

## Energy use in buildings

Disclaimer: The graphs below show data available in the EU Building Stock Observatory: a country not represented only means data was not available for this specific country.

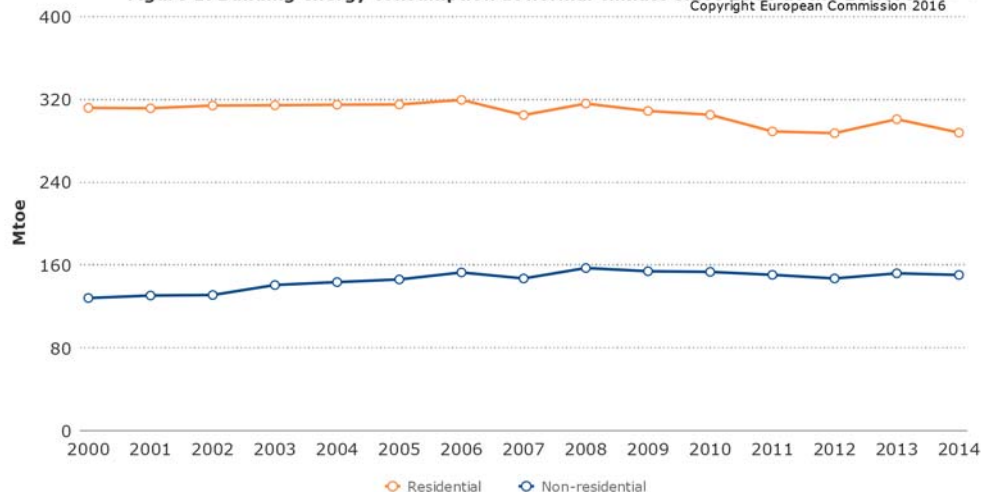
### Introduction

This factsheet describes selected quantitative results on the energy use stemming from the Building Observatory.

The energy consumption in buildings has been decreasing since 2008, in particular due to the efforts observed in the residential sector. This trend is due to energy efficiency improvements driven by various types of policy measures, higher energy prices and the recession.

**Figure 1: Building energy consumption at normal climate since 2000 at the EU level**

Copyright European Commission 2016



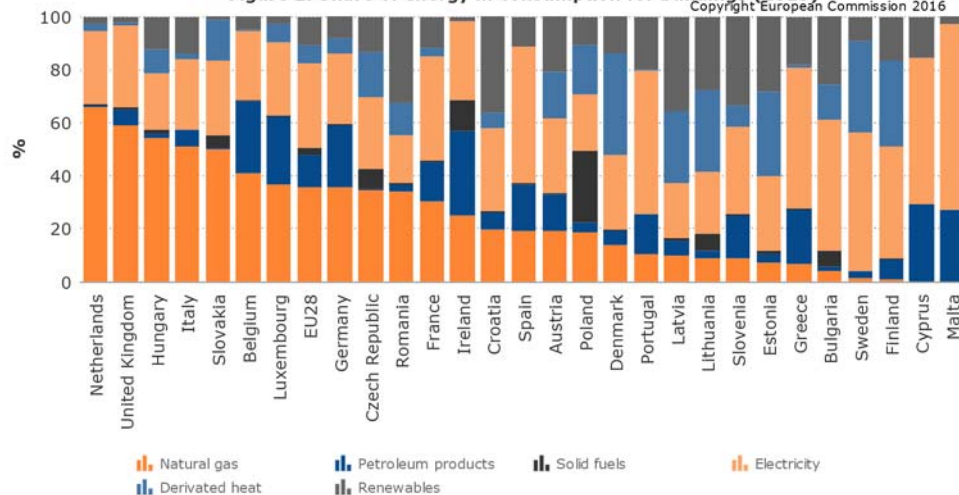
Sources: Calculation [Notes](#)

### Building consumption by energy

Gas energy consumption represents the highest share of energy use in buildings (residential and non-residential) on the EU level (36%) and it represents the largest consumption in several countries: at least 50% in Italy, United Kingdom and Hungary and above 60% of building energy consumption in the Netherlands. The second important energy use is electricity, 32% at EU level and up to 70% in Malta. Renewables and oil stand at 10%-12% of energy used for buildings at EU level and represents a third of the energy consumption in Ireland.

**Figure 2: Share of energy in consumption for buildings (2013)**

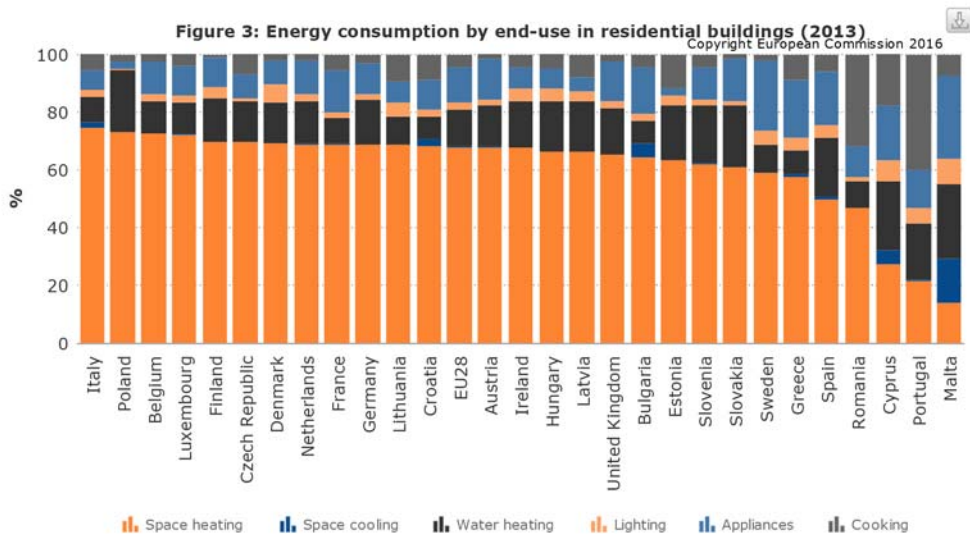
Copyright European Commission 2016



Sources: Eurostat [Notes](#)

### Energy consumption by end-use

Space heating is the most important end-use in the residential sector (68%). In most countries, the share of space heating represents 60-80% of the total energy consumption. In Malta, Cyprus and Portugal, the share of space heating is below 30% and just below 50% in Spain and Romania. Water heating ranks second with a quite considerable share (13%). Electrical appliances are becoming more important and represent 12% of the final energy consumption of residential buildings at the EU level. Cooking represents 5% of the total energy consumption and lighting just 2%.

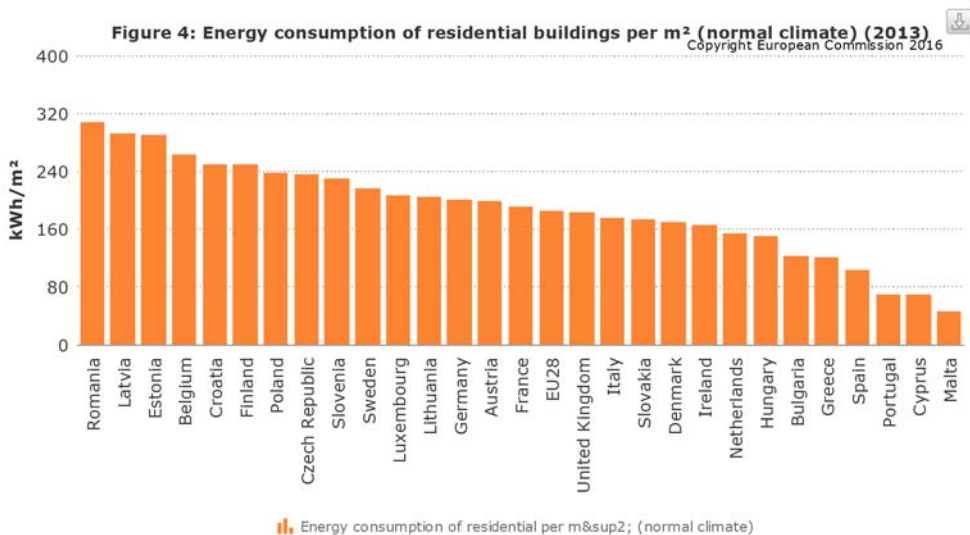


Sources: Calculation - Danish Energy Agency - Estimation - Eurostat - Odyssee [Notes](#)

Data on energy consumption by non-residential sub-sector is available for a limited number of countries.

### Energy consumption per m<sup>2</sup>

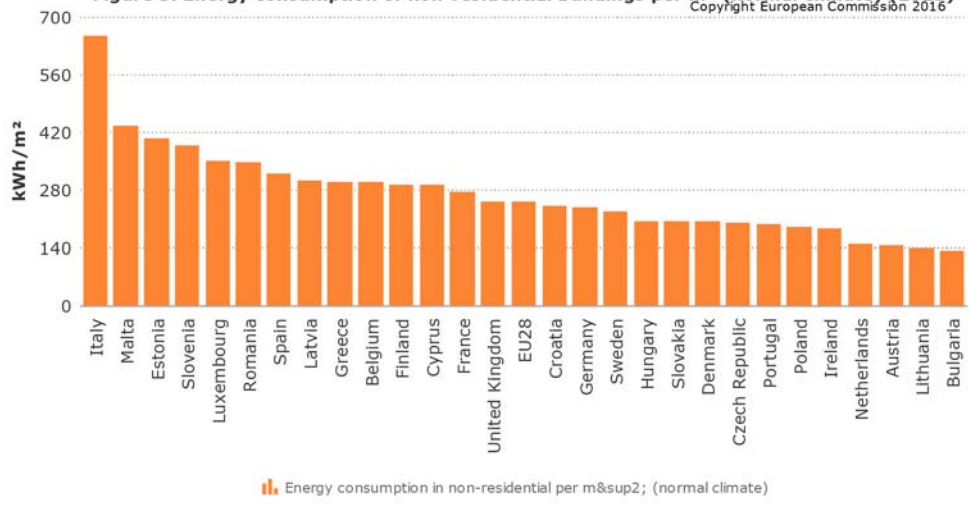
At the EU level, the average annual specific consumption per m<sup>2</sup> for all types of buildings was around 180 kWh/m<sup>2</sup> in 2013. It differs among countries: from 47 kWh/m<sup>2</sup> in Malta and 70 kWh/m<sup>2</sup> for Portugal or Cyprus, to 300 kWh/m<sup>2</sup> in Romania (or 290 kWh/m<sup>2</sup> in Latvia and Estonia) which is significantly higher than the EU average. However, even for countries with a similar climate, significant discrepancies exist (e.g. 210 kWh/m<sup>2</sup> in Sweden, 18% lower than Finland). Such differences are partly explained by climatic conditions and statistical definitions.



Sources: Calculation - Estimation [Notes](#)

Non-residential buildings are on average 40% more energy intensive than residential buildings (250 kWh/m<sup>2</sup> compared to 180 kWh/m<sup>2</sup>). As for residential buildings, energy consumption per m<sup>2</sup> in services is heterogeneous. Italy, Malta and Estonia use by far the largest amount of energy per m<sup>2</sup> (more than 1.5 times higher than the EU average). For the other countries, energy consumption per m<sup>2</sup> is much more homogeneous: most countries use between 200 and 300 kWh per m<sup>2</sup>.

**Figure 5: Energy consumption of non-residential buildings per m<sup>2</sup> (normal climate) (2013)**  Copyright European Commission 2016



Sources: Calculation - calculation

 Notes