

ENERGY POVERTY IN THE URBAN CONTEXT

POLICY BRIEF

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Contents

Energy poverty in the urban context	7
Socialism-dated prefabricated multifamily buildings.....	4
Heat source: District heating	7
Refurbishment projects: lack of trust and effectiveness at the level of tenants' associations.....	11
Multifamily buildings only:	11
Low targeting and impact assessment:	12
Own contribution:	12
Low trust in community projects	13
The owners' dilemma: energy poverty and the high property ratio	14
Energy poverty in the urban pockets: the Roma outskirts of the rapidly developing cities	15
References	18

Energy poverty in the urban context

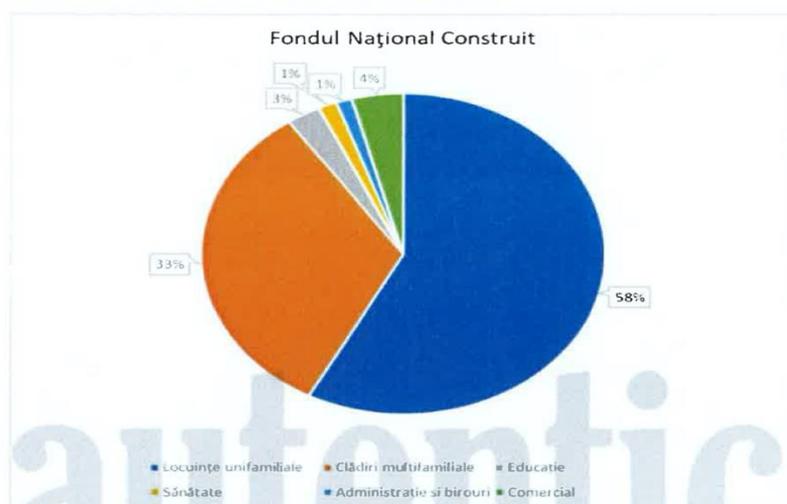
Romania is characterized by a variety of instances of energy poverty. Whereas national analyses display important regional differences in these manifestations and in the availability of programmes of redress (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017) there are important contrasts to be established in the residential sector between the urban and the rural localities, each displaying very specific challenges. This policy brief is aimed at displaying a number of energy poverty challenges characteristic of the urban context in Romania.

Socialism-dated prefabricated multifamily buildings

In Romania there are 8 mil. residential spaces corresponding to 7,2 mil. households. Residential buildings amount to 90% of the total national building capacity. 31% of total are multifamily buildings, whereas 50% are single family houses (PNRR, 2021) The rate of vacancy at the level of residential buildings is 16%. This is due to various factors. The rate of migration is an important factor that has affected some urban localities and more generally the rural area. Besides vacancy, another general phenomenon present in the residential sector is overcrowding. The majority of households live in small living spaces compared to the majority of EU member states. 63% of living spaces are smaller than 50sqm and these are to a large extent multifamily buildings. Multifamily apartments have an average living space of 48sqm compared to individual houses with 73sqm (Guvernul României, 2020). Multifamily buildings are mostly present in the urban context, where they make up to 72% of the housing facilities, that is approx. 85.000 facilities (ANRE, 2018). Multifamily buildings are a quite uncommon feature of the rural area, where they make up only about 5% of the residential capacity.

Figure 1. Types of buildings in Romania

Figura 5: Fondul de clădiri - ponderea clădirilor pe categorii



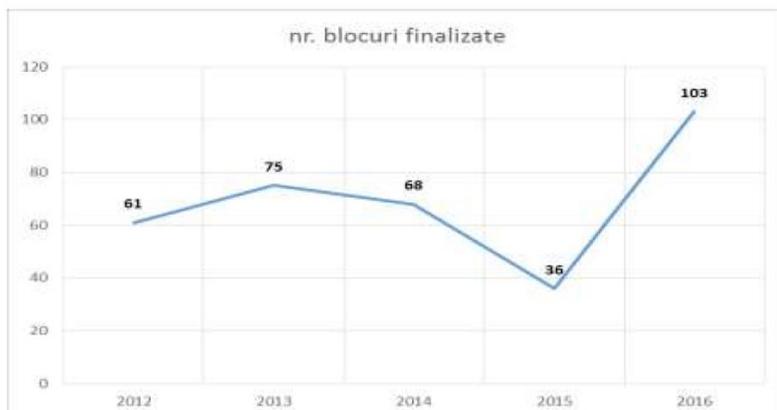
Sursa: Analiza Băncii Mondiale, 2019.

Source: (Guvernul României, 2020)

In Romania 87% of the buildings have been built before 1990, and only 6% after 2000. Multifamily panel buildings, have been built during communism, generally in waves, between the 1960s and 1980s, to uphold the massive planned industrialization and urbanization process. The effort was pursued under a specific type of systematization and economic logic that included the development of single massive supply systems, including for district heating and gas that became unsustainable with the high urban growth that rendered households dependent on one single and increasingly vulnerable source. These low efficiency, fast-to-assemble panel buildings relied on heavily subsidized energy and housed thousands of formally rural families with little capacity to invest in maintenance. With the fall of communism, the landscape witnessed the challenges of transition both with respect to public and private investment capacities. This left apartment blocks and their energy supply systems unrestored, resulting in a deteriorating building stock and general servicing infrastructure. The ever-degrading state of the district heating systems resulted in increasing numbers and duration of heat and hot water cuts for households.

After the fall of communism some of these highly inefficient buildings have been isolated either individually or through programmes that requested important individual contributions. This resulted in a high degree of patchwork with many households refusing to invest due to limited financial capacity (Sinea, George, Ute, & Philipp, 2020). With the use of pre- and post-adhesion funds this trend has been slowly curved with the inclusion of entire facilities in the programmes. Still the renovation pace remains low compared to needs, whereas prioritization takes vulnerability into account marginally. Based on European statistics, under a quarter of the planned energy performance works in houses having been accomplished between 2014-2020 in Romania (European Union, 2020). Another, national source, reports that between 2012-2018, a renovation rate of up to 5% was achieved over the entire period, i.e., only 343 (approx. 12,300 apartments) out of 85,000 apartment buildings have been included in interventions programs of various types, with the process reaching a higher rate towards the end of the period. That corresponds to an annual renovation rate of 0,5, much below the current 1% European goal or the up to 3% objective of the Renovation Wave Initiative. The status quo led to an improvement of 8,5% in final energy consumption in housing (from 8,10 Mtep-7,42 Mtep), which is evaluated as being a minor improvement (PNRR, 2021). The objective was to reduce the annual consumption to 100 kWh/sqm (Guvernul României, 2020). However, achievements are difficult to establish due to inconsistent impact assessment (PNRR, 2021) (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017). The trend is illustrated in the graph below. So far, renovations have been performed on financial schemes that have been financed up to 60% out of national financial sources and 40% of variations of sources coming from own tenant funds or local budgets, or a combination of the two (PNRR, 2021). Much of the difficulty of implementing renovation programs has come individually or from a combination of the design of these projects and their bureaucratic requirements and complexity, the difficult process of association between tenants, the difficulty of mobilizing own funding and the limited capacity of local administrations to implement (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017). National experts maintain that improvement targets have usually not been set around energy poverty nor have the improvements completed been measured for savings (Center for the Study of Democracy, 2021).

Graph 1. Number of refurbished multifamily buildings



Source: (ANRE, 2018)

Based on new refurbishment plans elaborated in the National Long Term Renovation Strategy and National Resilience Plans by 2050, 77% of the national residential buildings should be renovated. Multifamily buildings are at the core of this strategy as they are deemed a priority of the first intervention track. Through NRRP will be renovated the building blocks constructed before 2000, with a final energy consumption higher than 300 kWh/m² year and a final energy consumption for heating higher than 200 kWh/m² year. By 2026 all multifamily buildings are planned to have been renovated with a documented reduction of consumption of at least 30%. The plan also aims for a higher degree of in-depth renovations and a higher degree of integration in efficiency measures. To that aim it increases the list of works that can be done to improve the quality of the buildings to also include works such as window replacement, replacement of interior heating and electricity installation, smart systems, indoor ventilation, internal structural works, connection to district heating, etc., which have previously not been part of the refurbishing schemes. The program also aims to lessen the bureaucratic burden involved and to target programs better towards the lowest-performing housing facilities. 20% of the funding allocated will be destined to vulnerable families (in general and not specifically to the energy poor) (PNRR, 2021).

Despite ambitions, there is a high complexity of the situation on the ground. A study performed on efficiency certificates issued on refurbished apartment blocks in the city of Cluj-Napoca has established that over 45% (94 from 2016) of apartment buildings refurbished in Cluj-Napoca between 2011-2018 could not be brought to the standard recommended based on the type of building due to the unsatisfyingly high costs involved. Most on these situations involved a target label of C, whereas accomplishments have been around a D standard or lower (EnPowerR, 2021).

The buildings population in Cluj-Napoca cannot be considered to be representative for the situation at the national level. However, it showcases many of the challenges of multifamily panel buildings around the country. The refurbishing needs are complex and the absence or dissipation of data between authorities the activities of which lack integration are high. This is exemplified by a renovation needs modeling tool elaborate by CSD. Using data retrieved from

the national buildings' census, we classified 80% of the national building stock in 23 different categories based on a number of construction features. This allowed us to compute the heating needs of these housing types in order to reach inside temperature standard of 21 degrees Celsius provided for in the national regulations. We associated the heating needs with the type of fuels used for various purposes in that household (space heating, hot water and lighting) and established their standard effective consumption. Standardized as it is, the instrument is purely indicative and does not capture real behavior, such as for instance under or overconsumption. In Romania partial and temporary room heating is common practice in more than 50% of the households (Ministry of Energy, 2016). Heating below standards at times, or over-heating are much employed coping practices. Furthermore, it only captures heating needs. Cooling needs during the hot season are not included.

Despite the shortcomings, the model allowed us to formulate a number of conclusions with regard to the situation of multifamily buildings, such as consumption potential, or more precisely, based on structural characteristics, to identify those buildings that have the highest potential to fall in energy poverty.

Generally speaking, panel buildings in Romania (approx. 30% of the building sample at the national level) have a heating need of anywhere between 257-655 kWh/sqm/year. This lies above the European average sqm consumption in the residential area, which is 180kWh/sqm, based on European Commission data (European Commission). As mentioned before, national strategies aim at reducing the annual consumption of refurbished multifamily buildings to 100 kWh/sqm (ANRE, 2018), which lied beyond the aims of profound renovation (60% efficiency and emissions improvements). In the category of multifamily buildings made of concrete paneling, the most vulnerable are the 30sqm 1-room apartments using gas boilers. They consume anywhere between 390 and 655 kWh/sqm/year energy depending on the heating zone and they account for 1,3% of the sample. These types of buildings remain the highest consumers even in the event of substituting the heating fuel for district heating, for instance. This means that just switching the heating fuel is insufficient. Targeted refurbishment measures are needed. These types of apartments are also associated with comparatively high emissions for they should let out between 77-131 kgCo₂/sqm/year depending on the climate zone to reach an acceptable comfort standard (Center for the Study of Democracy, 2019). Provided that this statistical situation of structural data is corroborate with socio-economic data on the ground, these types of buildings should be prioritized for interventions.

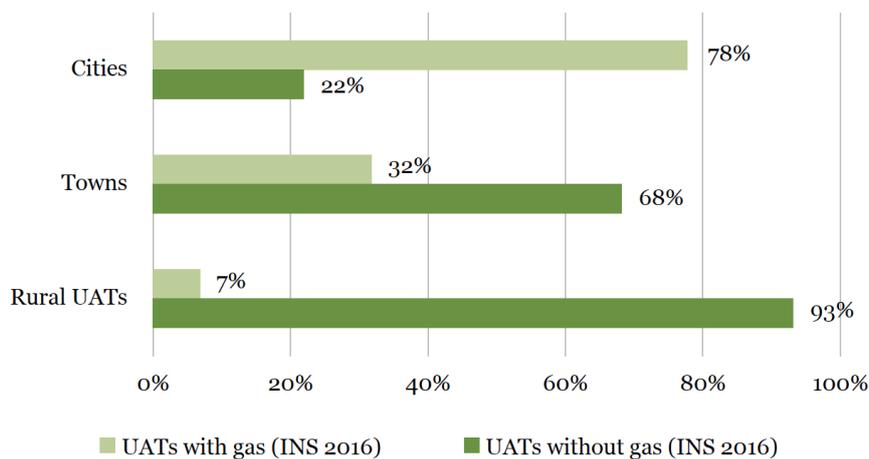
Heat source: District heating

District heating is an important component of the urban energy landscape in Romania as it is closely related to the development of multifamily building districts in many of the industrialized cities in the country. At the national level 1.3 million households in 60 localities across the country are supplied with heat generated by district heating (Ministry of Energy, 2020).

With little investment in the sector, it remains associated with inefficiency, high costs, souring losses, unreliability, which causes a steady percentage of disconnections. The situation of Bucharest, for instance, is by far the most critical in the country in the entire CEE region, with losses of over 1400 tons of water/per hour in 2020 (Nicuț, 2019), repeated heating and hot water supply service failures during high season (Sinea, George, Ute, & Philipp, 2020), and high pressure on production due to excessive consumption and losses. It is a crucial topic that

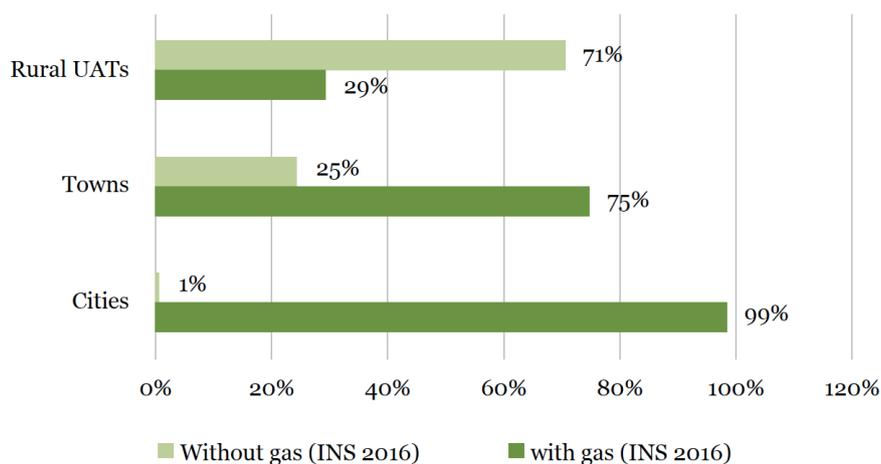
has majorly contributed to voting administrations out of office. Today, there is increasing confidence that the complete failure of the system, at the expense of the 1,21 million consumers, is inevitable. A few initiatives around the country resulted in the technologization and modernization of some of these systems, which are being upheld as good practices. Oradea or Cluj-Napoca are two such examples (Pacuraru, 2020). Despite that, these projects, as in Cluj-Napoca for instance, fail to be convincing enough to halt disconnections by the population and to attract new consumers or to generate public agreement on future strategies. In Cluj-Napoca discussions have been heavy. These system function on high subsidies, which are burdensome for the local public administrations, but the absence of which would render thermal energy uncompetitive price-wise. Based on this argument, some short-sighted administrations continue to encourage disconnection and the installation of individual boilers (such as in the city of Galati – which are highly inefficient and polluting practices, but which may reduce public expenditure immediately. In other cities, as is the example of Cluj-Napoca, the local administration intends to prohibit the installation of new individual boilers. However, there is no obligation in place yet and no real alternatives to follow (Scarlat, 2021). In Bucharest interventions have been piecemeal, either through installing individual meters or through replacing damaged pipes. More often than not situations are similar to the one in Bucharest. Important cities such as Timisoara or Constanta replicate the challenges in the capital city. With little alternative, consumers here are forced to employ various coping solutions. In Bucharest households use electric boilers as a backup to serve their hot water needs throughout the year. This is an expensive method, but the only one available. Grant enquiries have been developed for a massive system upgrade but the financial and administrative complexity of the matter have so far blocked solutions (Sinea, George, Ute, & Philipp, 2020).

Graph 2: Percentage of administrative units connected to gas



Source: (Sinea, 2018b)

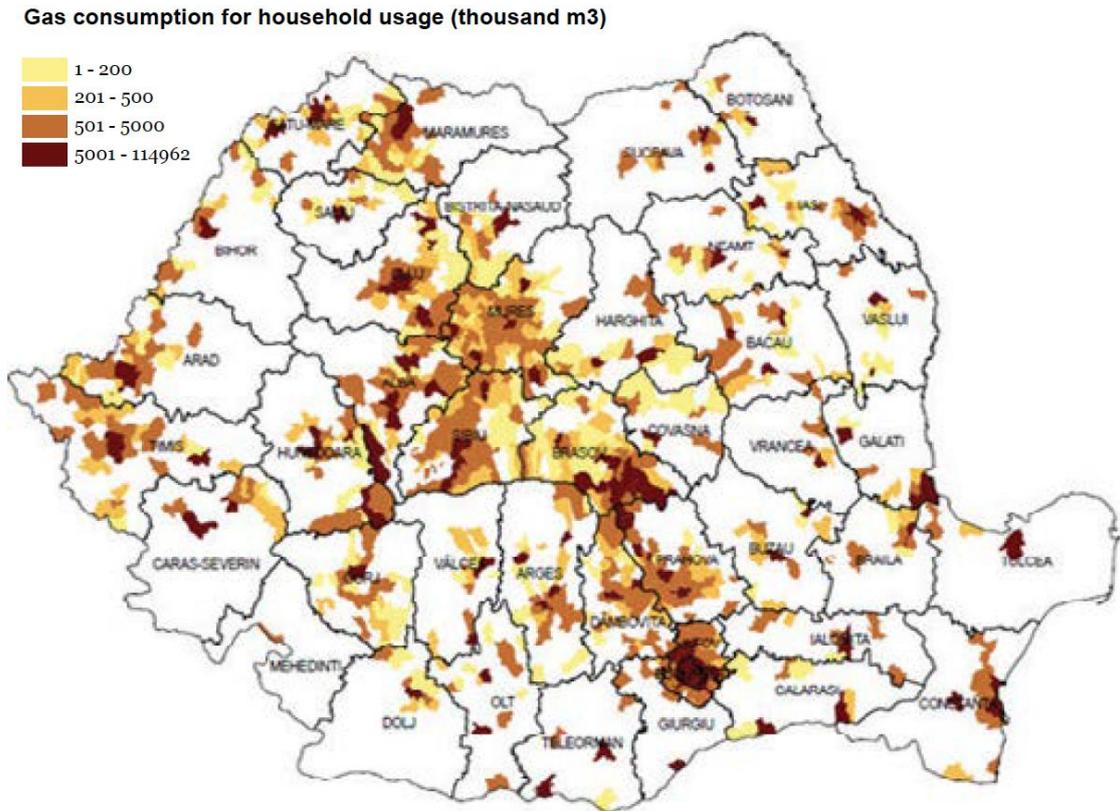
Graph 3: Percentage of residents in the administrative units connected to gas



Source: (Sinea, 2018b)

If access to a diversity of energy resources for household use is generally considered to be a problem in Romania, urban and suburban localities are better supplied compared to rural ones. Electricity is almost generally available (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017). Gas mainly covers high-density urban or suburban areas, areas that are close to gas extraction sites and geographically more accessible. 28% of Romanian use gas for heating. 96 of the 103 municipalities are currently connected to the gas network, covering 99% of the population residing in municipalities. The 7 municipalities not yet connected are the following: Beiuș (Bihar county), Orșova (Mehedinți county), Brad (Hunedoara county), Calafat and Băilești (Dolj county), Vatra Dornei (Suceava county) and Toplița (Harghita county). 148 town (suburban) (68%) are connected to gas, covering 75% of their population. The largest five (by number of residents) of the 69 unconnected towns are: Borșa (Maramureș county), Cernavodă (Constanța county), Vișeu de Sus (Maramureș county), Vicovu de Sus (Suceava county) and Moldova Nouă (Caraș-Severin county). With respect to all localities, 72% of Romania's administrative units are not connected to gas. But the largest share of unconnected administrative units are located at short distances from the network. For instance, 874 administrative units lie at less than 10 km from the network. 66% of the population (approx. 14.7 million people) have 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). While a recent initiative waived gas connection fees to all consumers, companies reversed the provision due to excessive bureaucratic burden on their behalf (Pirvoiu, 2021). No preferential treatment was made available to vulnerable consumers at any stage of this initiative. The national resilience plan envisions the extension of the gas distribution network by 400 km, particularly to Mehedinți and Dolj counties in a pilot initiative to build multifunctional pipes that might be able to transport alternative fuels in the future. This initiative should deliver heating fuel to areas that have the lowest access to resources, high degree of vulnerability in the population, and high consumption on wood fuel. However, the ambition is deemed too low even at the level of the European Commission, who is demanding additional efforts. A solution would be to evaluate the effort needed to pursue this type of solution for localities that are much closer to the network and, thus, much faster to connect.

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

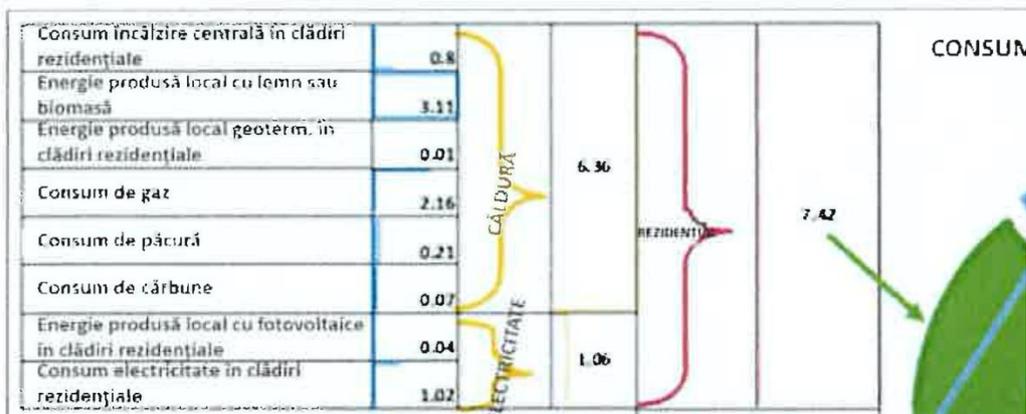


Source: (Sinea, 2018b)

In the urban setting 12% of households use wood for heating (48% nationally). Electricity for heating is nationally marginal (around 1%) and is usually employed either by very poor households or by the ones who are better off and can afford modern and more expensive technology (heat pumps, electric stoves, etc.).

Graph 5. Energy consumption in buildings in Romania , 2013-2016

Figura 4: Consumul de energie în clădiri în România, 2013-2016 (Mtep)



Source: (Guvernul României, 2020)

Refurbishment projects: lack of trust and effectiveness at the level of tenants' associations

National statistics illustrate an annual 0,5 renovation rate over the period 2012-2018, with up to 5% households being upgraded over the entire period. Most of these refurbishments have run on financing schemes that involved 60% national sources and 40% individual or local administration sources either separately or in a combination of the two. There are at least three issues related to refurbishment programs in residential buildings:

Multifamily buildings only: Experts unanimously agree that most financial programs have been dedicated to multifamily buildings despite single family households making up a much larger part of the national buildings' capacity (50%), with a higher consumption and climate impact. In Romania the largest part of refurbishing projects have addressed multifamily buildings almost exclusively, whereas single family houses have been systematically excluded from refurbishing support programmes. The table below illustrates the number of buildings renovated. It is unclear if the numbers also include new buildings and only initiatives financed by public resources or also own funds – more likely at the level of single-family buildings. Based on a national legislation from 2011 (Ivanov, 2011), some local initiatives aimed at changing the face of the urban setting have conditioned lower property taxes (or have imposed fines for non-compliance) on the refurbishment of facades, such as was the case in Cluj-Napoca, Oradea or Arad (Sfârlea, 2018) . Despite important progress, the provision did not involve structural changes and was financed by a variation of solutions that involved household budgets almost exclusively or to a high extent. Private owners criticized the high costs involved and the complicated bureaucracy to receive intervention permits. Other programs targeting single family houses have been marginal and mainly dedicated to higher income families, and even so, they have been slow to deliver. Programs like Casa Verde Clasic (The classic green house programme), only aimed to install PVs on individual houses. 30.000 individual houses have been targeted, but no structural intervention was involved. Casa Verde Plus (The green house plus) (Ziare.com, 2018) was designed to be an upgrade for the previous program and also include efficiency works by financing building insulations. Casa eficienta energetic (The energy efficient house) was aimed exclusively at financing energy efficiency works on private houses. 60% of investment (up to 15.000 EUR) involving insulation, heating system improvement, and window and door improvement would be supported from the grant. These programs have faltered out of various reasons, such as the lack of funds (Casa Verde Plus), slow bureaucracy ([Casa verde](#) (Digi24, 2020)) or low institutional capacity despite high public interest in the program ([Casa eficienta energetic](#) (Alba24.ro, 2021)). Green mortgages, another financial instrument well promoted by authorities and administered by private banks, have been accessible solely to real-estate investors and solvable families (RoGBC). The national resilience plan will implement a scenario where multifamily buildings will be mainly targeted and completely refurbished by 2026, whereas for individual houses the two latter programs will be activated to be accessed by beneficiaries (PNRR, 2021).

Figure 2. Renovations in the residential sector

Type of building	Category	Number of buildings	Total heated area (th M2)	Renovated until 2020
Single family hh	Rural	3,810,737 (71.6%)	247.80	3%
	Urban	1,354,263 (25.46%)	124.46	8%
Multifamily hh (30%)	P+ >= 4 floors	92332 (1.7%)	94.51	7%
	P + < 4 floors	61554 (1.1%)	115.51	7%
Totals		5,318,886 buildings	582.27	5%

Source: World Bank 2019 based on URBAN INCERC INCD

Low targeting and impact assessment: There is widespread judgement at the level of expertise that the mechanisms currently in place provide for little targeting at the level of refurbishment programs and little impact measurement. In fact, there is no centralized data on the impact of refurbishment measures performed so far (Guvernul României, 2020). The national resilience plan points out the fact that more effort is needed in targeting the lowest performing buildings which have so far not been the focal point of intervention programs, and in establishing mechanisms that would record the types of intervention performed and their impact on consumption and welfare. To this aim the document proposes a much needed detailed and centralized data system, which not only succeeds to collect a diversity of building related data but is also able to integrate data bases from different authorities and relate to socio-economic evidence. Currently, data is not only collected unsystematically and at times inaccurately but is in the property of a diverse set of actors, public and private, who have inconsistent data collecting practices, have divergent GDPR application rules and do not communicate data between them. Moreover, it is not clear what institution should take initiative to centralize all existing data basis and data collection initiatives. Despite the difficulties involved in reconciling these concerns, there is need for targeted measures that would secure tailored solutions based on evidence. PNRR plans to target the lowest performing buildings mainly, but this is dependent upon access to data and the challenges previously mentioned (PNRR, 2021).

Own contribution: In the decision-making circles there is a strong support for own contribution in refurbishment projects, which is generally associated with a higher degree of responsibility on maintenance. Albeit justified, depending on size, it may slow down refurbishment programs. Vulnerable families may not dispose of these sums and consequently they may opt out, leading to partially renovated buildings or delays in the realization of the projects altogether.

Low trust in community projects: One of the fundamental components of refurbishment projects in multifamily buildings is the contribution of the tenants' association either by securing a part of the investment or through agreement on the performance of refurbishment works and its details, or both in most cases. This involves a high degree of cooperation between neighbours, which has oftentimes been stranded by the low degree of trust among citizens. In 2020, 56% of Romanians denied trust in fellow-citizens (Fundația Viață și Lumină, 2020). A recent household survey performed in Cluj-Napoca with the aim of identifying behaviour and attitudes associated with various manifestations of energy poverty, revealed that 25% of citizens have no trust in neighbours, whereas 55% acknowledged to trust some. Only 8% of tenants cooperate with their neighbours on regular basis, whereas 57% rarely or never do. It is not clear what entity should take the lead in trust-building among neighbours. Whereas generally trust in governmental institutions or local public administrations rarely exceeds 30% at the national level, cities such as Cluj-Napoca may be rather exceptions, data placing trust in the municipality at 60% with higher potential to cause change in this respect. It may just come down to local circumstances and local solutions (Babeș-Bolyai University, 2021).

Trust is an important aspect to consider given that Romania has a 94,7% private property ratio (Guvernul României, 2020) leading to a high stake for the owner in deciding on measures to be taken on the owned space, a comparatively low capacity for the local administration to impose measures in this respect, and a low propensity of the household to invest in refurbishment and property preservation due to generally low incomes. This defines a general private property dilemma in Romania.

The residential buildings consumption instrument computed by CSD singles out single family houses as the highest consumers in the residential sector based on their energy needs. Private houses have been recorded to have a potential consumption between 255 and 900 kWh/sqm/year to secure acceptable living conditions depending on the building material, climate zone and fuel used. The highest demand is associated with 1960s brick buildings, 50 sqm, with 2 rooms using wood to heat as they may have to consume anywhere between 520 and 900 kWh/sqm/year to reach an acceptable indoor temperature. Given the volatility of the wood market, these households may be exposed to outrageous prices especially during the high season and may have to reduce their consumption drastically in order to stick to budgets (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017). These are all single-family houses and they represent over 5% of the households population considered in the study. Brick houses seem to be an important problematic category, irrespective of their primary energy source being gas or wood. Their needed consumption seems to surpass 700 kWh/sqm/year easily, which may indicate a high need for investment in refurbishment and the quite limited control exercised by building authorities in imposing standards and sanctioning their disregard so far. From the perspective of pollution, brick houses using gas boilers are particularly problematic as their annual carbon footprint can be anywhere between 53 and 160 with 56 sqm with 2 room-houses being particularly problematic (91-160 kgCo2/sqm/year). This particular category is 1.19 % of the housing population considered in the simulation. Generally speaking, approximately 17% of the households need important intervention at the level of the heating systems. The individual boilers are a very wide-spread solution in Romania (33% of households, that is 2,2 Mil., own individual apartment boilers on gas to heat their homes and water. 0,3 Mil. households burn gas in traditional stoves). This solution was justified in the context of high private property tenure, due to the high degree of independence it offered to households. But their efficiency,

pollution and security are topics of important debate. Most of the households using individual apartment boilers are situated in the urban or sub-urban areas (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017).

With regard to wood or plaster houses burning wood, which make up approx. 50% of the individual residential capacity (affecting the rural context disproportionately), the model developed offers a comparatively favorable score on emissions, even if the needed consumption is only moderately lower. What the model does not consider are the heating sources employed – mostly wood – and the quality of the stoves employed, which according to national data remain quite low. Much of the wood is still being purchased from unauthorized sources and is not properly prepared for burning (Ministry of Energy, 2018). In the residential area, the highest final consumption is mainly due to the consumption of biomass (mainly wood burnt in inefficient stoves) (3.11 Mtep) and followed by gas (2.16 Mtep) (Guvernul României, 2020). Another aspect to be pointed out in this type of housing is their low market value, which makes investment in high value heating or electricity technology disproportionate, and their high susceptibility to develop mold, contain moisture, develop mold and develop improper living conditions.

The owners' dilemma: energy poverty and the high property ratio

Former communist Member States have a much higher property ownership ratio than Western European Member States. At the beginning of the 1990s most housing units were inhabited by tenants who benefited from “giveaway” privatization programmes, in which sitting tenants were preferred and encouraged to purchase the properties they have lived in through various forms of programmes and payment schemes (European Housing Partnership, 2017). In addition, former private landlords and their successors received in-kind compensations or other forms of material benefits to substitute their loss. Romania leads the private property ratio with 96% (Csiba, Bajomi, & Gosztanyi, 2016)

This situation leads to a number of energy poverty-related challenges. Owners have low capacity to preserve and improve the quality of their buildings from own funds given the low efficiency of the housing facilities and the low household income shares available for investments. Limited investment capacity has also led to a common situation where several generations live under the same roof, causing increased wear of the property and an overcrowding of the living space. According to Eurostat (Eurostat, 2018, p. 56) Romania has the highest share at the EU level of overcrowded households (48.8%) lives in overcrowded households. The situation in the region is comparable (more than 40% of the population from Hungary, Poland, Slovakia, Croatia, Bulgaria, Latvia are in a similar situation). Furthermore, high property ownership has also translated into low associative culture and low capacity of local administrations to initiate refurbishment programs and legislation. It is common practice for owners to manage their living space, including construction-related decisions, on their own with little interference from authorities (Sinea, George, Ute, & Philipp, 2020). This is rarely a topic of public debate despite effects of such behavior coming up oftentimes in the media as hazards with or without casualties. Despite legislation having been updated repeatedly (2018, 2019, 2020) and sanctions progressively increased, the implementation capacity on behalf of

the authorities remains reduced and tenants can easily evade obligations, whereas court decisions remain feeble and lack leverage.

The excessive and well-spread private ownership culture may also prevent authorities from identifying situations of energy poverty. There is little data on the behavior of people with respect to energy consumption in their own households, other than what is reflected in expenses and consumptions (which is also limited and little accessible due to GDPR provisions that entitle private companies to protect client data while also failing to perform individual studies on potential own vulnerable consumers). A survey conducted in Cluj-Napoca in fall 2020 shows that over half of households prefer to keep a temperature above 21C, despite this generating expenses, which may bring more than 40% of households in a state of vulnerability. This is a matter of choice, since these are households which to a very high degree hold temperature regulation equipment (“termostat”). 76% of the households use individual gas boilers and only 20% are connected to district heating. Studies show that a decrease of temperature by 1 degree Celsius reduces the energy bill by 7%.

The private ownership mentality also generates effects in the rental market. This topic will be developed at length in a different policy brief. As a general remark, the rental market comparatively much smaller in size. Despite efforts over the years to regulate it given the dynamics of a more vibrant real estate market, it has remained largely unregulated with little leverage on the landlords to improve the efficiency of their let apartments. Landlords and renters alike, commonly prefer a cheaper arrangement based on an informal contract in order to avoid taxes and other bureaucratic matters, and do not find the benefits of a legal contract particularly attractive.

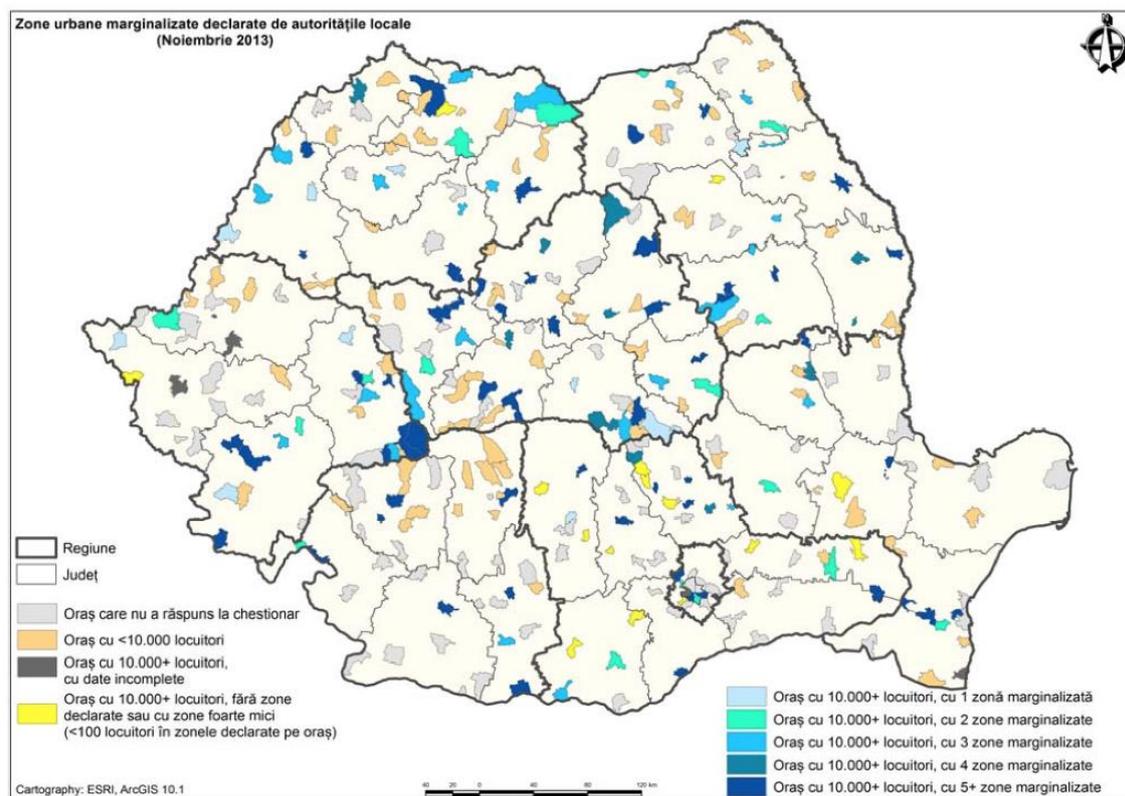
Energy poverty in the urban pockets: the Roma outskirts of the rapidly developing cities

Around 6 million Roma live in the European Union, representing the largest and the most marginalized minority in the region (World Bank, 2015), and one with the highest risk of falling into a state of extreme poverty. Romania hosts the highest population of Roma citizens at anywhere between 1 to 2 million people (World Bank, 2015). In Bulgaria, Hungary, and Romania, Roma poverty rates are between 4 to 10 times higher than that of their non-Roma fellow citizens. If they fall in extreme poverty, there are fewer opportunities available for social mobility (Ringold, 2002) (World Bank, 2015). In the former communist countries, Roma vulnerabilities have been exacerbated by the transition to democracy, involved their economic and social disempowerment along with limited political and administrative engagement. Due to their lower level of education and social skills, the Roma were the first to lose their jobs after the fall of communism. In addition, the succeeding economic crises only deepened their previous situation of precarity. Moreover, the housing crisis, which resulted either in their evacuation or in the reduced ability to improve their living conditions, led to new types of energy poverty, many of which can be described as extreme (Teschner, Sinea, Vornicu, Abu-Hamed, & Negev, 2020) given the low-efficiency and, at times, improvised dwellings, isolated in deep poverty pockets of otherwise thriving cities, further restricted by an impossibility to connect to the grid, use or pay for public utilities (World Bank, 2015).

Around 100 000 people, most of them Roma, live in the Ferentari district of Bucharest, mostly in highly degraded, concrete panel apartment buildings, usually overcrowded. While some residents own their apartments, others live in illegal properties or shacks. A few of these buildings have been refurbished. The provision of public services is scarce and unreliable. Between 30% and 70% of the households in the Ferentari district cannot keep their homes adequately warm during winter and 50% of them cannot afford to pay the utility bills (Teschner, Sinea, Vornicu, Abu-Hamed, & Negev, 2020). The landfill at the outskirts of Cluj-Napoca hosts up to 2 000 people with low economic opportunity (Bădiță & Vincze, 2019). Some of them have been evicted from social houses in the city center to living facilities of very low standards, while others have erected unauthorized huts with complete lack of access to water, sewage and electricity. In most cases they have developed informal electricity consumption practices. For heating, people mainly use wood and waste burned in suboptimal heating facilities (Teschner, Sinea, Vornicu, Abu-Hamed, & Negev, 2020)

Graph 6. The distribution of cities and towns according to the number of marginalized areas reported by local authorities

Harta 3. Distribuția orașelor și municipiilor după numărul de zone marginalizate raportate de autoritățile locale



Date: AM POR, Sondaj privind zonele urbane marginalizate la nivelul orașelor din România, Noiembrie 2013. Notă: Orașele cu mai puțin de 10.000 locuitori nu sunt eligibile pentru intervenții de tip DLRC, dar ca parteneri ai unor Grupuri de Acțiune Locală alături de comunele învecinate pot deveni eligibile pentru programul LEADER.

Source: (Regio)

Similar situations replicated around the country in locations identified in a study coordinated under the World Bank (see the map above) (Regio). This study identifies a high development gap between these marginalized areas and the main urban localities to which they are

attached, and they are multidimensional as they translate into low human capital, high unemployment rate, improper living conditions (i.e., no energy connection, over-crowded spaces, low housing security). These areas vary in size (from a handful of inhabitants for some 9000 persons) and typology (various types of ghettos and slums with houses or improvised shacks, at the margins or in the center of cities). The study identifies at least 20% of the inhabitants are being Roma. However, the numbers are difficult to evaluate as many refrain from declaring their ethnic identity.

A number of drivers are at work. One of the most important is the state of informality as many pursue their daily lives without valid documentation. Access to energy or heating benefits is conditioned upon the possession of property and identification documents. Forced evictions have contributed to deepening of this problem as political engagement in these communities is low. As a result, individuals feel disenfranchised, abandoned, and distanced from bureaucratic processes, of which they lack understanding. Most often, the energy relationship with suppliers and authorities is one of conflict resulting in repeated forced disconnections and lawsuits, only rarely with serious engagement and solution-finding approaches (Teschner, Sinea, Vornicu, Abu-Hamed, & Negev, 2020).

Besides immediate effects on the welfare of these communities and their individual members, the situation may also lead to informal market practices, such as informal electricity trade (Jigla, Sinea, Dubois, & Biermann, 2021) which may expose these households to further risks (community disputes, harassment, increased indebtedness, etc.) and hazards. Authorities may be unaware of these practices or turn a blind eye on them hoping that they are the best solutions at hand for the time being (Teschner, Sinea, Vornicu, Abu-Hamed, & Negev, 2020). Some good practices have been identified: the involvement of humanitarian NGOs who, taking advantage of the lack of administrative observance, connect these households in compliance with technical safety requirements, and deliver electricity at a fair price (Pata Rat, Cluj-Napoca); the involvement of community mediators is another good practice employed by some companies who are interested to know the issues in the communities and possible solutions (Ferentari, Bucharest) (Jigla, Sinea, & Murafa, Sărăcia energetică și consumatorul vulnerabil. Evidențe din România și Europa, 2017). However, despite their potential to improve the situation on the ground, these examples remain rather the exception.

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