

114 million people live in rural areas across Europe. These communities matter and need to be understood. To deliver a just energy transition, policy should reflect conditions in rural areas. However, data is often difficult to find.

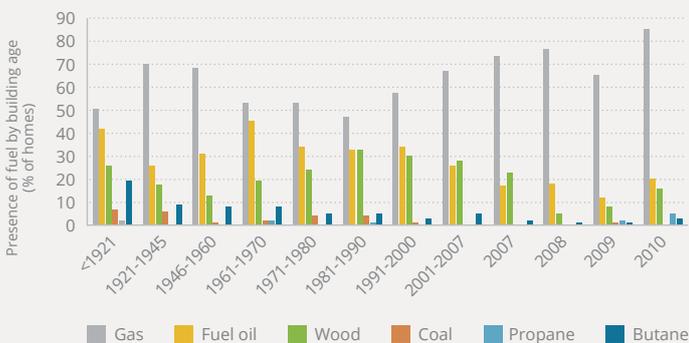
This series of country-profiles provides the reader with an accessible overview of the key rural energy challenges in selected EU member states and brings together important datapoints in an accessible review.

## Rural Energy Matters

- **Heating oil consumption is high in Belgium.** 35% of final energy consumption for heating homes is from heating oil, which – other than natural gas – is the most commonly consumed residential fuel in Belgium.
- **The Belgian rural building stock is very old.** Most homes (56%) were built before 1962. Heating oil and coal are used more prominently in the oldest dwellings, which are typically less energy efficient and harder to upgrade.
- **Rural air quality is a problem.** Over half of rural air quality measurement stations reported particulate matter (PM<sub>2.5</sub>) emissions above WHO guideline levels. Air quality is not just an urban issue in Belgium.

### AGE BREAKDOWN OF RURAL BUILDINGS

Older properties are more commonly heated by oil and coal

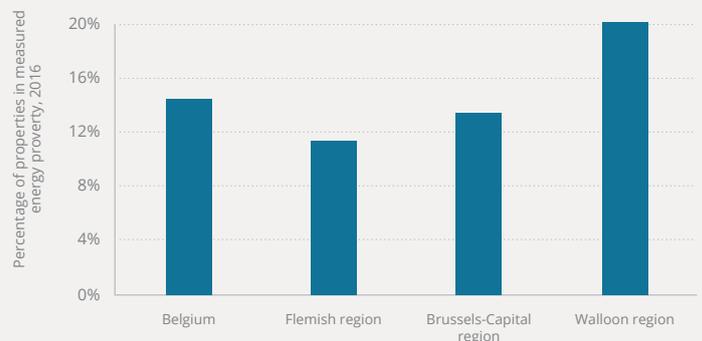


- Off-grid fuels - heating oil and coal - feature more prominently in older dwellings than newer building types where their presence is diminished. Older dwellings are typically less energy efficient and have higher fuel bills than newer homes.
- For the whole building stock, the majority (56%) of dwellings are relatively old and were built before 1962.

Source: [VITO](#)

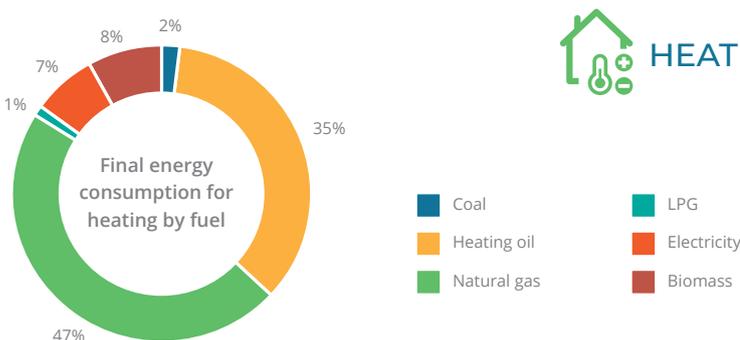
### ENERGY POVERTY IN RURAL BELGIUM

The Walloon region has the highest percentage of properties in energy poverty



- Energy poverty is an issue across the country in Belgium, with 15% of the population in measured energy poverty (mEP).
- Walloon is the region with the highest proportion of households in mEP – 20% in 2016. This is a result of income levels, as well as greater number of large energy inefficient homes. Walloon is categorised as a predominantly rural region.

Source: [King Baudouin Foundation](#) and [Eurostat](#)



Source: [DG Energy](#) & [ENTSO-E](#)

### HEAT DEMAND

The majority of final energy consumption for heating in Belgium is derived from natural gas (47%) and heating oil (35%).

In rural areas, off the gas-grid, the consumption of biomass and heating oil is very high. Heating oil is carbon intensive while both heating oil and biomass generate high local emissions.

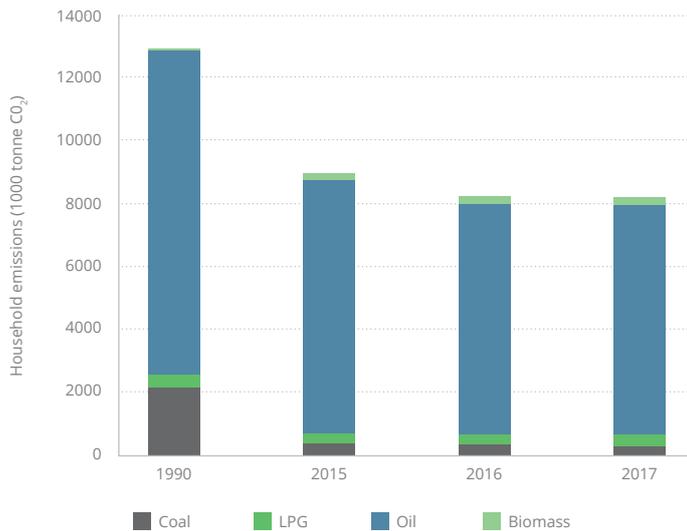
In 2017, nuclear stations provided 50% of Belgium's net power generation with renewables accounting for 18%.



# Belgium - Rural Energy Data

## RURAL CO<sub>2</sub> EMISSIONS TRAJECTORY

Off-grid household emissions have fallen over time



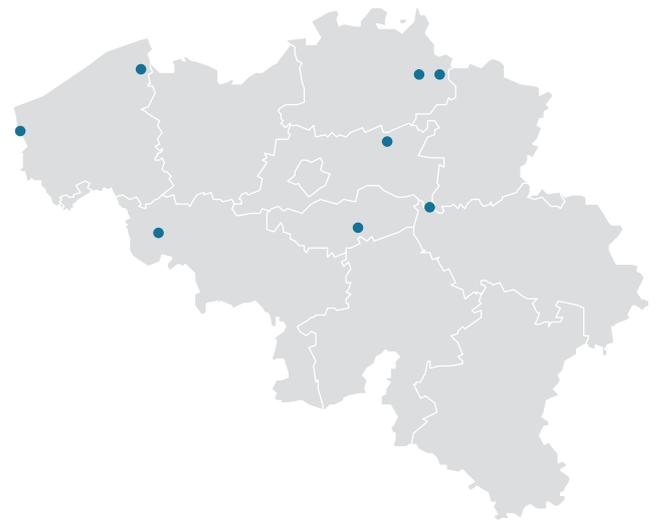
- Belgium's greenhouse gas (GHG) emissions stand at 122 million tonnes (Mt) CO<sub>2</sub>e. This is down from 150 MtCO<sub>2</sub>e in 1990.
- Per capita emissions are at 10.8 tCO<sub>2</sub>e, which is down 28% from 2000 levels (15.1 tCO<sub>2</sub>e). However, over the past few years emission remain stable.
- CO<sub>2</sub> emissions from rural fuel\* consumption have fallen by 37% since 1990.

Source: Eurostat energy balance data, GHG emissions, emissions per capita  
\* here defined as heating oil, coal, LPG and biomass

## RURAL AIR QUALITY CHALLENGES

The majority of rural air quality stations in Belgium reported PM emission levels above WHO guidelines

Map of rural air quality stations reporting PM<sub>2.5</sub> emissions above WHO guidelines in 2017



- In the EU, fine particulate matter (PM<sub>2.5</sub>) exposure has been estimated to reduce life expectancy by more than 8 months. These fine particles can enter human bloodstreams and have a significant negative impact on health.
- 53% of rural air quality monitoring stations reported PM<sub>2.5</sub> background emission levels in exceedance of WHO guidelines in 2017 (emission limits of 10 µg/m<sup>3</sup> per calendar year).

Source: European Environment Agency

## RURAL ENERGY MATTERS

Rural communities are often not connected to the natural gas grid. Indeed 45% of houses across Belgium are not connected to the gas grid. As a substitute, heating oil is widely consumed for heating purposes.

Decarbonising heat will be necessary if Belgium is to meet its climate change targets. To do this in a just and effective way, policymakers need to balance emission reduction, air quality and energy affordability challenges, all of which impact Belgium's rural communities.



The Future of Rural Energy in Europe (FREE) initiative was created by SHV Energy in 2010 to promote the use of sustainable energy within rural communities. FREE is supported by a variety of stakeholder groups, together giving a voice to all those who believe that rural energy needs are important, and aiming to add new perspectives to the EU's energy and climate debate. Identifying untapped potential in Europe's rural areas to decarbonise and improve air quality in a cost-effective manner. Filling in rural energy data gaps. Engaging and supporting rural communities is essential if government energy, climate and environment policies are to be realised.