

# Firewood usage in Bulgaria, Hungary and Romania

Online survey conducted for WWF Hungary and its partner organisations  
February - March, 2022

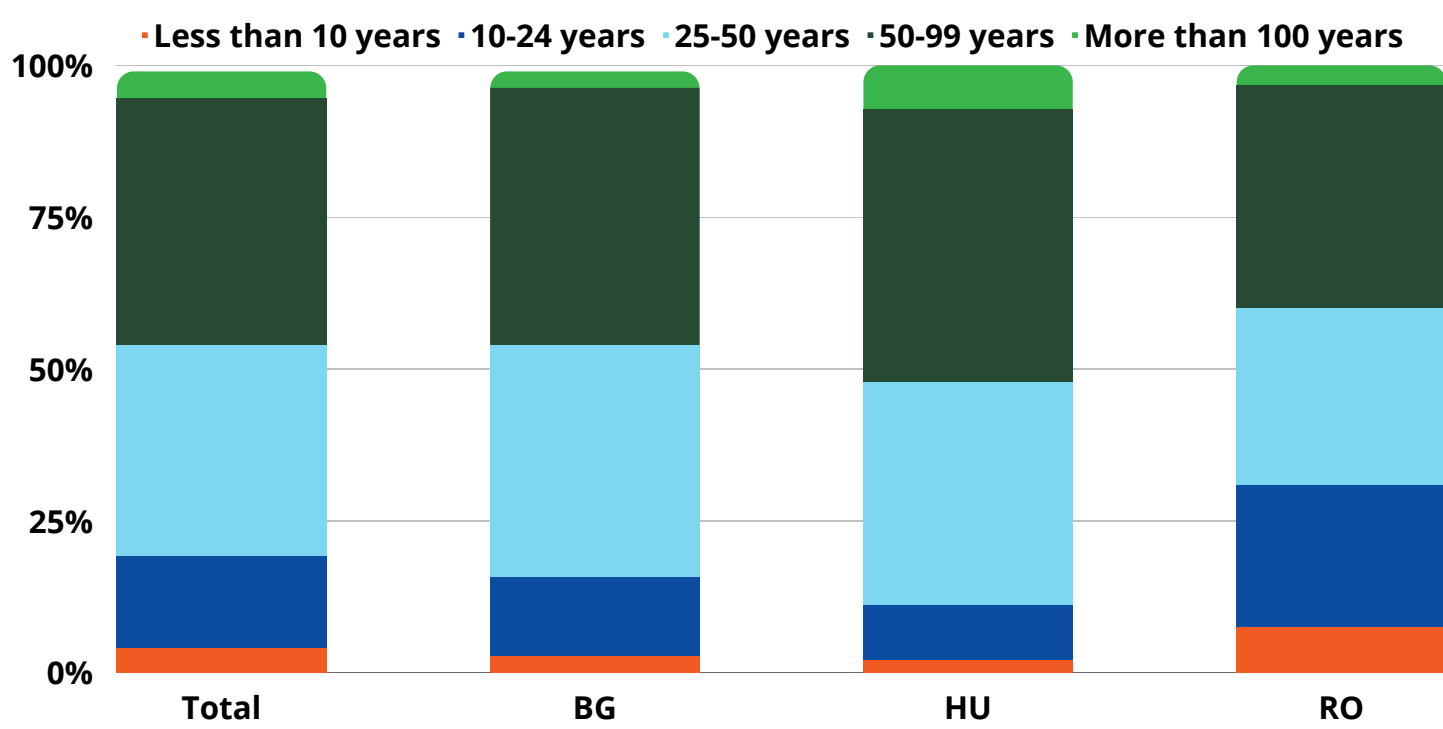
An on-line quantitative survey was carried out in Bulgaria, Hungary and Romania at the households that use firewood - at least partly - for heating. The objective of the survey was **to study and identify the firewood usage habits and firewood-user household stock** in the three countries. The target group included **500 respondents per each country between the ages of 18 and 70**, who qualified the above screening criteria. The surveying was carried out in **February-March 2022**. It is important to note that in Hungary, it took time before the Russian invasion started in Ukraine, while in Bulgaria and in Romania after that. This might have affected the answers.

**This survey is outstanding in several ways.** In order to effectively tailor policies to support firewood user households, comprehensive data would be needed, but only very limited official statistical data are available on residential firewood use, which only includes basic information from census and other statistical surveys. This questionnaire fills these gaps, and provides detailed information not only about the energy efficiency status of the dwellings, the habits how the firewood is used, but also provides us insight into the firewood users' social status and energy awareness. The four main topics of the survey were: dwellings, heating solutions, firewood usage and energy poverty.

## DWELLING & ENERGY EFFICIENCY

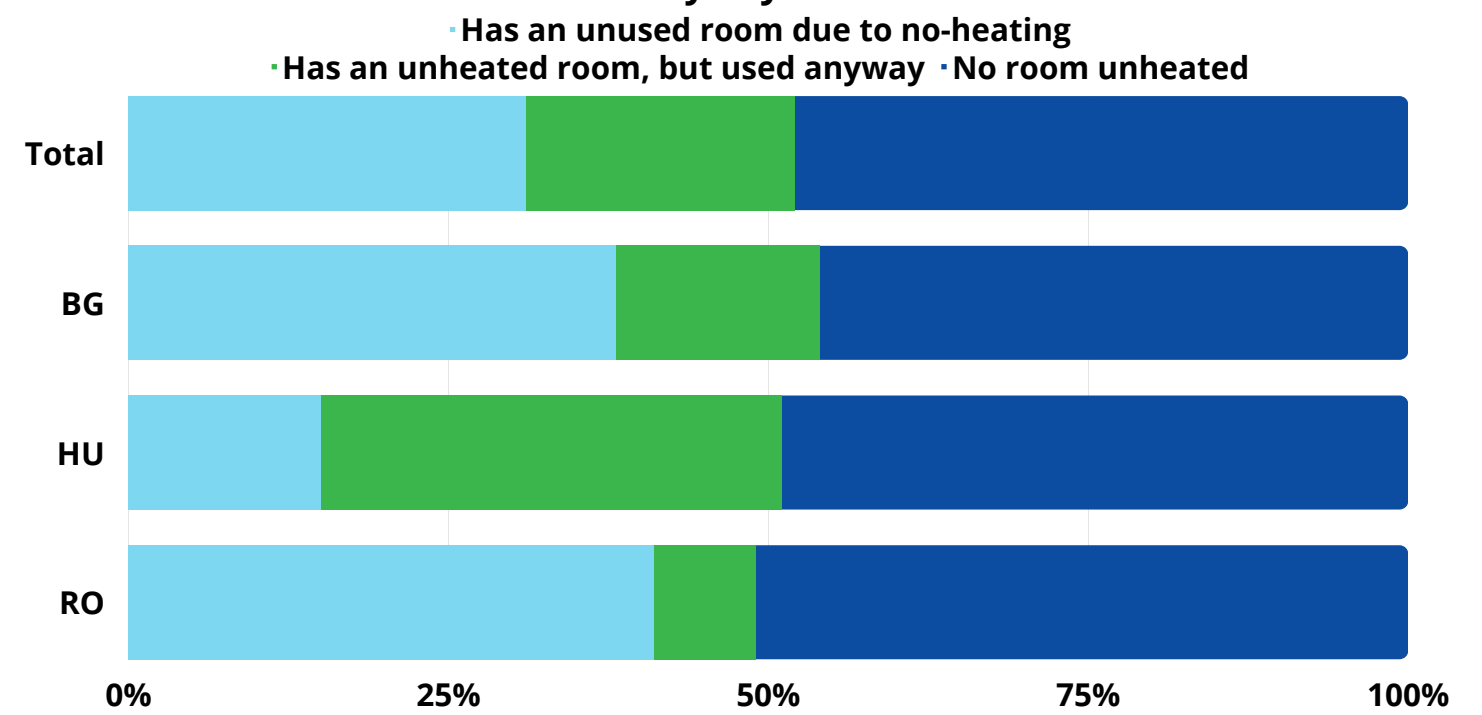
### Age of the dwelling

The majority lives in brick houses that are more than 25 years old. The average age of the houses is the youngest in Romania.



### Unused rooms in the household due to missing heating

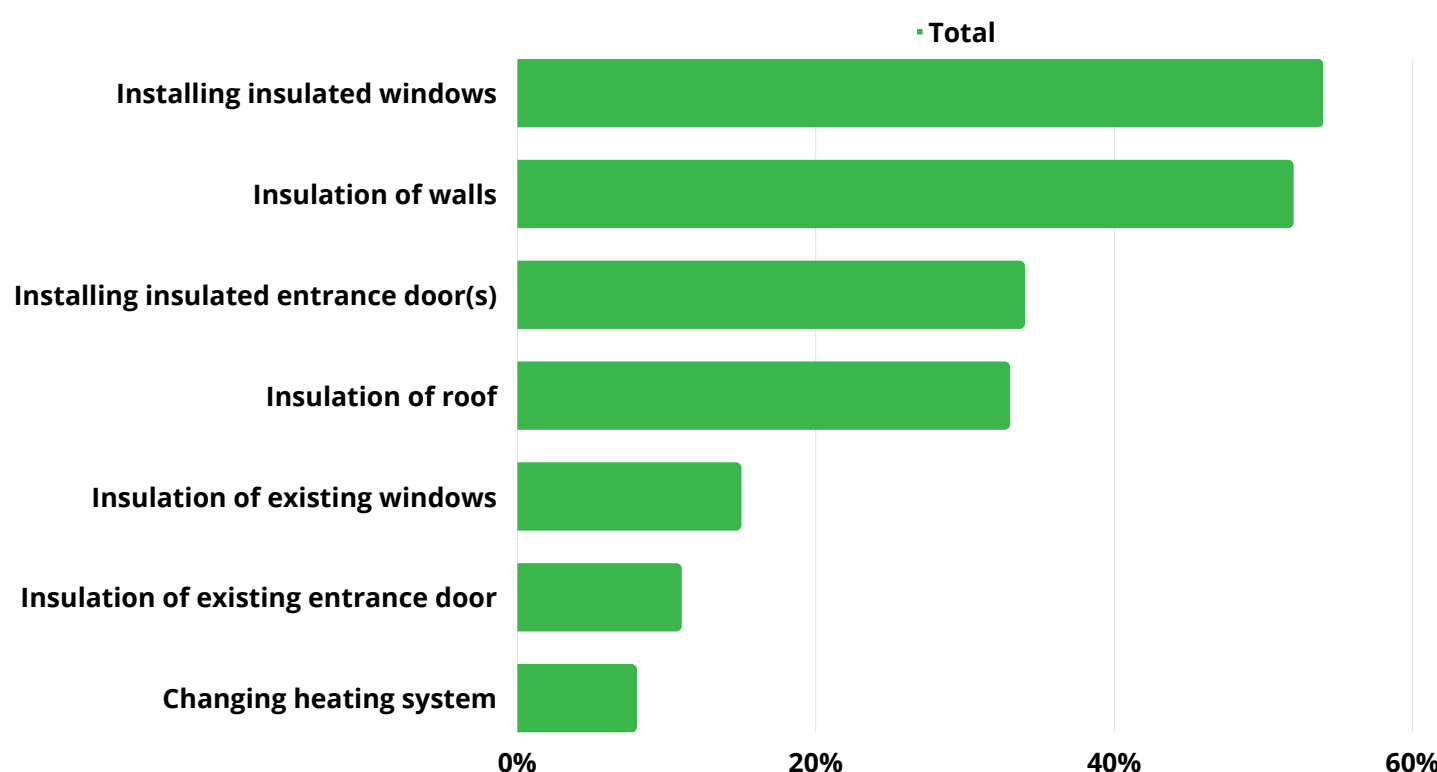
Unused rooms due to missing heating are typical in 1/3 of the households, except for Hungary, where usually the room is used without heating anyway.



The majority of people who run heating at least partly by firewood live in **brick houses built at least 25 years ago or older**. Regionwide, **82%** of the houses that are built for 10 years or more made some energy saving investment, including **insulation of walls (52%), installing insulated windows (54%) or entrance doors (34%)**. However there are high differences between countries, with Romania as more proactive, and Hungary as the least active in these kinds of investments. Furthermore, people in Romania (48% vs. 28% of Hungary) are the most willing to make (further) energy saving investments in the near future.

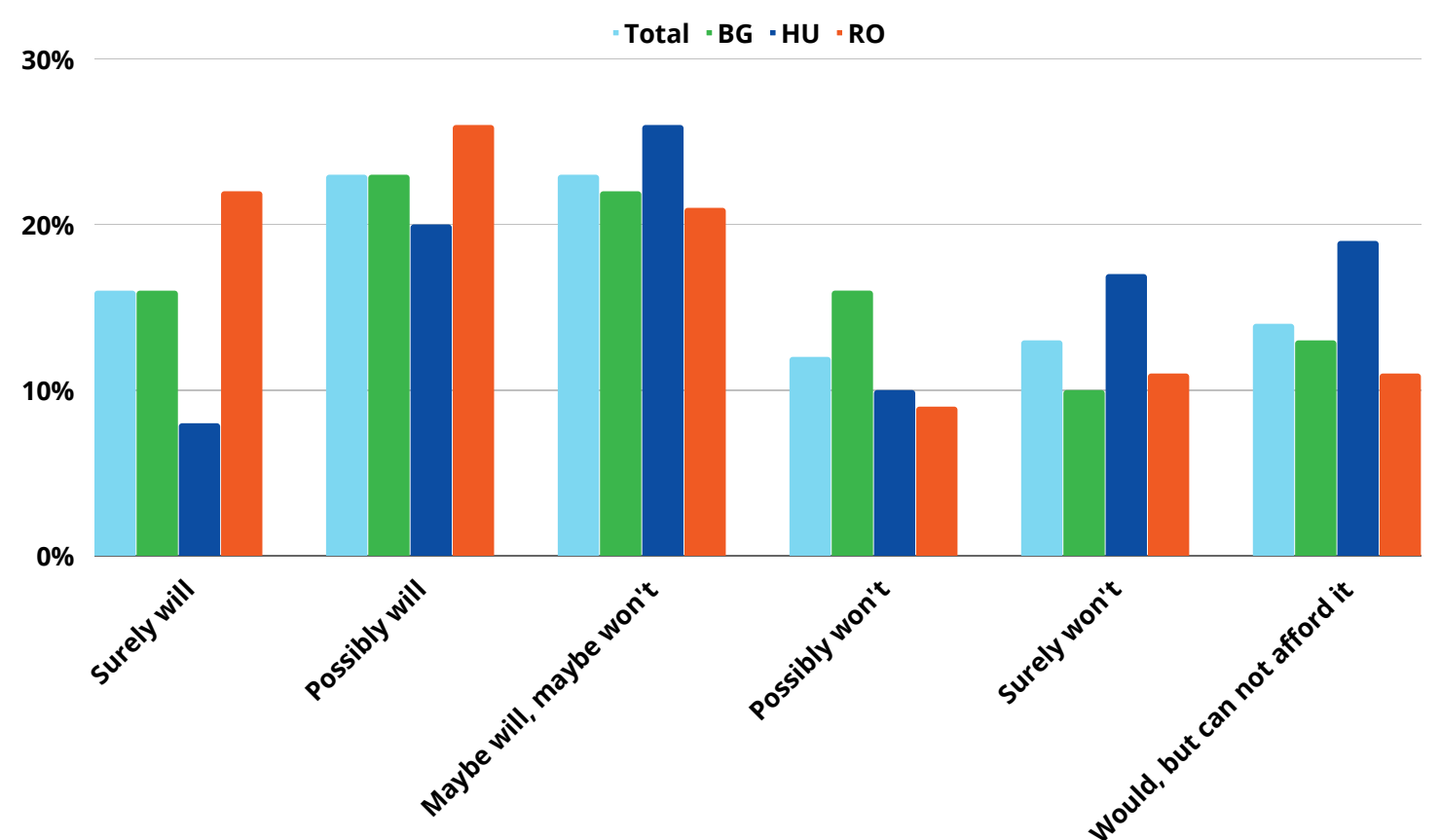
### Already implemented energy saving investments

Insulation of windows and walls are the most common investments. The insulation on walls is the lowest in Hungary among the respondents. Insulation itself is not enough: its average thickness is very low. Among the respondents where there is any existing wall insulation, 71% of them marked the thickness 10 cm or thinner.



### Intention to energy saving investments

Romania shows the highest intent to invest in insulation, and the situation is the worst in Hungary - 17% responded they are sure they won't invest in any renovation.



THIS PROJECT IS FUNDED BY THE EU'S LIFE PROGRAMME





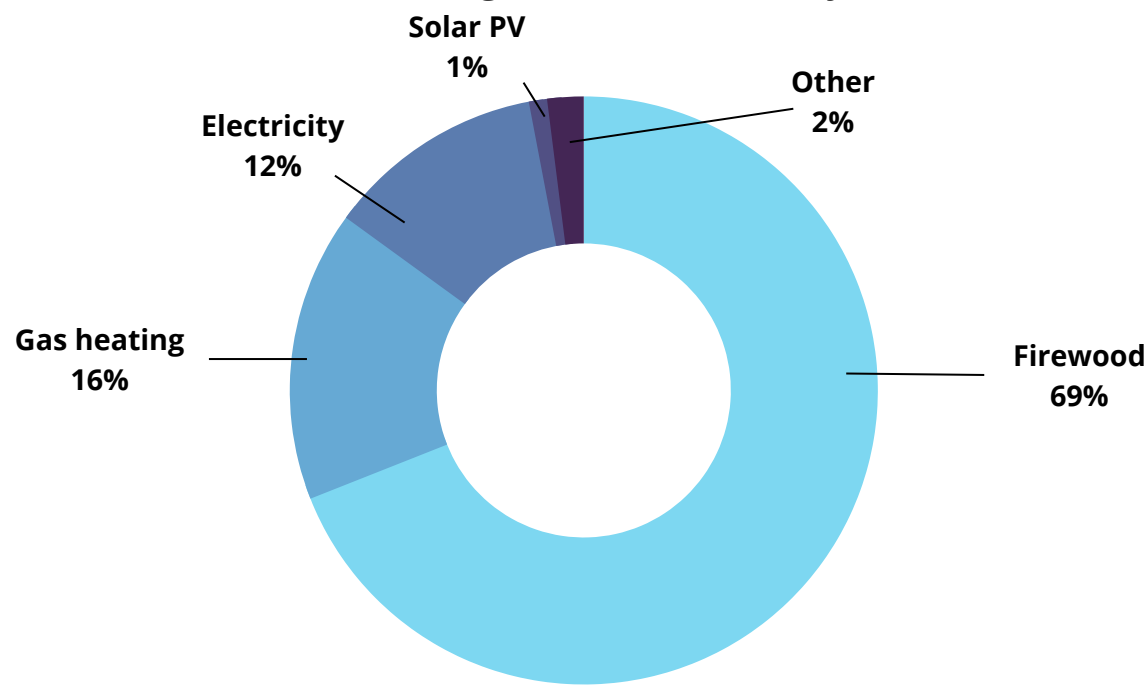
# HEATING SOLUTIONS

If we consider all heating solutions, regionwide **69% of total heat demand is covered by firewood**. Sole firewood usage is the most typical in Romania, where 58% of the households use only firewood for heating, while in Hungary 40% and in Bulgaria 36%. Among alternatives, in Hungary and Romania gas heating is the most popular, while in Bulgaria it is electricity. Regarding the regionwide available heating solutions among the respondent households, **central heating with firewood is the most popular** in total. Bulgaria shows the lowest match with the regional data, where air heaters are the most widespread.

Roughly **half** (48% regionwide) of the households **plan to improve the current heating system** in some way, with Romania showing the highest (61%), and Hungary the lowest (33%) intent. When speaking about changing the most used fuel, 38% of the respondents voted for 'No' and almost the same percentage, 35% of them marked it as planned. According to the countries, the same tendencies appear: Romania shows the highest interest and Hungary the lowest. The main direction for investments are **changing firewood to natural gas, solar power or electricity**, while changing to firewood completely from partial use is less typical. The availability of pipeline gas is far the best in Hungary.

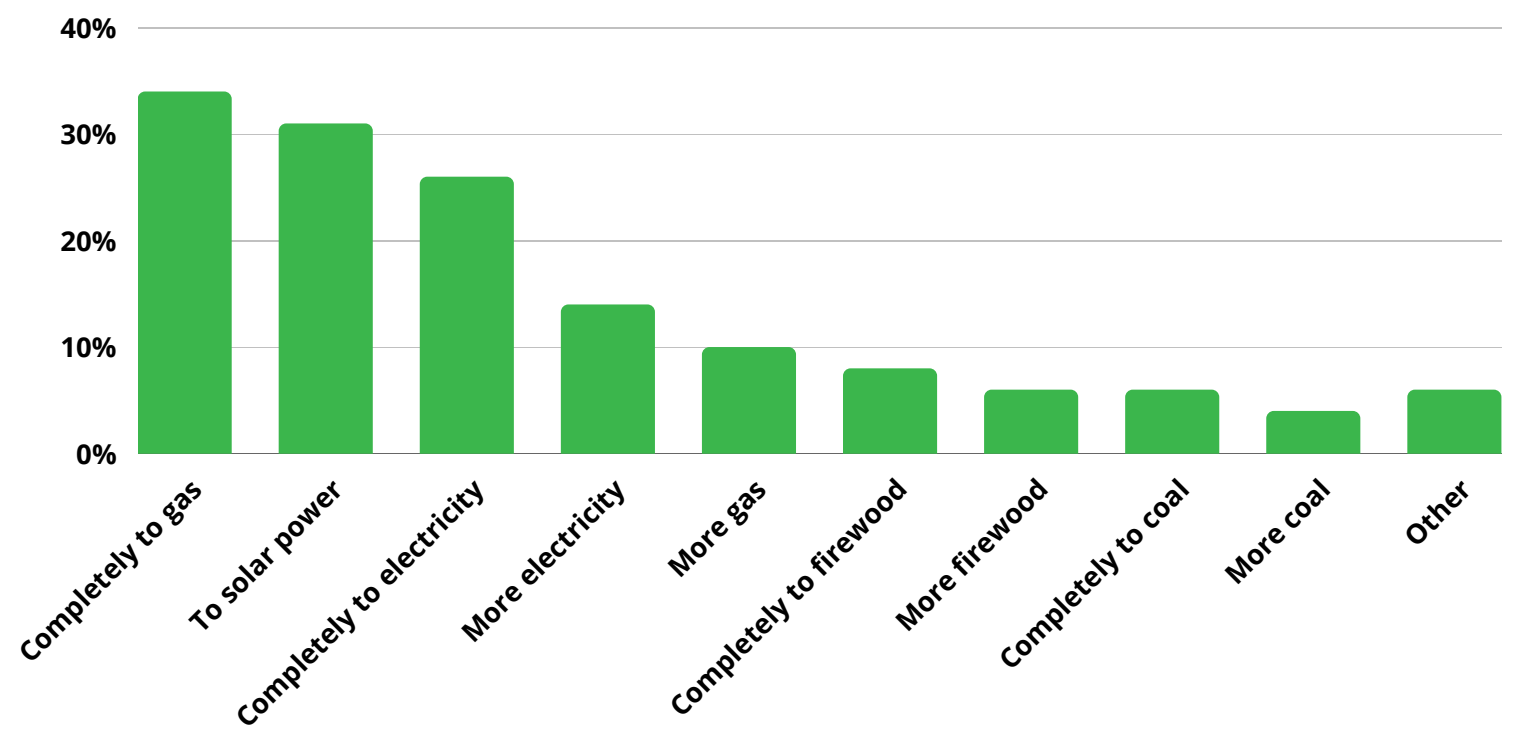
## Share of different fuels used for heating

There may be national differences compared to the average. Beyond firewood, gas heating is the main alternative for Hungary and Romania, while in Bulgaria it is electricity.



## Plans for changing the fuel being used for heating.

Changing to gas or solar power are the most popular plans.



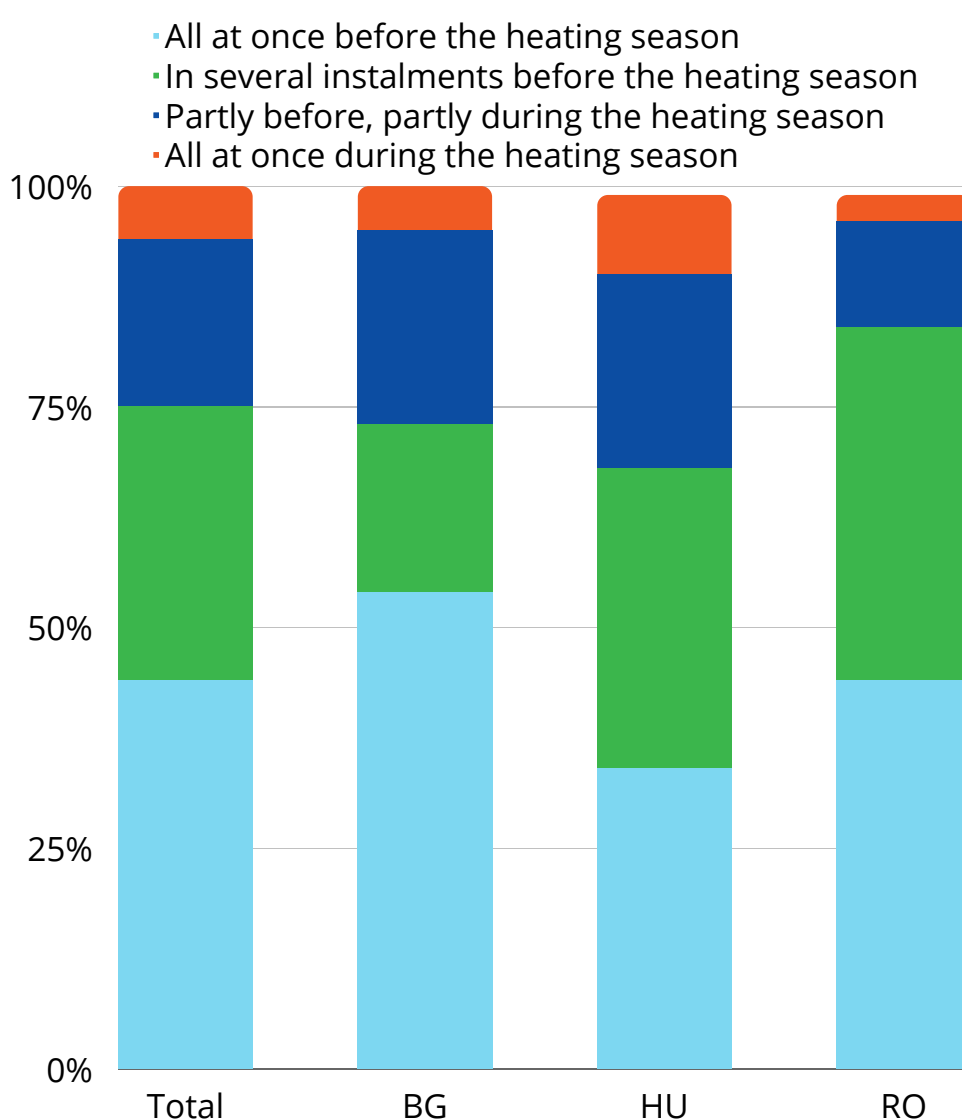
# FIREWOOD USAGE

Regionwide, **firewood is mainly bought from local entrepreneurs (47%)** or from woodyard, while own forest, friends' or relatives' forest takes roughly 20%. The average spending on firewood is **between 445-550 EUR** according to the heating season of 2020-2021. Interestingly, 23% of people in Hungary did not wish to tell the amount spent.

Regionwide, **the average time for drying the firewood is 4 months**, while the ideal time is set to 5 months. In this question Hungary estimated the ideal time for drying the firewood the closest to necessary. It gives a certain tonality to the answers for drying time that the majority (59%) are using a **mix of dry and wet firewood** for heating. Concerning the air pollution caused by firewood usage, regionwide 40% find it a significant impact, with Hungary being the least worried about it.

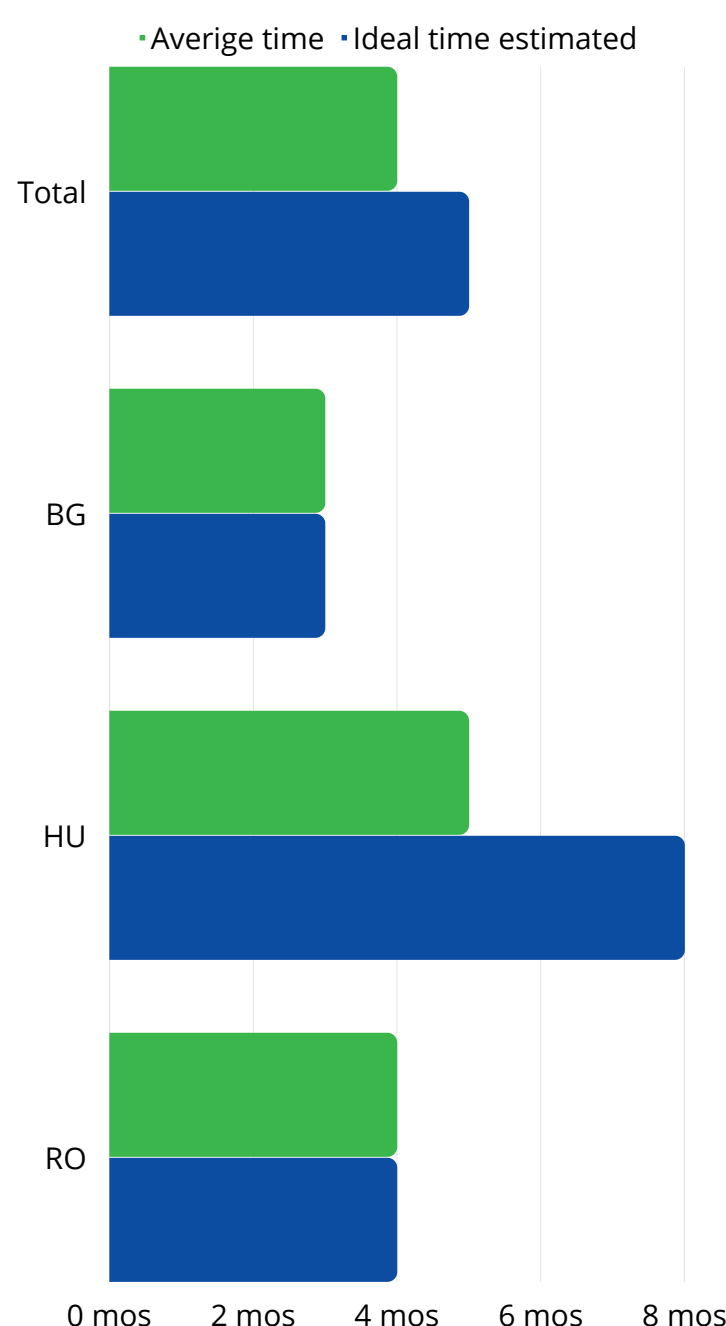
## Way and time of purchase

The majority of the respondents take or buy firewood at least 6 months prior to the heating season and take it all at once. There is also a correlation between the way and the time of purchase: respondents who buy firewood just right before the heating season, they purchase it from a local entrepreneur and are less likely to cut it from their own forest.



## Drying the firewood

The ideal drying time is the most realistically estimated in Hungary, though the actual time still remains far below that.



# ENERGY POVERTY

We also asked the income situation of the households. The results proved that there is a high risk that **low-income families can afford less energy efficiency investments**, therefore they are locked-in in a vicious cycle, where a significant part of their income is spent for heating, so they cannot afford energy efficiency in order to decrease their heating bills.

There is a correlation between the income situation of the respondent households and the proportion of firewood in the heating fuels used. The respondents **who have insufficient income level or can afford only basic necessities are more likely to depend on firewood** as the primary (and often the only) heating source. There is another important connection between the income situation and the possible renovations in the future. The respondent **households with the lowest income usually cannot afford any energy efficiency actions or fuel change**, so they are locked in the current situation, however they show high interest in the improvements.

## Possibility to install insulation by income situation

The respondent households with the lowest income usually cannot afford any energy efficiency actions, although they would like to.

