance, %	(MDL, thousands, per person)	maintenance, %
2010	1325.4	15.6	1340.2	18.5
2011	1427.4	16.9	1523	18
2012	1510.9	18.3	1582.9	18.5
2013	1656.1	18.3	1762	19
2014	1733.7	18.6	1807.9	18.3
2015	1913.3	17.1	2075.9	17.9
2016	2058.1	17.5	2079.7	18.5
2017	2091.3	18.7	2246.8	18.4
2018	2332.4	17.8	2387.6	18.1

Source: National Bureau of Statistics

The correlation of data from Figures 1 and 2 (See above) show the price for electricity and natural gas, and the proportion of expenditures for housekeeping illustrate the incidence that energy poverty can have on average in Moldova's most vulnerable groups. More precisely, the 17% spend for housekeeping include a variety of services, with the highest proportion of expenditures being not only for electricity and gas, but also for the supply of wood, a more common trait for rural areas (See Figure 17)

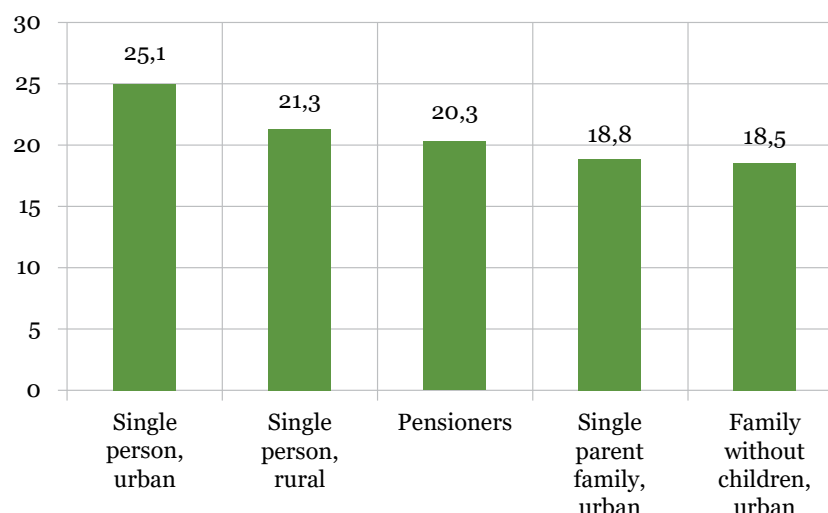
Graph 17: Structure of expenditures for the households, %



Source: National Bureau of Statistics

According to the data from 2015, the people most prone to energy poverty are single persons from rural and urban areas, as well as pensioners and single parent families (See Figure 18).

**Graph 18: Most vulnerable to energy poverty groups, 2015,
% of incomes spend for households**



Source: National Bureau of Statistics

Chapter 4. Existing policies and schemes to protect vulnerable consumers

The currently-developed mechanism of social aid designed to cope with some energy-related costs is envisioned in the Social Aid Law. The law provides specific criteria of eligibility for disadvantaged families that are entitled to state aid over the five months when heating equipment is most needed, namely from November to March. The families that can benefit from state aid include six conditions under which should fall the persons in order to be eligible: (i) pensioner; (ii) persons with disabilities; (iii) registered unemployed; (iv) pregnant or recently given birth women; (v) caretaker of a family member that needs a third party assistance; (vi) person with incomes from specific agriculture activities (Art. 5). The other two elements that are crucial to determine the compliance are the incomes of family members, and a proxy helping to verify the paying potential, such as home equipment.

The amount of the social payment is calculated by comparing the overall global income of the family and the monthly-guaranteed income per each member of the family. Only after the degree of family wealth is established can the payment be made. A family member of 18 years of age or above can submit a request for aid to social assistance structures within the local authorities. The status of the beneficiary of such aid lasts for no longer than two years, while the Government regulates the exact size of the aid (Art. 15,1).

More detailed provisions about the aid given during the low temperature period is provided by the Regulation on Modality of Establishing and Paying Social Assistance, adopted in 2008.¹¹⁰ According to this act, the amount set to be paid until 2019 was 350 MDL per month.¹¹¹ In October-November 2019, the government announced the increase of this amount up to 500 MDL¹¹², including the number of beneficiaries to 300,000 of families with lower incomes.¹¹³

Obtaining the right to social aid for the cold months requires either to submit the request individually by filling in the special form or to request the assistance of the social protection unit at the local public admin-

¹¹⁰ Regulation on modality of establishment and paying the social assistance of 16.10.2008, <http://lex.justice.md/md/329399/>

¹¹¹ According to current exchange rate (20.10.2019), 350 MDL accounts for approx. 18 EUR.

¹¹² Government, Press-release of 17.10.2019, <https://gov.md/ro/content/cresteri-salariale-pentru-bugetari-ajutoare-mai-mari-pentru-oamenii-cu-venituri-mici-si>

¹¹³ Presidency, 18.11.2019, <http://presedinte.md/rom/presa/seful-statului-a-anuntat-despre-lansarea-unor-masuri-de-protectie-sociala>

istration. The right to social payment for the “cold months” is determined together with the right to social aid. To check the eligibility, the solicitants may present copies of several acts out of a total eleven documents, including an identification document. Incorrectly fulfilled requests can be rejected, though the solicitant is entitled to contest such decisions in court. The assessment of the requests is conducted through the “Social Assistance” Automated Information System, run by the Ministry of Health, Labor and Social Protection, and which allows the corroboration of the data and the identification of any inconsistencies. This electronic platform is used by social workers to establish eligibility status. As a result of the evaluation, the family needs at least 85.64 points to fulfill the criteria. The final beneficiary is the whole family, not only the individual solicitant. The results of the evaluation should be issued 15 days after the submission. The heads of social assistance units authorize the social assistance payments every month, which can take place retroactively. The National House of Social Insurance performs the payments according to annual financing programs and based on transfers from the Ministry of Finance. There is no publicly-available system of reporting concerning the efficiency of this mechanism of assistance assessing the impact of the allocated public funds.

Another functional mechanism, available in the capital’s municipality (Chisinau), constitutes the regulation of compensation for household and energy services, expanded until June 2020 in November 2019¹¹⁴. About 30,000 families benefit from the compensation scheme since the wintertime begins. This foresees financial assistance of 40% of the costs for the energy bill. The payments from Chisinau City Hall are transferred directly to the bank account of the heating energy provider “Termoelectrica”, avoiding any risks of the use of money contrary to the destination.¹¹⁵ However, offering compensation cannot offset the problems with the quality of energy service (heat) in the residential sector. The existing legislation¹¹⁶ imposes a dependence of the heat supplier company upon the administrator of a particular housing stock. Consequently, the investments in renovation are blocked, leading to the distribution networks becoming morally and technically outdated.

Chapter 5. Internalization of external inputs

Under the 2030 Development Strategy of Moldova, inspired by the UN’s Sustainable Development Goals, the national authorities shall draft national programs dedicated to reach the stated targets. According to the “accessible and clean energy” goal¹¹⁷, representing one of the seventeen development goals, the population has to be ensured with equitable access to energy sources. In addition, the use of energy from renewals should expand. Nevertheless, the measures already undertaken put emphasis on mitigating the impact of energy inequality. Therefore, the payment capacity of the consumers attracts more attention than improving the physical parameters of living conditions that can ultimately enhance the accessibility of energy services.

Some complementary policies to the functioning mechanism of financial support during the winter are emerging. In October-November 2019, the central authorities announced measures of support to 300,000 families consisting of 500 MDL per family paid during the cold period of the year.¹¹⁸

Apart from the obligation to implement the UN development goals, the authorities have a strong commitment to fulfilling the conditions in the energy field in return for the EU’s financial assistance. According to the macro-financial assistance agreement of 2017¹¹⁹, the conditionality for the third tranche accounting for 40 million EUR requires from the Moldovan authorities to “strengthen and improve”¹²⁰ the social assistance

¹¹⁴ Chisinau City Hall, 20.11.2019, <https://www.chisinau.md/libview.php?l=ro&idc=403&id=27801&t=/Presa/Comunicate-de-presa/Compensarea-cheltuielilor-familiiilor-defavorizate-la-efectuarea-platilor-pentru-serviciile-comunale-i-resursele-energetice-in-sezonul-rece-2019-2020>

¹¹⁵ Finding from the Workshop on “energy poverty”, organized in Chisinau, on November 22nd 2019.

¹¹⁶ Law on thermal energy and promoting cogeneration of 29.05.2014, <http://lex.justice.md/viewdoc.php?action=view&view=doc&id=353698&lang=1>

¹¹⁷ The Goals of Sustainable Developments, <http://statistica.gov.md/pageview.php?l=ro&idc=601&id=6316>

¹¹⁸ Presidency.md, 2019, <http://presedinte.md/rom/presa/seful-statului-a-anuntat-despre-lansarea-unor-masuri-de-protectie-sociala>

¹¹⁹ EU-Moldova Memorandum of Understanding on macro-financial assistance, 2017, <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=373730>

¹²⁰ Ibid.

program, in particular the program that offers aid for heating needs. Moreover, the criteria of eligibility have to be revised, so that more vulnerable social categories can benefit from state support.

Clearly, the external inputs help to upgrade the social policies that support disadvantaged groups in coping with prices for basic energy services (electricity, heating). These efforts aim at integrating the essence of energy poverty, though they deal exclusively with the financial, and not technical, capacitation of the consumers.

Conclusions and recommendations:

The existing mechanisms of social protection foresee assistance for disadvantaged families that face difficulties in paying the bills for energy services. This policy is limited in time to only five months, when actually the costs for the heating make the payment unaffordable for various social categories. The statistics underline that the energy poverty can affect the pensioners, single parent family and single person family both in urban and rural areas. Under the impact of external commitments and conditionality, the authorities are encouraged to diversify and improve their assistance policy for persons vulnerable to energy inequality.

Even if the legislation and the functioning policies embed the elements of energy poverty, there is a fragmentation between energy-related acts and those that govern the social assistance. Thus, the Electricity, Natural Gas and Energy laws operate with the notion of the “vulnerable consumer”, which is legally speaking detached from the “disadvantaged families” as provided by the Social Assistance Law. Although this incongruity is not circumventing the coordination of the social support for poor social groups, it shows that different sectoral legislation is not fully harmonized. The only legislation that stipulates the clearly specific provisions on addressing the energy poverty with preventive measures is the Energy Efficiency Law.

It is worth mentioning that the Social Assistance Law uses a rather centralized approach of support for the vulnerable sections of the population. This results from the “Social Assistance” Automated Information System used by the Ministry of Health, Labor and Social Protection to determine the right to benefit from social assistance for the winter period involving the territorial social assistance units. The Energy Law that envisages the local public administrations having to find resources to compensate the payment of energy bills provides a more local approach. This aspect also confirms the persistence of some inconsistencies in legislation that administers energy inequality.

The policy paper argues that a more systemic approach about preventing and addressing the negative effects of unequal access to energy services requires a comprehensive and pro-active vision and policy tools. To address the shortcomings explored in the paper the following recommendations are formulated:

1. Legal harmonization. More uniformity across the social assistance (Social Assistance Law and the Regulation) and energy-related legislation (Energy, Electricity and Natural Gas laws, and Energy Efficiency Law) can energize the policy tools used to support the “vulnerable consumers” at both the central and local levels. The sectoral conditions under the EU’s macro-financial assistance contain political incentive to push for the unification of the legal and policy frameworks concerning “energy-related social subventions” for disadvantaged groups.

2. Development of preventing measures. Adopt measures related to energy efficiency and improving of the living conditions (heating, electricity) that may significantly prevent energy poverty and complement the social assistance offered to overcome the high costs for utilities. More efforts are required in rural areas since in objective terms the dwellings outside cities have less access to energy-related services.

3. More socially-oriented tariff policies. New forms of cooperation should be explored between the Ministry of Health, Labor and Social Protection and the National Energy Regulatory Agency in order to better take into account the vulnerability of consumers when the tariffs on energy are updated. This measure will also diminish the political pressure on energy regulatory measures, and eventually prevent the worsening of price conditions for vulnerable social groups.

4. Setting-up a specialized “Energy Poverty Public Fund”. The creation of a special public fund

dedicated to social categories which are in precarious energy conditions should be considered. Such a fund could back both a policy understanding of the phenomenon and indicate the sources of money earmarked to mitigate and prevent the effects of energy poverty. The sources for an eventual fund will form the payments currently paid as social assistance for the cold period. The discussion of introducing VAT for energy services (similar to gas consumption further to electricity and gas) could result in the generation of income for the proposed fund, redistributing the available financial resources to those most in need.

5. Paying directly to energy suppliers. The effective practice of transferring energy-related social payments by Chisinau City Hall directly to the account of the suppliers could be replicated with electricity and other energy sources at across the country. The Ministry of Health, Labor and Social Protection could introduce a mechanism for direct payments to the local suppliers; so that the money is spend according to the destination.

6. First generation of statistics on energy poverty. To develop feasible and targeted programs on fighting the energy poverty, the authorities have to develop and integrate the data relevant for evaluating and monitoring the evaluation of the energy poverty. This set of data should incorporate the following aspects: (i) complete data about the access to various energy sources and energy equipment for heating and cooking; (ii) energy efficiency in the buildings, both in the urban and rural areas; (iii) costs for the energy services, disaggregated according to types of energy-related services, as share of the total income per household; (iv) the share of the population benefiting from social assistance for the winter period, and electricity payments (recently proposed by the central authorities), divided according to the centrally and locally distributed subsidies.

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Social Assistance Law of 13.06.2008, <http://lex.justice.md/viewdoc.php?id=329197&lang=1>

Local Public Administration Law of 28.12.2006,
http://lex.justice.md/document_rom.php?id=C8E304A4:037190E8

Elected local bodies that plays a deliberating role in decision-making at the local level, in the limits of the local competences, and counter-balancing the mayor office.

Moldova is organized in 32 administrative territorial units.

Housing Law of 30.04.2015, <http://lex.justice.md/md/358764/>

National Bureau of Statistics, Living subsistence in 2019,
<http://statistica.gov.md/newsview.php?l=en&id=6329&idc=168>

Households that consume more than 2 500 kWh and less than 5 000 kWh

Regulation on modality of establishment and paying the social assistance of 16.10.2008,
<http://lex.justice.md/md/329399/>

According to current exchange rate (20.10.2019), 350 MDL accounts for approx. 18 EUR.

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"Colder" villages vs. "warmer" cities

'Energy poverty' illustrates the situation when 'individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost'. The disparities between the rural and urban areas is what define one of the most important aspect of energy poverty in Moldova.

1 Moldova's population consumes different amount of energy supplies. The citizens who live in cities have more access to hot water and central heating, which are rather scarce in the rural areas where more traditional energy sources prevail, such as coal, wood etc. Only the electricity is the energy source that has a uniform distribution across the country.

Dwellings' facilities related to energy supply by areas

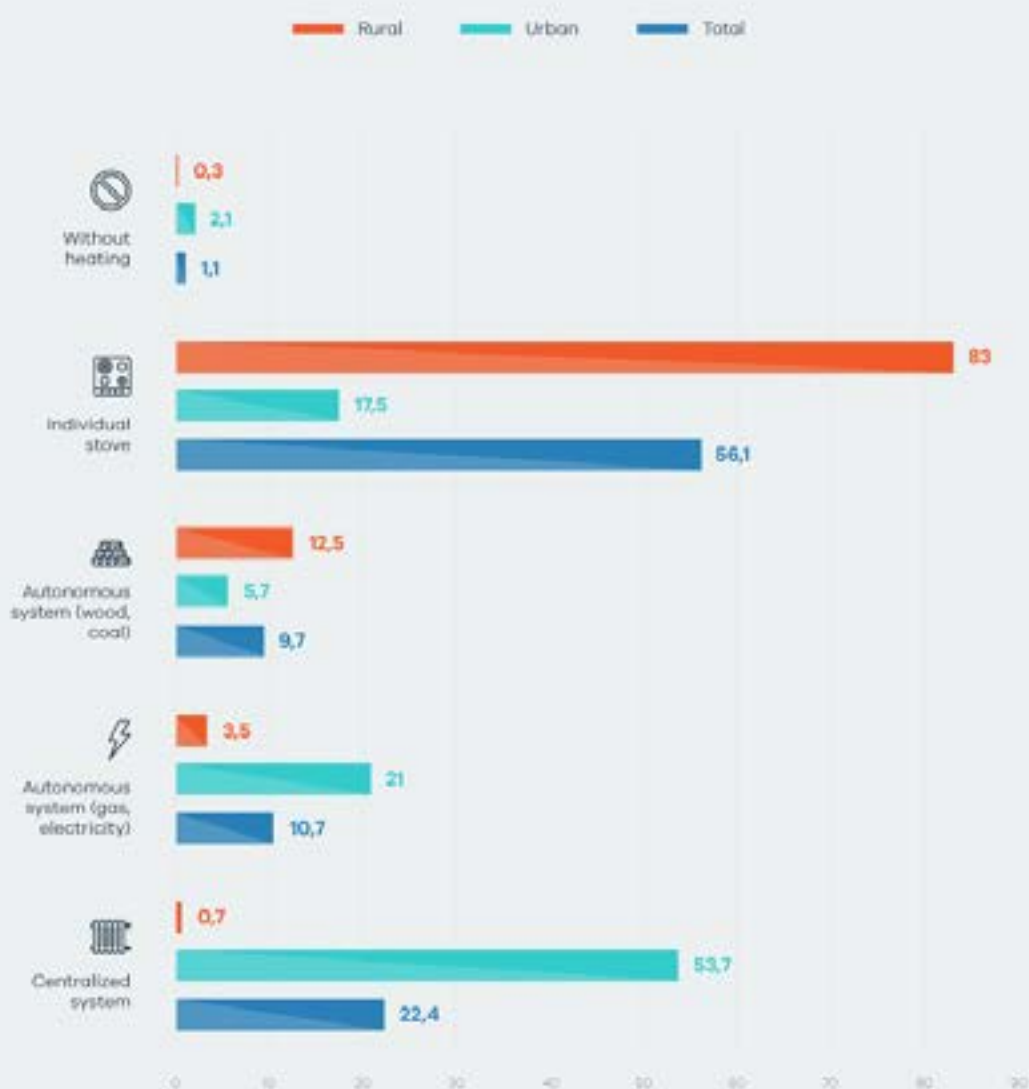
%, 2018



The means used by consumers to heat their households vary from centralized system to autonomous systems. The distinguishing aspect between the urban and the rural areas is that villagers are using extensively the stoves to ensure positive temperature in the dwellings. With except to the villages that border with country's capital Chisinau, the rural areas remain outside the centralized heating system, without showing dramatic change since the Soviet times.

Types of used heating by the total dwellings

%, 2016

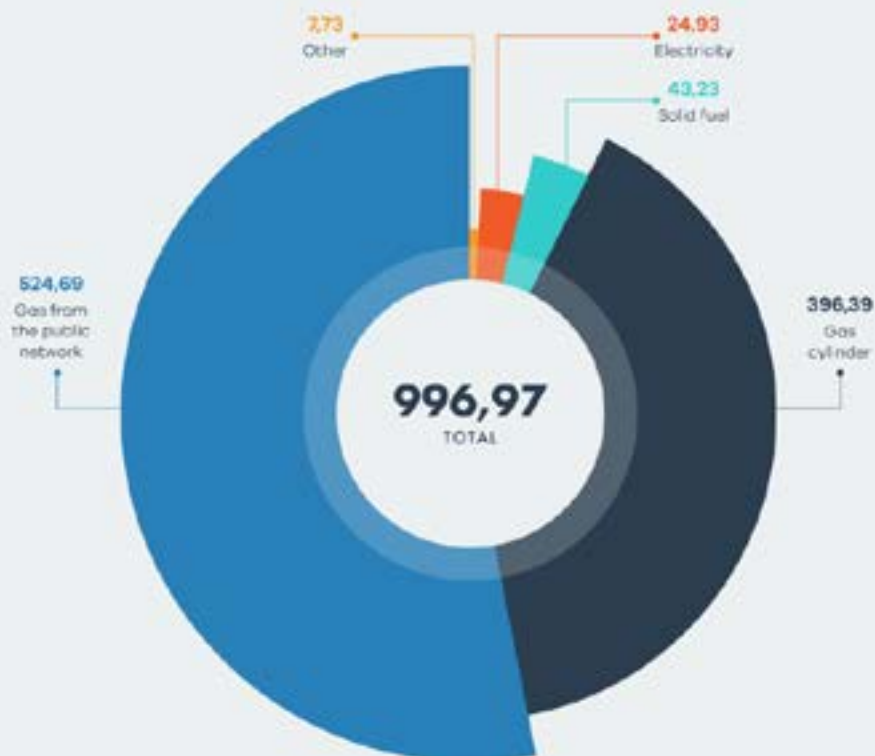


3

A high number of consumers use either the gas in cylinder or the centralized gas network when seeking to cook. Electricity has a smaller attractiveness for cooking purposes. This situation creates an additional pressure for the whole population in the towns and villages if the gas supplies are endangered by the external factors.

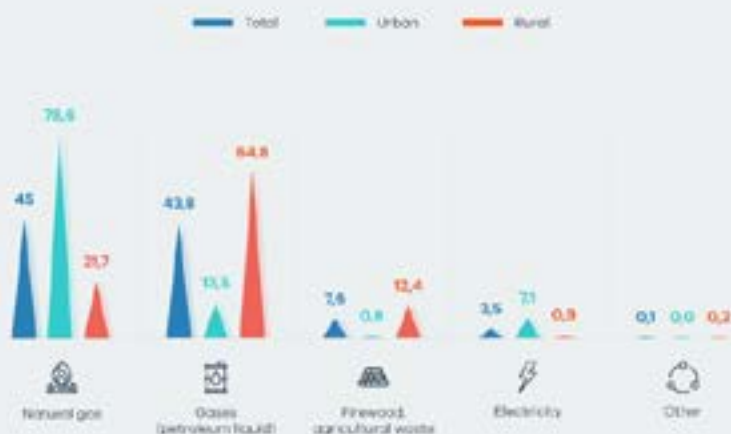
Type of fuel used for cooking in the stock of dwellings, numbers of dwellings

2014



Distribution of dwellings by used energy sources for cooking on stove and area of residence

%



Introduction and Background

In Romania energy poverty is approached from a vulnerability point of view and the measures and interventions instruments are rather restrictive. There is no official definition of energy poverty. But there are various perspectives to describe the manifestations of the phenomenon at the national level.

From an official perspective, legislation recognizes indiscriminately three categories of vulnerable energy consumers: the elderly, the ill impaired and the poor. The instruments used to remedy energy poverty are mainly social-system based and only take into consideration the household income. A number of financial and non-financial protection measures apply. Based on the numbers of beneficiaries of heating benefits, mainly heating aid, it can be inferred that in 2015 “official energy poverty” in Romania was as high as 4,6% (Sinea, 2018). However, this percentage diminished significantly over the following years due to the progressive rise in the minimum income threshold, which has disqualified many from receiving heating allocations.

From a more analytical perspective, based on various conventional cost indicators, the percentage of the energy poor in 2018 was: Twice the National Median (2M) – approx. 13%; Low Income High Cost (LIHC) – 12%; Hidden Energy Poverty (M/2) – 15,5%, indicators which are on the rise, as compared to previous years. To these can be added the recipients of social tariffs for electricity, which are another 8200 households (Sinea, 2018).

The European Union Survey on Living Conditions (EU-SILC) reports on more qualitative data on energy poverty. According to this, in 2017, 15,9% of the Romanian population had arrears on utility bills (EUROSTAT, 2019); whereas the percentage of the population that was unable to keep their house adequately warm was 9.6 in 2018 (EUROSTAT, 2019).

These scores are important quantifications of the phenomenon, however they fail to completely describe energy poverty in Romania. Other aspects should be added. They are discussed below.

Accessibility

Recent EUROSTAT studies show that final energy prices in Romania are much lower than the EU average, both on gas and on electricity, with the lowest price on gas (34 EUR/MWh) and the sixth lowest price on electricity (132 EUR/MWh) for household consumers. However, the purchasing power of the population was 57% of the EU average in 2016, whereas the distribution of wealth is the most unequal in the EU with a Gini coefficient of 37,4. Therefore, from an accessibility perspective, energy poverty is not a question price, but rather one of **income, purchasing power and justice**.

From a comparative perspective with regards to the price difference between fuels, a recent study on the heat need of a medium household showed that in Romania the most expensive heating fuel is electricity (almost 3 times more expensive than gas), followed by gas and then, closely by wood. Wood can, at certain peak times, be even more expensive than gas. Most households in Romania use wood for heating, some of them are having limited access to alternative sources due to the absence of energy infrastructure (Sinea, 2018b)

⁹³ EU Energy Poverty Observatory, Addressing Energy Poverty in the European Union: State of Play and Action, August 2018, https://www.energypoverty.eu/sites/default/files/downloads/publications/18-08/paneureport2018_final_v3.pdf

Access

The electricity grid is most widely spread across Romania. However, there are anywhere between 20.000 and 100.000 households that are not connected to the grid. There have been at least three attempts by the Government to measure the extent of this issue. But accounts remain inaccurate because neither of the processes have been conducted completely, whereas methodologies are uncertain (Sinea, 2018b)

Informal access is quite high. According to some estimations, more than 420.000 households are informally connected to electricity (Sinea, 2018). A large part of this number is made up of low income, marginalized and informal communities. Mass media accounts repetitively for accidents related to improper connection to electricity, which originates mainly in the lack of monitoring of construction-related legislation.

Access to gas is much more limited. Only approx. 33% of the households are connected to the gas grid even though gas might be available in the locality. This is due to the fact that the price of connection to the grid can be particularly high, whereas the bureaucracy involved can be restrictive. Gas mainly covers high-density urban areas, many at the rural level being quite limited to the usage of wood. Wood can become quite pricey especially in wintertime. At some points it might even be more expensive than gas (Sinea, 2018b).

Inefficiency of the building stock

Almost 50% of the housing stock in Romania is made of old, low quality wood-based material; the rest is building brick or prefab (Sinea, 2018b). Due to poor implementation of construction legislation, the inefficiency of the building stock in Romania remains high. Several insulation programs with EU grants have taken place, mainly targeting communist-era apartment buildings, however they have been imprecisely targeted and their impact has remained unmonitored. Implementation of EU legislation on energy efficiency is generally problematic.

Partial and temporary room heating

Partial and temporary room heating is a common practice in Romania. More than half of the population heats their home partially (Ministerul Energiei, 2018). To this can be added other aspect of energy consumption behavior, such as heating below standards or heating just at times, which does not maintain a constant room temperature. These practices might also be associated with over-heating.

Pollution

Taking into consideration that most of the heating is based on wood, and that heating systems are generally of low quality, there are large quantities of particles that are being released both indoor and outdoor. There is no quantification yet of indoor pollution, however, outdoor pollution due to the residential sector is 6,2 mil. CO₂ and 7,2 in GHG emissions, the residential sector being one of the highest pollution causes in the country (ANRE, 2019).

Existing studies on energy poverty

Studies on energy poverty in Romania are scarce. The first publication on the topic was issued under the auspices of UNDP in 2012 on energy efficiency in low-income households in Romania (Househam and Muresescu, 2012). The most important research on the topic so far was performed by the Center for the Study of Democracy in 2017, which resulted in an extended report on energy poverty in Romania and the EU (Sinea, 2018). In 2018 a second report related energy poverty and the consumption of gas was published (Sinea, 2018b). Ashoka Romania is a non-for profit organization in the field of social innovation, which maps innovative projects and stakeholders that create solutions to alleviate energy poverty (Ashoka CEE, 2018). There is one ongoing study by a Romanian-Israeli academic team that focuses on extreme energy poverty in Romania and Israel and the role of public authorities in alleviating the phenomenon in marginalized communities of

important urban settings. A chapter on the heating benefits system in Romania is included in the upcoming Routledge volume on Perspectives on Energy Poverty in post-Communist Europe. Romania is a member of the ENGAGER COST Action, being involved at the level of research in various projects on energy poverty across the EU2019 (Action, 2019).

Data availability on energy poverty

The complexity of energy poverty poses obvious challenges with respect to the accurate measurement and quantification of its size, in terms of number of people affected and in respect of the costs involved in fighting it. The large number of institutional actors that should be involved in collecting data on energy poverty creates an important challenge, as it involves a continuous process of coordination and reporting between institutions. These challenges are part of the explanations identified for a poor collection of data on vulnerable consumers and the people in energy poverty in Romania (Sinea, 2018).

Most institutions involved are aware of the need to measure the phenomenon and they already collect useful data. Their approaches are, however, not unitary. Each authority has its own perspective of the problem, without any institution having an overall view based on which to create solutions to combat the phenomenon in the long run. For example, the Ministry of Labour rigorously centralizes the data on heating benefits granted from the state budget. City halls keep records of additional benefits from the local budgets. The ANRE centralizes data from providers regarding social tariffs. The Development Ministry holds data on the dwellings fund, the expenses incurred for energy efficiency (both from state or local budgets as well as European funds). The National Statistics Office also collects statistical data relevant to the measurement of the phenomenon of energy poverty through investigations such as the Family Budget Survey or the EU SILC. Data coming from the general population census can be used to apprehend the phenomenon, however, the latest survey was performed in 2011, and is being repeated once every decade.

However, these institutions do not communicate with each other to exchange data or to analyze them in a common manner. This results in the absence of any real assessment of the measures implemented to combat energy poverty or to enhance energy efficiency. For example, the fact that the number of households receiving heating benefits has halved in the last four years might be regarded as a major reduction of poverty, but the decrease is due, in fact, primarily to an increase of the minimum income. Also, there is no assessment of the benefits brought by thermal insulation programs for blocks. The amounts invested, from local budgets, from the state budget or from European funds for thermal insulation programs are known, but it is not clear what impact they have on the heating bills. Also, the body of energy auditors holds the expertise needed to conduct substantial assessments of dwelling fund, following a well established methodology that takes into account the characteristics and facilities of each household, which would allow the collection of a significant volume of data that could be linked to the data on household income. However, energy performance certificates are not mandatory under Law 159/2013, unless a property is quoted on the market or, more recently, when renovation permits are awarded (Sinea, 2018).

Primary Assessment of Energy Poverty in the country

Access to energy

Physical access to diversified and, therefore, affordable sources of energy is an important issue when speaking of energy poverty, as it determines the number of options consumers have and can choose from based on their respective household budgets.

On the demand side, in Romania the mix of the heating and cooling systems for buildings can be

described the following way:

Graph 1: Heating and cooling of buildings according to sources of energy

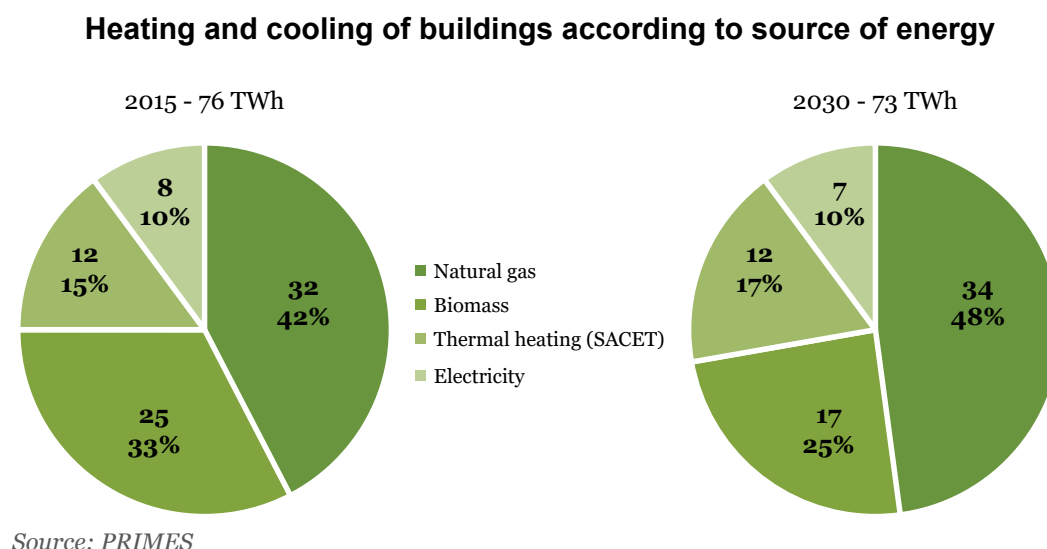


Chart from the draft energy strategy (2016) (Ministerul Energiei, 2016)

However, this mix is not evenly spread across the national territory and households do not have equal access to all sources. Access varies based on the geographical positioning, proximity to resources, prices, income, and complexity of the grid connection process.

Access to energy has come up in the media at times, not as an issue of energy poverty, but mostly related to other public concerns or policy issues, such as the established development disparities across the Romanian territory and in relation to the European living standards. Most recently, the issue of access to gas has been marginally approached with regard to the limited national market perspectives of new gas resources discovered in the Black Sea, given the limited stretch of the distribution network across the national territory. The media did not generate any systematic analysis or public debate on the topic (Petrescu, 2018). The national energy strategy draft issued in 2016 points out the low access of rural households to diverse sources of energy and the need to invest more in suitable solutions, such as the expansion of the gas network to areas outside the reach of the existing infrastructure (Ministerul Energiei, 2016). Similar considerations on the topic have been made by subsequent reports; such as the 2018 report of the Romania based Energy Policy Group, which points out the need to invest in alternatives (Iuga & Dudau, 2018). The most in-depth analysis on this situation has been undertaken by the Center for the Study of Democracy of the Babes-Bolyai University in Cluj-Napoca in 2018, which explores several dimensions of the lack of access to gas and the conclusions of which will be elaborated below (Sinea, 2018b).

Access to electricity

From all available sources, the electricity grid is most widely spread across Romania. However, there are anywhere between 21.000 and 100.000 households that are not connected to the grid at all, according to various Government accounts. Based on a draft Government decision launched for public debate in 2012 by the Ministry of Economy, Romania had approximately 100,000 households without access to electricity. Another assessment was included in the last National Electrification Program, as approved by a Government Decision in 2007 (GD 328/2007). According to this decision, on 15 May 2006 there were 67,738 households without electricity. A third assessment, in 2012, was performed in the context of another Government decision put up for public debate in relation to the National Electrification Program, which stated that 98,871 households had no electricity. Data derived from the latest census in 2011 shows that 3,4% of the total number of households (i.e. 207.434 households) have no electrical system installed. To these may be added those who have been disconnected for various reasons, mainly for non-payment. There have been at least three attempts by Government to measure the extent of the issue and advance legislation to remedy the situation. However, accounts remain inaccurate, and the processes have not been completed, whereas the methodologies used to

estimate the extent of the issue are uncertain (Sinea, 2018).

Informal access to electricity is also high. According to some accounts, more than 420.000 households are informally connected to electricity. This consumption behavior is mainly typical of marginalized communities that are in situations of extreme energy poverty (ghettos, informal housing, etc.), and are mainly due three issues: the complex bureaucracy involved in connecting to the grid, the documentation necessary to connect and the lack of clear legal situations of these households (lack of IDs, property rights, complex family situations, etc.) (Sinea, 2018).

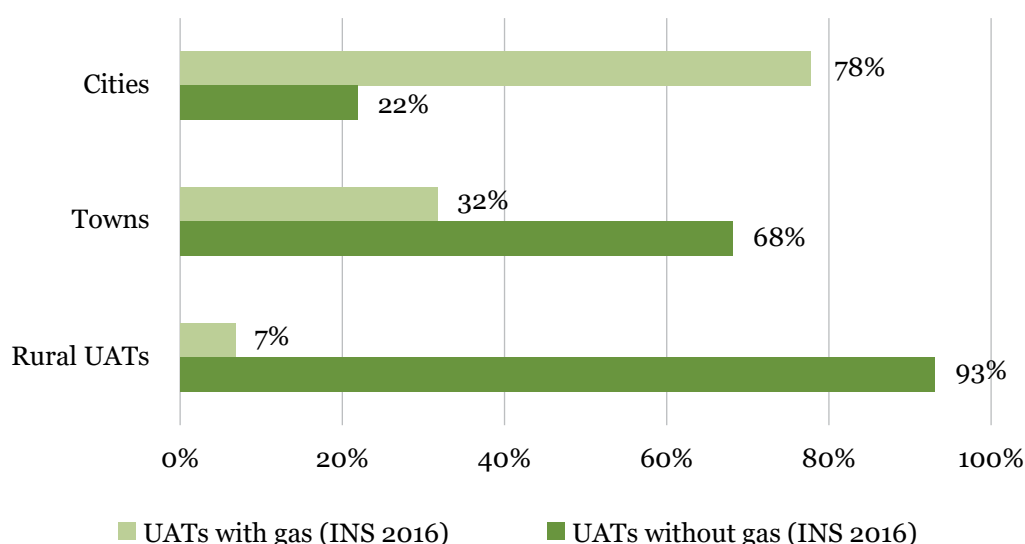
In Romania Electricity is mainly used for lighting and electrical devices. Only a very low percentage of households use electricity as a heating fuel (just 1% of Romanian households) (Ministerul Energiei, 2016). This type of consumption is typical of lower income households that use electricity-based heating systems intermittently or combined with other heating sources (Sinea, 2018).

Access to natural gas

Access to gas is much more limited as compared to electricity. There is no accurate assessment of households without access to the gas distribution network. The National Energy Regulator relies on the licenses granted to publish detailed statements of places with access to gas, down to the village level. The National Statistics Institute publishes a statement of Romanian localities connected to natural gas distribution networks, broken down per administrative units. The two reports give different figures and it is not clear if such differences are caused by inconsistent methodologies or other errors.

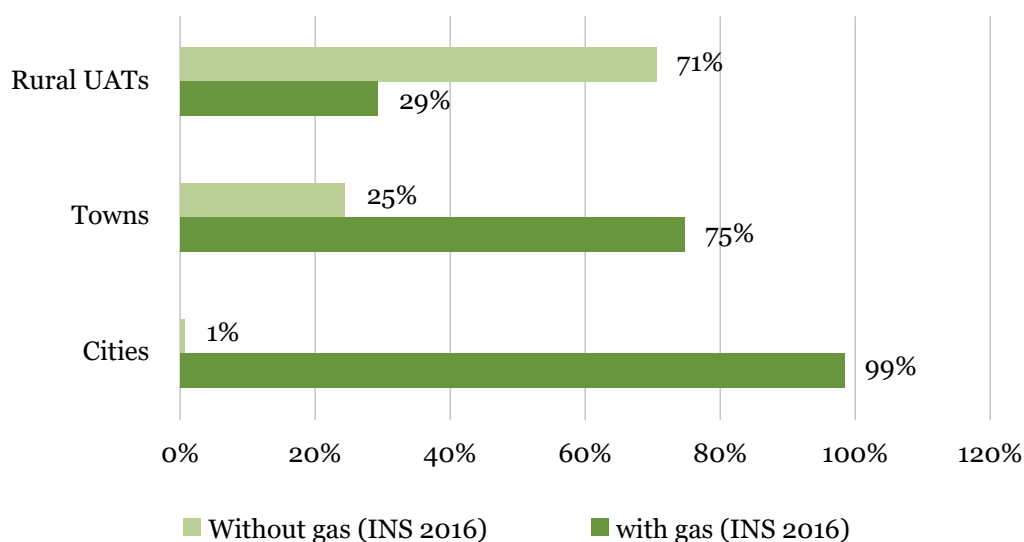
Based on the draft national energy strategies, out of 7.5 mil. permanently inhabited households in Romania, 2.5 mil. used gas for heating in 2015, which is approx. 33% of the households. Gas mainly covers high-density urban or suburban areas, areas that are close to gas extraction sites and geographically more accessible. Most of the households at the rural level are quite limited to the usage of wood. 78% of the rural administrative units are not covered by the gas network. However, the largest share of administrative units, which are not connected to the grid, are located at short distances from the network. For instance, 874 administrative units lie at less than 10 km from the gas network (Sinea, 2018b)

Graph 2: Percentage of administrative units connected to gas



Source: (Sinea, 2018b)

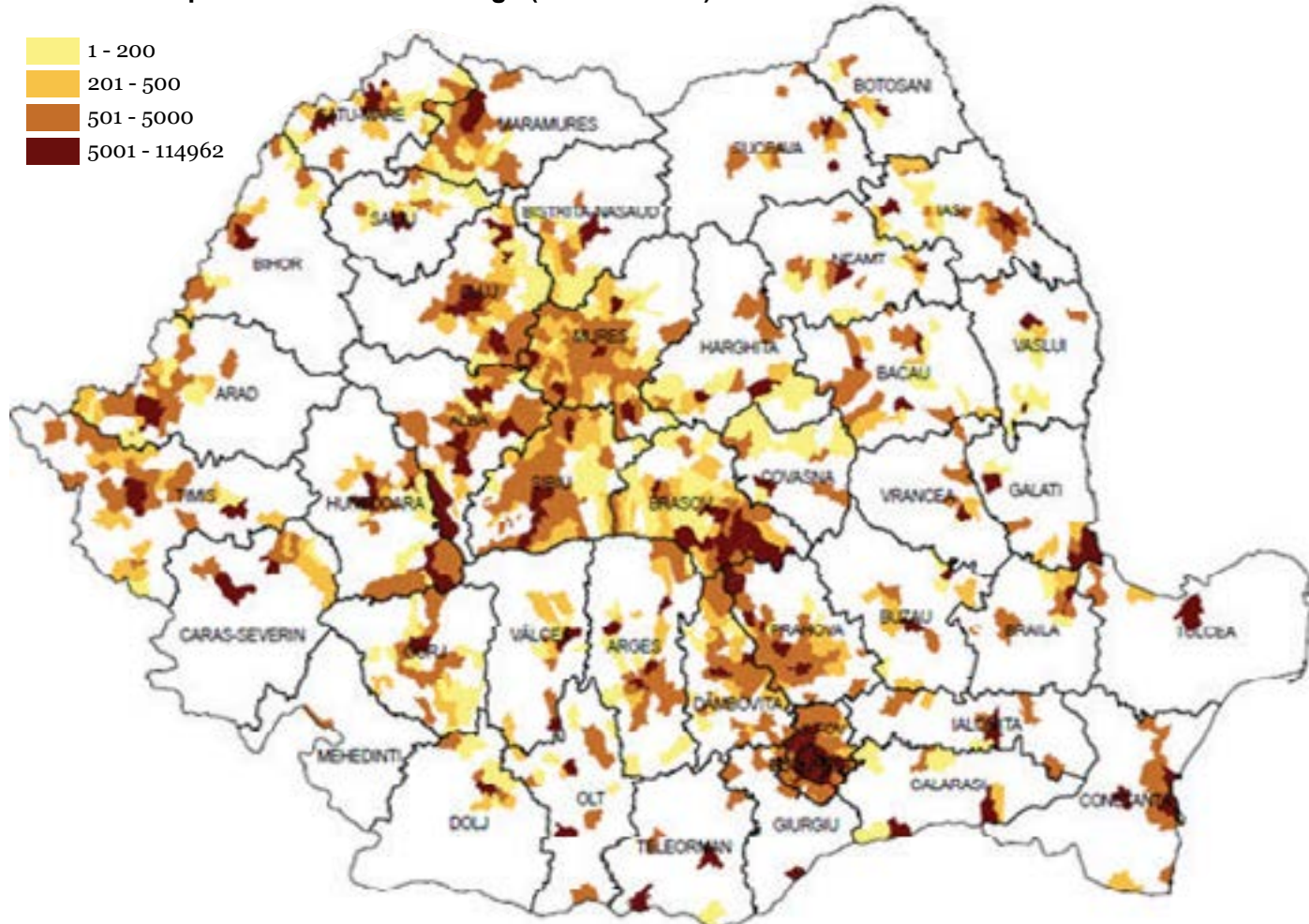
Graph 3: Percentage of residents in the administrative units connected to gas



Source: (Sinea, 2018b)

Graph 4: Administrative units connected to gas and average annual consumption

Gas consumption for household usage (thousand m3)



Source: (Sinea, 2018b)

Beyond the physical access, accessibility is also a matter of restriction. 33% of households use gas from the grid, however, 44% have gas in their proximity. The 11% difference in the numbers is due to a number of issues, among which accessibility is one of the most important. Accessibility relates on one hand to the connection costs involved and to monthly bills, on the other.

It has been concluded that many refrain from connecting to gas because they cannot afford the connection

fee. It was estimated that the connection costs amount to around 4000 lei for an individual house and 3000 lei for an apartment (i.e. between 630 EUR and 1000 EUR) in the context of an average monthly salary of approx. 1000 EUR, including taxes. These costs compel many homeowners to use inefficient and ultimately more costly solutions (Sinea, 2018b). The EPG 2018 report equally recognizes the issue and recommends that the State subsidized connection fees as a protection measure for low-income consumers (Iuga & Dudau, 2018).

A second issue with regard to accessibility is the affordability of the bills, it has been concluded that in Romania this is a question of purchasing power of the population. According to Eurostat, final energy prices in Romania are much lower than the EU average, both on gas and on electricity. Romania has the lowest average price on gas (and estimated 0,030 EUR/KWh) (EUROSTAT) and the fifth lowest average price on electricity (0,1289 EUR/KWh) (EUROSTAT, 2019) for household consumers during the second semester of 2017. However, the purchasing power of the population was 57% of the EU average in 2016, whereas the distribution of wealth is the second most unequal in the EU with a Gini coefficient of 33,1 in 2017 (EUROSTAT, 2019). Price increases have taken place on a constant bases due to the process of the energy market liberalization, based on a European commitment to deregulate the market for household consumers. Moreover, Government initiatives to limit this process at the end of 2018 through a milestone Government emergency measure, has set off the opposite effects, causing prices to soar even more (Guvernul Romaniei, 2018).

Access to firewood

In Romania 3.5 mil. households use solid fuels, mainly wood for heating. In the rural the practice is typical of 82% of the households, whereas 12% of the homes in the urban areas use firewood for the same purpose. 10% of the households in Romania combine wood with gas when heating their homes.

The usage of wood is well related to the absence of gas infrastructure and the limited access to renewable technologies, but also to various aspects regarding the firewood market. The wood market is under-regulated and penetrated by a large illicit consumption component, which leads to the constant presence in the media of issues related to wood theft, illicit logging and other related crimes. As such, many consumers prefer to find ways to purchase off-the market, and at times, cheaper firewood to get by during winter. In extreme poor households other subsistence practices occur, such as burning waste, rags or agricultural residue. However, due to the lack of regulation, the market can also be extremely volatile, which makes wood prices, even under the described circumstances, soar especially during the cold season. This affects regions with fewer wood resources disproportionately. These regions, located in the southern part of Romania, are also more affected by poverty than others.

Based on a comparative study, it was concluded that the price difference between wood and gas is slight when considering a standard room temperature, wood being comparatively cheaper per kWh. However, due to the situation on the wood market, the different availability of wood across regions, the price of wood can differ from one part of the country to another and from one season to the other. Depending on the supply-demand ratio, it can easily surpass that of gas in some situations and regions. In the absence of alternative options, households are constrained to use this more expensive and less efficient resource to heat their homes (Sinea, 2018b).

The issue regarding the price of wood comes up every winter in the mass media. However, the approach is not being systematically brought up neither in an energy poverty context, nor in the broader context of the lack of access to affordable energy sources. It is rather discussed separately. A more recent approach regarding the situation on the wood market related to the EU infringement procedure of 2015 on the mismanagement of the forestlands in Romania, which resulted in tougher market regulations and the doubling of the wood prices for household consumers (Ronkov, 2016).

Access to district heating

District heating remains marginal in the generation of heating for residential use, and is expected to further serve no more than 2% of Romanian households or even register a slight decline due to the inherent difficulties faced by this system (oversized, obsolete technology, giant losses, inefficiencies, debts, high operation costs due to high rate of disconnections, bankruptcies, poor services, etc.) and the highly capital-intensive

investments required for its restoration. Currently, 1.3 million households are served by SACET in 60 localities across the country. At the current rate of disconnections, this figure is expected to fall under 1 mil. by 2020, possibly followed by a return to the current levels by 2030 against the background of higher gas prices, considering the low efficiency of domestic water heaters (excessive gas consumption for the apartment size, respectively a negative impact on indoor air quality), and of EUR 4 bln. invested in the system. The expected driver of this recovery is the higher efficiency at both consumption (upgrading of dwellings and improvement of consumer practices) and production and distribution/supply (by developing more efficient production points, better adapted to the decreasing consumption curve - smaller water heaters, closer to the consumption place, more flexible, etc.). The main fuel used in domestic water heaters will still be gas, as the higher scale production of heating is expected to be more energy-effective. The final consumption expected in the residential sector is 10.09 TWh (Ministerul Energiei, 2016).

Indoor and outdoor air pollution caused by energy consumption and inadequate appliances

The types of fuels and systems used in household activity, but also the energy consumption habits determine not only the thermal comfort of individuals, but also the quality of air they breathe both indoor and outdoor. So far, there have not been studies to measure the indoor or outdoor air quality as a result of energy poverty. However, there are a number of related factors that can be described as being related to the degradation of air quality and which should be addressed in order to improve the living condition of vulnerable consumers.

The heating fuels used can be an important factor. The Draft National Strategy of 2016 reports with regard to the fuels used in heating and cooling processes that gas is most widely used (42%), followed by biomass, 95% of which is firewood (33%), district heating (15%) and electricity (10%). District heating is mainly based on the burning of natural gas, while electricity production is based mainly on clean sources, whereas fossil fuels are still an important component (coal-27,5%, water-23%, nuclear-18,3%, gas-16%, 13%-solar and wind power) (Draft Strategy 2018). As described before, in Romania 47% of the households use solid fuel, mostly wood, to heat their homes and cook. Most of the rural households (85%) use firewood for heating and other purposes, whereas in the urban area about 12% burn wood. 10% of those using gas for their heating combine it with firewood (Ministerul Energiei, 2018).

The types of systems and the heating practices employed also play an important role when discussing indoor and outdoor air quality. In Romania 33% of households (that is 2,2 Mil.) use individual apartment boilers on gas to heat their homes and water. 0,3 Mil. households using gas, burn it in traditional stoves. Most of the households using individual apartment boilers are situated in the urban or sub-urban areas. These boilers are usually over dimensioned, burning more fuel than necessary, being also a source of indoor and outdoor pollution. This has been partially recognized in national legislation regarding the fixture and use of such systems, as the setting-up of individual boilers is mandatory in well-ventilated spots. There are no official accounts regarding the implementation of these norms. However, scrutiny is scarce. Moreover, in the media there have been some accounts of deaths due to indoor emissions. The installation of individual boilers should, according to the law, be strictly overviewed and authorized by a specialized practitioner (Ministerul Energiei, 2016).

In the rural areas most of the systems (82%) are based on the burning of firewood and are quite inefficient. Due to the qualities of wood and the low performance of the stoves, the level of indoor and outdoor pollution generated can be important (Sinea, 2018b).

1,25 Mil. households in Romania are connected to district heating. The underperformance of these facilities is well-known and is due to the old technology employed and the lack of investment over time. High levels of leaks and losses, which also generate pollution, are reported constantly in the media, especially during the cold season (Ministerul Energiei, 2018).

Safety of Energy Supply

Energy safety

Consumers, which have a legal contract with an energy supplier, are entitled by law to safe and continuous supply of energy. Illicit connection to the grid involves the exposure to life threatening risks. Despite this, illicit consumption still occurs in high numbers, especially in vulnerable communities. Moreover, civil con-

struction legislation binds contractors and individual clients to strict safety rules with regard to the access to energy and its use (e.g. construction materials and procedures, rules with regard to the installation and use of supplies, etc.). Despite this, there are constant media accounts of human casualties, severe injuries, and material and financial damages caused by fires and accidents resulting from legal misconduct in civil construction.

Reliable supply

Two types of power cuts are possible: planned and unplanned. The first category is due to development works done by energy operators, in which case they are obliged to notice clients in advance. Unplanned power cuts occur out of a variety of reasons: outdated or overcharged distribution system, energy theft or unauthorized interventions to the network, etc. The issue of outdated energy infrastructure is being highly debated. According to some sources between 73% and 97% of high voltage lines have almost reached their complete lifespan, whereas investments in development and modernization have only been slight after 1980, and very low after 2000. The investment needs remain high, while the situation has resulted in increasing planned and unplanned power cuts, with an impact on the consumer that is a tremendous increase of non-supply of energy in 2016 as compared to the previous years. Due to interruptions 224,69/264,70 MWh of electricity remained undelivered/uproduced in sites in 2016, which is around 600% higher than during the previous years.

The general state of the power network has determined more interventions on the lines, and with a higher degree of complexity, which has led to an increase of the duration of unavailability of the system. Planned intervention time on the lines is over 1000 and over 4000 times higher on the transformers than unplanned ones. Despite increase in maintenance works, more incidents are being reported every year by the electricity TSO. Based on the TSO development report, the average yearly disruption time has reached the 2,11 min. peak in 2016 after a number of years of decrease. So has the severity indicator to 0,10 min/disruption and the minute system indicator to 1,54, relating the average annual disruption duration to the annual peak consumption. The most important cause of interruptions identified is the technical situation of the networks, whereas the highest number of incidents on networks is due to bad weather conditions (Transelectrica, 2018). With the increase of extreme weather events attributed to global warming energy service interruption or fluctuation due to infrastructure damage is being more and more accounted for in the media with localities isolated for days under snow, floods or due to violent storms.

Another important issue on the topic is related to the degree of interconnection of the Romanian energy market to the regional one – a mechanism created by the European Energy Market in order to safeguard national markets in the event of penuries or imbalances. Whereas, there is significant progress on the electricity market coupling, the gas market lags behind due to the old infrastructure, the related pressure differences with the neighboring markets, the important need of investment and the low political will (Ministerul Energiei, 2016).

The district heating system too faces difficulties to secure a constant and safe supply due to its deplorable state (oversized, obsolete technology, giant losses, inefficiencies, debts, high operation costs due to high rate of disconnections, bankruptcies, poor services, etc.) and the capital-intensive investments required for its restoration. The ensuing financial situation of the district heating company in Bucharest has rendered it in insolvency for years and a conflict situation between the stakeholders. System breakdowns and debts lead to instances where hundreds of households remain in the cold for several days every winter season.

Energy Affordability

In Romania access to affordable energy is a question of purchasing power of the population, of social justice, of access to diverse resources, and of the bureaucratic complexity and redundancy.

Despite important progress since EU accession in 2007, Romania remains one of the poorest countries of the block with a GDP per capita of \$ 24.600 (in PPP) in 2017. The unemployment rate in 2017 was of 4,9% (Central Intelligence Agency, 2019), the average income in 2019 was 659 EUR. The purchasing power of the population was 57% of the EU average in 2016, whereas the distribution of wealth is the second most unequal in the EU with a Gini coefficient of 35,1 in 2017 (EUROSTAT, 2019).

According to Eurostat, final energy prices in Romania are much lower than the EU average, both on gas and on electricity. Romania has the lowest average price on gas (and estimated 0,030 EUR/KWh) (EUROSTAT) and the fifth lowest average price on electricity (0,1289 EUR/KWh) (EUROSTAT, 2019) for household consumers during the second semester of 2017. Therefore, the affordability issue is not mainly price-focused, but rather an issue concerning income and social justice. The beginning of 2018 was marked by important imbalances on the energy market due to a number of reasons, such as suspended production of energy, labor union conflicts, technical issues or an emergency provision regulating energy prices, which lead to a chain of historic peaks of the energy prices on the retail market and to an increase in imported energy (Nicut, 2019).

Based on a simulation that takes into account current energy prices, the construction type and the methodology to calculate the heat necessary of an average home in Romania, an average Romanian family would have to pay between 1600 EUR - 2500 EUR for gas every year or between 1400 EUR - 2200 EUR for wood in order to heat their homes appropriately (Sinea, 2018b). Given an average monthly salary of 1000 EUR, including taxes, that would be anywhere between 12% and 21% of the gross wage.

There are various cost indicators to quantify energy poverty in Romania accepted in the field, various other percentages can be advanced for 2015: 2M (as an alternative to the 10% measure) – approx. 13%; LIHC – approx. 12%; M/2 (hidden energy poverty) – 15,5%. To these can be added the beneficiaries of social tariffs for electricity, which are another 8200 households (Sinea, 2018)

The EU-SILC reports on more qualitative data on energy poverty. According to EU official data, in 2017, 15,9% of the Romanian population had arrears on utility bills (EUROSTAT, Arrears on utility bills - EU-SILC survey [ilc_mdso7] , 2019); whereas the percentage of the population that was unable to keep their house adequately warm was 9.6 in 2018 (EUROSTAT, Population unable to keep home adequately warm by poverty status, 2019).

The Quality of the Building Stock

Based on data extracted from the general population survey performed in 2011, it can be concluded the majority of the residential buildings in Romania have been built between 1961 and 1987. 45% of the building stock is built from brick, stone or aerated concrete masonry; over 30% of the building stock is built of concrete panels, and are to a large extent multifamily buildings; 18% are adobe and 3% wood. Based on an evaluation of the national building stock, statistically speaking, the residential buildings most prone to fall in a state of energy poverty, that is more than 10% of the disposable income is spent on energy consumption, are: 1 room houses/apartments built of concrete panels, using an individual gas boiler (approx. 12% of the disposable income); houses/apartments built from brick, stone or aerated concrete masonry with two or three rooms, using natural gas stoves (approx. 15%, respectively 11%); 2-room houses/apartments built from adobe and burning wood or coal to heat up (over 10%). Based on this assessment over 2800 (i.e. more than 9%) households are at the risk of energy poverty based on expenditure indicators. It should be born in mind that all these values are yearly values, whereas during the winter season, when heating is used more intensively, this number could be much higher.

Existing Policies and Schemes to Protect Vulnerable Consumers

Energy Poverty Definitions and Indicators

The so-called Energy law 123/2012 with subsequent additions and amendments defines the "vulnerable consumer", whereas the concept of energy poverty is not present in law. According to this law, the vulnerable consumer is the final consumer belonging to the category of household consumers who, for reasons of age, health or low income, is at risk of social exclusion and who, to prevent that risk, benefits from social protection measures, including of financial nature. Energy vulnerability involves, thus, "social exclusion". Law 196/2016 on the minimum inclusion income, which lumps together all social benefits, in order to better cover

the needs of vulnerable persons, proposed a new definition for the vulnerable consumer, laying a an accent on the ability to keep warm, not on the various vulnerable categories. This perspective is closer to the energy poverty concept, but only related to heating, not to cooling. The law was expected to enter into force in 2018, but was postponed mainly due to the face that the informatics tool needed to support the new system, was not yet in place.

The first definition is operationalized through a number of support schemes of financial and non-financial kind. There is no reporting of the number of people recognized as vulnerable on the basis of this legislation. However, based on the recipients on heating benefits it can be inferred that in 2015, 4,6% of the households were energy vulnerable/poor and, thus, received heating benefits. This percentage is lower than the previous years due to a successive nominal increase in the minimum income, which is being taken into consideration when assessing the qualification of applicants. The trend carried on during the successive years, eventually leading to very few allocations being handed out. Other cost indicators can be used to evaluate energy poverty, and they show a much higher percentage, which is closer to the European Union situation. To these can be added 1.014.000 households, who are recipients of the social tariff. These may overlap with the recipients of heating benefits to a large extent, as the social tariff is only available for electricity, whereas the heating benefits are available for both electricity and gas, without being mutually exclusive. The households that receive some kind of non-financial protection are not quantified (Sinea, 2018). Also, other forms of energy poverty, as discussed above (access, inefficiency of the building stock, inefficient consumption patterns, indoor and outdoor pollution, etc.) are not accounted for and for that matter remain unmeasured.

Table 1: Indicators of energy poverty in Romania

Indicator	2013		2014		2015		2018	
	% households in energy poverty acc to indicator (of the total households)	% overlap between the actual beneficiaries and those identified by indicator	% households in energy poverty acc to indicator (of the total households)	% overlap between the actual beneficiaries and those identified by indicator	% households in energy poverty acc to indicator (of the total households)	% overlap between the actual beneficiaries and those identified by indicator	% households in energy poverty acc to indicator (of the total households)	% overlap between the actual beneficiaries and those identified by indicator
Heating benefits	7,4%	100%	6%	100%	4,6%	100%	N.A.	N.A.
2M	11,9%	14,86%	19%	33,33%	12,10%	17,39%	13%	N.A.
LIHC	12,3%	27,02%	16,9%	41,66%	9,90%	30,43%	12%	N.A.
M/2	12,2%	24,32%	18,7%	16,66%	13,5%	32,6%	15,5%	N.A.

Source: (Sinea, 2018)

Table 2: Categories of households affected by energy poverty from the perspective of access to electricity and associated figures

Household category	Number	Source
Dwellings with no electrical equipment	287.434	287.434
Households benefiting from the social tariff*	1.014.000 (approx)	ANRE 2016 (relative to the total number of households in Census 2011)
Households receiving heating benefits for electricity	8218	The Ministry of Labour 2017
Households with informal access	422.615	Deloitte 2017
Total	1.732.267 (approx) 23% of total households	

Source: (Sinea, 2018)

Energy Poverty Support Schemes

Primary and secondary legislation

Non-financial measures

Primary legislation, that is the Energy law 123/2012, mentions that vulnerable consumers enjoy benefits (financial measures) for the supply of energy and network access (non-financial measures). It is forbidden to disconnect vulnerable consumers at any time, including in energy crisis situations. These protection measures, as well as the eligibility criteria, are established through normative acts in secondary legislation.

Primary legislation also makes reference to the obligation of the Government to elaborate a national action plan on energy poverty. It is not clear what this action plan should involve. Besides, obligations are vaguely allocated between ministries (Ministry on Energy and Labour Ministry), leading to the absence of such a plan as of now. With regard to this, the Integrated National Energy and Climate Plans 2021-2030, requested by the European Commission, clarifies the mandates in the sense that the Ministry of Energy should be in charge of elaborating the plan, while consulting with the Labour Ministry (Ministerul Energiei, 2018). However, the process is still stalled with no concrete perspectives of implementation.

Law 196/2016 on the minimum inclusion income, aimed at simplifying the Romanian welfare system, lumps together all social benefits in order to better cover the needs of vulnerable persons. Fundamentally, there are no changes in principle with regard to the aid allocated, as the heating benefit, which is still income based¹²², the eligibility criteria and the institutional design, all remain the same. The only significant difference is made by the existence of a centralized database, hosted by a unique digital system to perform a uniform coverage, across institutions, of the information regarding beneficiaries. Also, by changing the definition with an accent on the ability to keep warm, not on the various vulnerable categories, access to benefits is widened. The law was expected to enter into force in 2018 but was postponed due to the lack of centralized data system (Sinea, 2018).

Government ordinance OUG 114/2018 takes a number of measures to curtail energy poverty. Based on the situations, where successive rises in the minimum income disqualified many applicants from receiving heating benefits, it sets the income level higher in order to make sure that a larger number of people can apply (Guvernul Romaniei, 2018). Additionally, it takes a number of highly criticized measures that limit the free

¹²² other social benefits are not taken into account when the level of income is assessed.

energy market in order to reduce consumer prices. But as these are considered to be blanket measures, and therefore economically highly inefficient, they have been highly criticized.

Financial measures

Secondary legislation establishes the eligibility criteria for the financial and non-financial measures. Order no.64/2014 of the National Regulator regulates with regard to the vulnerable consumer of electricity. According to it, consumers of electricity are considered vulnerable only if they either have a low income, or if the consumer is an elderly person with health problems, who requires continuity of supply. Measures of redress are only foreseen for the second category, and these are of non-financial kind (minimizing disruptions, the installment of additional sources).

Vulnerable consumers of gas are regulated by NRA Order no. 29/2016. The categories are similar, however the regulation also provides for heating benefits allocated through the social system. Non-financial measures are provided for and they involve monthly billing based on actual consumption. Vulnerable consumers of health/age can appoint a third party as an interface. Some extra measures to facilitate physical access and suitable information is foreseen in these regulations. The provider is obliged to inform operators about the existence of vulnerable consumers.

Besides the categories defined in primary and secondary legislation, the heating benefits regulation adds another category of energy poor: the “single person/family, who is unable to maintain the dwelling in adequate temperature conditions, namely a temperature of 21°C” and whose income limits are placed within certain thresholds stipulated by the law. These can be updated annually by governmental decree. Therefore, heating needs and income are also important. However, as there are no instruments to implement this provision, the category of beneficiaries remains outside any program (Sinea, 2018).

In the category of financial measures, it is important to distinguish between two kinds: heating benefits and social tariffs for electricity.

Heating benefits

The heating benefits are the main financial intervention instrument (they are regulated by the GEO 70/2011) and they are delivered through the social affairs system. Heating benefits are granted regardless of the heating fuel: district heating, natural gas, solid fuels (wood, coal), or electricity (according to GEO 27/2013, only if the dwelling has no other forms of heating). The principle of granting these benefits is that of proportional compensation of heating expenses depending on the income per family member, up to certain monthly average consumption. Therefore, the higher the income per family member is, the smaller the compensated proportional amount. Criteria also differ from one type of fuel to another, which leads to significant inequities. The highest compensation can be for the district heating, as it can be up to 100% of consumption. Second in line is gas, followed by electricity and wood. Electricity is one of the most restrictive; as the household has to prove that there is no other source of heating. To this adds the much higher price of the fuel.

In Romania a standard medium sized house pays a monthly mean of 2000 lei for heating exclusively with electricity, 650 lei for heating exclusively with gas and 570 lei for heating exclusively with wood equivalent. The basic assumption is that expenses are divided equally every month, which is not the case. Winter expenses can be much higher. Heating aid is only allocated during the cold season (November through March) and can be insufficient compared to the real energy needs of the households. During these months compensations reach a maximum of RON 240/month for electricity, RON 260/month for gas and RON 54/month for solid fuels. Only for wood benefits are granted in cash, whereas for the other fuels they are processed between the Labour Ministry and the supplier in an administrative process that involves also the local administration that manages the applications. GD no. 920/2011 details on this application procedure.

There is a strict application procedure in place in order for heating benefits to be granted: Applicants must submit a request prior to every cold season. Mayors request documents (there is no clear list accounted for) attesting the size, and socio-economic situation of the family, as well as documents on the dwelling or goods owned by them, including in other administrative-territorial units. The latter can be valued and added up to the family income to become a basis for admission/rejection of application. The mayor's office examines the

applications and performs social investigations to establish the correctness of the data provided by applicants and allocates the amounts. All information can be directly requested from applicants or from other public institutions, on the basis of protocol of cooperation. In practice, they are mostly directly requested from vulnerable consumers, which over-burden the application process and therefore discourages many to apply.

As a general remark with regard to heating benefits, data shows that the largest amounts of benefits are allocated to those who have the highest expenses with energy, therefore, the most energy inefficient households. This proves that there is an important problem with regard to inefficiency in these low-income communities. With regard to the types of fuel for which the most benefits have been allocated, in 2017, wood-users have benefitted the most (under 50% of sums for under 70% of recipients), followed by gas (under 25% of sums for under 20% of recipients), district heating (under 25% for 11% of recipients) and electricity (under 2% of sums for 1.5% of recipients) (Sinea, 2018).

Social tariffs

The social tariff for electricity is the second financial tool used as a relief mechanism for energy poverty. Social tariffs are regulated by Order no. 176/2015 of the NRA, not as an energy poverty measure, but given the fact that they are allocated to low-income households, they may be considered as such. They are granted by the final energy supplier within certain consumption limits. The allocation principle is the following: Final providers of electrical energy are required by NRA to provide clients with a preferential tariff under two conditions: based on a formal request and provided they can prove that their average income per family member is below the national minimum wage (Order 176/2015 of ANRE). Recipients must consume no higher than 1) 2 kWh/day for each day of the billing period, in order to be billed RON 0.1954/kWh (installment 1); 2) an additional 1 kWh/day for the second rate available (installment 2) will be billed 0.4690 RON/kWh for the extra kWh/day; 3) every kWh consumed over these two limits will be charged with RON 0.9246 (installment 3). The declarations of income are to be validated by the town halls. The client takes responsibility for declaring income changes and for complying with the social tariff. Providers are not obliged by law to check on the situations of recipients or to notify over-consumption. Therefore, over 40% of recipients go over these limits and are heavily penalized, which oftentimes leads to increasing their energy burden.

In 2016, the NRE reported that approximately 12% of all household clients of electricity benefitted from the social tariff; that is about 1.01 million households in total. It should be kept in mind that heating on electricity is heavily intensive and practiced by the lowest income categories. Those who have alternative heating systems in their homes do not benefit from heating benefits and are, therefore, reliant on the social tariff. However, it is possible to receive both heating benefits and a social tariff (Sinea, 2018).

National strategies

National Strategy on Social Inclusion and Poverty Reduction 2015-2020 and the Strategic Action Plan 2015-2020 aim at reducing poverty and increasing social inclusion through various measures, including the reduction of energy poverty through two type of measures: improving the social assistance program including by setting up a national electronic database and introducing installment schemes for energy poor households as a non-financial measure. First, no concrete steps have been undertaken in these directions. Second, as mentioned before, there is no national action plan with regard to energy poverty. Third, there have been at least three national programmes of building rehabilitation aimed at insulating blocks of flats or residential houses (Ministerul Lucrarilor Publice, Dezvoltarii si Administratiei). Most of them had as a target to reduce GGEs and improve the building efficiency, including amenities. However, none has targeted even marginally energy poverty or made mention to it, having essentially been blanket measures. Some voices say that energy poor communities are hardly ever targeted, if not at all, due to legal ownership issues and guarantees of how investment will be guarded after rehabilitation, low financing or co-financing capacity, or even low liquidity for programs based on bank loans. As of now, there are no impact studies on these measures, whatsoever.

Local norms (local council decisions)

Proportional compensation for heating benefits is granted from both the national and the local budget. There is no methodology on how these contributions are being established. Besides the fact that national regulation

imposes the principle of equity between applicants, it is rather up to every local council to decide how much of the local budget goes to heating aid. Research shows that some authorities allocate financial aid, whereas other go for investment in building materials. However, some authorities are more effective or creative in offering solutions than others. But there are significant limits to these initiatives coming from other policy areas, such as national acquisition laws or financial restrictions for the local authorities, which only allow certain types of measures to be implemented by local authorities (Sinea, 2018b)

Table 3: Application files per each fuel type, 2013-2017

		District heating	Gas	Electric	Wood
% files	2014	18.10	22.72	1.43	57.74
	2015	16.92	22.42	1.24	59.40
	2016	15.16	20.17	1.38	63.27
	2017	14.33	17.59	1.53	66.53

*Ministry of Labour data
Source: (Sinea, 2018b)*

Policies to Address Energy Poverty

Electrification Programmes

Lack of access to electricity should be acknowledged as a form of energy poverty. Bearing in mind that in Romania there are anywhere up to 100.000 households without electrical energy (according to a Government decree proposal launched in public debate in 2012, by the Ministry of Economy), we consider that the current legislation concerning the electrification of households should be evaluated.

The last National Electrification Program was approved in 2007 by Government Decree (GD no. 328/200) and covered the period 2007-2009. Program implementation was awarded to a governmental commission while the effective management was granted to the Ministry of Interior. On 15 May 2006, in accordance with the aforementioned decree and based on the evaluation of the commission, there were 67.738 non-electrified households in Romania. The solution proposed to overcome the situation was their connection to the distribution network, with the exception of isolated localities, where the decree mentions as a possible solution the use of independent generators. Off-grid solutions from renewable sources were also part of these options, if the investment was justified. The wide majority of these localities were located in rural or partially electrified areas, and the rest in rural, completely non-electrified areas or in urban communities that required network extensions. Out of these, 41704 households were in the distribution perimeter covered by national company Electrica, and the rest in private perimeters. The unit cost of the connection to the network was established to be, according to the normative act, between RON 10.000 and 240.000, depending on the location. The program management unit, located in the Ministry of Administration, should have facilitated the construction of electricity networks for connecting such localities from different funds (local budgets, state budget, distributor funds, sources derived from bank loans and European loans). The decree also contained an action plan. Local councils were responsible for leading the investments in coordination with the DSOs in the area on the basis of reports on the state of electrification in these areas, including the needed works and investments.

In 2012, Government subjected to public debate another Government decree concerning the National Program on Electrification, mentioning that in Romania there were 98.871 non-electrified households, i.e. approximately 30.000 more than five years ago. The difference from the previous Government decree is not explained. About two thirds of these were located in partially non-electrified rural localities, most of them in the Electrica portfolio. The unit cost evaluated for connection is RON 11.000, far superior to prior estimations. The origin of the difference is unclear. Based on the above-mentioned figures, the cost of electrification for the entire country were roughly RON 1 billion. The program implementation unit was determined to be the Romanian Agency for Sustainable Development of Industrial Zones, under the Ministry of Economy. The

Government decree was promoted in public debate in August 2012, it was never adopted, and the aforementioned agency was disbanded by Government Emergency Ordinance at the end of the same year, its attributions being taken over by the Ministry of Economy. The electrification strategy resumes the same technical solutions identified by GD 328/2007, and a breakdown of the budgeted amounts for all years until 2016, inclusively, also exists.

ANRE regulations regarding the connection of individual dwellings to the power distribution network (Order 59/2013) states that, if there is an electric distribution network at less than 100 meters distance from any property, the distributor is obliged to carry out an electrical connection to the network. Connections are to be paid by the user and any additional works needed to update network capacity in order to integrate the new user are made at the expense of the distributor. If the distance is greater than 100 meters, the distributor has an obligation to communicate to the consumer all proceedings necessary for the expansion of the distribution network, including the schedule of the necessary works. Project financing is to be assumed by both the distributor and the local authorities.

Art. 51 of the law 123/2012 describes the processes involved in the electrification of localities or the expansion of electrical distribution networks. According to it, local authorities must request the extension of the network based on regional development and zoning plans, whereas the distribution network operator is obliged to fund these actions. The distribution operator shall have 60 days to assess the feasibility of the investment, following the request received from the local authorities, in accordance with a methodology approved by NRA. If the extension is not justified from an economic perspective, the distribution operator may suggest a co-financing action of the respective local authorities, from the local and/or state budgets, following the notification of the NRA. The economic indicators to be used in order to evaluate if an investment is considered feasible or not are determined in a methodology (approved by ANRE Order 75/2013). The feasibility study itself is performed at the expense of the public authority. If the investment is effective, then the expansion plan is included in the distributor's annual program of investment and/or in the medium term development plan (Sinea, 2018).

Gasification Programmes

There have not been national gasification programs/initiatives similar to that for electricity, neither has there been a count of the dwellings, which are not connected to gas. However, from the national census various estimations can be made and these are detailed below. Neither was there an estimation offered for the investment costs needed per dwelling in order to connect to the distribution network. The legal-technical conditions for gasification are similar to those for electrification and they are described in the energy law 123/2012, as they have been detailed above. The parameters involved in calculating the costs are more comprehensive.

Based on data collected by the National Statistics Institute (INS) on all the administrative units (UAT) and the National Energy Regulator, 96 of the 103 municipalities are currently connected to the gas network, covering 99% of the population residing in municipalities. 148 town (68%) are connected to gas, covering 75% of their population. The ratio changes significantly in case of communes, where 2228 (78%) are not connected to gas, covering 71% of the rural population. In total, when considering all localities, 72% of Romania's UATs are not connected to gas. 66% of the population (approx. 14.7 million people) has access to gas, (but only 44.2% are connected according to EPG, which may reveal a problem with excessively high connection fees for a part of the population).

Localities connected to gas networks are clustered mainly in the center of the country, along an axis, which connects the northwest, the Transylvania plateau (the eastern parts of Cluj and Alba counties, Mureş county and mostly all of Sibiu and Braşov counties), going down to Dâmboviţa, Prahova, Ilfov and Bucharest. The Timiş and Arad counties also stand out as better covered by the network. Moreover, we notice that the gas network least covers the outer Carpathians areas. If distinguishing between the three types of localities (fully connected, partially connected, fully unconnected), one may notice that out of all three types of UATs, the unconnected ones have a considerably lower density.

There are some exceptions: 20 localities with a low density (from 10 to 20 people/sq. km) are connected, and other 29 with a high density (more than 200 people/sq. km) are not connected. However, the largest share of unconnected UATs is located at short distances from the network. For instance, 874 UATs lie at less than 10

km from the network (Sinea, 2018b).

Given these elements, a more concrete evaluation of a gasification program is needed at the national level:

- the obligations undertaken by Romania on decarbonization and lowering of greenhouse gas emissions and other emissions, and the European strategies on the transition towards clean economies;
- the expected role of gas in the national energy mix;
- the sizing of the current distribution network to cover the gas demand on the internal market, mainly for domestic consumers, in optimum economic conditions;
- the current and estimated natural gas costs, including be reference to other fuels which are used or could serve as alternatives for households;
- the outputs and consumptions specific for climate zones or residence types;
- the current state of the gas market and the consumption level in relation to population size, broken down per administrative units (communes, towns or municipalities);
- the need for a change in consumption behavior and to improve housing heating efficiency, and the need to address the energy poverty in terms of access, accessibility and consumption efficiency.

The roll-out of RES

In April 2019 Government launched a financing project to install PVs that would enable remote households to have access to electricity. The basic program assumption was that the 7136 households across Romania, that are not connected to electricity, and therefore in a distance longer then 2 km from any distribution network can apply for a 100% financing of investment costs up to a limit of approx. EUR 5000 to install the technology. Most of the households identified in the program are situated in areas that are hard to reach, in mountain regions.¹²³ The applications are to be submitted by the county authority in a one-time call. Up to the due date, no application was submitted and the deadline needed to be extended due to the lack of capacity of local authorities, to collect in time all requests from their respective constituencies. Another program that subsidies 90% of investments up to a maximum of RON 20.000 for any kind of private applicant, has been in a situation of deadlock for a long time (Vasalca, 2019).

Measures to support energy efficiency in the building stock and in general

The State is currently implementing two major energy efficiency programs (ANRE, 2019) in various sectors of activity:

- The 2017-2020 National Energy Efficiency Action Plan for the supply of energy, which aims at reducing GHG emissions of the producers of energy based on fossil fuels, respectively at modernizing the electricity producing industry, based on European Union commitments. The program implementation report noted in 2018 a reduced energy consumption of over 360.000 tep as compared to a commitment of 100.000, mainly due to the rehabilitation of two electricity production units, one on gas (Brazi) and one on coal (Rovinari).
- 2017-2020 National Energy Efficiency Action Plan regarding the energy consumer targets various types of beneficiaries (industrial, construction, public and private services, transport, agriculture) among which the residential sector plays an important part. In the residential sector the program aims at reducing energy consumption based on refurbishments in single and multi-family buildings, replacements of old equipment and on performing energy audits in households. The implementation report accounts of over 570.000 MWh in energy savings in 2011-2017 and over 4.300.000 kWh only in 2018 due to actions taken at the level of residential buildings, whereas with regard to the replacement of old equipment it describes various market or voucher-based strategies that have been efficient in the process.

Energy efficiency and energy poverty meet rather coincidentally in policy. At the level of local authorities, investment in efficiency measures in buildings usually fall within the framework of European funding, with its limitations, as there are no resources at the local level to start projects on their own. The limitations of

¹²³ Satu Mare (754 households), Bistrița-Năsăud (471), Iași (447), Maramureș (417), Harghita (398), Caraș-Severin (329), Neamț (321), Bihor (301), Brașov (295), Suceava (281).

funding, together with the lack of trust and a cooperative climate within associations of tenants, make energy efficiency measures rather an exception. Also, there is no framework to allow access to funds for the rehabilitation of dwellings and individual housing. However, where the residents have made interventions on their own, the impact at the level of the energy bills was visible. Furthermore, there is a legal possibility to implement local means of combating poverty through energy efficiency measures. There are local examples, where experts evaluate the dwellings, indicate the necessary interventions and make a calculation of the necessary money and equipment for interventions. These models of good practice identified in field research could be taken over by local authorities with more generous budgets. However, the legislative limitations are visible in these cases as well, because the process of effective intervention in the dwelling cannot be completed by the city hall in the absence of public procurement procedures (Sinea, 2018)

Awareness raising campaigns

Information and awareness raising measures are particularly important in the transition process to a free energy market but also for its functioning. Studies show that most public information mechanisms can be identified on the more liberalized markets. Transparency depends on a certain political culture and the way in which a state's civil society understands to become involved in the market as equitable stakeholders. Results of such mechanisms are the awareness of one's own rights and obligations, the recognition of the other market stakeholders, their rights and obligations, and a certain degree of trust on the market and its players.

While energy poverty and all the risks and mechanisms associated is rather a new topic in Romania, there are various aspects with respect to awareness that can be apprehended. The conclusions below are based on a field research done in various municipalities around Romania, where local decision makers, social workers and heating aid beneficiaries have been interviewed about the quality of information with respect to energy poverty, access to benefits, the role played by different actors in alleviating energy poverty. Municipalities involved in the field research were chosen in such a way as to represent all varieties of energy poverty in Romania.

The relationship between the institutions involved in the process of granting benefits is usually a good one. All local authorities claim to have a good communication with other state institutions with which they are in direct contact for granting the benefits, in particular with social services at the county level, or directly with the Ministry of Labour. Also, with some exceptions, the communication with utility providers is assessed as positive and easy. This being the case, a better information system to document households on a constant basis would be an optimal source of support. Through digitalization the pressure for additional human resources would be smaller, at least because the need to constantly perform investigations in the field would be reduced.

The relationship between beneficiaries and authorities is also perceived to be a good one. City halls argue that the population is efficiently informed with regard to the periods when aid applications can be submitted, the required documents, the conditions under which social investigations are conducted. A good relationship is also maintained through the local press, but also horizontally between people. Social assistants are considered to be a support and a source of information for potential beneficiaries, which confirms the assumption that the large number of benefits from a county does not necessarily indicate that the problems are greater there, but that the process of communication with the authorities is presumably better.

Another overall conclusion drawn from the interviews with local authorities is the tendency to stigmatize recipients and to associate heating benefits with social benefits. Thus, often negative remarks appear in reference to the recipients, such as "some have become used to the benefits", "... there are those who receive the money cash and use it to get drunk", "some will never get out of this situation, they are used to this since they were small". It must be said, however, that such attitudes are not dominant in the behaviour of the authorities in practice. There is no indication that the procedures would be applied selectively, depending on personal prejudice.

The relationship between recipients and utility companies is perceived as a good one as long as communication channels made available by utility companies are efficient. Communication between beneficiaries and providers can prevent disconnections, as alternative solutions such as individually negotiated pricing plans in relation to vulnerable clients, or even counselling, are being sought.

Most of those interviewed who receive benefits for gas and electricity understand how subsidies can be identified on the invoice, and problems of understanding invoice, where they exist, are not placed in the supplier's fault. In other words, it is important for providers to constantly transmit the message to vulnerable clients and to those who may encounter difficulties in paying the bill, in order to generate understanding of their situation and in order for the relationship between the two parties to operate on a presumption of good faith. Apart from traditional methods of communication with the clients (call center, information desks), proactive measures to establish relationships with vulnerable consumers are welcome. One such case is known in Bucharest, where the provider hired a community mediator in order to establish a better relationship with the inhabitants of several ghettos. It must be said, however, that none of the respondents who do not benefit from benefits for electricity (who would not be eligible) has indicated that it was actively guided by the provider in the choice of the social tariff. It is unlikely that either of the respondents, however, should benefit from this tariff plan, so it is possible for providers to overcome such clients without having to explain them clearly so even if its clients consent by signing the contract.

Interventions at the level of education and customer behavior are also important. The majority of respondents have difficulties in assessing their current income, the necessary income, the household expenses, the specific expenses on energy or the consumption. On the other hand, there is a willingness to accept the counseling. Therefore, the question of education can be approached either school programmes or various other training facilities offered by the authorities or by suppliers to their staff (Sinea, 2018).

Recommendations

I. At the level of Parliament, amendment of the law 123/2012:

I.1 Redefining the notion of “vulnerable” client in an integrated manner and the introduction of “energy poverty” in such a way as to reflect the complexity of the phenomena.

I.2 Redefining the role of the National Regulator as coordinator of the National Action Plan (NAP) on energy poverty according to EU principles. The NAP will be the reference document to comprise a comprehensive definition, clear measurement and intervention tools and procedures across the institutional landscape, so as to prevent the occurrence of discrepancies and to support the principle of effectiveness of spending public money.

I.3 Redefining the role of the Ministry of Labour with regard to the intervention tools on energy vulnerability. We recommend placing the responsibility with the Ministry of Labour to determine the criteria by which a household consumer may fall in the category of vulnerable consumers or those affected by energy poverty.

II. With regard to the Regulator, as the agency that elaborates secondary legislation with impact at the level of the energy poverty phenomenon:

II.1 The amendment of regulations for the supply of electricity and natural gas so as to provide for an integrated intervention and non-discriminatory intervention (in relation to applicants and fuels) measures that would also take into consideration energy efficiency solutions.

II.2 The modification by the Regulator of Order 38/2005 concerning the social tariff to

- Eliminate the obligation of city halls approving income statements.
- Oblige the providers to notify the consumer if the consumer exceeds the consumption limits.
- Resize consumption installments and cutting costs for the purpose of extending the first installment, with a special tariff targeting those with low income and high consumption.

III. With regard to the Ministry of Labour

The amendment of GEO 70/2011 (as amended by GEO 27/2013) and the implementing regulations for the

purposes of eliminating from the procedure for granting the heating benefit for electricity the obligation of the applicant to demonstrate that this is their only source of heating (art. 10 (4) of GEO 27/2013). We also recommend to amend art. 14 (4) and (5) of the GEO 70/2011 in the sense of mentioning a clear list of supporting documents that city halls may request, as well as a prohibition to request additional documents, in order not to discourage potential beneficiaries. Art. 14 (5) can be modified in the sense of asking city halls to obtain data on applicants, primarily through administrative channels, through protocols of collaboration with other institutions, and only then, in the absence of the ability to obtain such information in this manner, to be requested directly from applicants.

GEO 70/2011 should also be amended for the purpose of increasing the percentage of the ISR that determines the maximum amount received by a dwelling that uses solid fuels for heating, in order to ensure equity between methods of heating.

The Ministry of labour should also introduce heating benefits in the benefit management information system, in order to ensure uniform implementation of this system.

IV. With regard to Government

IV.1 The development of an action plan to solve the problems of access to electricity, through cooperation with local authorities (prefectures, county councils, city halls). Currently, there is no clear statement about the number of unelectrified dwellings, with no connection to electricity or with no electrical installation in the dwelling, this problem being derived both from the poor cooperation between authorities and from the absence of clear criteria for data collection.

The plan drafted at the level of the Government should include the following measures:

- Continuation of the Ministry of Energy approach for an open database covering the situation of municipalities with unelectrified dwellings
- Establishing a clear distinction between the causes of the lack of access to electricity and organizing the database on the basis of these criteria: 1) physical access to the network, 2) inability of the household to afford the cost of electrification in spite of network proximity, income reasons, 3) impossibility to connect the household because of lack of papers, 4) absence of electrical installation in the dwelling.
- In the case of communities where unauthorized interventions to the power network were noticed, implementing various programs carried out by local authorities and providers to identify and remedy the causes that determine this kind of intervention, up to individualized solutions for categories of households.
- Simplifying bureaucratic procedures for the conclusion of contracts for the supply of electricity.
- The establishment of mechanisms for collaboration between local authorities and providers to identify solutions for isolated or precarious communities, so local authorities can benefit from the expertise of suppliers in identifying flexible and affordable solutions and new technologies.

IV.2. Drafting concrete measures to determine energy expenditure reduction. These measures should be integrated and should aim at climate commitments, of energy efficiency and implementation of new technologies, flexible and performant, as well as the development and promotion of public and private financing tools, innovative, flexible, and affordable, to implement such measures

This roadmap can be materialized through a joint effort of several ministries, as follows:

- Ministry of Development responsible for the dwelling fund
- Ministry of Labor responsible with the social system
- Ministry of Energy to design interventions for innovation and information campaigns to encourage more efficient energy use.
- Ministry of Education- to roll out information campaigns in schools and universities for long-term awareness with regard to the impact of household behavior on energy consumption and energy costs.

V. A special category of long-term recommendations concern the behavior of electricity and gas providers on the market, in their relationship with customers and in relation with the

ANRE and other relevant actors for the development of public policies aimed at aspects of energy poverty.

V.1. Improving communication between providers and clients to solve the problems relating to the social tariff for electricity.

V.2. The optimisation of customer advisory mechanisms for selecting an optimal tariff plan, especially in free market conditions, could be an advantage for big providers, which could limit the migration of some clients to new providers, with attractive offers in terms of price, but that may involve higher risks for consumers (especially for the vulnerable who might be attracted by lower prices). Even in the absence of legislative changes to coerce providers to adopt a more proactive behavior towards customers; suppliers can jointly elaborate a code of good practice regarding market behaviour, especially in relation with vulnerable clients. Another measure that can be taken by common agreement by providers is the establishment of an energy efficiency fund to support for investments mainly in the areas affected by energy efficiency.

VI. Recommendations with regard to gasification

VI.1. Connection to gas of all households from already connected UATs. However, the unconnected households from already connected localities can be prioritized.

VI.2. The connection of UATs with at least one connected neighboring UAT, prioritizing those at short distances.

VI.3. Identification of clusters of high population density localities, possibly close to the network, which will ensure an ideal cost-benefit ratio between the expansion costs and the number of consumers.

VI.4. Adding a social component to the economic profitability calculations.

Conclusions

Energy poverty in Romania is dealt with through the vulnerability perspective, whereas the social system is the only persistent intervention tool. Over time, due to successive upgrading of income limits many have been excluded from the financial aid programme, with currently very few benefitting from such allocations. Non-financial tools are used sporadically across categories of vulnerable consumers. Moreover, other aspects of energy poverty, such as access to diversified and competitive sources of energy, efficient consumption across various household dimensions, clean indoor and outdoor air, the empowerment of consumers on the market, etc. are rarely dealt with. Vulnerable household are part of these policies delivered at national or local level just as much as any other consumers of energy, without benefiting from any targeted strategy. Despite many lacks in terms of established policies and instruments, credit should be given to the increasing consideration of the topic, as well as part of the dialogue between stakeholders, as also as part of the agendas of political parties and public institutions.

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In Romania 3.5 mil. households use solid fuels, mainly wood for heating



Source: Ministry of Energy



23% of the households from Romania are affected by energetic poverty

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Denis Cenușă

He is affiliated to “Expert-Grup” Think-tank in Moldova, where he works on energy security and European integration-related projects. Denis Cenușă is a PhD candidate at the Justus-Liebig-Universität (Germany).



Anca Sinea

Anca Sinea is an energy policy researcher with an expertise in the field of energy poverty. Her research work originates in the area of International Relations as she holds an MA at the Diplomatic Academy of Vienna, where she centered on conflictual relations in the field of energy, and a PhD at the Babes-Bolyai University (BBU) in Cluj Napoca with a focus on energy cooperation and multilateral diplomacy in the field of resources in CEE. Over the years she has been involved in both academic research, teaching and in consulting in the private sector and the policy-making process, both in matters related to energy poverty and security. Currently she is affiliated to the Center for the Study of Democracy think-tank of the BBU, she holds a board member position in the ENGAGER COST Action on energy poverty.

The project benefits from support through the EaP Civil Society Forum Re-granting Scheme (FSTP) and is funded by the European Union as part of its support to civil society in the region. Within its Re-granting Scheme, the Eastern Partnership Civil Society Forum (EaP CSF) supports projects of its members that contribute to achieving the mission and objectives of the Forum.

Grants are available for CSOs from the Eastern Partnership and EU countries. Key areas of support are democracy and human rights, economic integration, environment and energy, contacts between people, social and labour policies