

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.

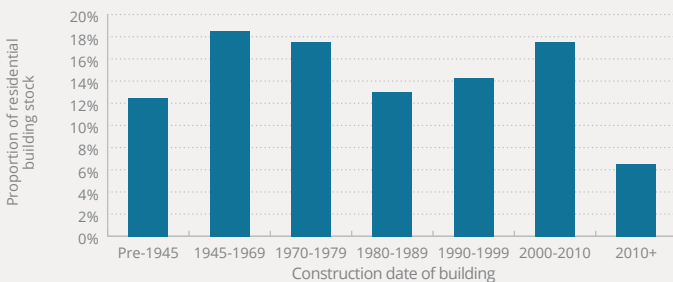
This series of country-profiles provides the reader with an accessible overview of the key rural energy challenges in selected EU member states and brings together important datapoints in an accessible review.

Rural Energy Matters

- **Heating oil is still used in rural areas.** 10% of homes' final energy consumption for heating comes is attributable to heating oil. This is likely to be dominant in rural areas, creating higher emissions and air pollution levels.
- **Rural energy poverty is widespread and has increased over the last decade.** 9.5% of the population in 'thinly populated' areas reported an inability to keep their home adequately warm – above the national average of 9.2%.
- **Rural greenhouse gas emissions from heating have remained stable over recent years.** Emissions from rural heating fuels have fallen by 27% since 1990 but increasing biomass consumption can lead to air quality problems.

AGE BREAKDOWN OF SPANISH BUILDINGS

Spain has a newer building stock than most other countries

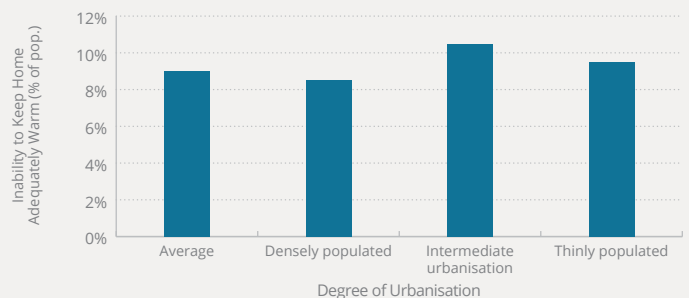


- 38% of Spanish dwellings were built after 1990, making it relatively newer than many housing stocks of European countries.
- However, rural homes tend to be older and larger than average. This means that a higher energy demand is required, which can result in higher fuel bills for rural households.

Source: [European Commission](#)

ENERGY POVERTY IN RURAL SPAIN

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

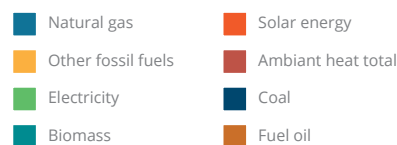
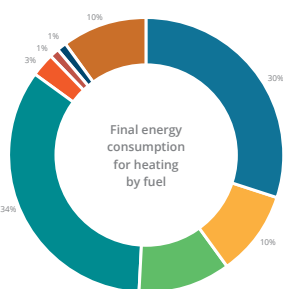


- Rural energy poverty in Spain appears to be an issue with nearly 10% of the population reporting an inability to keep their home adequately warm in 2016. This is above the national average.
- Since 2008, this proportion has increased from 5.5% to nearly 10% of properties in thinly populated areas.
- During 2016, over 4.7% of homes in 'thinly populated' areas reported that they had been in arrears on their utility bills in the preceding 12 months.

Source: [EPOV](#)



FINAL ENERGY CONSUMPTION FOR HEATING BY FUEL



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

The majority of final energy consumption for heating in Spain is derived from natural gas (30%) and biomass (34%).

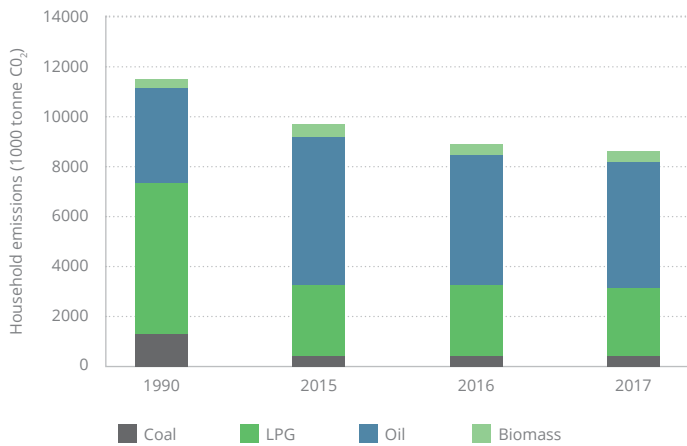
Fuel oil still makes up for 10% final energy consumption for heating in Spain, this is likely to be in rural areas, off the gas-grid.



Spain - Rural Energy Data

RURAL CO₂ TRAJECTORY

Off-grid household emissions have fallen over time



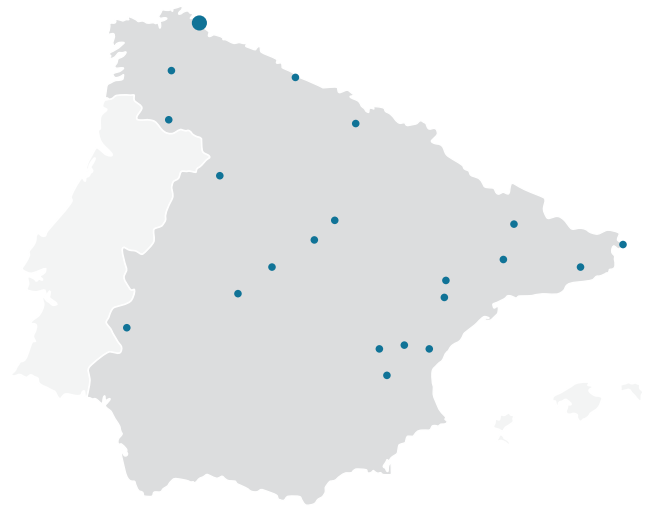
- Spain's greenhouse gas (GHG) emissions stand at 341 million tonnes (Mt) CO₂e. This is up from 292 MtCO₂e in 1990.
- Per capita emissions are at 7.3 tCO₂e, which is down 25% from 2000 levels (9.7 tCO₂e). However, over the past few years emission remain stable.
- CO₂ emissions from rural fuel* consumption have fallen by 27%. Transitioning away from heating oil consumption will be necessary to reduce rural emissions further.

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

RURAL AIR QUALITY CHALLENGES

Rural air quality in Spain is less of an issue than elsewhere in Europe

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.
- 5% 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. In 2017, 79% of the population live in areas connected to natural gas.

Decarbonising heat will be necessary if Spain 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 Spain's rural communities.

[Sedigas](#)



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.