

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.

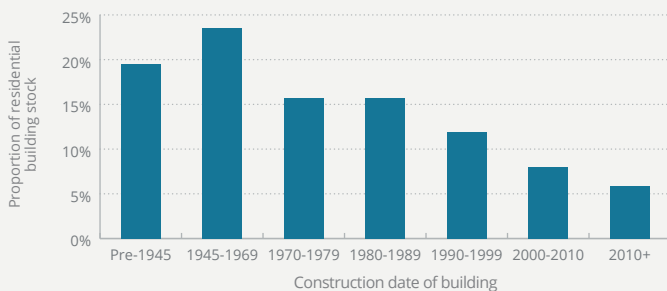
This series of country-profiles provides the reader with an accessible overview of the key rural energy challenges in selected EU member states and brings together important datapoints in an accessible review.

Rural Energy Matters

- **The Polish building stock is old.** Most homes (43%) were built before 1969. Coal and heating oil are used more prominently in the oldest dwellings, which are typically less energy efficient and harder to upgrade.
- **Coal consumption is high in Poland.** 51% of final energy consumption for heating homes is from coal, the most commonly consumed residential fuel in Poland.
- **Rural air quality is a significant health issue.** 100% of rural air quality measurement stations reported particulate matter (PM_{2,5}) emissions above WHO guideline levels. The EEA estimates that 45,000 people a year die prematurely from PM_{2,5} exposure in Poland.

AGE BREAKDOWN OF POLISH BUILDINGS

Nearly half of homes in Poland were built before 1969

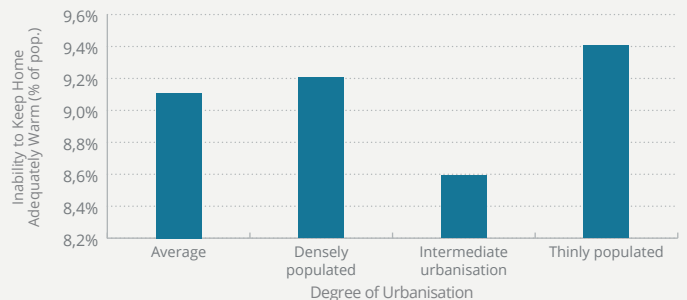


- A large proportion of the Polish building stock (43%) was built before 1969. These older homes are more likely to be off-grid and heated using coal.
- In rural areas, over 65% of homes are at a very low or low energy efficiency standard. A greater proportion of the properties in cities are built to high energy efficiency standards (15.2% of total) as compared to rural areas (8.6%).

Source: [European Commission](#) and [IEE](#)

ENERGY POVERTY IN RURAL POLAND

Nearly 10% of rural homes are unable to keep their home adequately warm

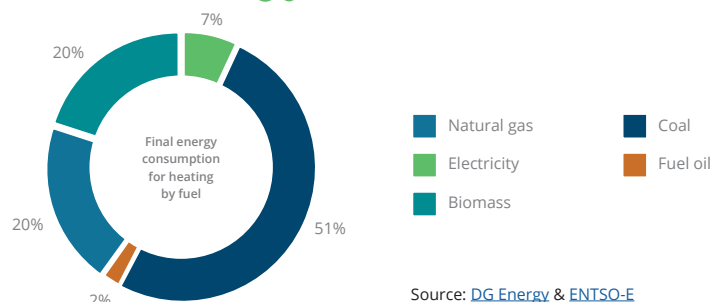


- Energy poverty is an issue across the country in Poland, with 9.4% of the Polish population in *thinly populated areas* reporting that they couldn't afford to keep their home adequately warm in 2016. This is above the average for Poland as a whole (9.1%).
- 9.8% of the population in *thinly populated areas* also reported that they had been unable to pay their utility bills on time.

Source: [EPOV](#)



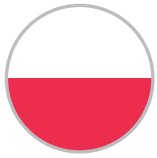
FINAL ENERGY CONSUMPTION FOR HEATING BY FUEL



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

The majority of final energy consumption for heating in Poland is derived from coal (51%) and natural gas (20%).

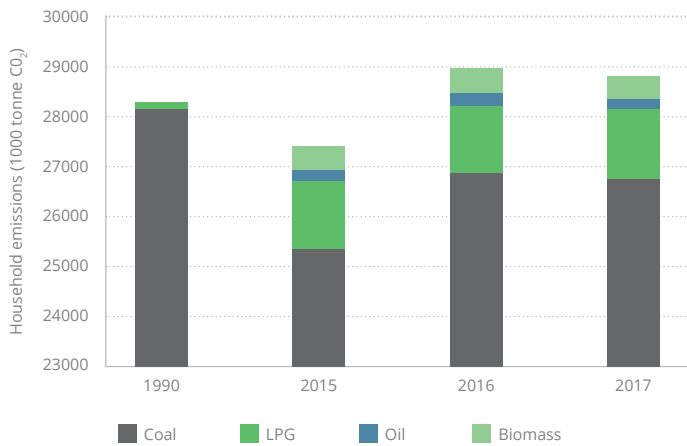
In rural areas, off the gas-grid, the consumption of coal is very high. Coal is carbon intensive and generates high local emissions.



Poland - Rural Energy Data

CO₂ RURAL CO₂ TRAJECTORY

Off-grid household emissions have increased between 1990 and 2017



- Poland's greenhouse gas (GHG) emissions stand at 398 million tonnes (Mt) CO₂e. This is down from 468 MtCO₂e in 1990.
- Per capita emissions are at 10.5 tCO₂e, which is up 3% from 2000 levels (10.2 tCO₂e).
- CO₂ emissions from rural fuel* consumption have increased by 2% since 1990, driven by increasing coal consumption. Coal is one of the most emission intensive fuels in terms of both GHG and air pollutants.

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

RURAL AIR QUALITY CHALLENGES

All rural air quality stations in Poland reported PM emission levels above WHO guidelines

Map of rural air quality stations reporting PM_{2.5} emissions above WHO guidelines in 2017



- In the EU, fine particulate matter (PM_{2.5}) 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.
- 100% of rural air quality monitoring stations reported PM_{2.5} background emission levels in exceedance of WHO guidelines in 2017 (emission limits of 10 µg/m³ per calendar year).

Source: European Environment Agency

RURAL ENERGY MATTERS

Rural communities are often not connected to the natural gas grid. Indeed 44.5% of houses across Poland are not connected to the gas grid. As a substitute, coal is widely consumed for heating purposes.

Decarbonising heat will be necessary if Poland 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 which impact Poland'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.