Briefing
Statistical Spotlight
April 2015

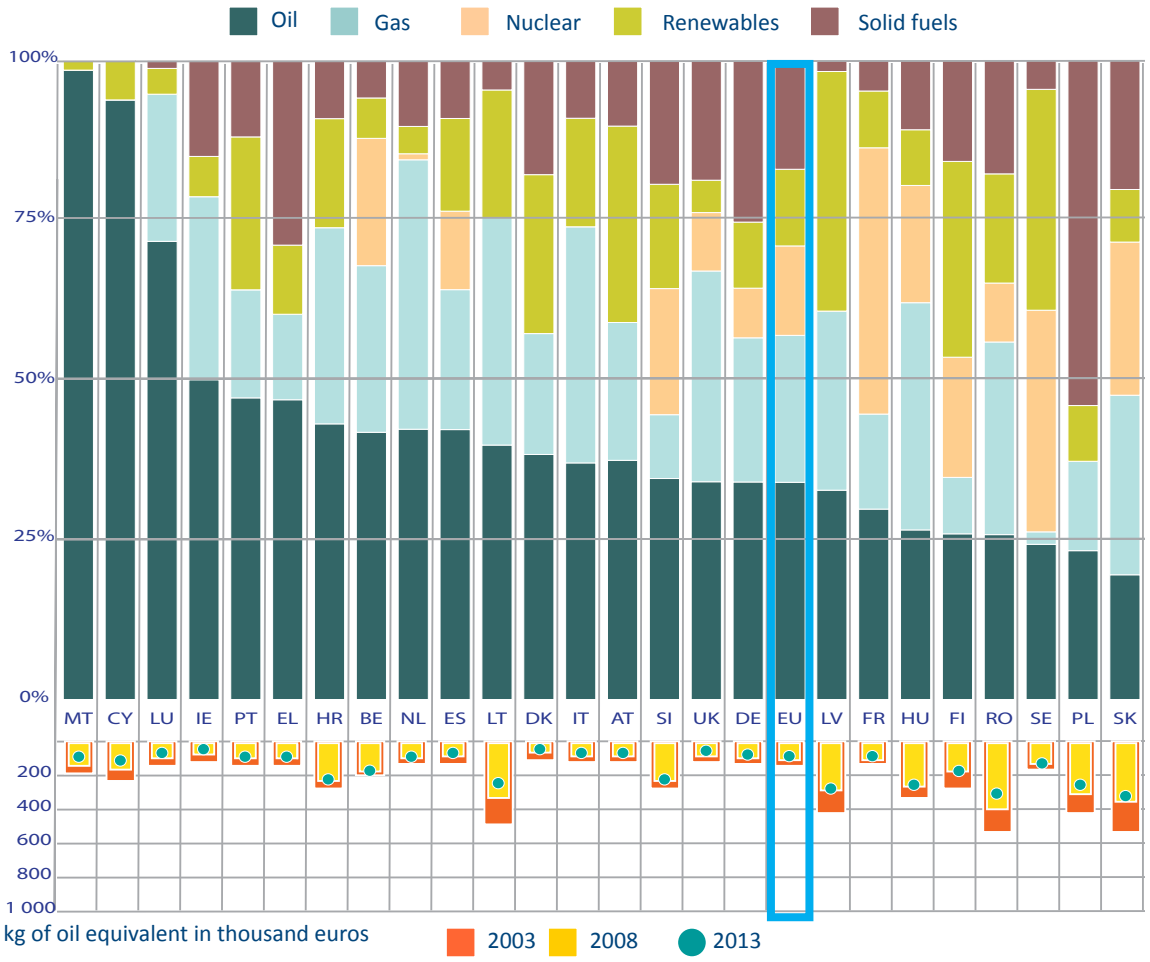
European Parliament

Energy consumption in the EU

The EU Energy Efficiency Directive sets targets to cut primary and final energy consumption, with countries required to submit action plans to achieve national targets. Whilst progress has been made, the overall picture of fuel sources and user consumption in the EU remains fragmented along national lines.

Energy consumption statistics measure both the use of primary fuels directly extracted or captured from natural resources, and of secondary energy sources which result either from energy transformation or from direct use of primary fuels, e.g. gas. Gross inland energy consumption (or total energy inputs to an economy) represents the quantity of energy necessary to satisfy the inland consumption of a country, whilst primary energy refers to energy consumed to produce energy. Final energy consumption includes all energy delivered to the final consumer (industry, transport, households and other sectors including services, fishing and agriculture).

1. Energy consumption by energy source in 2013, and energy intensity



Energy intensity, shown in the lower graph, is the ratio between energy consumption and GDP, and is used as an indication of the energy efficiency of a country. EU28 energy intensity fell from 169 kg to 142 kg oil equivalent per €1 000 from 2003 to 2013. Consumption fell from 1 797 to 1 666 million tonnes oil equivalent.

Further information on page 7

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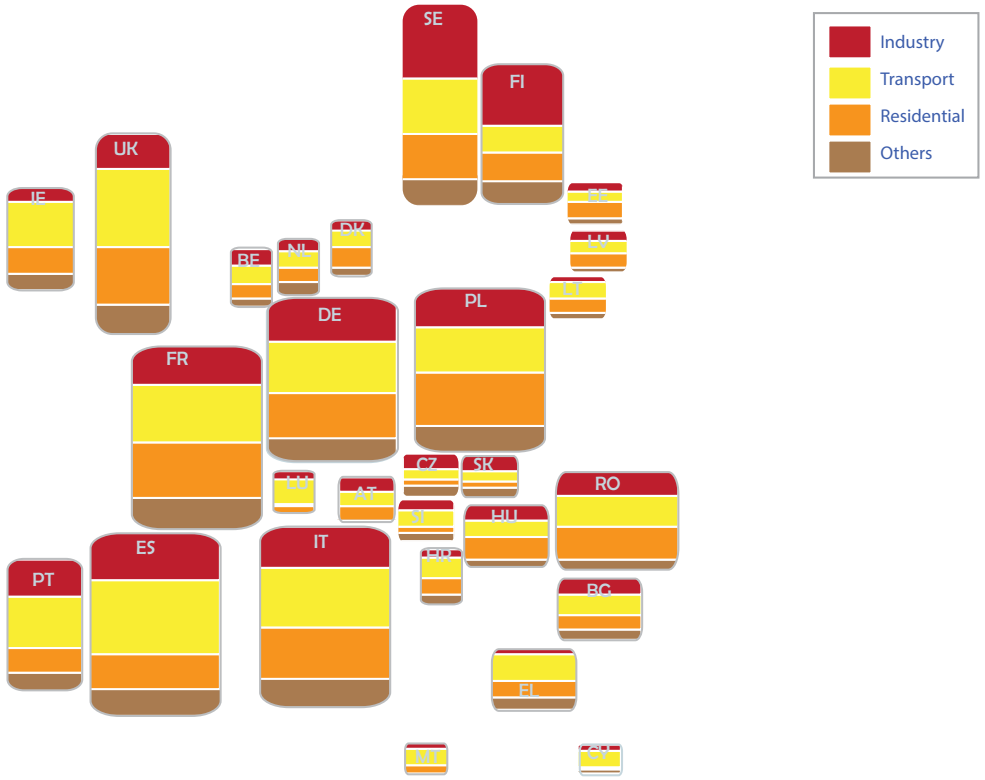
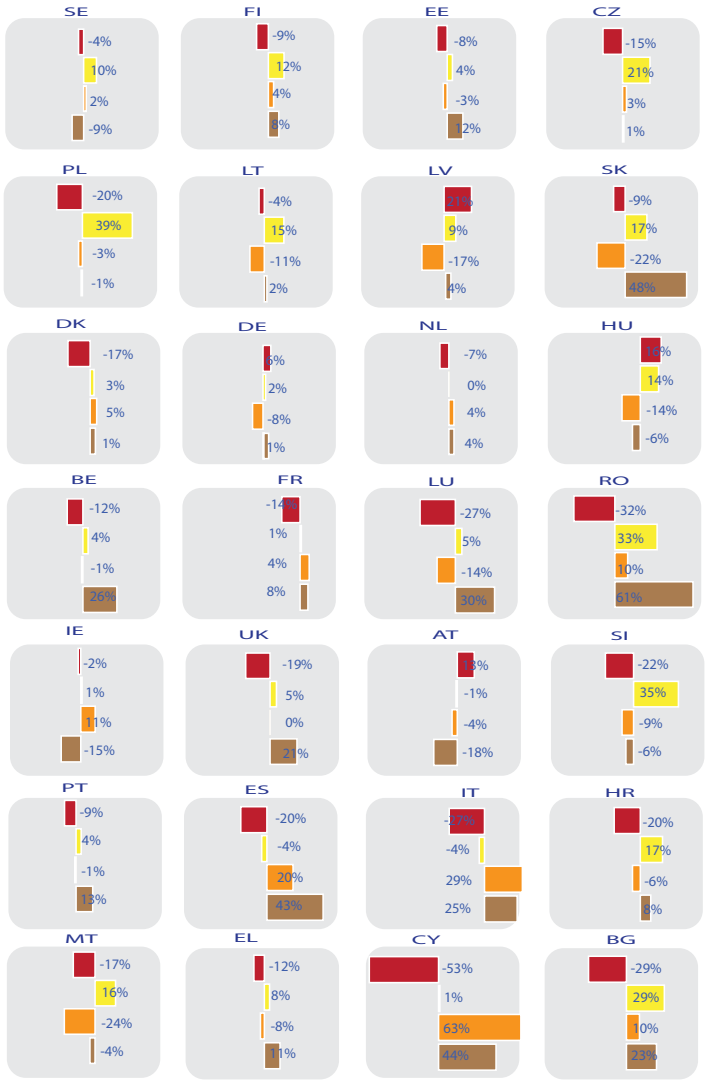
2. Final energy consumption by economic activity in 2013, and change since 2003



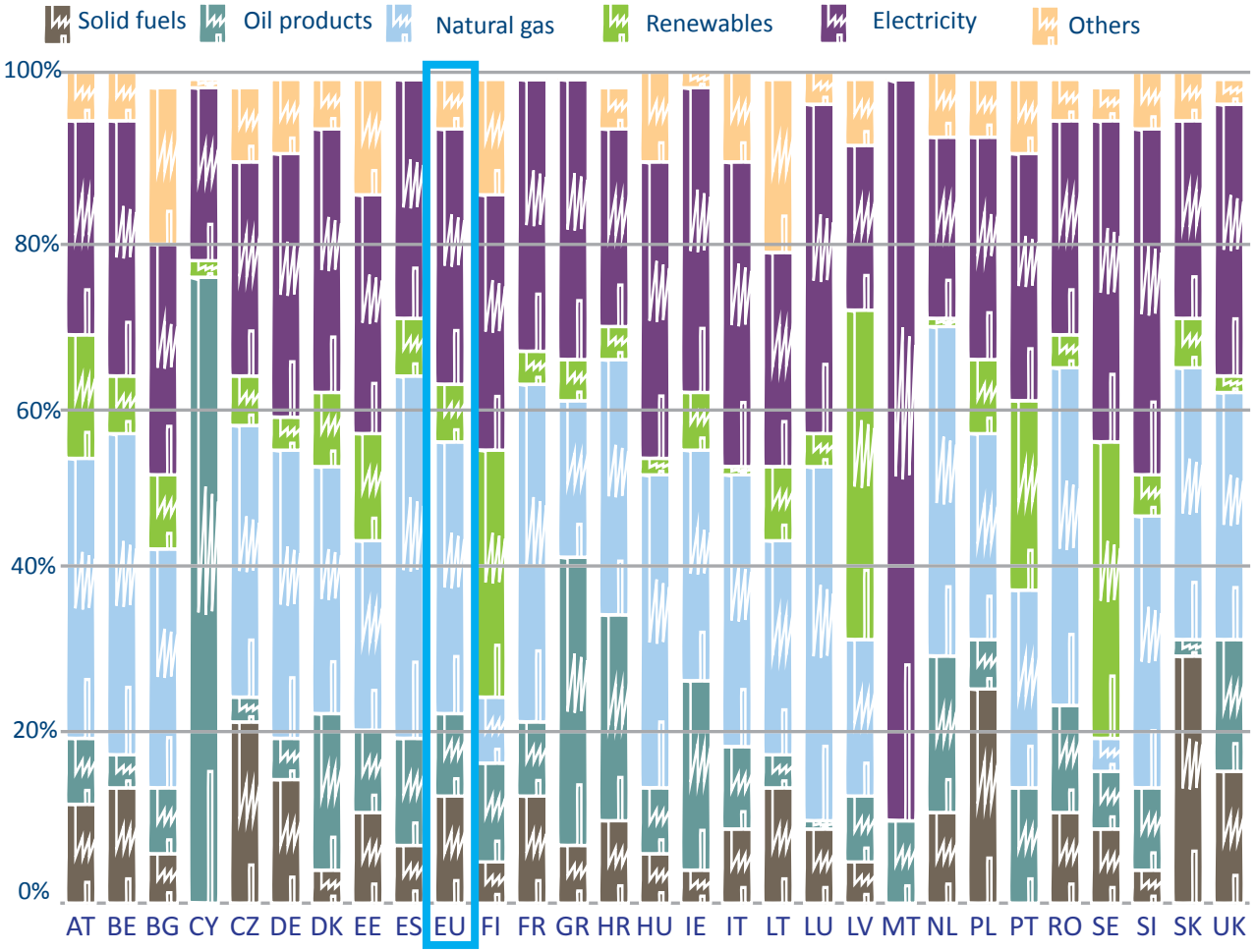


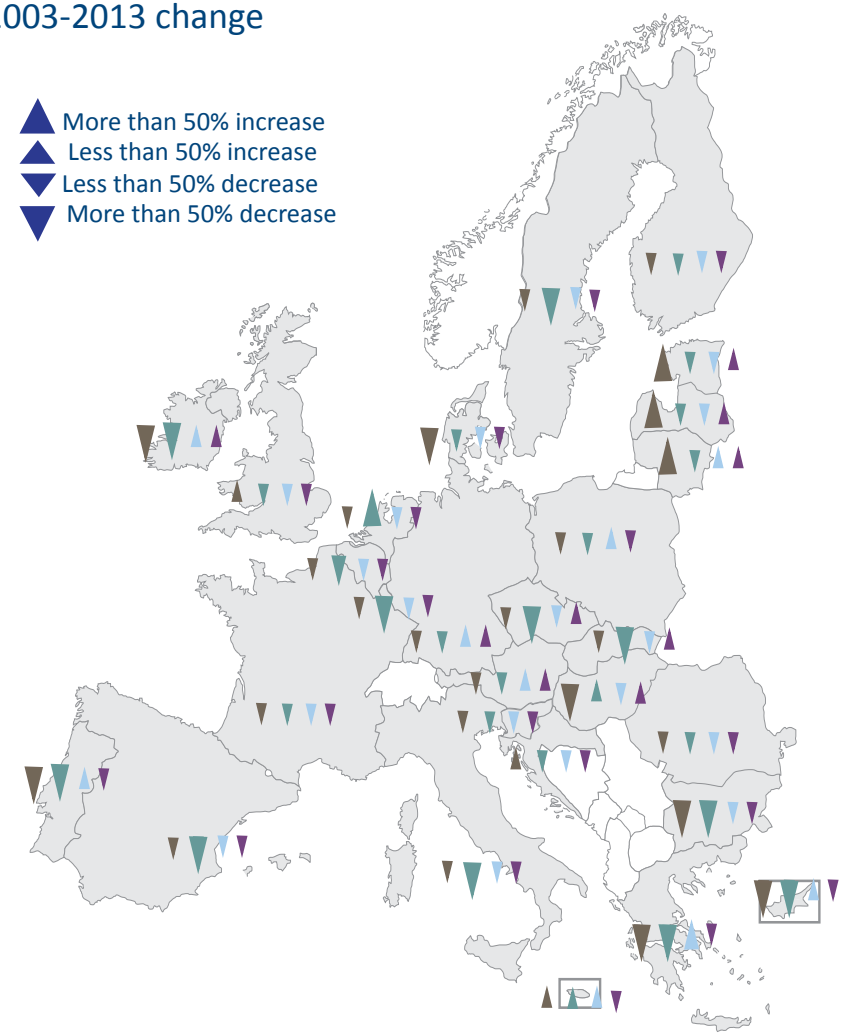
Energy distribution to the main EU economic sectors remained relatively stable from 2003 to 2013. Energy consumption by transport rose from 30% to 32%, and the industry share fell (from 28 to 25%). Finland consistently has the highest share of industry consumption of final energy (48% falling to 44%). Use of energy in transport activity is highest in Luxembourg (increase from 58% to 62%).

The energy consumption picture in several countries is changing: services sector consumption (under 'Others') in Belgium, Bulgaria, Cyprus, Spain, Italy, Luxembourg, and Slovakia has increased over 25% relative to 2003, and over 60% in Romania.

Further information on page 7

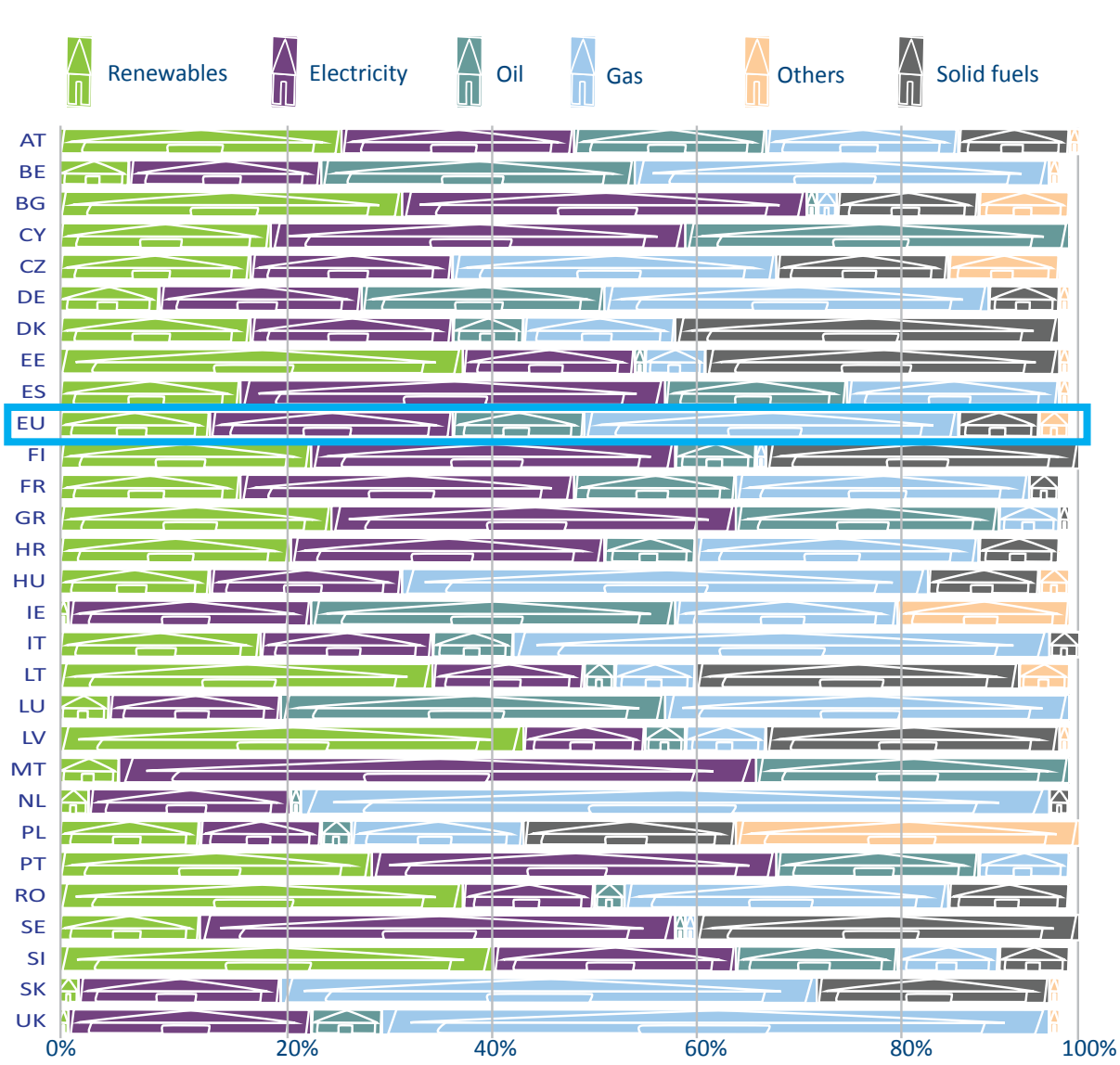
3. Industrial use of energy by source in 2013, and 2003-2013 change

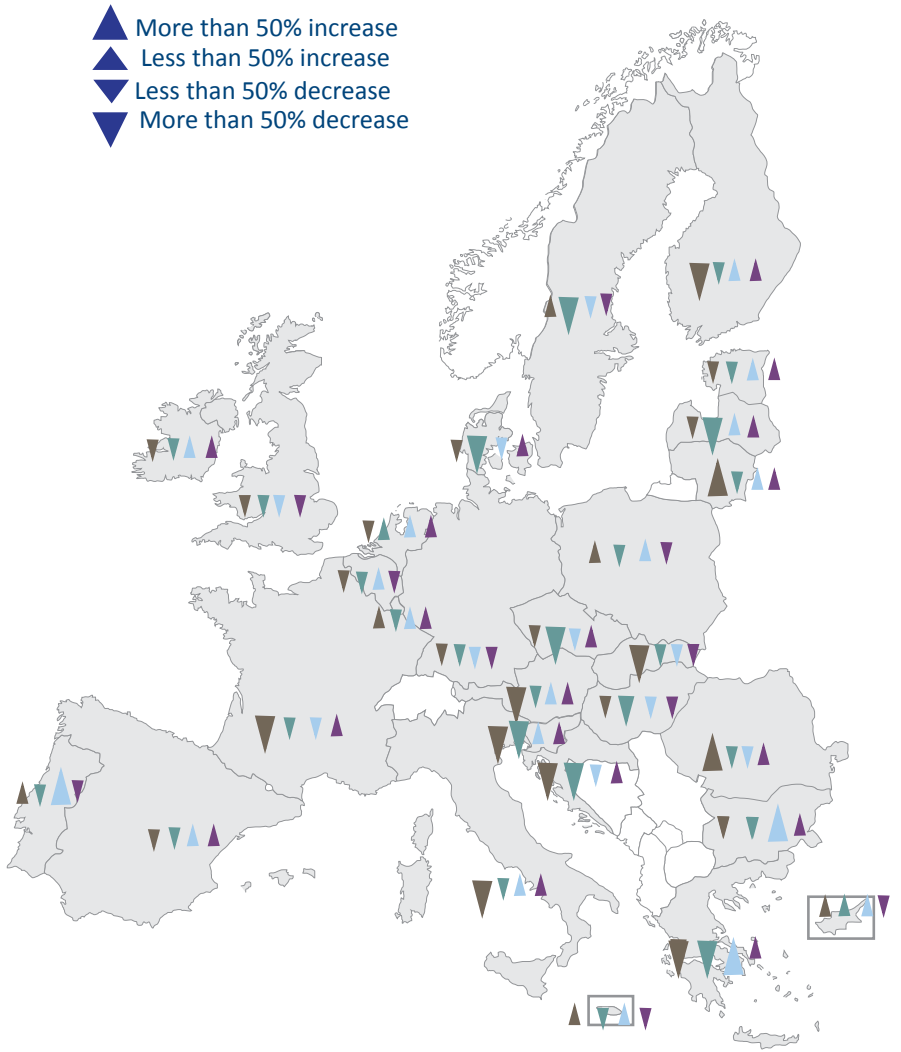




Further information on page 7

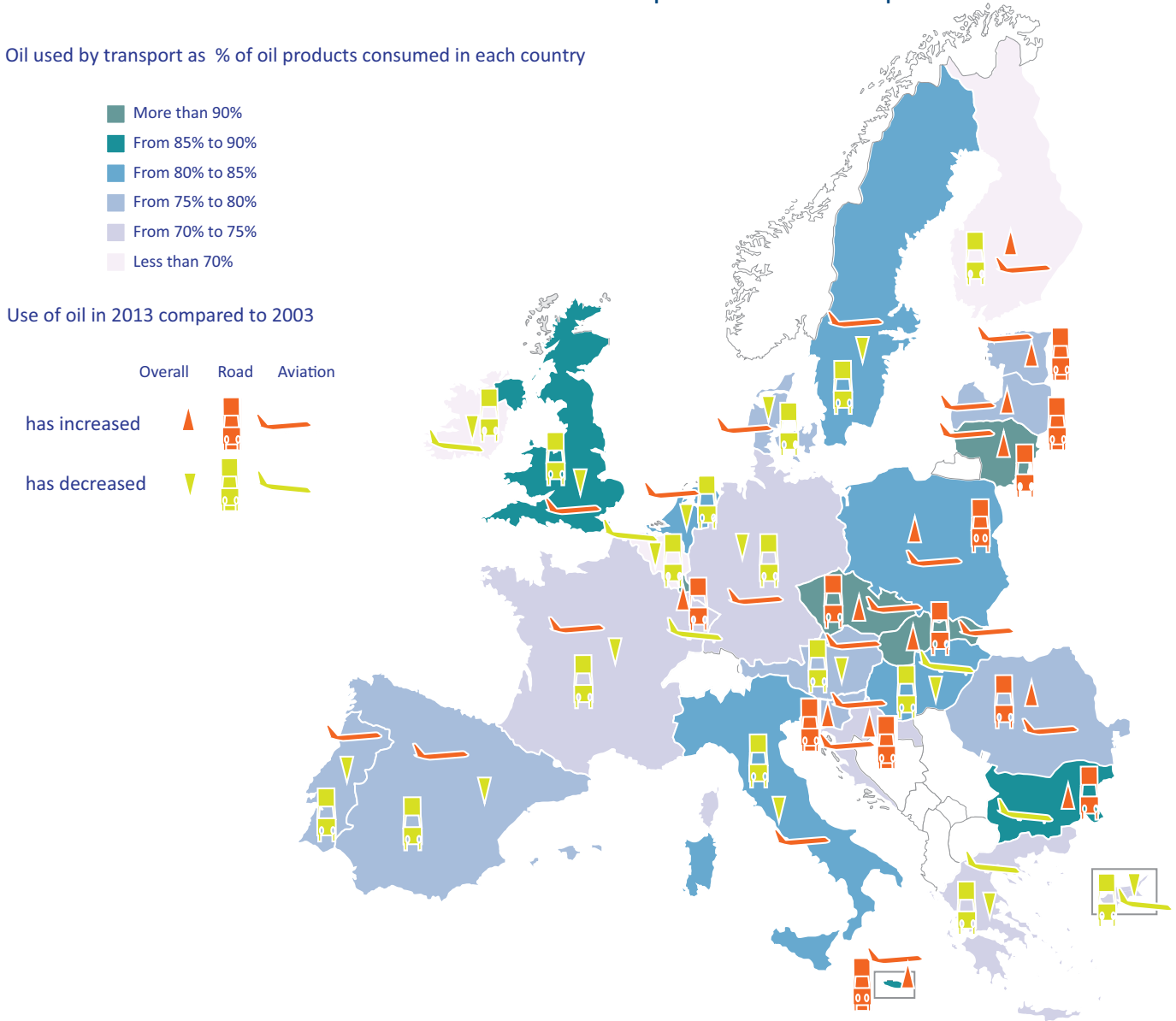
4. Household use of energy by source in 2013, and 2003-2013 change





Further information on page 7

5. Use of oil products for transport in 2013



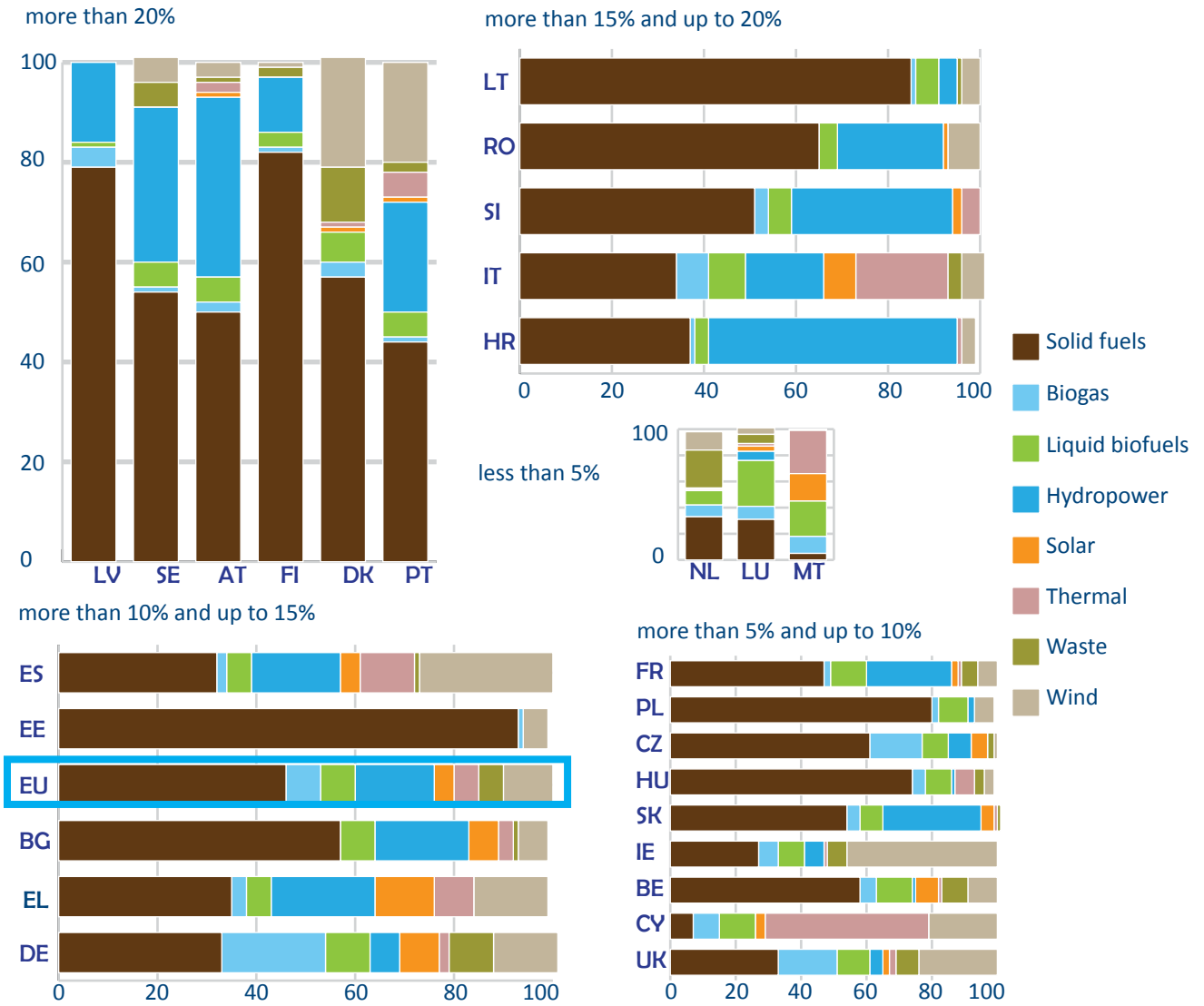
In 2013, the transport sector consumed over 326 million tonnes of oil derived fuels, equivalent to 77% of EU consumption of all petrol products (a drop of 6% against 2003). Despite this decrease, 2013 aviation oil consumption (50 million tonnes oil equivalent) rose by 10% against 2003.

In the Czech Republic, Lithuania, Luxembourg and Slovakia, transport sector consumption of oil fuels exceeded 90%, whilst, at less than 70%, it was lowest in Belgium, Ireland and Finland.

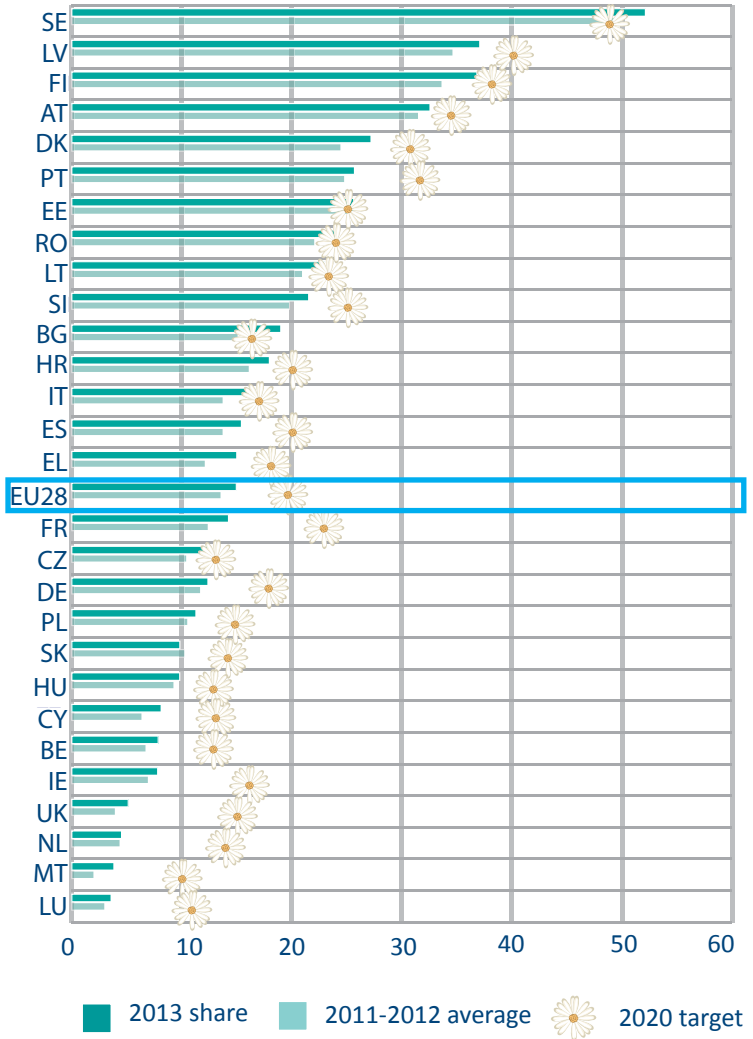
Further information on page 8

6. Energy from renewable sources in 2013

Countries are grouped by the share renewables represent in their total energy use



7. Renewables: Progress towards 2020 consumption targets



Further information on page 8

Further information

1. Energy consumption by energy source and energy intensity in 2013

Gross inland energy consumption is calculated by adding energy imports to total domestic energy production, minus energy exports and withdrawals from existing stocks (definition: European Environment Agency). This Sustainable Development Indicator was chosen to assess progress on EU Sustainable Development Strategy targets.

Energy intensity is measured as the ratio between gross inland energy consumption and GDP, and is often used as an energy efficiency indicator for a country. With unchanged GDP, a more energy-efficient economy will show a lower energy intensity ratio. The Climate and Energy Package set a non-binding 2020 target (1086 million tonnes oil equivalent final energy consumption) to achieve 20% energy savings against a 2008 baseline scenario, and the Energy Efficiciency Directive established binding measures to help EU countries to maximise energy efficiency at all stages of the energy chain.

Member States have adopted different baseline years for energy efficiency comparison.

2. Final energy consumption by sector in 2013, and 2003 change

Consumption of final energy covers energy supplied to the final consumer for all energy uses. Final energy usage patterns across the EU are presented as rectangles, the breakdown on the right shows energy use change in major economic sectors 2003-2013 for each country. 'Others' includes agriculture, fishing and services.

3. Industrial use of energy by source in 2013, and 2003-2013 change

Although the term energy refers strictly to heat and power, it is often used to include fuels, defined as substances burned as a source of energy. Energy commodities, like energy vectors or energy carriers, are used as synonyms and refer both to energy (as heat or power) and to fuels. Primary fuels are either extracted or captured directly from natural resources, whilst secondary energy sources may result either from the transformation of energy or be produced from primary fuels. Electricity generation may result from energy transformation either from a primary or a secondary source. (Manual of Energy Statistics).

Final energy consumption includes energy consumed by end users, excluding the energy sector.

This chart shows final energy consumption by industry sector, and transformation of fuels by the energy transformation sector, rather than industrial consumption, which is excluded.

The direction of the triangles on the map shows change in consumption of the four main types of fuel 2013-2003. Triangle size indicates change magnitude (more or less than 50%).

Overall EU industry consumption fell In the map from 333 to 277 million tonnes of oil equivalent (Mtoe). Cyprus and Romania saw the largest reductions, and only Austria (19%), Lithuania (8.3%), Malta (2.9%) and Germany (2.6%) reported increases.

4. Household use of energy by source in 2013, and 2003-2013 change

Household final energy consumption covers quantities consumed by private households. Eurostat's data accuracy is affected by emerging liberalisation processes in some countries. Waste from non-renewable sources, transmission losses and inaccuracies account for the differences in the totals.

5. Use of oil products in transport in 2013

The map presents the volume of oil and petrol used by transport as a share of all petrol products used in each country. Icons represent the changes in

transport sector consumption of oil products: From 2003-2013 oil product use in Poland, Malta, Slovenia and Slovakia grew over 25%, whilst consumption fell by over 15% in Portugal, Spain, Italy and Greece.

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6. Energy from renewable sources in 2013

Energy from renewable sources means energy from renewable non-fossil sources, namely solid biofuels, solar photovoltaic, thermal, hydropower, liquid biofuels, renewable municipal waste and wind.

These charts are grouped by the share of renewables in the gross inland consumption of each country. Whilst they represent over 20% in Latvia, Sweden, Austria, Finland, Denmark and Portugal, in nine countries they are between 5-10%, and in the Netherlands, Luxembourg and Malta less than 5%.

Wood and other solid biomass are the largest contributors to the renewables mix, representing 46% of EU renewables, and more than 50% in 14 Member States. EU renewables mix diversity corresponds to national characteristics: biogas constitutes over 20% of the mix in Germany alone, liquid biofuels in Luxembourg and Malta (respectively 35% and 27%). Hydropower represents over 50% of Croatian renewables, while counting for over 20% in eight other countries. Solar's share is above 20% in Malta, where this is also the case for thermal origin renewable energy, which counts for 50% of the mix in Cyprus. Wind accounts for 46% in Ireland, 27% in Spain, 24% in the United Kingdom and 21 and 22% respectively in Cyprus and Denmark.

7. Renewables: progress towards 2020 consumption targets

In 2013, the EU28 share of renewable final energy consumption reached 15%, up from 10.5% in 2008, and from an average of 13.5% in the two previous years, which is in line with achieving the 2020 20% renewables target. According to the National Renewable Energy Action Plans adopted by EU countries in 2010, a 20.6% renewables share should be achieved, which implies a growth rate of absolute renewables consumption of 5.4% per year.

Notes

Country codes: Austria (AT), Belgium (BE), Bulgaria (BG), Croatia (HR), Cyprus (CY), Czech Republic (CZ), Denmark (DK), Estonia (EE), Finland (FI), France (FR), Germany (DE), Greece (EL), Hungary (HU), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Poland (PL), Portugal (PT), Romania (RO), Slovakia (SK), Slovenia (SI), Spain (ES), Sweden (SE), United Kingdom (UK), European Union (EU28).

Data source: Eurostat

Extraction date: data extracted in March 2015 .

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