

## Energy Poverty: The Bulgarian Case

By Teodora Peneva\*

### Introduction

"As winter approaches, millions of people who don't have the money to heat their houses are left to fend for themselves", said Brenda Boardman this October, the primary "researcher, strategic thinker and campaigner" in the world of fuel poverty, as the Environmental Change Institute of Oxford University celebrated her 21 years of research in the field in 2012.

As winter approaches, two thirds of the Bulgarian people are left to fend for themselves, and there haven't been many years of research behind these numbers in the past. Yet, energy poverty is quite severe in Bulgaria. Documents of Eurostats and statistics from the Statistics of Income and Living Conditions survey since 2008 show over 67% of the people limiting their heat comfort in the winter due to lack of money. Compared to an average of 8% for the EU and 16% for the post-social regime member countries in Central-East Europe, this number is distressing. In fact, this is just the subjective perception of the respondents in the survey. But this number can not be far from true.

All the three factors determining the level of energy poverty - e.g., low income, high energy prices and poor quality buildings - are present. Specific measures and social policies for each factor are ineffective, targeting a very limited part of the population and providing very low heat allowances, for the poorest groups, in particular. Since there is no specific research being done so far, or published by the National Statistical Institute, only guesses can be made that the energy poverty level likely worsens each year, or fluctuates depending on climate conditions. A mild winter at the end of 2012, however, couldn't stop social protests against high electricity bills in the beginning of 2013. The government managed to keep electricity prices at the same level for the first time this year, leveraging costs by changes in various taxes for business, producers, and exporters, and sharing the cost burden between different market participants. In each of the preceding years price increases of between 5% and 10% were registered for households, twice a year. Increases in energy prices were much greater than increases in income, resulting in social protests, political pressure, speculation, and other negative consequences.

### High Energy Prices

In fact, electricity prices in Bulgaria are the lowest amongst countries in the EU. Statistics on electricity prices in the EU from 2011 show (Figure 1) Bulgaria with the lowest retail price per kWh. One would ask why do we call this high energy prices then? The main problem is the low income level, but there are also problems with the energy consumption structure in the country. Electricity accounted for over 55% of Bulgarian household energy consumption in 2011, according to data estimates from the World Bank. Around 20% is from wood consumption, 9% from coal, some 11% from district heating, and just 1-2% from gas. Few countries in the climate conditions of Bulgaria use so much electricity for household heating. This is ineffective and results in higher costs for primary energy, compared with other ecologic and lower cost energy sources. This share has increased in past years, with many users of district heating switching gradually to electricity in order to be able to control energy costs.

The gas supply network for households is underdeveloped, and meets severe barriers for development, thus leaving people with no access to a gas heating alternative during the winter. One of these barriers is the price of gas. Gas prices in Bulgaria, unlike electricity prices, are among the highest in the EU. In the few cities where gas networks were established and developed for households, the gas price became too high for affordability, so many people who connected to the gas grid in the beginning, quickly stopped using it for heating during the winter.

Central heating is used by around 11% of households, in specific regions, in 18 cities in the country. This type of heating, usually the most efficient and clean

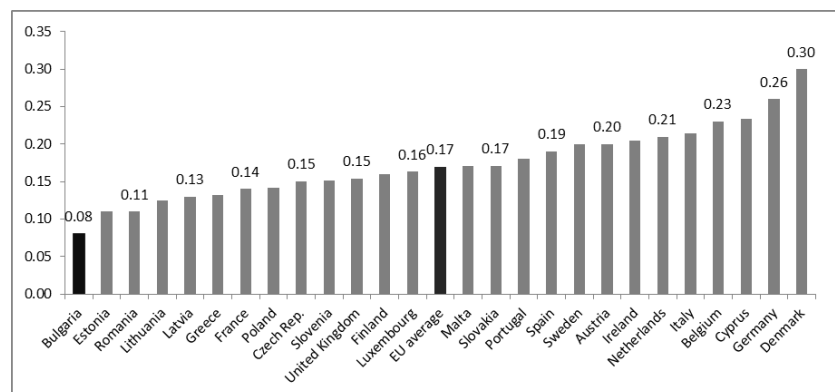


Figure 1: EU Electricity Prices (kWh).

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energy source, offering the ideal price-performance ratio with low cost and high comfort, has severe problems in Bulgaria, becoming not a solution to energy poverty, but rather a cause for poverty. Central heating grids were designed and developed in the 1980s in Bulgaria, when the government subsidized a big part of energy prices, and usage in the multifamily panel buildings reached 100% of households. With increasing overall poverty levels and removal of the state subsidies for district heating prices at the end of the 1990s, there was a rapid decrease in users within the buildings. This made the distribution cost for those remaining in the buildings higher, and bills unpredictable. Gradually, entire buildings started switching off the grid and using electricity. In this way, households could manage the energy costs and limit their bills to affordable levels.

Control of the energy bill became the first reason for choice of heating type at the beginning of the 2000s and continued over the decade. Affordability improved slightly in 2007, right before the global financial crises, which is shown in Figure 2 taken from National Statistical Institute data.

It is hard to estimate what percentage of this was exactly for energy, and what level of comfort this percentage has afforded. Very likely, the energy bill took the higher portion of the expenditure. This hypothesis is based on simple calculations for monthly bills and income levels.

**Low Income**



Figure 2: Expenditures by Bulgarians for Housing, Energy, Fuel and Water as a Percent of Total Household Income.

Source: National Statistical Institute.

Bulgaria set a minimum salary of just 158 Euro per month in 2013 and the average salary reached 408 Euro per month in August 2013, with significant variations across the country. If we accept the energy poverty definition adopted by the UK government as "A household is considered to be fuel poor if it would need to spend at least 10% of its income in order to heat the house to an acceptable level of warmth", then a household with income below 400 Euro spending more than 40 Euro per month for heating in the winter is energy poor. Usually, energy bills exceed this amount in Bulgaria, or if limited, then there are serious limitations in the comfort levels. The question then is how

many households have income below 400 Euro?

According to Eurostat, in 2011, countries with the highest share of persons being at risk of poverty or social exclusion were Bulgaria (49%), Romania and Latvia (both 40%), Lithuania (33%), Greece and Hungary (both 31%), with the highest at-risk-of-poverty rates being observed in Bulgaria, Romania and Spain (all 22%) and Greece (21%). With a population of over 7mil. people, this means over 1.6mil. people are at risk of poverty in Bulgaria. And for the EU it means 17mil. are poor, a very high number. And all of these, are certainly energy poor. The poverty line in Bulgaria was estimated at 123 Euro in 2013. See Figure 3.

The government has social programs aimed at decreasing those below the poverty level, and even has special social aids for heating (heating allowance) for the most affected groups. However, of the 22% of the population (around 1.6 million people) living below the poverty line in Bulgaria, only about 210,711 households are receiving social heating assistance for the 2012/2013 season. The amount of money that has been given is relatively small (33 Euro), compared with heating costs (over 40 Euro on average), and the criteria for approval quite severe. Another severe problem is the quality of buildings. Even if people manage to somehow afford 30-40 Euro per month for heating, they receive a lower comfort due to high heat losses.

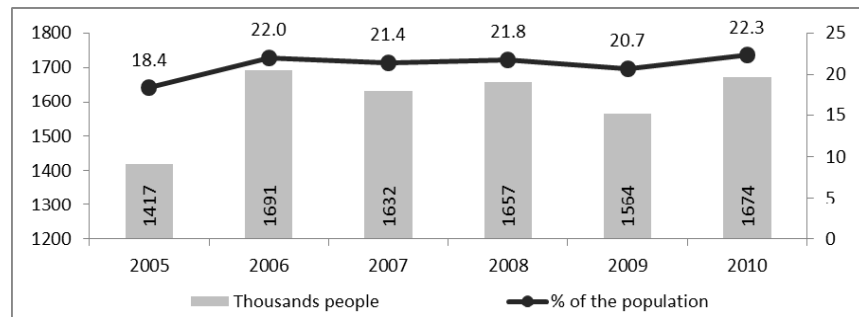


Figure 3: Bulgarian People Below the Poverty Level

**Poor Quality Buildings**

According to the National Program for Housing Renewal in Bulgaria adopted in

2005, over 20% of the buildings are panel buildings, most of them needing renewal. Experts estimate that there are 680,000 buildings that will be needing renewal in the 10 to 15 years after 2005. Of these, 360,000 are panel buildings, 150,000 concrete buildings and 170,000 massive buildings. The biggest problems are with buildings built using large-panel technology. Around 83% of the panel buildings are located in regional cities, and in many big cities they represent around 50% of all housing.

A few energy efficiency credit programs for multifamily household buildings were applied in the country in recent years, but not very successfully. The biggest program, REECL, provided 46,027 credits in the period from September 2006 to September 2013. The process of renewing buildings with credits is slow and not applicable if 5% of the building's household are poor. This is the main barrier for popularization of energy efficiency programs with credits. Poor households cannot afford any additional cost, and cannot invest in energy efficiency. The energy poverty itself has become a barrier to energy efficiency programs.

### Conclusion

Fighting energy poverty this severe is not an easy job. The Bulgarian government applies various measures to reduce overall poverty, but the lack of in-depth research in the field of energy poverty in particular, affects the results of other social policies. Unexpected and unpredictable energy costs in the winter push more and more households below the poverty line during the winter season, and only part of them are able to receive a heating allowance. The level of the energy poverty can only increase, as progressing integration of the electricity markets is not expected to keep electricity price levels in Bulgaria as they are in 2013. The problem needs more attention from all levels and institutions, and a continual monitoring on an annual basis. Currently, the parameters of the SILC survey applied in all EU countries are not specifically designed to cover energy poverty; this can not help the work on decreasing the EU poverty. Having more concrete data and analysis, policies can be more effective and focused.



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Employers are invited to use this database, at no cost, to advertise their graduate, senior graduate or seasoned professional positions to the IAEE membership and visitors to the IAEE website seeking employment assistance.

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