EUROPEAN
COMMISSION

Brussels, 18.11.2015
SWD(2015) 245 final

PART 1/2

COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

Assessment of the progress made by Member States towards the national energy efficiency targets for 2020 and towards the implementation of the Energy Efficiency Directive 2012/27/EU as required by Article 24 (3) of Energy Efficiency Directive 2012/27/EU

{COM(2015) 574 final}

TABLE OF CONTENTS

1. INTRODUCTION

Article 24(3) of Directive 2012/27/EU on Energy Efficiency (EED) requires the Commission to evaluate the National Energy Efficiency Action Plans (NEEAPs) and Annual Reports of Member States and to assess their progress towards the implementation of the Directive. The Commission submitted its assessment in Report from the Commission to the European Parliament and the Council COM(2015) 574.

Report COM(2015) 574 is based on a set of indicators and an assessment of the information provided by Member States in their NEEAPs and Annual Reports. This staff working document provides further information on the analysis which has been undertaken by the Commission. The chosen indicators are described in detail in the following subchapters and additional graphs of the main indicators provided in the Annual Reports can be found in Annex II.

2. CURRENT PROGRESS

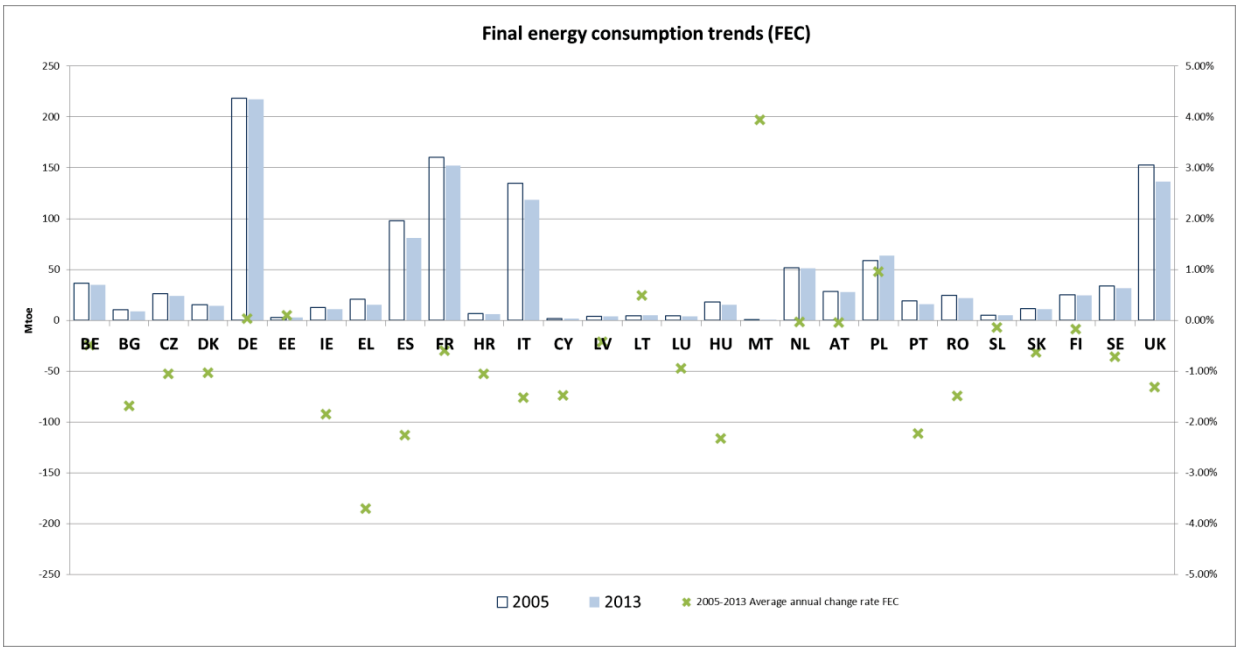
As described in Report COM(2015) 574, final energy consumption (FEC)[1] of EU-28 dropped from 1186 Mtoe in 2005[2] to 1105 Mtoe in 2013.[3] This equals a reduction of final energy consumption in 2013 by 18.6 % compared to 2020 projections. The absolute final energy consumption of all Member States except Estonia, Germany, Lithuania, Malta and Poland has declined since 2005.

[1] Final energy consumption is the energy supplied to industry, transport, households, services and agriculture excluding deliveries to the energy transformation sector and the energy industries themselves. Eurostat data used with code nrg_100a.

[2] 2013 is the most recent year for which data are available from Eurostat. 2005 was chosen because it allows consistency with the EU energy and climate framework where both the GHG and RES targets are set against 2005 as the base year. 2005 is also seen as the break point by Marvin J Horowitz and Paolo Bertoldi: A harmonized calculation model for transforming EU bottom-up energy efficiency indicators into empirical estimates of policy impacts, in Energy Economics 51(2015).

[3] This document refers to Member States' data published by Eurostat for comparability reasons mainly. The data provided by Member States in the Annual Reports according to Article 24(1) and Annex XIV of the EED are often based on different or unknown definitions and sources. The Commission will try to further align the data reported under Article 24(1) and Annex XIV of the EED in the future.
The average change rates of the different indicators are calculated for each year of the indicated time period (here 2005-2013) and then divided by the number of years of this time period. This method was applied to take into account the changes between the years and not only the changes between the first and the last of the indicated time period. This method is applied for all calculations of average change rates in this document.

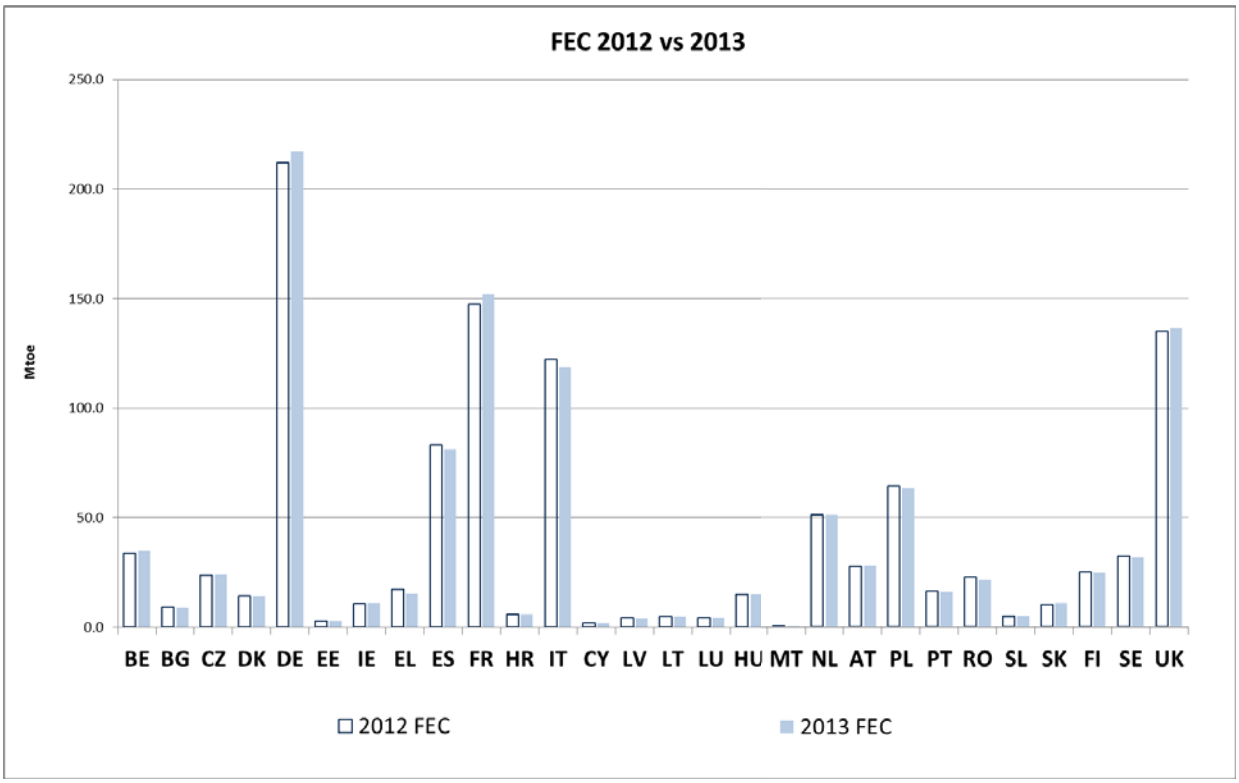
Figure 1: Final energy consumption 2005-2013



Source: Eurostat

Looking at the short term trends, final energy consumption increased from 1102 Mtoe in 2012 to 1105 Mtoe in 2013. There were increases in Austria, Belgium, Czech Republic, France, Germany, Hungary, Ireland, the Netherlands, Slovakia and the United Kingdom.

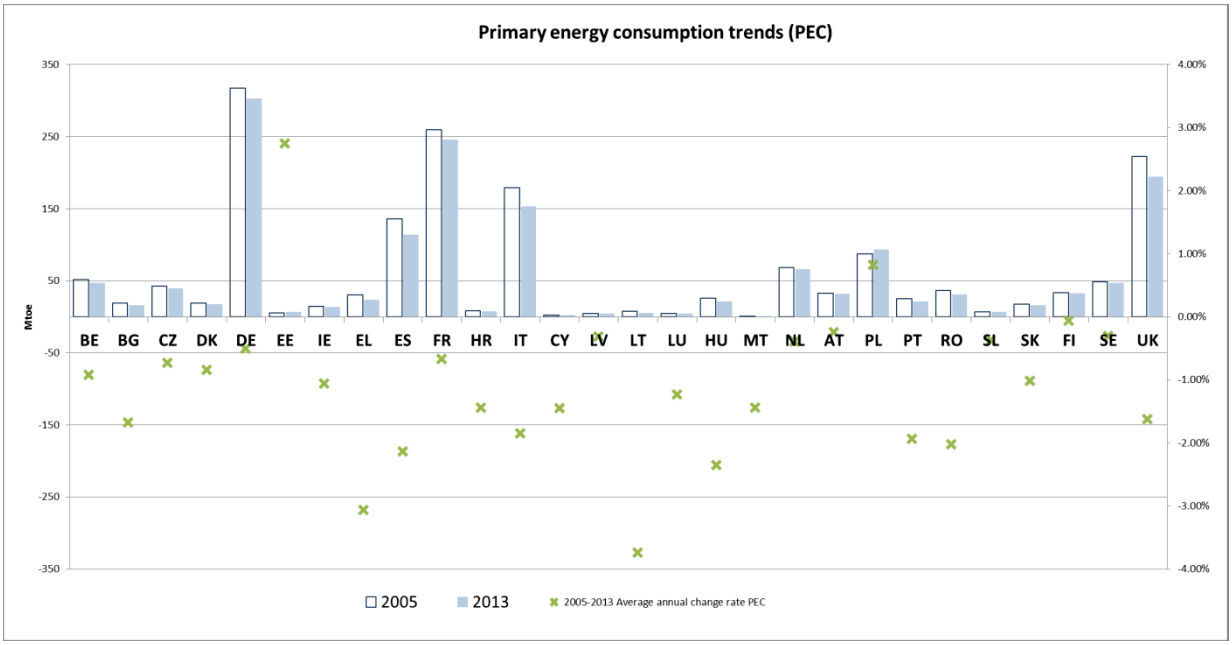
Graph 2: Final energy consumption 2012 and 2013



Source: Eurostat

Primary energy consumption (PEC)[4] of EU-28 dropped from 1709 Mtoe in 2005 to 1567 Mtoe in 2013. This equals a reduction of primary energy consumption in 2013 by 15.5 % compared to 2020 projections. The absolute primary energy consumption of all Member States except Estonia and Poland has declined since 2005.

Figure 3: Primary energy consumption 2005-2013

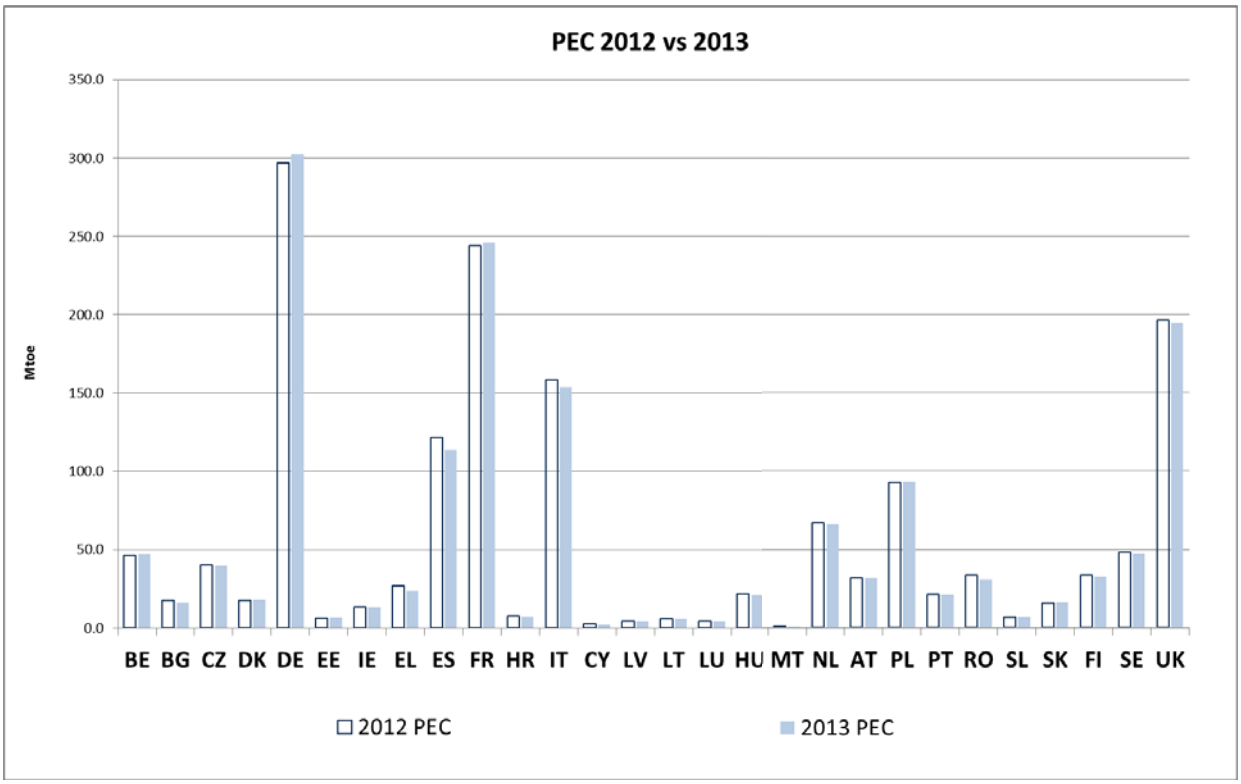


Source: Eurostat

When looking only at the short term trends from 2012 to 2013 which are provided in the Annual Reports 2015 and are available on Eurostat, it can be seen that most Member States lowered their primary energy consumption to close their gap towards the 2020 target. However Belgium, Denmark, Germany, Estonia, France, Poland, Portugal and Slovakia increased their primary energy consumption in 2013 compared to 2012.

[4] Primary energy consumption is the gross inland consumption excluding non-energy uses. It includes generation/ transformation losses, the consumption of the energy transformation sector and network losses compared to final energy consumption. Eurostat data used with code nrg_100a.

Graph 4: Primary energy consumption 2012 and 2013



Source: Eurostat

3. NATIONAL TARGETS

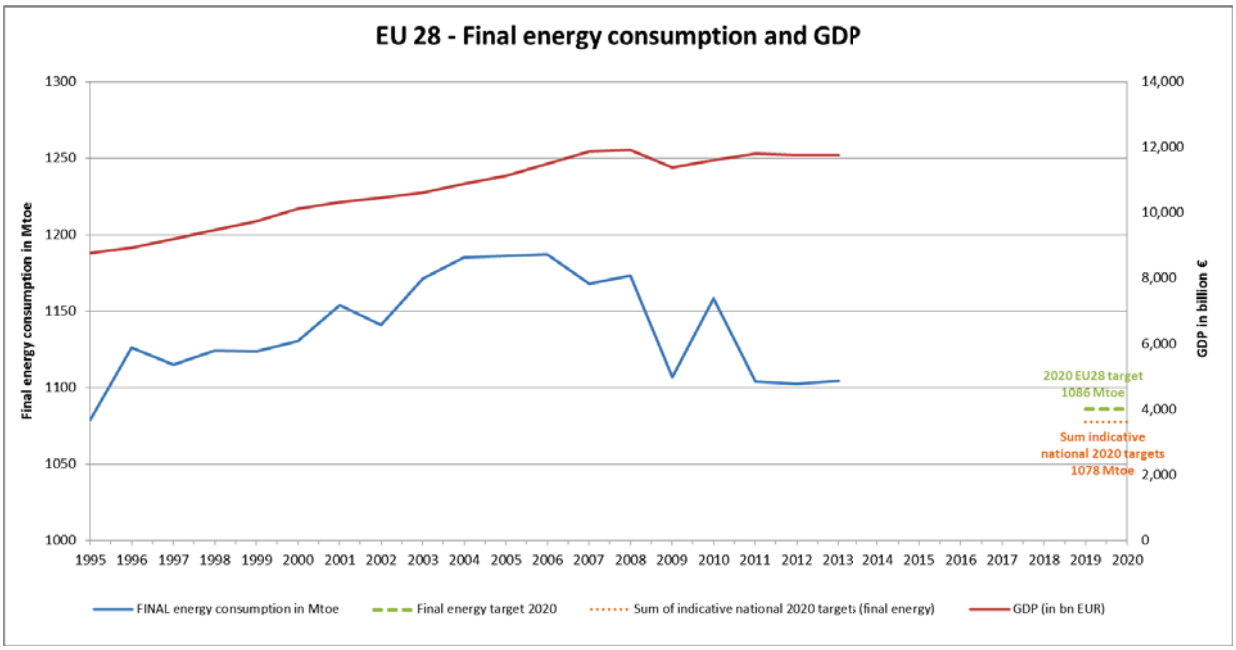
Article 3 of the EED sets out the Union's energy consumption target for 2020 of not more than 1483 Mtoe of primary energy consumption or not more than 1086 Mtoe of final energy consumption. This equates to a 20 % saving compared to projections made in 2007.

In 2013, when national energy efficiency indicative targets for 2020 were set for the first time, the Commission calculated that the sum of national targets set by Member States, in terms of primary energy, corresponded to 16.4% of primary energy savings compared to projections. In 2014, the Commission concluded in its Energy Efficiency Communication of July 2014 (COM(2014) 520 final) that the EU will achieve energy savings of around 18-19 % in 2020 taking into account the effects of the economic recession and other factors like the impacts of e.g. Ecodesign which will further help to reduce energy consumption. It was highlighted that the full implementation of the existing energy efficiency legislative framework and the improvement of the financing conditions of energy efficiency investments are key to achieve the 20 % energy efficiency target by 2020.

Several Member States have changed the level of ambition of their national targets as regards primary and/or final energy consumption compared to their initial targets set in 2013.[5] Austria, Bulgaria, Croatia, Cyprus, Greece, Hungary, Italy, Slovakia, and Spain have set more ambitious targets for 2020 expressed in final energy consumption which will help the European Union to achieve its 2020 target. Only Malta and Poland have notified less ambitious targets compared to their initial targets.

[5] The new targets were notified to the European Commission in the NEEAPs of 2014 or directly to the Commission. An overview of the indicative targets can be found in Annex I.

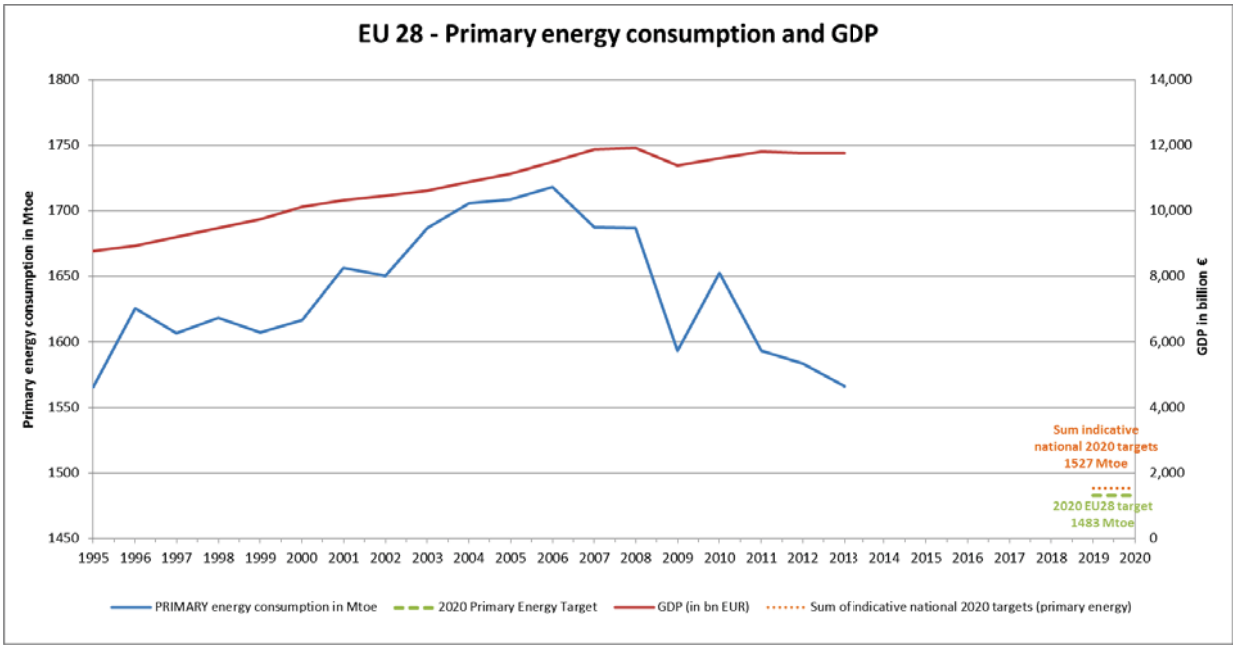
Figure 5: 2020 targets expressed in final energy consumption



Source: Eurostat, Member States

As regards primary energy consumption, Cyprus, France, Greece, Hungary, Malta, Spain, and Sweden have notified more ambitious indicative targets compared to their initial targets, whereas Bulgaria, Croatia and Slovakia have reduced their level of ambition. As a result, the sum of the national indicative targets now corresponds to 17.6 % primary energy savings compared to projections for 2020. While this represents a welcome improvement compared to the first set of notified targets, it still falls short of the EU target to save 20 % of primary energy compared to projections in 2020. However, data on recent progress suggest that a more optimistic conclusion can be drawn.

Figure 6: 2020 targets expressed in primary energy consumption

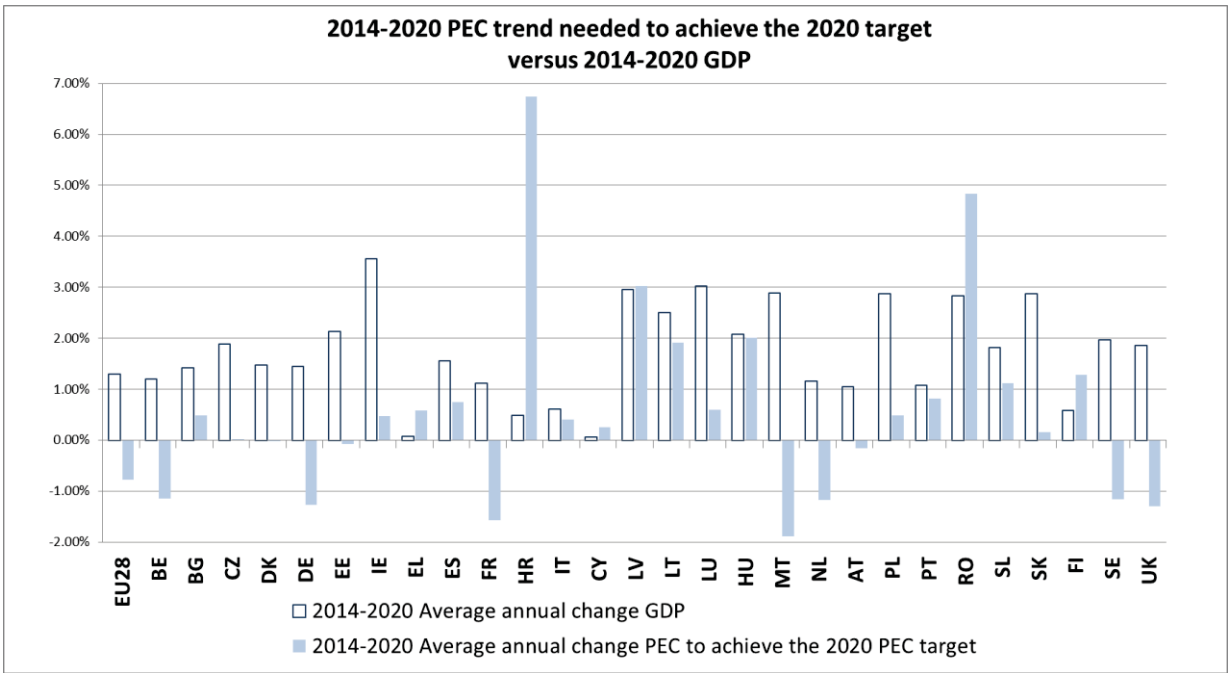


Source: Eurostat, Member States

The scale of the challenge for the achievement of their 2020 target for individual Member States can be measured by comparing the average annual change in energy consumption between 2014 and 2020 which will be necessary to achieve the national indicative target with the expected economic growth (for 2014-2016 from the ECFIN spring 2015 forecasts[6] and for 2017-2020 from ECFIN 2015 medium term forecast). The objective of energy efficiency is to decouple energy consumption from economic growth due to efficiency gains. Therefore, energy consumption should not be proportionate to economic growth.

Austria, Belgium, France, Germany, Malta, Netherlands, Sweden and the United Kingdom have set themselves ambitious targets with regard to their GDP forecast for 2014-2020. However, Croatia, Finland, Greece and Romania have set indicative primary energy consumption targets for 2020 which would allow them to increase their primary energy consumption in the next years considerably, even more rapidly than the expected average GDP growth in 2014-2020.

Figure 7: Average annual registered and forecasted GDP 2014-2020 vs average annual PEC reductions 2014-2020 necessary to reach national indicative PEC targets in %.



Source: Eurostat, ECFIN, notifications of Member States[7]

Using the expected primary energy consumption and GDP in 2020[8] to calculate the energy intensity of the whole economy shows that Croatia would increase its energy intensity to 312 ktoe/M€ in 2020 compared to 205 ktoe/M€, which was the level in 2013. Accordingly, the 2020 energy intensity would be higher than the maximum historical energy intensities in the period 2005-2013 (228 ktoe/M€ in 2005). For all other Member States, the estimated energy intensity in 2020 is within the range of historical energy intensities from 2005-2013 or even lower.

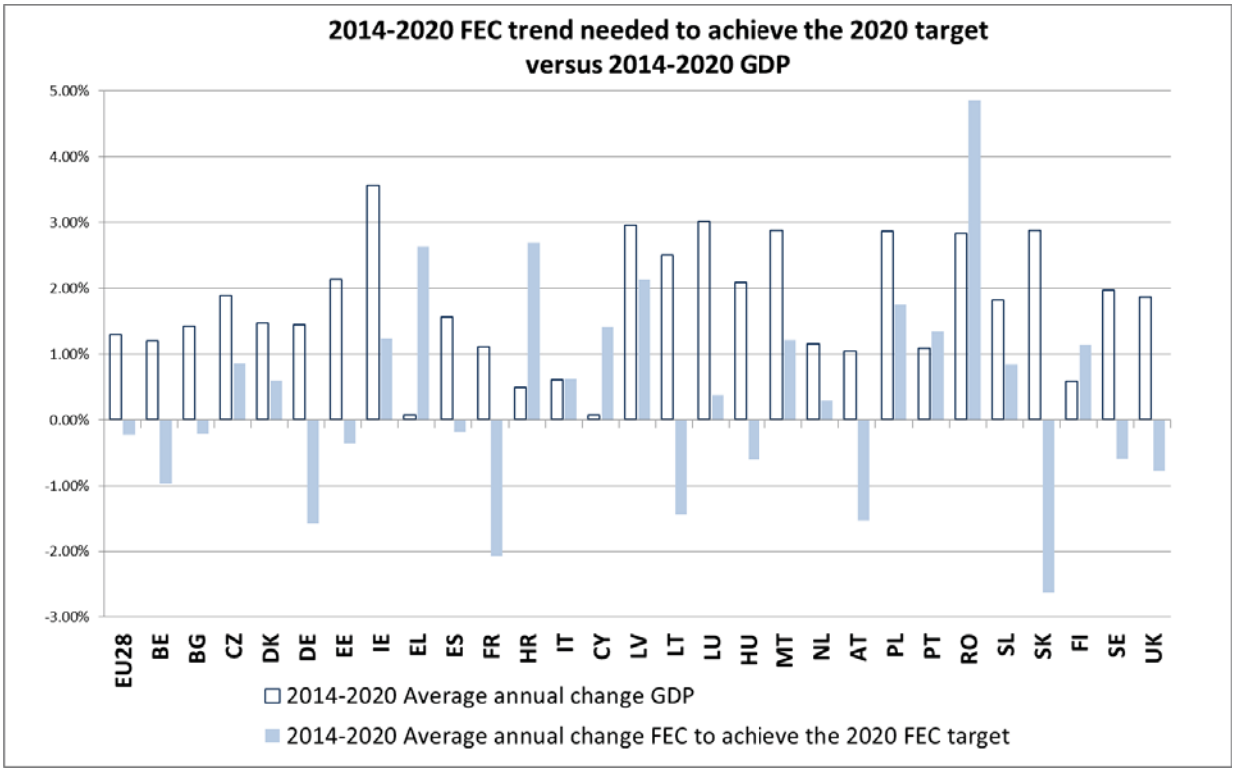
[6] European Commission, European Economic Forecast Spring 2015 http://ec.europa.eu/economy_finance/publications/european_economy/2015/pdf/ee2_en.pdf.

[7] The average annual change PEC from 2014 to 2020 to achieve the 2020 PEC target is 0% for the Czech Republic, Denmark, Estonia. Therefore, no column appears for these Member States in the graph.

[8] Based on the ECFIN 2015 medium term forecast.

The situation is similar when looking at the level of ambition of the indicative 2020 targets expressed in terms of final energy consumption compared to GDP forecasts for 2014 to 2020. the level of the indicative targets set by Croatia, Cyprus, Finland, Greece, Italy, Portugal and Romania are not ambitious enough as final energy consumption is projected to be higher than the forecast GDP development from 2014 to 2020.

Figure 8: Average annual registered and forecast GDP 2014-2020 vs average annual FEC reductions 2014-2020 necessary to reach national indicative FEC targets in %.



Source: Eurostat, ECFIN, notifications of Member States

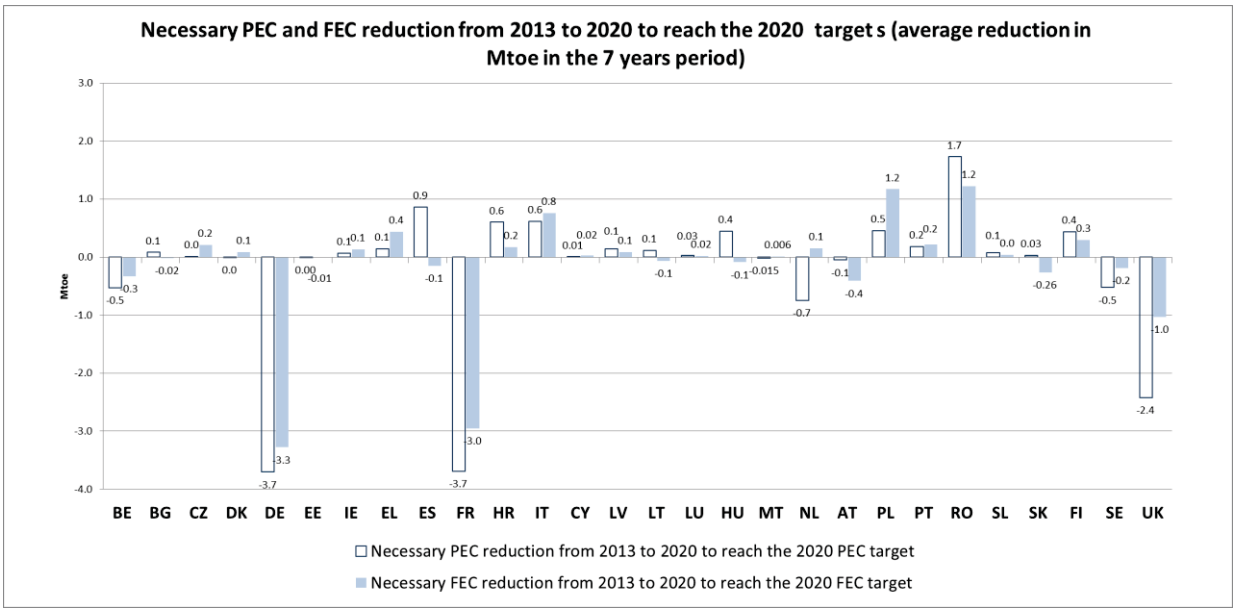
Figure 9 shows the average annual change in primary and final energy consumption which Member States need to realise from 2013 until 2020 to achieve their indicative national targets in 2020. The required efforts depend on the ambition level of each Member State and the progress achieved already. For some Member States the required efforts to achieve the 2020 target expressed in primary energy consumption might differ from the effort needed to achieve the 2020 target expressed in final energy consumption as Member States have set different ambition levels for the two. Whereas some concentrate on the decrease of primary energy consumption (e.g. through an increase of efficiency in their generation sector or the decrease of network losses) other Member States focus mainly on the final energy sector.

Data show that Austria, Belgium, Germany, France, Sweden and the United Kingdom would need to further decrease their current energy consumption expressed in primary and final energy consumption to achieve their indicative national targets. Malta and the Netherlands would need to further reduce their primary energy consumption; Bulgaria, Estonia, Lithuania, Slovakia and Spain would need to focus on final energy reductions in particular.

Even if the other Member States might have already achieved a level of energy consumption which equals or is below their indicative national 2020 targets, they would need to make an effort to keep this level or to further decrease it. In particular, if GDP is projected to grow in

the next years, weather conditions change or other factors change, holding consumption more or less constant is challenging if a Member States does not implement strong energy efficiency measures. It needs to be highlighted that figure 9 gives just an indication on the pace of energy consumption reduction which is needed in the next years to achieve Member States' indicative 2020 targets (allowed increase in energy consumption for Member States which have set indicative 2020 higher than their 2013 energy consumption levels). Figure 9 does not take into account possible future changes in economic growth, change in weather conditions or other factors influencing the future energy consumption.

Figure 9: Necessary annual PEC and FEC reduction from 2013 to 2020 to reach the 2020 targets



Source: DG ENER calculations based on Eurostat and notifications of Member States

4. ENERGY CONSUMPTION TRENDS

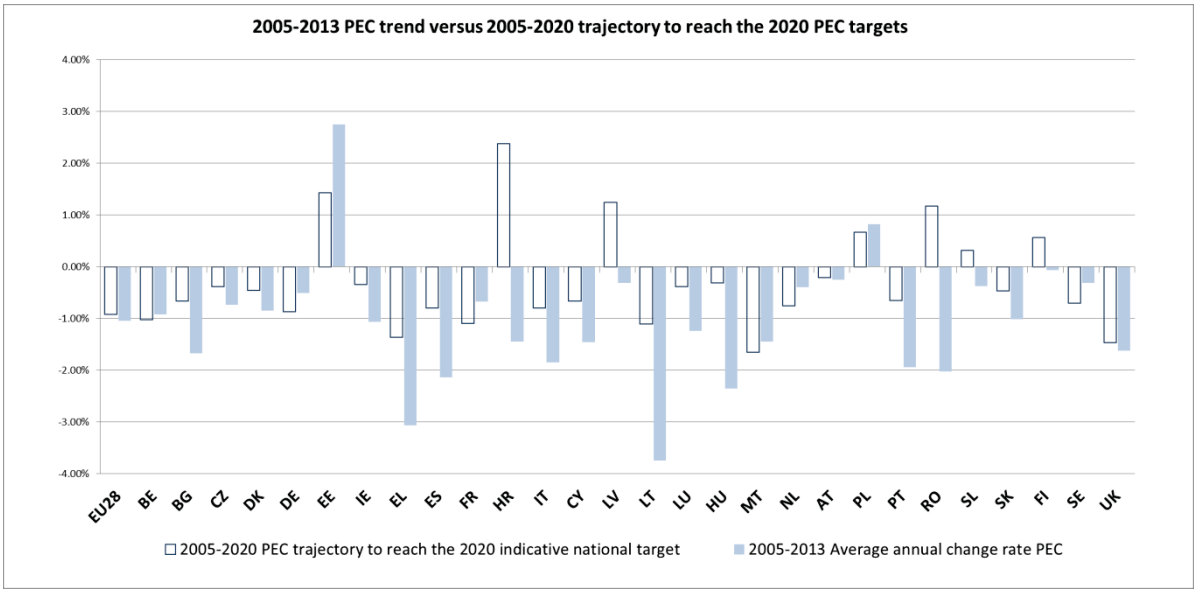
As described in Report COM(2015) 574, the trend in energy consumption between a base year (2005 in the case of this analysis) and the most recent year for which data are available from Eurostat (2013) can be compared with the trend in energy consumption between that base year and the year 2020 which would be necessary to reach the target. This comparison can be used as one indicator to analyse the progress of Member States. As only 2013 data are available, this comparison cannot take into account the impact of recently implemented energy efficiency measures on meeting the new obligations under the EED, nor the impact of some of the measures recently adopted under Ecodesign, energy labelling and the Energy Performance of Buildings Directive (2010/31/EU). In addition, this comparison does not make it possible to carry out a conclusive assessment of whether Member States are on track to meet their indicative 2020 energy efficiency targets. This is because the future effects (positive or negative) of changes in the economy (e.g. an increase/decrease of economic activity or a shift from energy intensive industries to the service sector), changes in energy prices, fuel switching or climate variations cannot be foreseen until 2020.

As shown in a report recently published by the European Environment Agency[9] and in figure 10 below, the majority of Member States decreased their primary and final energy

[9] See European Environmental Agency (2015): Trends and projections in Europe 2015 (see http://www.eea.europa.eu/publications).

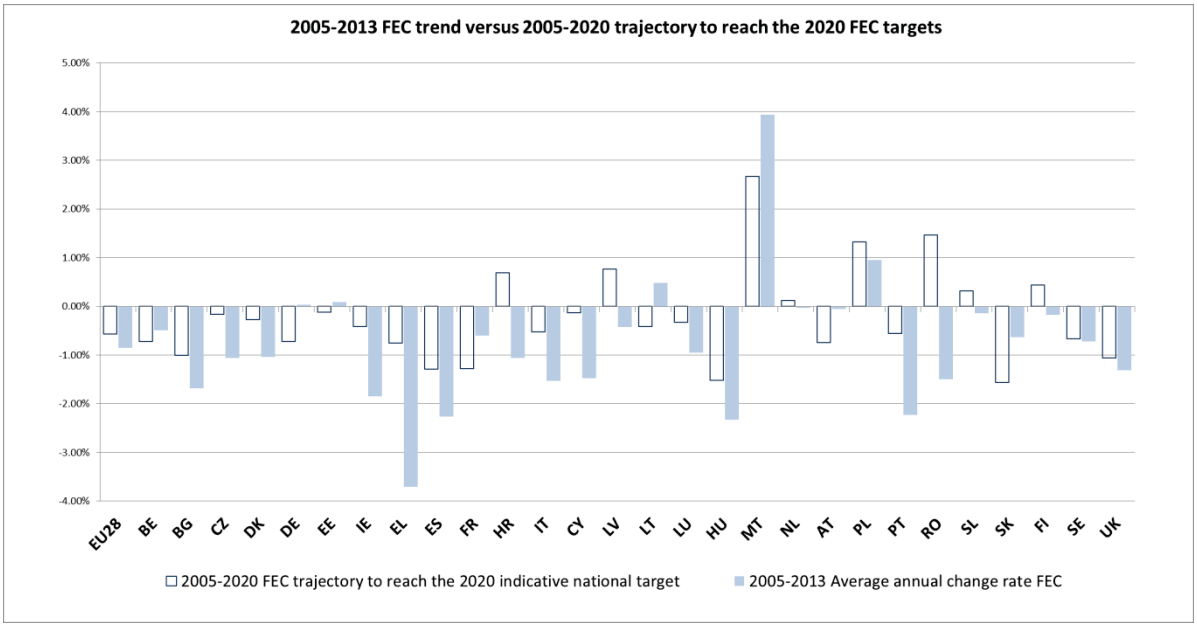
consumption in the period 2005 to 2013 at a rate which was higher than the rate of decrease which would be needed in the period 2005 to 2020 to meet their primary and final energy consumption targets in 2020. The exceptions are Belgium, Estonia, France, Germany, the Netherlands, Poland and Sweden (for primary energy consumption) and Austria, Belgium, Estonia, France, Germany, Lithuania, Malta and Slovakia (for final energy consumption).

Figure 10: 2005-2013 PEC trend versus 2005-2020 trajectory to reach the 2020 PEC targets



Source: Eurostat

Figure 11: 2005-2013 FEC trend versus 2005-2020 trajectory to reach the 2020 FEC targets

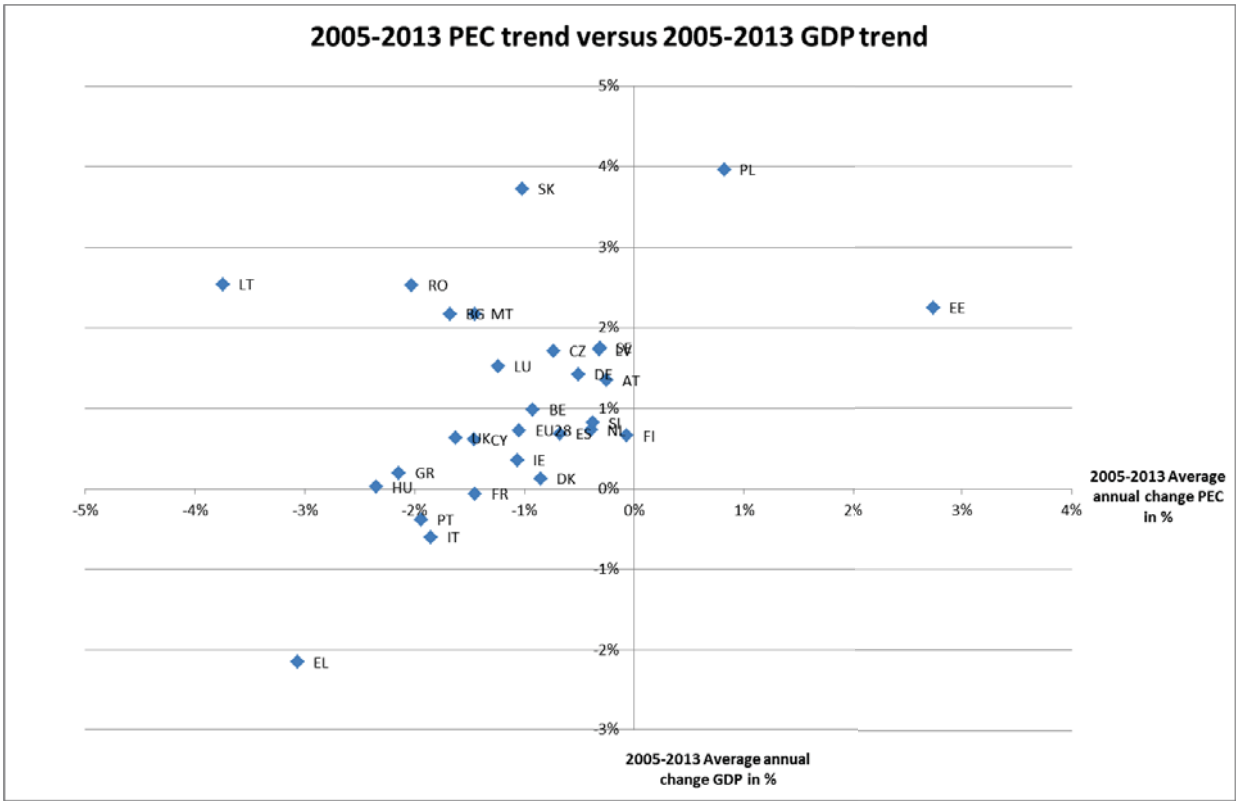


Source: Eurostat

When describing efficiency trends it is meaningful to compare absolute trends with trends in terms of economic output, not only because energy consumption and economic growth are correlated, but also because a decoupling of these two indicators can be considered as a proxy for increasing energy efficiency.

As shown in figure 12, many Member States reduced their energy consumption from 2005 to 2013 significantly, while increasing their economic output at the same time. Estonia is the only Member State where average primary energy consumption increased more than the average increase of GDP from 2005 to 2013.

Figure 12: Average annual growth of GDP[10] and average primary energy consumption developments in % in the period 2005-2013



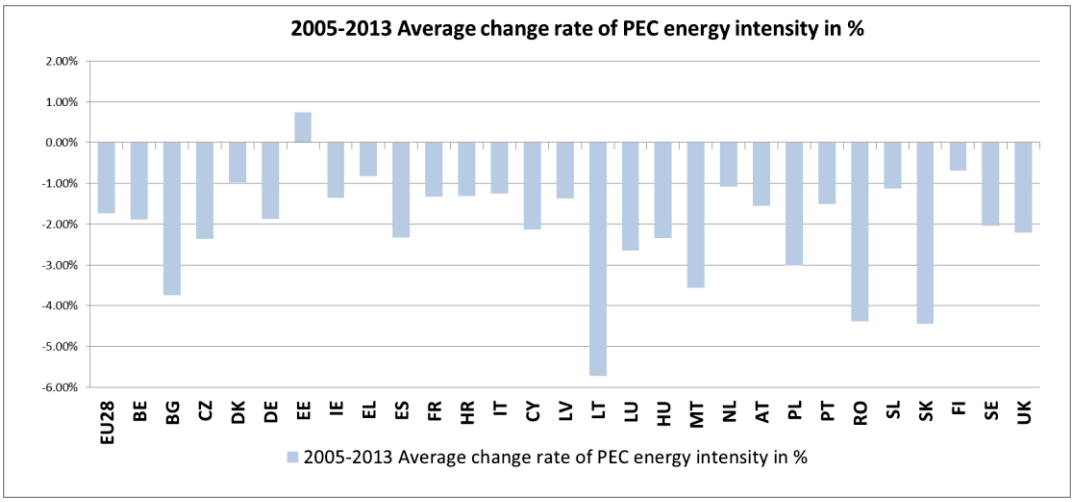
Source: Eurostat

Thus, the primary energy intensity[11] for the whole economy of Estonia grew on average over the period between 2005 and 2013, whereas it decreased in all other Member States. Bulgaria, Czech Republic, Cyprus, Hungary, Lithuania, Luxembourg, Malta, Poland, Romania, Slovakia, Spain, Sweden and the United Kingdom reduced their intensity on average by more than 2% in this period.

[10] Real GDP growth rates, expressed in chain-linked volumes with a reference year 2005. The reference year 2005 is used in this report compared to the indicator report SWD(2015) 243 in which GDP growth rates are expressed in chain-linked volumes with a reference year 2010. The reason is that in the Guidance for National Energy Efficiency Action Plans and Annual Reports SWD (2013) 180 Member States are required to deliver data on GDP growth rates, expressed in chain-linked volumes with a reference year 2005.

[11] Energy intensity is defined as primary energy consumption divided by GDP. Changes in energy consumption or energy intensity can be explained through energy efficiency measures, but also changes in the economic output. Other factors also come into play, such as changes in the structure of the economy, in the energy mix, energy prices and weather conditions. For example an increase of generation from renewable energy sources reduces the primary energy consumption as energy from renewable energy is in most cases considered to have 100 % transformation efficiency. An increase of the renewable share improves statistically the overall conversion efficiency with regard to primary energy consumption. An analysis of drivers for energy intensity improvements and other energy trends can be found in 'Member States' Energy Dependence: An Indicator-Based Assessment', ECFIN Occasional Papers 196, June 2014 and 'Trends in Energy Consumption and Energy Efficiency 2000 – 2012', JRC, 2015.

Figure 13: 2005-2013 Average change rate of PEC energy intensity in %

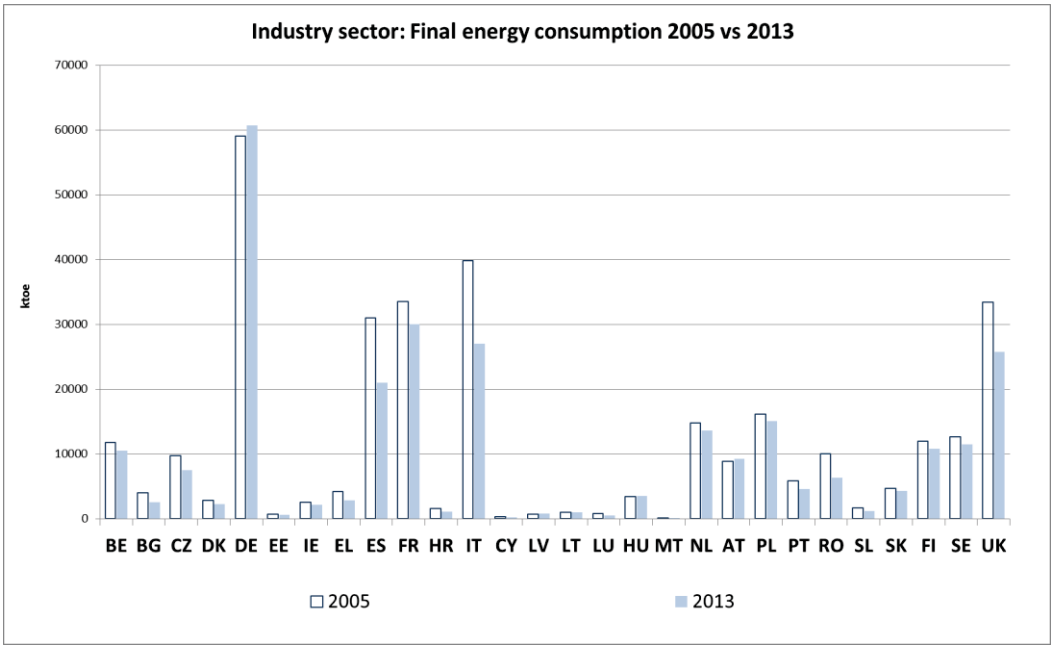


Source: Eurostat

4.1. Industry

Final energy consumption of industry decreased in absolute terms from 327 Mtoe in 2005 to 277 Mtoe in 2013 (15%). All Member States reduced their levels compared to 2005, except Austria, Germany, Hungary and Latvia.

Figure 14: Industry sector, final energy consumption 2005 vs 2013

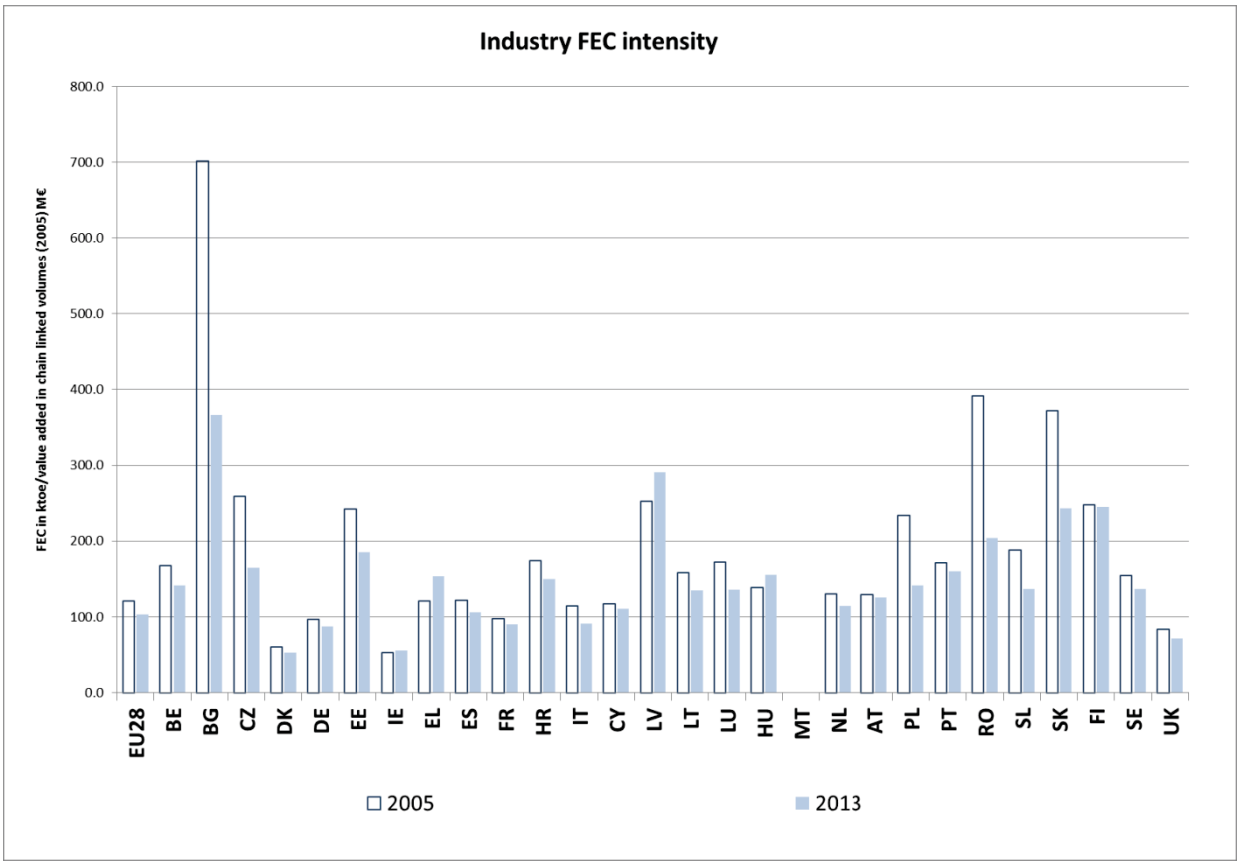


Source: Eurostat

In the short term, final energy consumption of industry increased from 2012 to 2013 in Austria, Belgium, Bulgaria, Cyprus, Estonia, France, Germany, Hungry, Poland, Spain and the United Kingdom. In their Annual Reports, Estonia and Poland indicated that this was due to changes in economic activity.

For the industry sector, an important indicator of efficiency trends/progress is energy intensity[12] as this is a relative indicator, which gives information about the amount of energy input needed to produce one unit of GDP. In figure 15 it can be observed that there is a significant difference between the energy intensity of industry in different Member States with a seven fold difference between the most energy intensive Member State, Bulgaria, and the least energy intensive ones: Denmark and Ireland. Whilst this is influenced by the share of energy-intensive industries, most Member States decreased energy intensity in the industry and construction sectors from 2005 to 2013, the exceptions being Greece, Hungary, Ireland and Latvia. Information on the economic structure of each Member State is provided in Annex II.

Figure 15: Energy intensity of industry in chain linked volumes 2005 (in ktoe/M€2005)



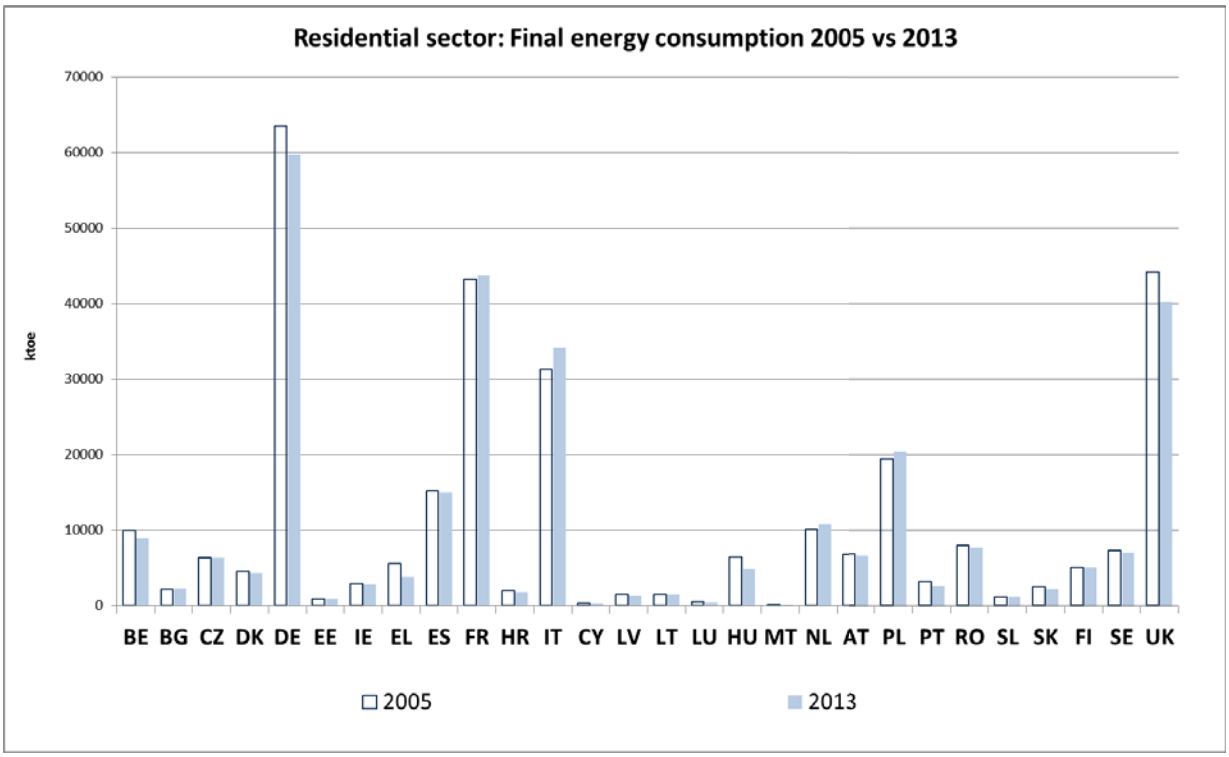
Source: Eurostat

[12] Energy intensity of the industry sector is defined as the final energy consumption of the industry sector (Eurostat code: nama_10_a10 and tsdpc320) divided by the gross value added of industry and the construction sector (in chain linked volumes (2005)).

4.2. Residential sector

Final energy consumption of residential buildings decreased in absolute terms from 306 Mtoe in 2005 to 296 Mtoe in 2013 (3%).

Figure 16: Residential sector, final energy consumption 2005 vs 2013



Source: Eurostat

In 2013, final energy consumption increased in the residential sector for Austria, Belgium, Czech Republic, France, Germany, Ireland, the Netherlands, Slovakia and the United Kingdom compared to 2012. Belgium and Germany explained in their Annual Reports that 2013 was a colder year than 2012 and France indicated that the use of electrical heating appliances and the prevalence of electronic equipment in homes increased.

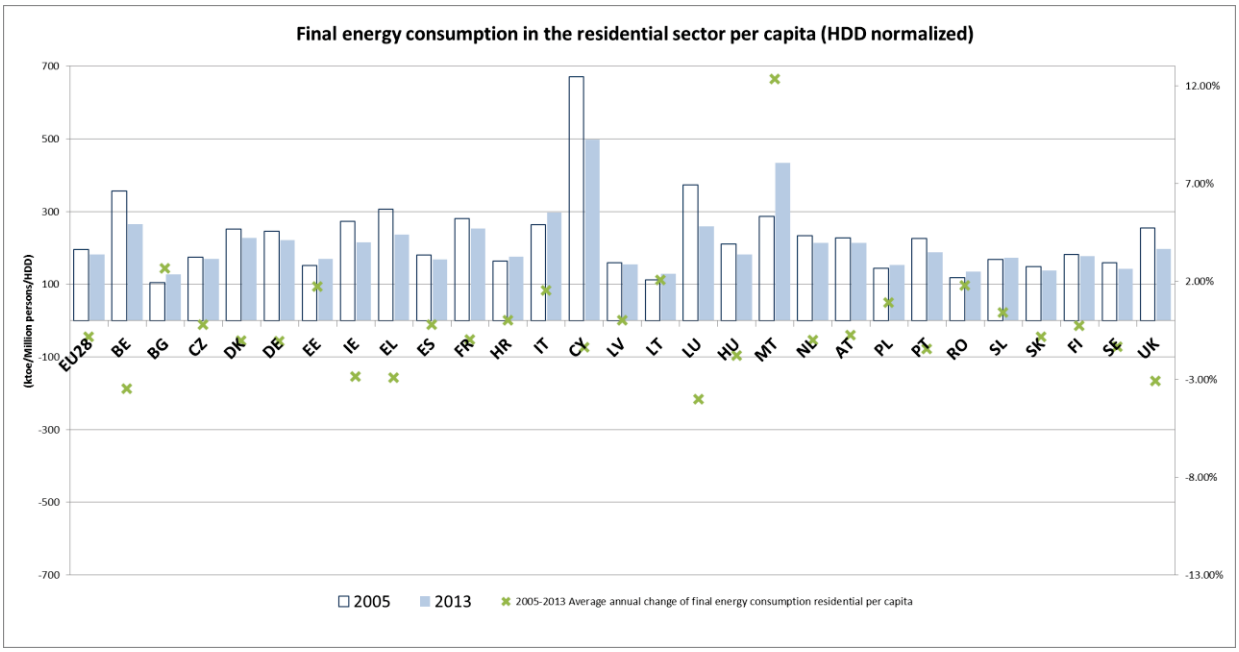
Energy consumption of the residential sector per capita is one of the indicators that can be calculated on the basis of the data provided in the Annual Reports by Member States. Malta and Portugal have the lowest energy consumption per capita. However, when the effect of different climate conditions (through normalization with the heating degree days of each country) is taken into consideration, Bulgaria and Lithuania have the lowest per capita final consumption, followed by Romania, Slovakia and Sweden. Malta and Cyprus have the highest values as shown in figure 17.[13]

To account for colder climatic conditions, residential energy consumption per capita can be normalised with heating degree days. When comparing 2005 with 2013 data, Bulgaria's consumption increased by 23 %, Estonia's 12 %, Croatia's 7 %, Italy's 12 %, Lithuania's 14 %, Malta's 51 %, Poland's 6 %, Romania's 14 % and Slovenia's 3 %. One explanation for this could be an increase in households' disposable income (as was the case in Bulgaria, Estonia, Lithuania, Poland, and Romania) which could have resulted in a higher demand for

[13] As energy is used in particular in southern Member States for cooling purposes, "cooling degree days" should also be taken into account. Eurostat is currently developing a methodology.

thermal comfort, a higher number of domestic appliances, or larger dwellings. Figure 17 below shows how the indicator developed on average over the period.

Figure 17: Final energy consumption in the residential sector per capita (HDD normalized)



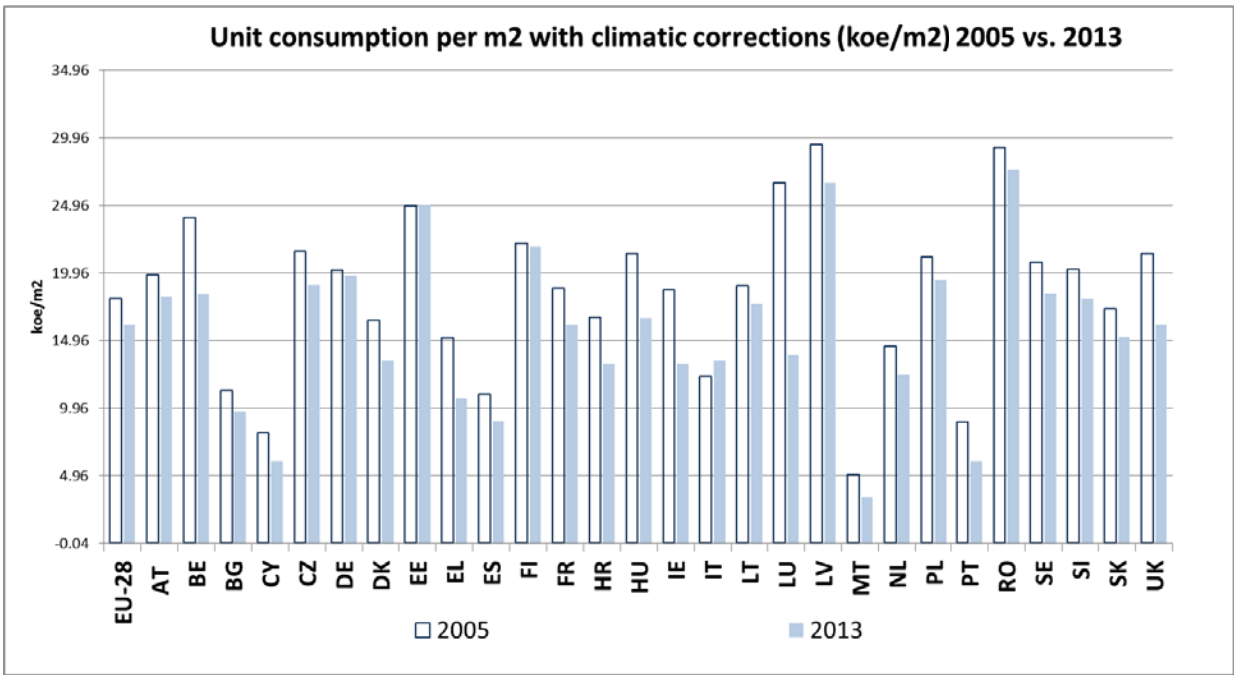
Source: Eurostat

This indicator does not fully reflect impacts of energy efficiency measures as energy efficiency policies are often targeted to address household/dwelling and the relevant inhabitants sharing the energy services in this dwelling. Therefore, another useful indicator is final energy consumption per square metre. Eurostat does not collect this data but findings from the Odyssee-Mure project[14] can be taken into account. The data from Odyssee-Mure show that between 2005 and 2013 energy consumption per square metre decreased in all Member States except in Italy where it increased by 10%, and Estonia, where it was constant.[15]

[14] See for further details: http://www.odyssee-mure.eu/project.html.

[15] See Odyssee-Mure database: http://www.indicators.odyssee-mure.eu/online-indicators.html. The increase in Italy is due to a revision of the biomass consumption in recent years according to the Odyssee-Mure (2015): Energy Efficiency Trends and Policies in Buildings.

Figure 18: Unit consumption per square meter with climatic corrections

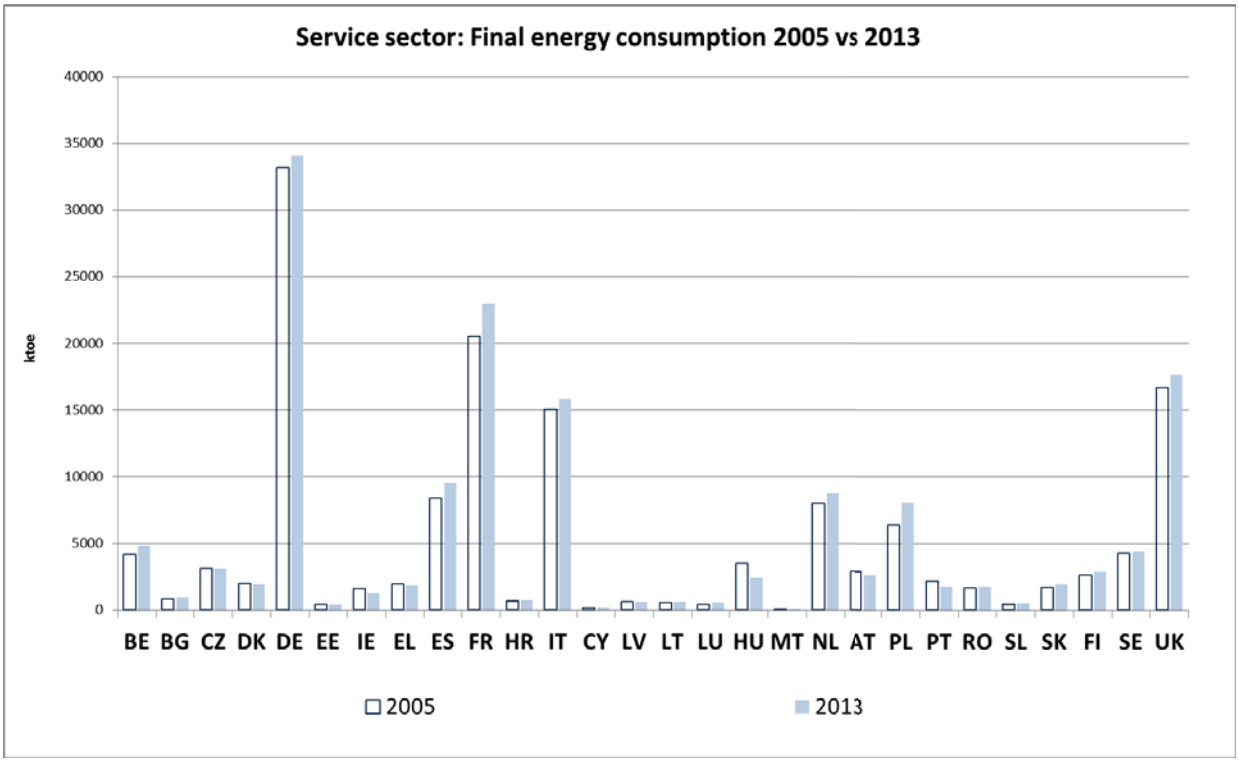


Source: Odyssee-Mure

4.3. Service sector

The added value of the service sector increased by 11% from 2005 to 2013, whereas the final energy consumption of this sector increased from 144 Mtoe in 2005 by 6% to 153 Mtoe in 2013.

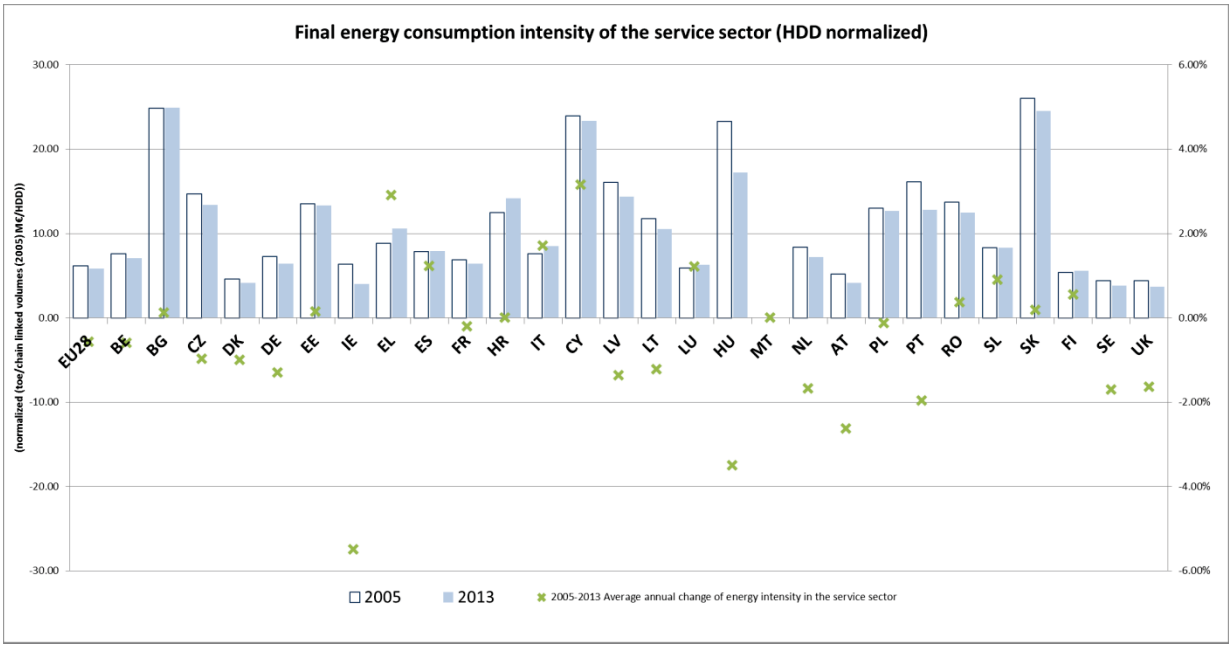
Figure 19: Service sector, final energy consumption 2005 vs 2013



Source: Eurostat

The energy intensity of the service sector (normalised with heating degree days) of EU-28 decreased between 2005 and 2013 by 5%.[16] The Member States that improved their energy intensity in the service sector (heating degree day normalized) most between 2005 and 2013 were Austria (-20%), Hungary (-26%), Ireland (-37%) and Portugal (-21%). Bulgaria, Croatia, Finland, Greece, Italy, Luxembourg and Spain increased their energy intensity over this period.

Figure 20: Final energy consumption intensity of the service sector (HDD normalized)



Source: Eurostat

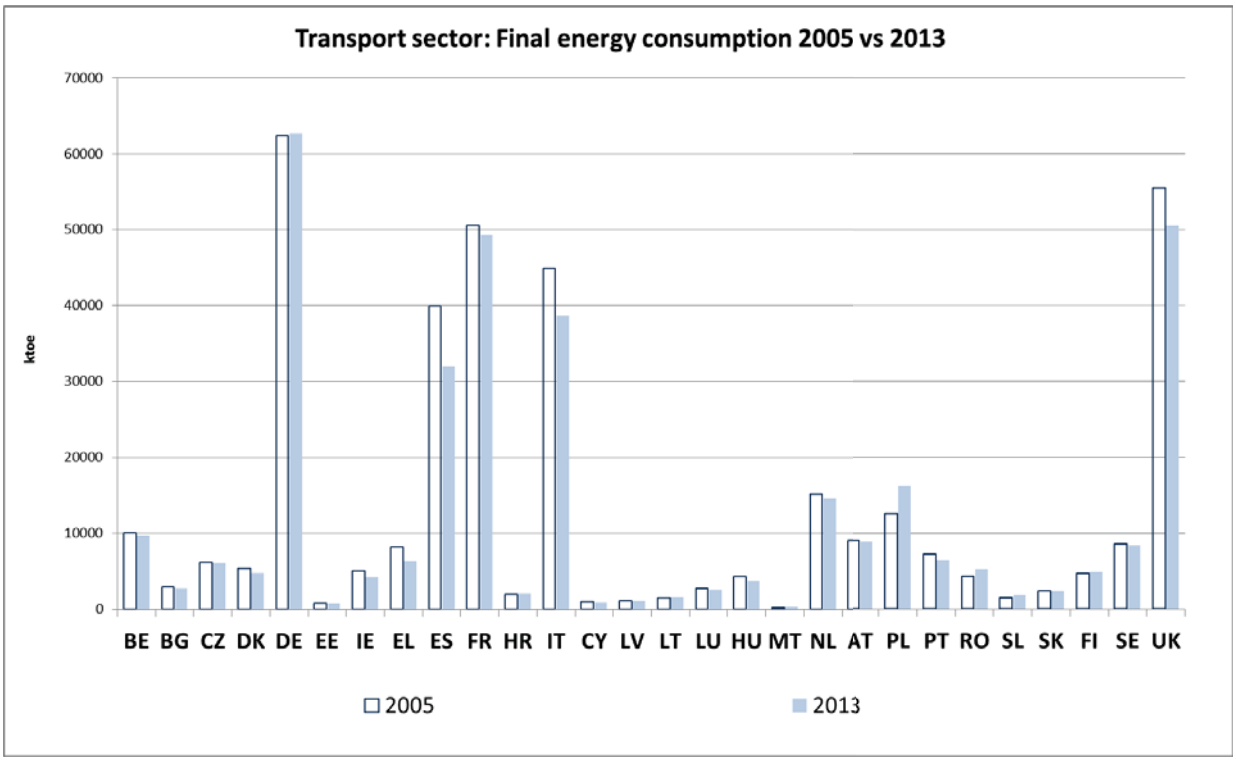
In 2013, final energy consumption of the service sector increased in Belgium, Czech Republic, France, Germany, Italy, Luxembourg, the Netherlands, Romania, Slovenia and Slovakia compared to 2012 levels. In their Annual Reports 2015, those Member States indicated that this increase was mainly attributable to weather-related factors and to growth in this sector which resulted in the opening of new facilities or the extension of existing facilities.

[16] This indicator is defined as final energy consumption by services (Eurostat code: tsdpc320) divided by the gross value added (Eurostat code: nama_10_a10) of wholesale and retail trade, transport, accommodation and food service activities, information and communication, financial and insurance activities, real estate activities, professional, scientific and technical activities; administrative and support service activities, public administration, defence, education, human health and social work activities, Arts, entertainment and recreation; other service activities; activities of household and extra-territorial organizations and bodies and normalised with the heating degree days which can be found under http://ec.europa.eu/eurostat/web/energy/data.

4.4. Transport sector

Final energy consumption in transport[17] decreased from 370 Mtoe in 2005 to 349 Mtoe in 2013 (decrease of 6%).

Figure 21: Transport sector, final energy consumption 2005 vs 2013

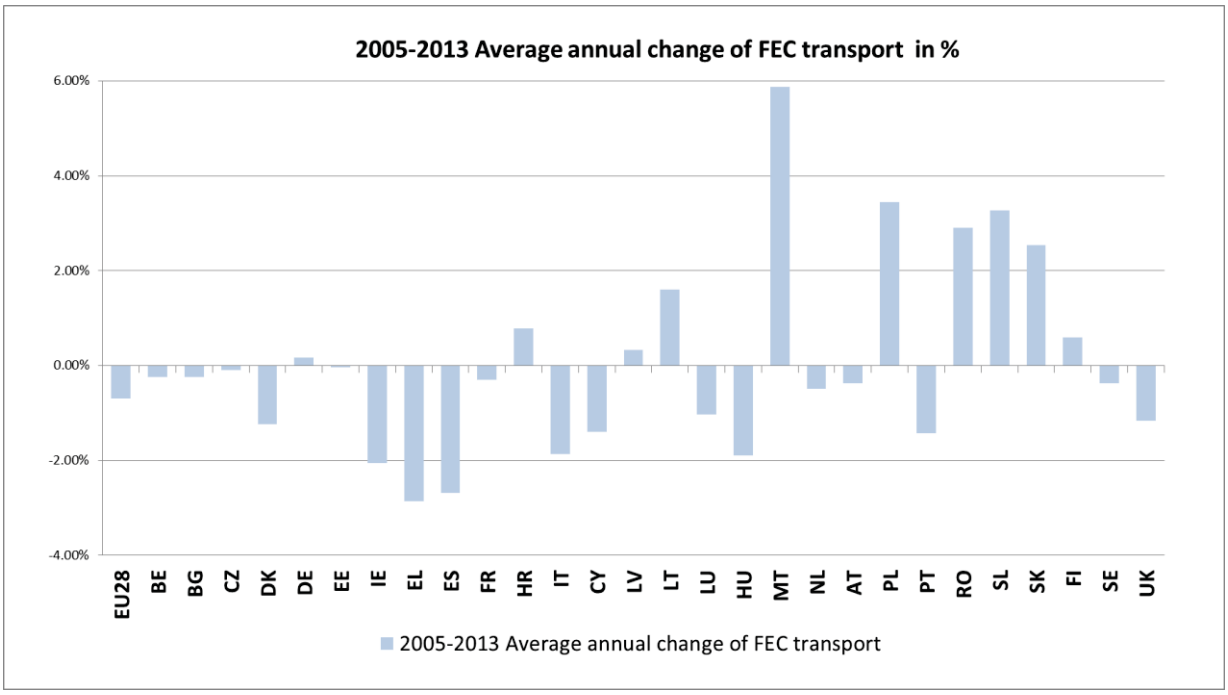


Source: Eurostat

In relative terms, the highest reductions in final energy consumption in the transport sector were registered in Greece, Ireland and Spain. Consumption increased slightly in Croatia, Finland and Germany and a considerable increase was recorded in Lithuania, Malta, Poland, Romania, Slovakia and Slovenia. Most of the increase originated from road transport. Comparison between Member States have to be undertaken with caution because final energy consumption is based on the fuels sold rather than on the fuel used on the territory of a country. Therefore, factors other than energy efficiency come into play e.g. the degree to which a given Member State is a 'transit country' for road transport or a hub for aviation.

[17] Eurostat data used with the code: tsdpc320.

Figure 22: 2005-2013 Average annual change of FEC transport in %



Source: Eurostat

To provide an in-depth analysis of the evolution of energy efficiency in transport, it would be appropriate to strip out the effects of economic growth and to look at physical indicators (energy used per tonne of goods transported for freight; energy used per kilometre travelled by passengers in the case of passenger transport). Currently, Member States do not provide Eurostat with the split of final energy consumption by passenger and freight transport and the traffic activity expressed in passenger-kilometres and tonne-kilometres cannot therefore be aggregated. Therefore, official statistics are not available at this stage for providing meaningful energy intensity indicators for the transport sector but data availability will be further explored in the future. For those Member States that have notified the relevant data to Eurostat, the trends of total final energy consumption compared to passenger-kilometres and tonne-kilometres are shown for Member States in Annex II.

Eurostat provides the percentage of public transport (trains, motor coaches, buses and trolley buses).[18] Between 2005 and 2013 the share of public transport increased in Austria, Belgium, Croatia, Czech Republic, Finland, Greece, Hungary, Luxembourg, the Netherlands, the United Kingdom, Portugal, Slovenia, Spain and Sweden. In the remaining Member States the share of passenger cars increased (no data were available for Cyprus and Malta).

[18] The indicator is defined as the share of trains, motor coaches, buses and trolley buses (Eurostat code: tran_hv_psmod).

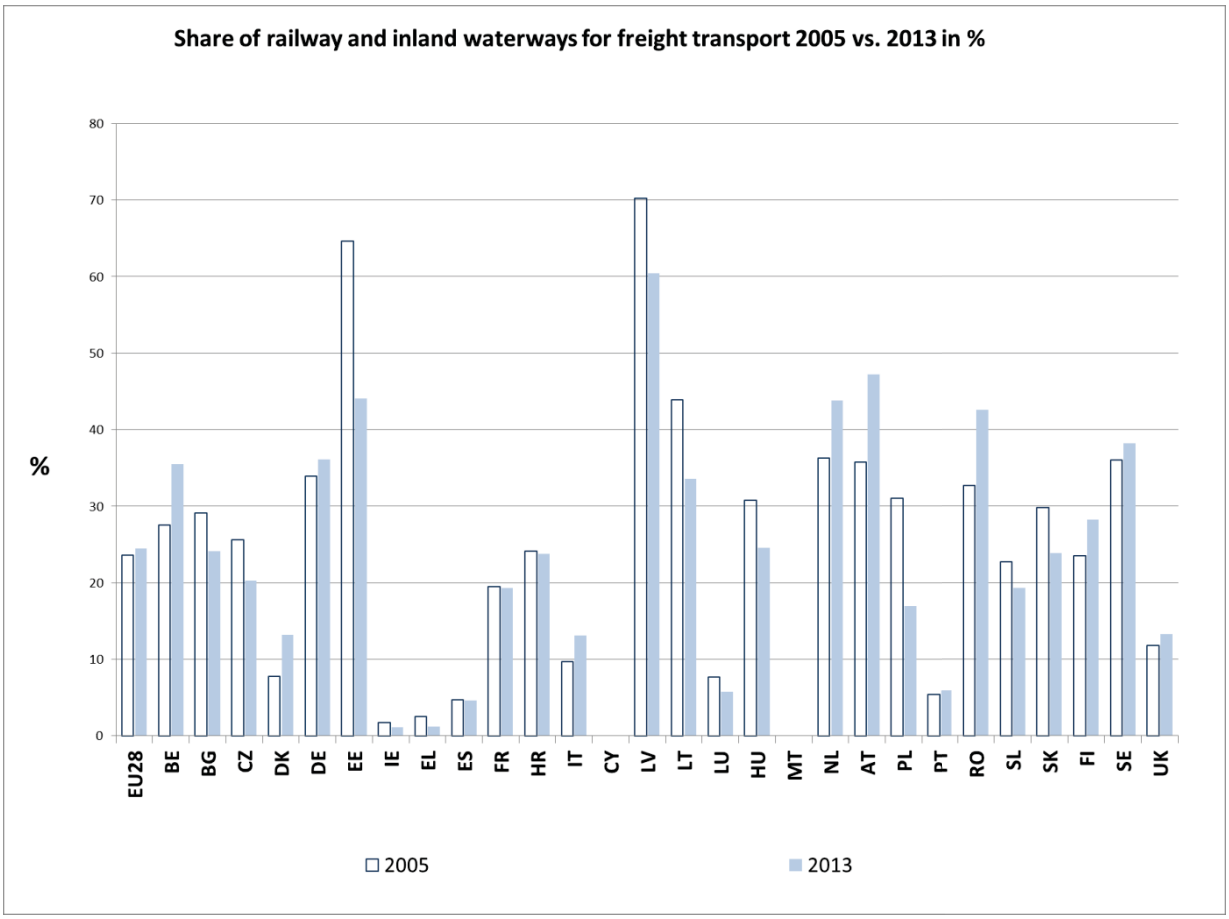
Figure 23: Share of trains, motor coaches, buses and trolley buses for passenger transport (passenger-km) 2005 vs. 2013 in %

Source: Eurostat

Eurostat also provides the percentage of railway and inland waterways for freight transport.[19] Austria, Belgium, Denmark, Finland, Germany, Italy, the Netherlands, Portugal, Romania, Sweden and the United Kingdom increased their shares in 2013 compared to 2005 levels.

[19] The indicator is defined as the share of railways and inland waterways for freight transport (Eurostat code: tran_hv_frmod).

Figure 24: Share of railways and inland waterways for freight transport (tonne-km) 2005 vs. 2013 in %

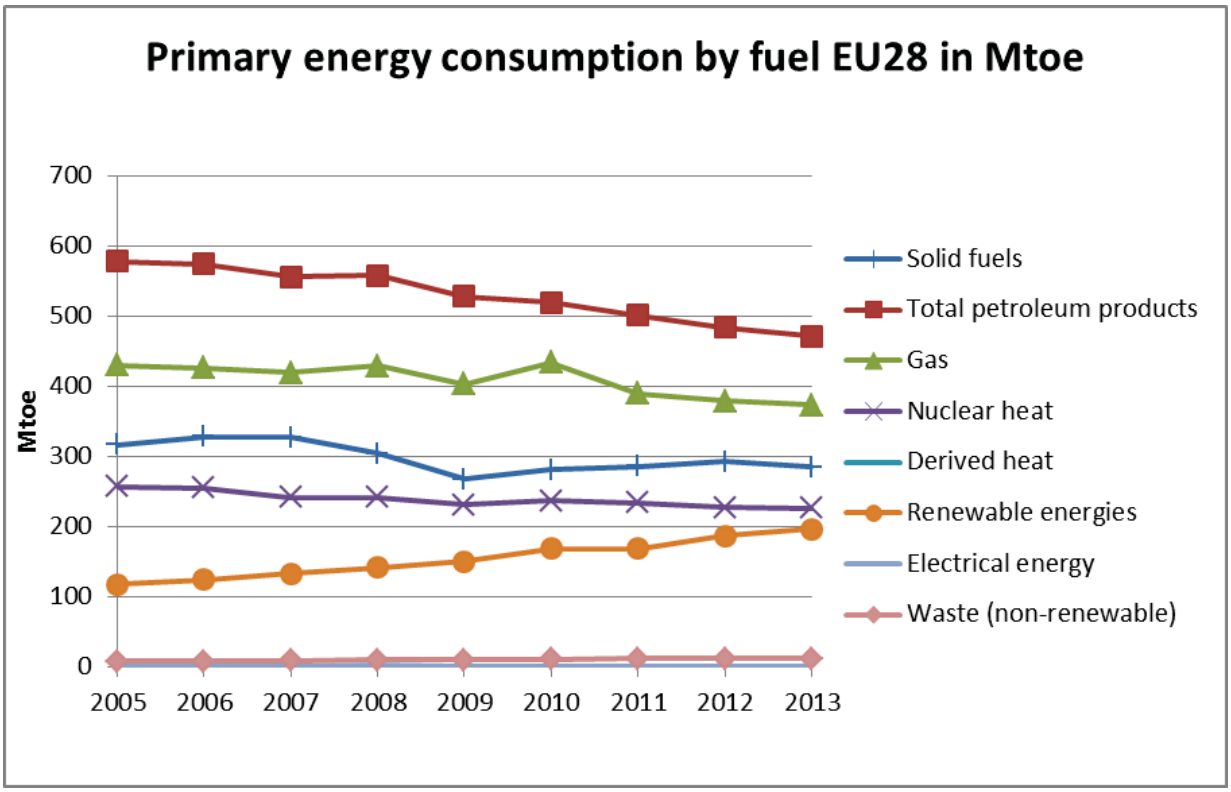


Source: Eurostat

4.5. Generation sector

The decrease of primary energy consumption during the past years was due to a decrease in final energy consumption and a structural change in the power generation sector. In particular, structural changes from thermal power generation towards more renewable energy sources took place.

Figure 25: Primary energy consumption by fuel EU-28



Source: Eurostat

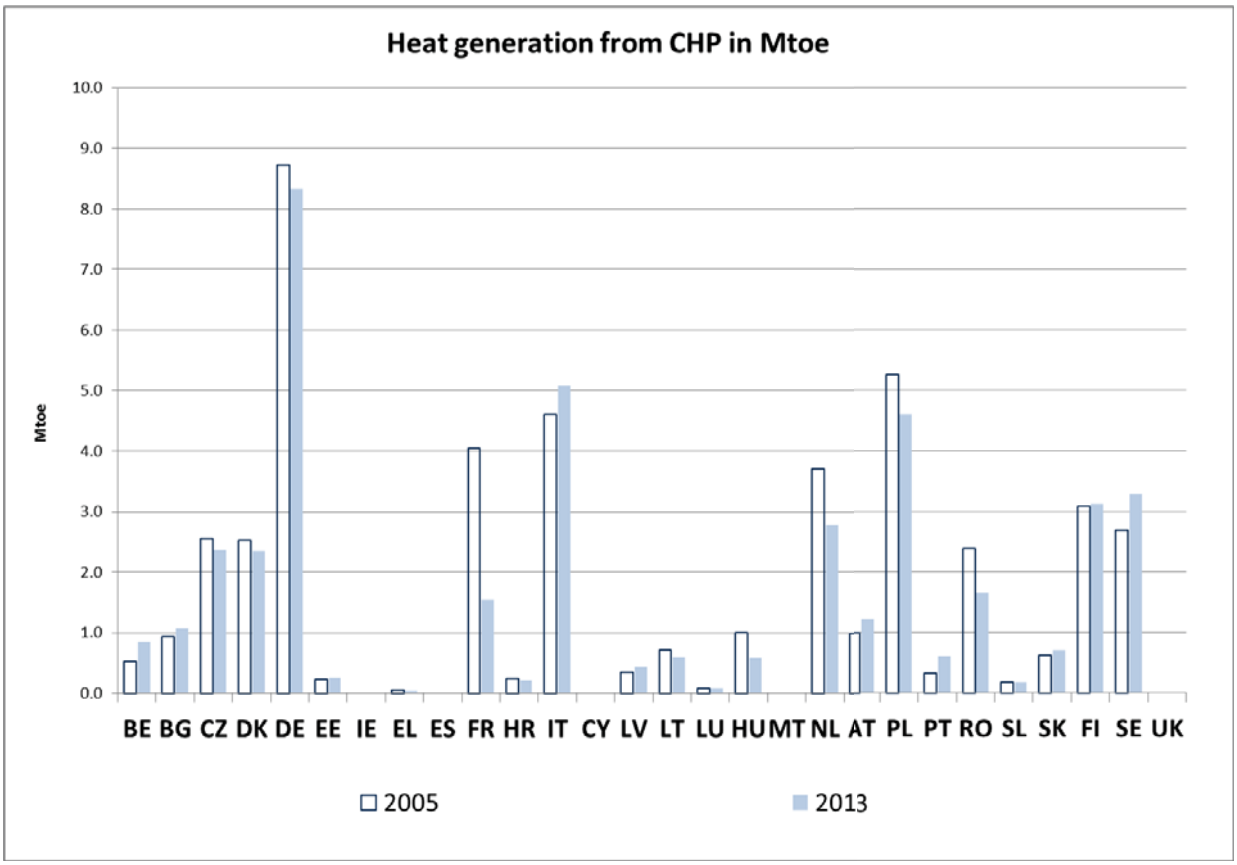
Member States have increased their share of renewables in the past years[20] which contributed to a reduction in primary energy consumption as most sources of renewable energy (excluding biomass and municipal waste) are defined as having 100% transformation efficiency.

The EED requires Member States to provide information on heat and electricity produced from thermal power plants and, in particular, from combined heat and power plants (CHP). This information is important to follow trends in high efficiency cogeneration which should be promoted by Member States according to Articles 14 and 15 of the EED.[21]

[20] See Renewable energy progress report COM(2015) 293 final.

[21] According to Article 24(5) EED, the Commission shall review the continued need for the possibility of exemptions possible under Article 14(6) for the first time in its assessment of the first NEEAPs and every three years thereafter. Based on the notifications describing the exemptions, which had to be notified to the Commission by 31 December 2013, the Commission comes to the conclusion that a detailed analysis is not possible at this stage. Without the comprehensive assessments by Member States which will be due by end of 2015 it seems to be premature to conclude if the criteria for these exemptions can longer be justified. Therefore, the Commission is planning to perform a detailed analysis after the required information is available.

Figure 26: Heat generation from CHP



Source: Eurostat

Figure 26 shows the heat produced from CHP plants for Member States in 2005 compared to 2013. The heat produced from CHP plants decreased from 46 Mtoe in 2005 by 9% to 42 Mtoe in 2013.[22]

More detailed information – in particular on the basis of CHP units - is expected from the data collection under Article 24(6) of the EED and from the forthcoming Heating & Cooling strategy which the Commission intends to put forward in early 2016.

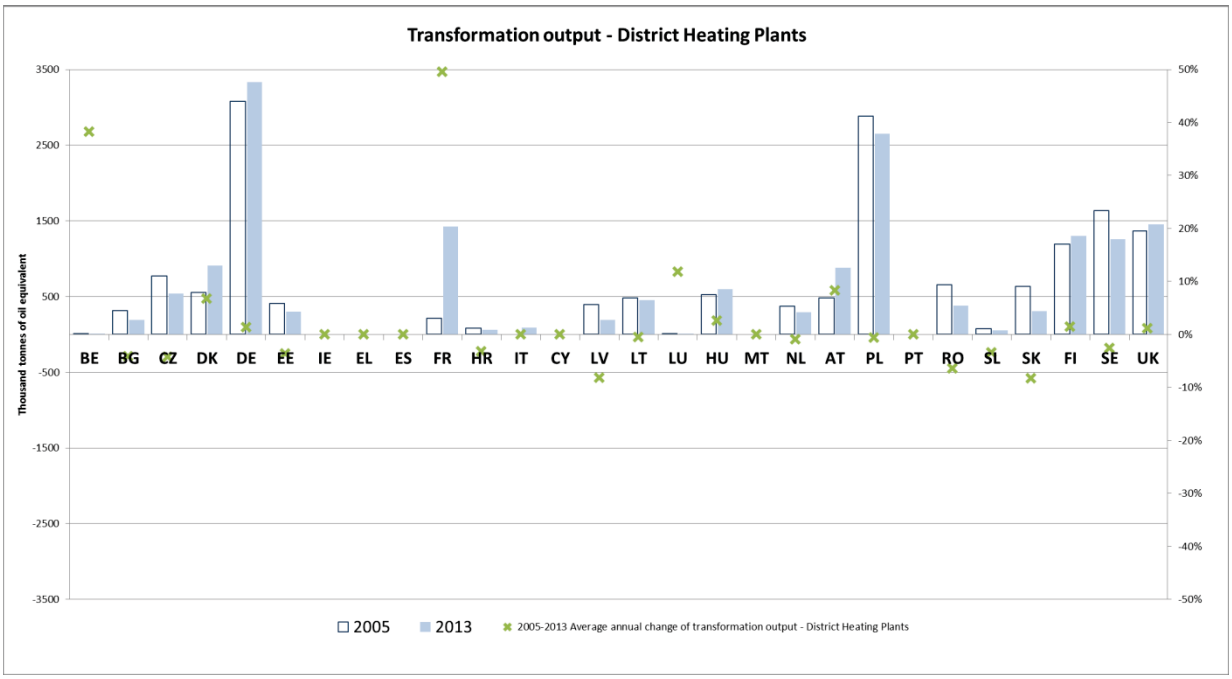
The EED also sets the framework to trigger investments in efficient district heating and cooling. A positive trend can be observed in nine Member States where the transformation output from district heating plants increased on average between 2005 and 2013. Nevertheless, in the remaining twelve Member States having district heating a decreasing trend can be observed.[23] Therefore, to fully exploit the energy-efficiency potential in the generation sector, the full implementation of Article 14 and the comprehensive assessments

[22] This indicator is defined as the sum of gross heat production from 1) Main activity CHP plants – Nuclear; 2) Autoproducer CHP plants – Nuclear; 3) Main activity CHP plants – Geothermal; 4) Autoproducer CHP plants – Geothermal; 5) Main activity CHP plants – Solar; 6) Autoproducer CHP plants – Solar; 7) Main activity CHP plants - Combustible Fuels; 8) Autoproducer CHP plants - Combustible Fuels; 9) Main activity CHP plants - Heat Pumps; 10) Autoproducer CHP plants - Heat Pumps; 11) Main activity CHP plants - Electric Boilers; 12) Autoproducer CHP plants - Electric Boilers; 13) Autoproducer CHP plants - Electric Boilers; 14) Main activity CHP plants - Other Sources; 15) Autoproducer CHP plants - Other Sources (Eurostat code: nrg_106a).

[23] Eurostat data 'Transformation output - District Heating Plants' used from complete energy balances - annual data (Eurostat code: nrg_110a). No data is available for Cyprus, Greece, Ireland, Italy, Malta, Portugal and Spain.

Member States are required to undertake by end 2015 (analysing their potential for applying high-efficiency cogeneration and efficient district heating and cooling) are of major importance.

Figure 27: Transformation output - District Heating Plants



Source: Eurostat

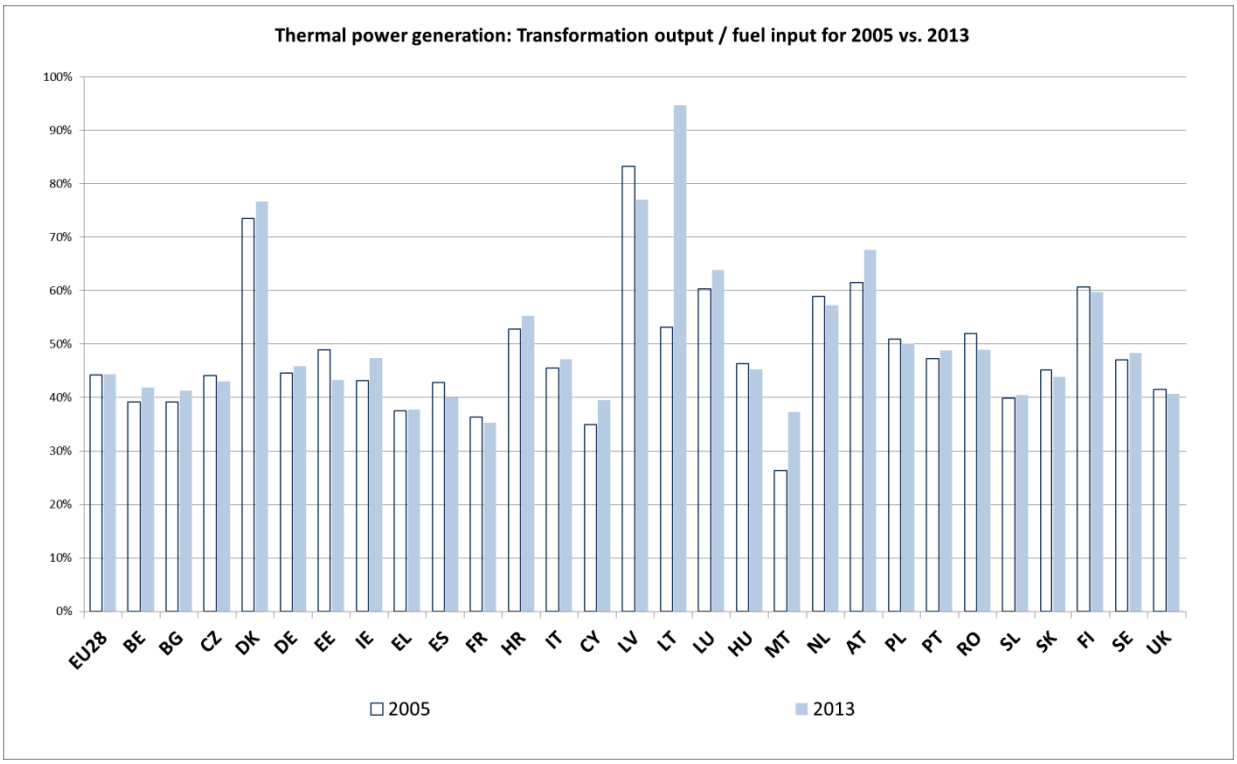
Due to the use of energy from renewable sources and other measures, the efficiency of electricity production in the EU increased from 43.6 % in 2005 to 46.4 % in 2013.[24]

The ratio of transformation output of thermal power generation compared to fuel input improved in Austria, Croatia, Cyprus, Belgium, Bulgaria, Denmark, Germany, Greece, Ireland, Italy, Lithuania, Luxembourg, Malta, Portugal, Slovenia and Sweden in the period 2005-2013. However, in other Member States the ratio worsened as shown in figure 28.[25]

[24] See the document 'η (eta) time series (1990-2013)' available under http://ec.europa.eu/eurostat/c/portal/layout?p_l_id=4703568&p_v_l_s_g_id=0.

[25] This indicator is defined as the transformation output from Conventional Thermal Power Stations, District Heating Plants and Nuclear Power Stations (Eurostat codes: B_101101, B_101109, B_101102) divided by the transformation input of the same type of beforehand mentioned plants (Eurostat code: nrg_100a).

Figure 28: Thermal power generation: Transformation output / fuel input for 2005 vs. 2013



Source: Eurostat

5. FINAL ENERGY SAVINGS IN 2016 REQUIRED BY THE ENERGY SERVICES DIRECTIVE 2006/32/EC

Directive 2006/32/EC required Member States to set – and aim to achieve – a national indicative energy savings target of at least 9 % of final energy savings in 2016. Most of the provisions in this Directive have been replaced by more precise provisions in the EED. However, the requirements related to the 9 % target will not be repealed until 2017. So Member States were required to provide information on their 2016 saving target in their 2014 NEEAPs: 19 Member States state that the required savings will be achieved by 2016; for 7 Member States it is not clear from the NEEAPs if the saving target will be achieved.[26]

[26] The final NEEAPs of Hungary and Romania were notified in 2015 only. Therefore, a detailed analysis has not yet taken place.

Table 1: Assessment of final energy savings for 2016

	9% Calculation ("theoretical" target)		Target final energy savings for 2016 under ESD declared in NEEAP 2014		Forecast final energy savings for 2016 reported in NEEAP 2014		Is 2016 ESD target expected to be met (i.e. forecast savings>target savings)?	Extent to which target is expected to be met or missed (i.e. forecast savings/target savings)	2016 ESD target expected to be reached based on NEEAP 2014 estimates (i.e. forecast savings/reference consumption)	Notes
			Value	Units	Value	Units				
AT	80.40652	PJ	80.4	PJ	84.234	PJ	Yes	104.8%	9.4%	
BE			27516	GWh	38957	GWh	Yes	141.6%		
BG	7294	GWh/y	7291	GWh/y			Unclear	0.0%		The forecast savings for 2016 have not been provided
CY	165.8	ktoe	185	ktoe	238.908	ktoe	Yes	129.1%	13.0%	The forecast savings provided are the sum of savings for the measures taken in the period 2004-2013 (163 158 toe) and estimated energy savings from the implementation of additional measures (75 750 toe).
CZ	71.4297	PJ	19.7244	PJ			Unclear			While the forecast savings are not provided, savings calculated by means of the top-down method for the period from 2008 to 2010 are estimated to be 27097 PJ, representing 137% of the 2016 target.
DE	833.49	PJ			2246	PJ	Unclear		24.3%	
DK	56.8	PJ	59.4	PJ	57.6 (top down), 64.8 (bottom up)	PJ	Yes	97.0% (top down), 109.1% (bottom up)		The target is to be reached only if the forecast savings under the bottom up method are considered
EE	9.9	PJ	9.9	PJ	12	PJ	Yes	121.2%	10.9%	The target of 9.9 PJ was extracted from AR2013. Despite the forecast savings of 12 PJ being higher than the target, the introduction of the NEEAP 2014 states that "since the forecast energy saving by 2016 is insufficient, Estonia will have to implement additional energy efficiency measures to ensure that the final energy consumption efficiency objectives and the objectives specified in Directive 2006/32/EC on energy end-use efficiency and energy services will be achieved."
EL	16.46	TWh	16.46	TWh	16.46	TWh	Yes	100.0%	9.0%	The forecast savings for 2016 seem to be exactly the same with the target.
ES			6390	ktoe	10993	ktoe	Yes	172.0%		
FI	17.8	TWh	17.8	TWh	25.4	TWh	Yes	142.7%	12.8%	
FR			12	Mtep			Unclear			The forecast savings for 2016 have not been provided. Instead, the NEEAP provides the savings between 2007 and 2012 which are estimated at 9.039 Mtep (excluding the tertiary sector) and states that it appears that France is ahead of schedule with reference to the achievement of the target set under the ESD directive
HR			19.77	PJ	19.77	PJ	Yes	100.0%		The progress towards the target is estimated by using both top-down and bottom-up methods and is the same (100%) - see Tables 2-7 and 2-8
HU	15.95	TWh					Unclear			Translated NEEAP is missing
IE	13116.69	GWh	13117	GWh	14285	GWh	Yes	108.9%	9.8%	
IT	10.186	Mtoe	10.88	Mtoe/y	10.88	Mtoe/y	Yes	100.0%	9.6%	The forecast savings (10.88 PJ) by 2016 seem to be the same with the target. The savings achieved in 2015-2012 are 6.38 PJ.
LT	324.6786	ktoe	327	ktoe	340.67	ktoe	Yes	104.2%	9.4%	
LU	1581.894	GWh	1769	GWh/a	2814	GWh/a	Yes	159.1%	16.0%	
LV	3483	GWh	3483	GWh	3483	GWh	Yes	100.0%	9.0%	The forecast savings for 2016 seem to be exactly the same with the target. In terms of achieved savings, it is stated that Latvia achieved 2069 GWh (7.4 PJ) energy savings by 2010. In a different section of the document (page 15) it is, however, stated that "the total cumulative energy savings obtained during the 2008-2012 period, calculated with a top-down method, are 1801 GWh". A clarification on these figures is needed (i.e. energy savings in 2010 > 2012?).
MT	32.46	ktoe			32.84	ktoe	Unclear			The target is not communicated in the NEEAP 2014. Intstead the NEEAP states that Malta expects to reach 24% energy efficiency by 2016
NL	51189.89	GWh	51190	GWh	57282	GWh	Yes	111.9%	10.1%	
PL	4.596	Mtoe	4.59	Mtoe	7.09	Mtoe	Yes	154.5%	13.9%	
PT	1651.23	ktoe	1501.305	ktoe			Unclear			The forecast savings for 2016 have not been provided.The only value regarding the achievement of the target is the value of savings achieved by 2010 that is 729ktoe which represents an achievement of 49% of the overall target.
RO	1875.636	ktoe					Unclear			Translated NEEAP is missing
SE	32.31	TWh	33.2	TWh	48.7	TWh	Yes	146.7%	13.6%	
SI	4261.392	GWh	4261	GWh	6872	GWh	Yes	161.3%	14.5%	
SK	40932.95	TJ					Unclear			
UK	136.566	TJ	136.5		161.6	TWh	Yes	118.4%	10.6%	

Source: JRC

6. OVERVIEW

Table 2 gives an overview of all indicators for each Member States.

Table 2: Energy efficiency indicators

	2020 Ambition level		Trend to reach the 2020 target		Short term trend		Intensity whole econoomy	Industry	Households		Service Sector	Transport			Generation		
Member State	Ambition level of 2020 PEC target compared to GDP estimations for 2014-2020	Ambition level of 2020 FEC target compared to GDP estimations for 2014-2020	PEC 2005-2013 trend compared to PEC 2005-2020 trend to reach the 2020 target	FEC 2005-2013 trend compared to FEC 2005-2020 trend to reach the 2020 target	Change of PEC 2013 compared to PEC 2012 in %	Change of FEC 2013 compared to FEC 2012 in %	2005-2013 average annual change of PEC energy intensity in %	2005-2013 average change of energy intensity in industry in %	2005-2013 average annual change of final energy consumption residential per capita in %	2005-2013 average annual change of energy consumption per m2 with climatic corrections in koe/m2 in % (Source: Odyssee)	2005-2013 average annual change of energy intensity in the service sector in %	2005-2013 average annual change of total FEC in the transport sector in %	Change of share of trains, motor coaches, buses and trolley buses for passenger transport in 2005 vs. 2013 in percentage points	Change of share of railway and inland waterways for freight transport in 2005 vs. 2013 in percentage points	2005-2013 average annual change of heat generation from CHP	Ratio transformation output thPG/Fuel input for thPG 2005 vs. 2013 change in percentage points	2005-2013 average annual change of transformation output of district heating plants in %
EU28	+	+	+	+	-1.1%	0.1%	-1.7%	-1.9%	-0.8%	-1.4%	-0.4%	-0.7%	0.0	1	-1.0%	0.10	0.7%
BE	+	+	-	-	2.6%	2.9%	-1.9%	-1.7%	-3.5%	-3.2%	1.2%	-0.2%	2.4	8	7.8%	2.74	38.3%
BG	+	+	+	+	-8.3%	-5.1%	-3.7%	-7.1%	2.7%	-1.7%	-0.9%	-0.2%	-10	-5	2.1%	2.07	-4.2%
CZ	+	+	+	+	-1.3%	0.8%	-2.4%	-5.4%	-0.2%	-1.5%	-1.2%	-0.1%	1.9	-5	-0.9%	-1.06	-4.2%
DK	+	+	+	+	0.7%	-1.2%	-1.0%	-1.7%	-1.0%	-2.4%	-0.7%	-1.2%	-0.9	5	-0.6%	3.19	6.8%
DE	+	+	-	-	1.9%	2.4%	-1.9%	-1.3%	-1.1%	0.0%	-0.6%	0.2%	0.1	2	-0.5%	1.32	1.4%
EE	+	+	-	-	8.4%	0.0%	0.8%	-3.0%	1.7%	0.1%	-0.4%	0.0%	-8.2	-21	2.4%	-5.69	-3.6%
IE	+	+	+	+	-0.5%	0.9%	-1.4%	0.9%	-2.9%	-4.1%	-4.6%	-2.1%	-1.1	-1	n.a.	4.21	n.a.
EL	-	-	+	+	-11.9%	-10.4%	-0.8%	3.6%	-2.9%	-4.1%	0.9%	-2.9%	-3	-1	-0.9%	0.29	n.a.
ES	+	+	+	+	-6.6%	-2.4%	-2.3%	-1.3%	-0.2%	-2.3%	0.1%	-2.7%	1.3	0	n.a.	-2.79	n.a.
FR	+	+	-	-	0.7%	3.2%	-1.3%	-0.8%	-1.0%	-1.9%	0.2%	-0.3%	0.5	0	-9.1%	-1.09	49.5%
HR	-	-	+	+	-3.9%	-1.6%	-1.3%	-1.8%	n.a.	-2.7%	-0.4%	0.8%	-1.6	0	-0.8%	2.50	-3.3%
IT	+	-	+	+	-3.0%	-2.8%	-1.2%	-2.9%	1.5%	1.3%	0.9%	-1.9%	1.4	3	1.5%	1.66	n.a.
CY	-	-	+	+	-12.7%	-8.4%	-2.1%	0.0%	-1.4%	-3.5%	1.1%	-1.4%	n.a.	n.a.	n.a.	4.59	n.a.
LV	-	+	+	+	-1.8%	-4.3%	-1.4%	2.6%	0.0%	-1.2%	-1.5%	0.3%	-3.8	-10	3.3%	-6.31	-8.2%
LT	+	+	+	-	-3.2%	-2.2%	-5.7%	-1.7%	2.1%	-0.9%	-1.7%	1.6%	-1.6	-10	-2.1%	41.53	-0.5%
LU	+	+	+	+	-2.7%	-1.2%	-2.7%	-2.4%	-4.0%	-7.7%	1.8%	-1.0%	2.6	-2	0.8%	3.55	11.8%
HU	+	+	+	+	-3.3%	1.3%	-2.3%	2.4%	-1.8%	-3.1%	-4.8%	-1.9%	-3.3	-6	-6.3%	-1.12	2.6%
MT	+	+	-	-	-13.8%	-0.2%	-3.6%	n.a.	12.3%	-3.4%	n.a.	5.9%	n.a.	n.a.	n.a.	10.92	n.a.
NL	+	+	-	+	-1.7%	0.0%	-1.1%	-1.3%	-1.0%	-1.9%	0.0%	-0.5%	1.1	8	-3.3%	-1.63	-1.0%
AT	+	+	+	-	-0.1%	1.6%	-1.6%	-0.3%	-0.8%	-1.0%	-2.6%	-0.4%	2.2	11	2.9%	6.12	8.3%
PL	+	+	-	+	0.4%	-1.7%	-3.0%	-6.0%	0.9%	-1.0%	-0.3%	3.4%	-10.3	-14	-1.6%	-0.81	-0.7%
PT	+	-	+	+	0.5%	-2.4%	-1.5%	-0.8%	-1.5%	-4.6%	-2.9%	-1.4%	0.2	1	8.8%	1.50	n.a.
RO	-	-	+	+	-8.2%	-4.6%	-4.4%	-7.3%	1.8%	-0.7%	-0.7%	2.9%	-6.8	10	-4.4%	-3.07	-6.5%
SL	+	+	+	+	-1.7%	-1.0%	-1.1%	-3.8%	0.4%	-1.3%	-0.1%	3.3%	-0.6	-3	0.3%	0.53	-3.4%
SK	+	+	+	-	2.9%	5.0%	-4.4%	-5.0%	-0.8%	-1.5%	-0.9%	2.5%	-8.5	-6	2.2%	-1.30	-8.3%
FI	-	-	+	+	-2.6%	-2.1%	-0.7%	0.0%	-0.3%	-0.1%	0.6%	0.6%	0	5	0.4%	-0.90	1.5%
SE	+	+	-	+	-1.9%	-2.4%	-2.0%	-1.4%	-1.3%	-1.4%	-1.3%	-0.4%	0.8	2	3.2%	1.29	-2.7%
UK	+	+	+	+	-1.0%	1.1%	-2.2%	-1.8%	-3.1%	-3.5%	-0.5%	-1.2%	2.4	2	n.a.	-0.78	1.1%

Source: Eurostat, Notifications of Member States, DG ECFIN, Odyssee-Mure

The analysis of the indicators described above demonstrates the trends for Member State in the industry, residential, services, transport and generation sector. For EU-28, the different performance indicators 2005-2013 used to analyse progress on energy efficiency show that most have improved on the European level but an increase in final energy consumption from 2012 to 2013 and a decrease of heat generated by CHP plants between 2005 and 2013 occurred. Most Member States have increased their effort considerably and either strengthened existing energy efficiency measures or introduced new ones which show already a positive impact on the performance indicators as shown in the table above.

Having in mind that the EU-28 needs to reduce primary energy consumption annually on average by 11.9 Mtoe (2.7 Mtoe expressed in final energy consumption) from the 2013 level to achieve its 2020 targets, it can be concluded that – despite the achievements of previous years – additional efforts are needed in particular in the buildings, transport and generation sectors as described in Report COM(2015) 574. To close the remaining gap towards the 2020 target expressed in primary energy consumption, Member States should accelerate their efforts in order to achieve their national energy efficiency targets for 2020 or to go beyond them. It is worth noting that some Member States – Austria, Belgium, France, Germany, Malta, the Netherlands, Sweden and the United Kingdom – have already set themselves particularly ambitious targets. Croatia, Finland, Greece and Romania, which have set less ambitious targets for 2020 in light of expected GDP growth in 2014-2020, could benefit from assessing again how an increased level of energy efficiency could increase their security of supply, competitiveness and sustainability.

The Commission will continue to closely follow Member States' progress towards their indicative national energy efficiency targets for 2020 and the implementation of the EED and update its assessment annually as part of the State of the Energy Union. This exercise has shown that more indicators based on official statistical data might be needed to fully assess Member States' progress towards their energy efficiency targets. In addition, detailed information is needed on a sectoral level. To distinguish impacts of energy efficiency measures from other factors like changes in economic structure, economic growth/downturn impacts, changes in the energy mix, weather variations, population growth, increasing wealth, impacts of other policies and other external factors, the Commission will further analyse how to improve or extend the performance indicators. In addition, the Commission will work on the further development of methods such as decomposition analysis or other suitable methods.

ANNEX I – INDICATIVE NATIONAL ENERGY EFFICIENCY TARGETS 2020

Table 3: Evolution of indicative national energy efficiency targets for 2020

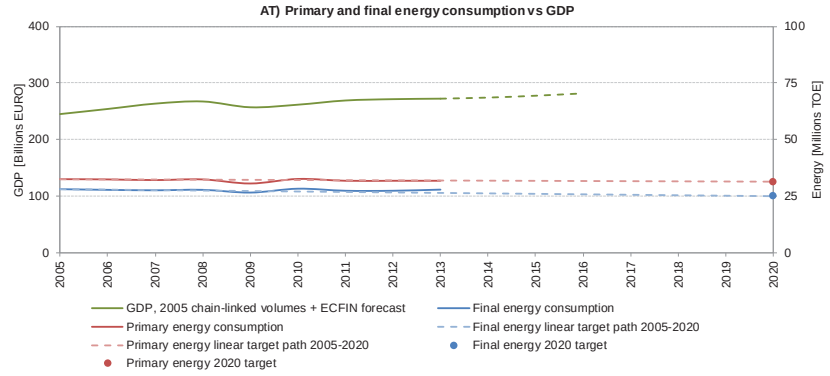
Member State	Absolute level of energy consumption in 2020 [Mtoe] as notified by Member States in 2013, in the NEEAP 2014 or in a separate notification to the European Commission in 2015	
	PRIMARY energy consumption	FINAL energy consumption
Austria	31.5	25.1
Belgium	43.7	32.5
Bulgaria	16.9	8.6
Croatia	11.5	7.0
Cyprus	2.2	1.8
Czech Republic	39.6	25.3
Denmark	17.8	14.8
Estonia	6.5	2.8
Finland	35.9	26.7
France	219.9	131.4
Germany	276.6	194.3
Greece	24.7	18.4
Hungary	24.1	14.4
Ireland	13.9	11.7
Italy	158.0	124.0
Latvia	5.4	4.5
Lithuania	6.5	4.3
Luxembourg	4.5	4.2
Malta	0.7	0.5
Netherlands	60.7	52.2
Poland	96.4	71.6
Portugal	22.5	17.4
Romania	43.0	30.3
Slovakia	16.4	9.0
Slovenia	7.3	5.1
Spain	119.8	80.1
Sweden	43.4	30.3
United Kingdom	177.6	129.2
Sum of indicative targets EU28	1526.9	1077.5
EU28 target 2020	**1483**	**1086**

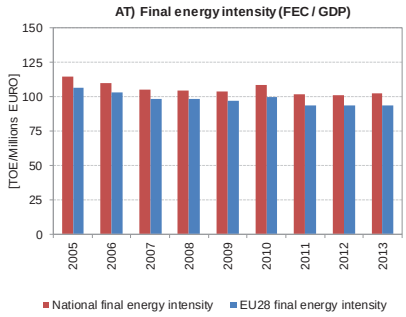
Status: 07/10/2015

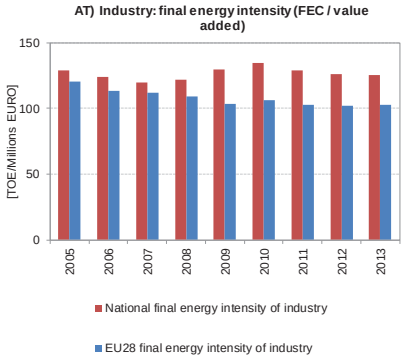
ANNEX II – INDICATORS OF THE ANNUAL REPORTS

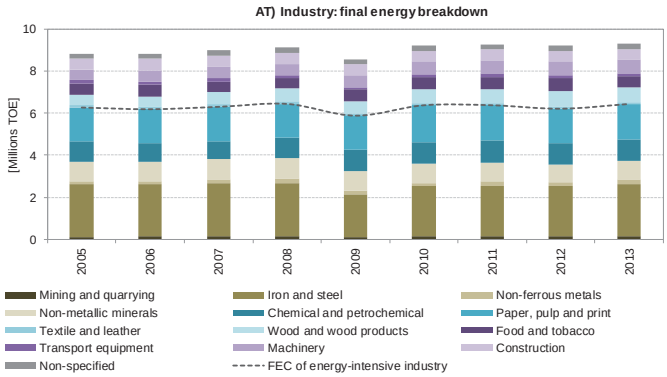
This Annex gives an overview of the indicators which Member States have to report in their Annual Reports. This staff working document refers to Member States' data published by Eurostat for comparability reasons as the data provided by Member States in their Annual Reports according to Article 24(1) and Annex XIV of the EED was often based on different or unknown definition and sources.

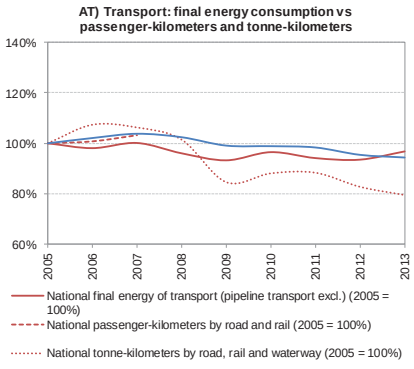
1. Austria

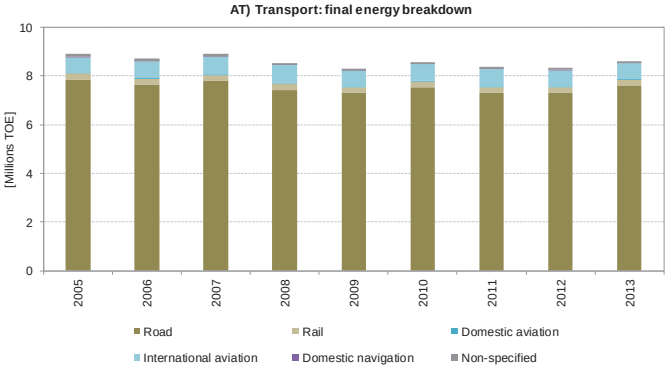

AT) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

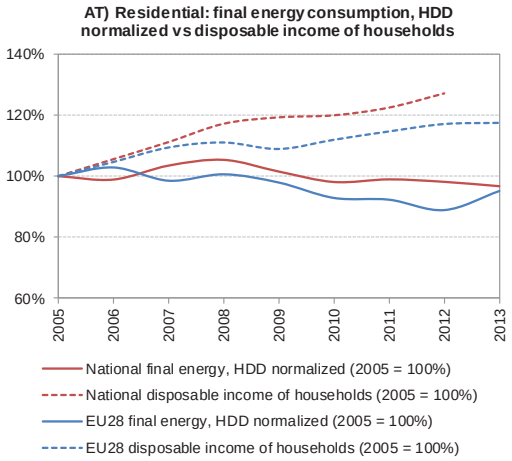

AT) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

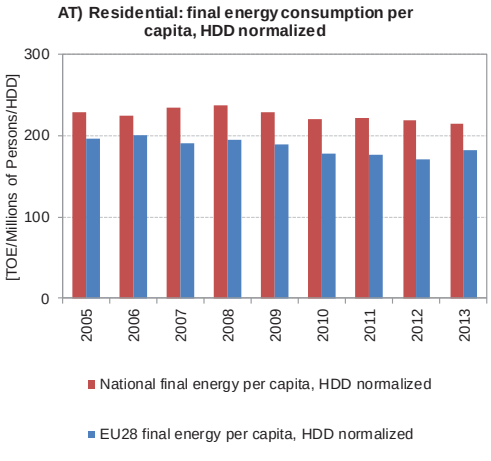

AT) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

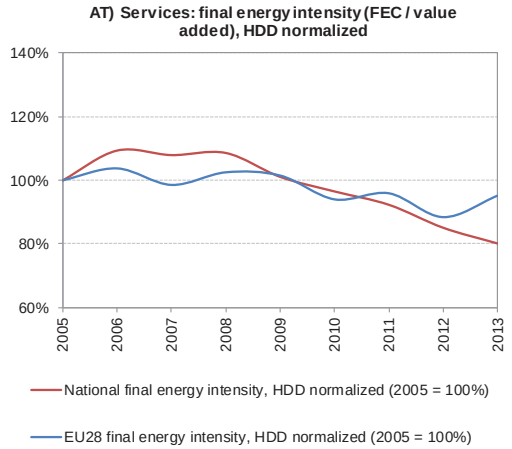

AT) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

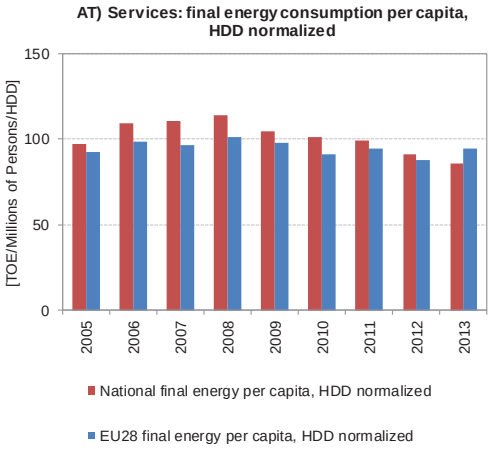

AT) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

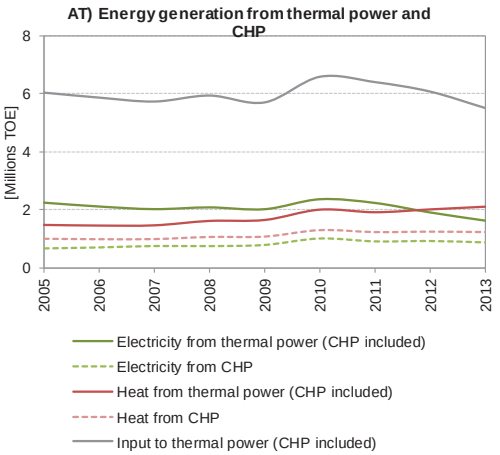

AT) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

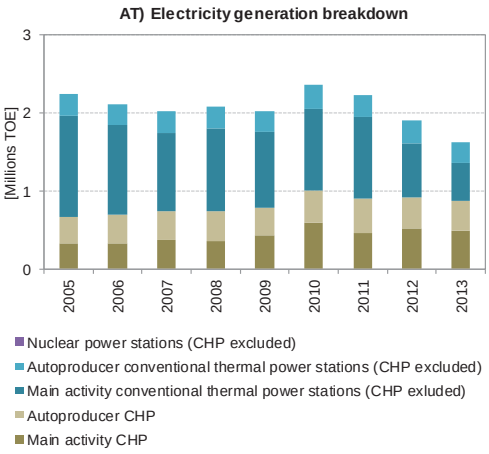

AT) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


AT) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

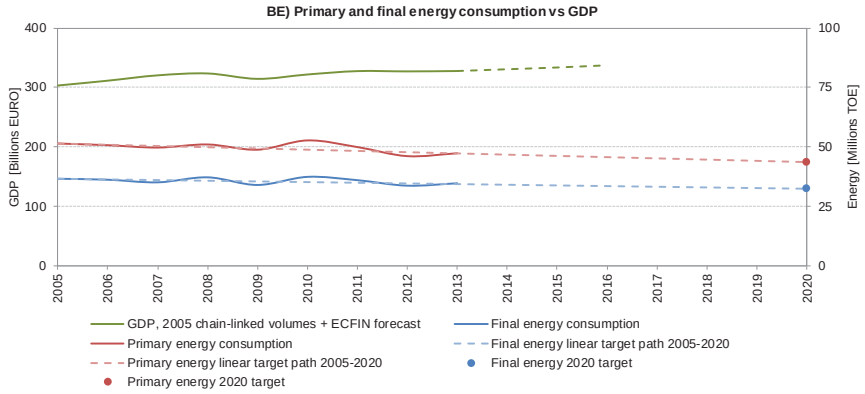

AT) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

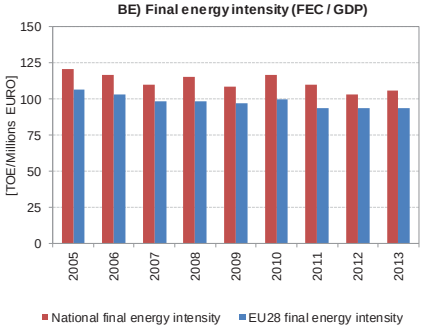

AT) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

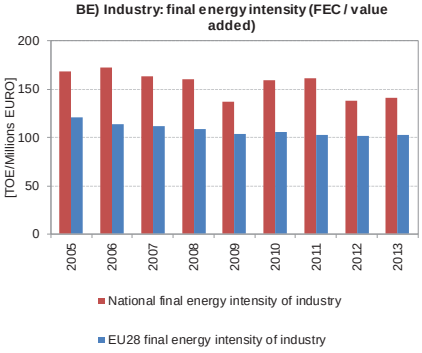

AT) Energy generation from thermal power and CHP
[Millions TOE]
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

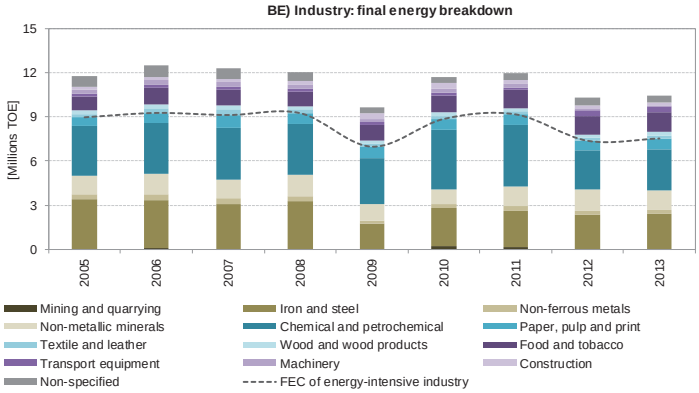

AT) Electricity generation breakdown
[Millions TOE]
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

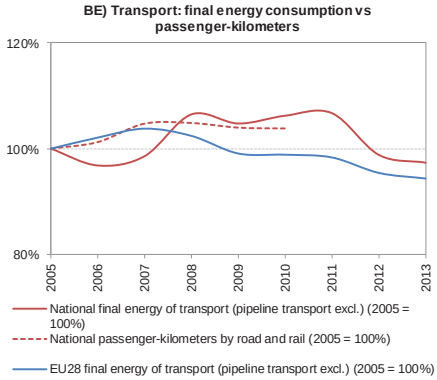
2. Belgium

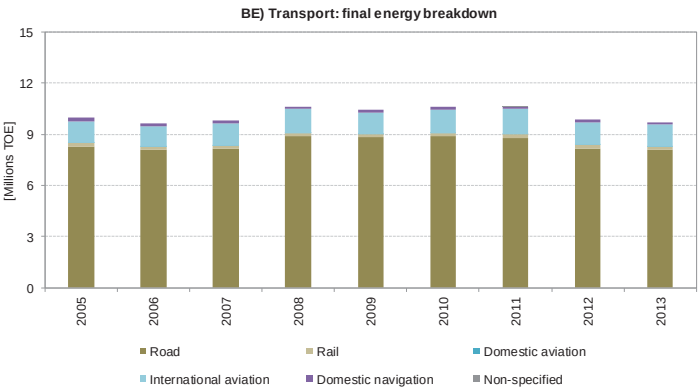

BE) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

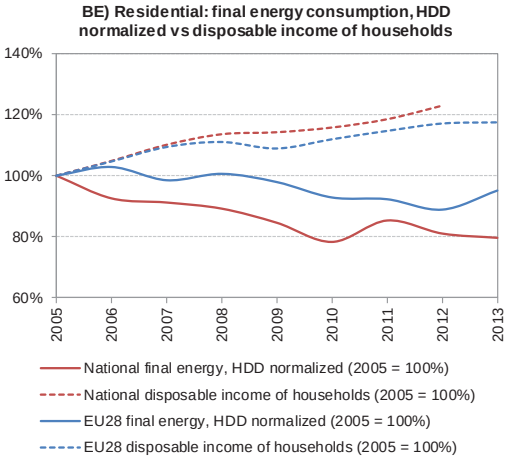

BE) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

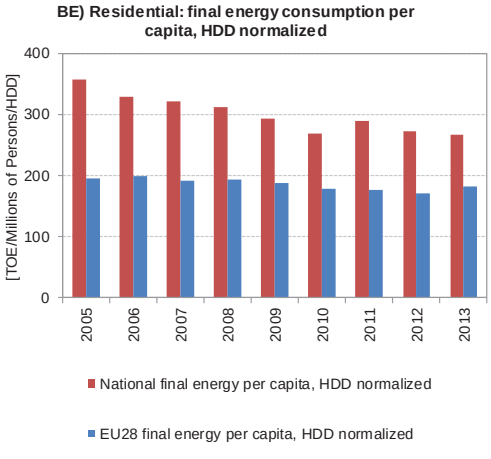

BE) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

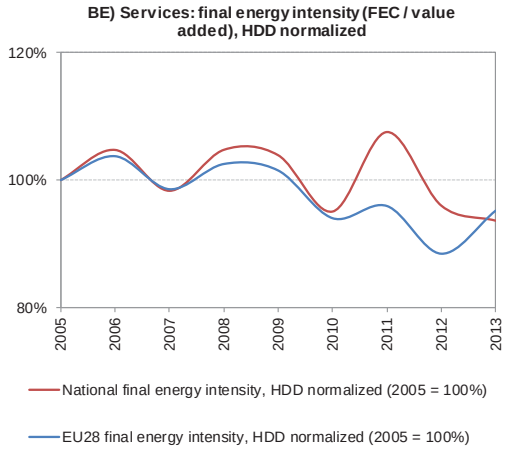

BE) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

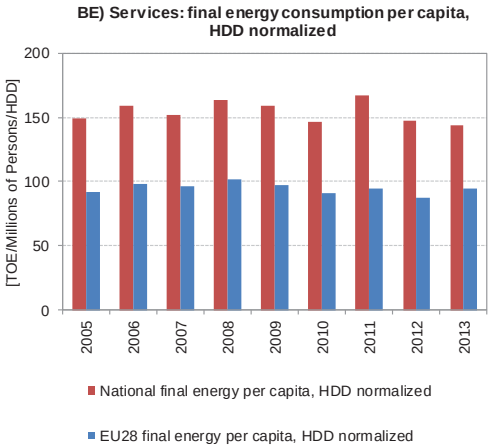

BE) Transport: final energy consumption vs passenger-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

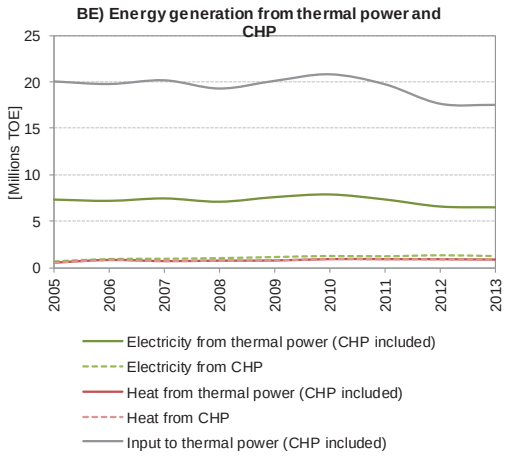

BE) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

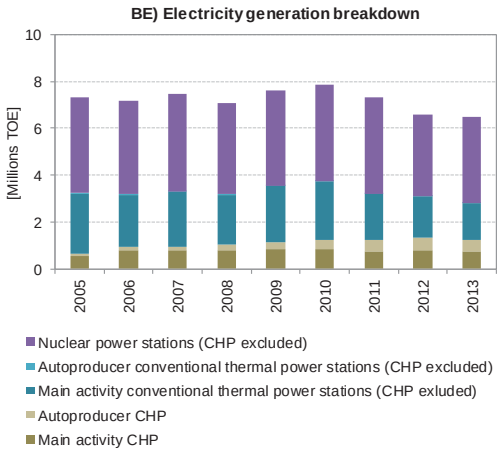

BE) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


BE) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

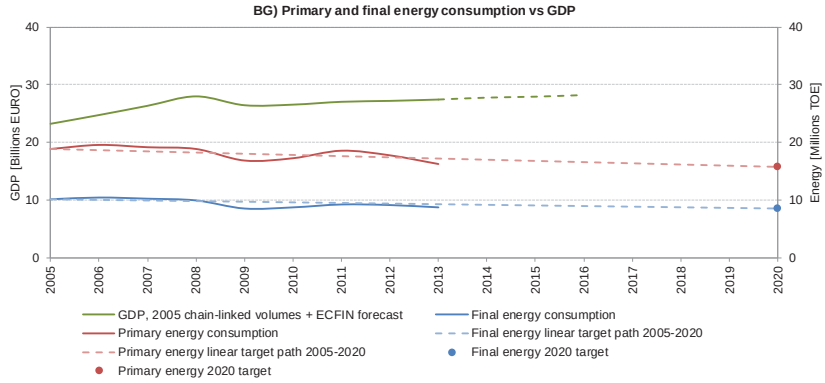

BE) Services: final energy intensity (FEC / value added), HDD normalized
120%
100%
80%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

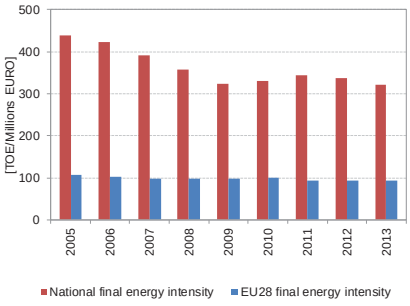

BE) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

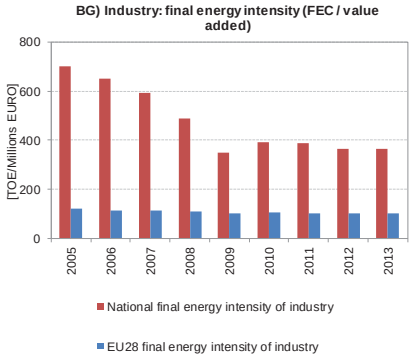

BE) Energy generation from thermal power and CHP
[Millions TOE]
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

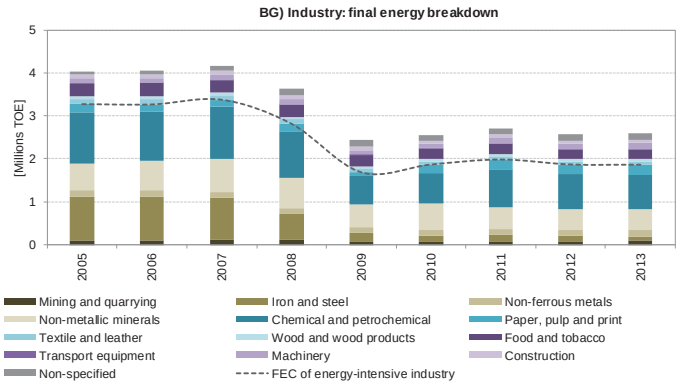

BE) Electricity generation breakdown
[Millions TOE]
10
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

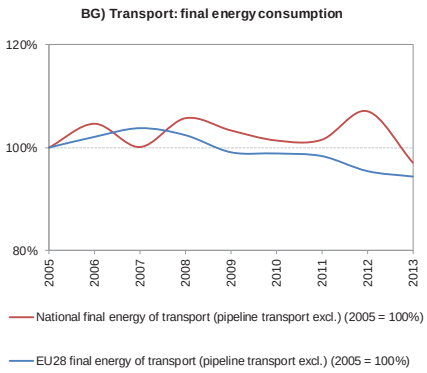
3. Bulgaria

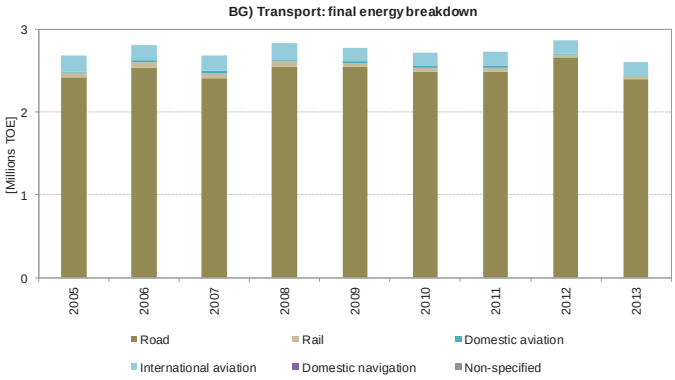

BG) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

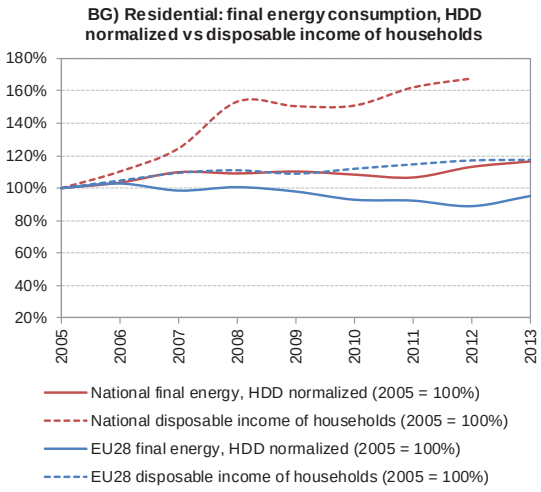

BG) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

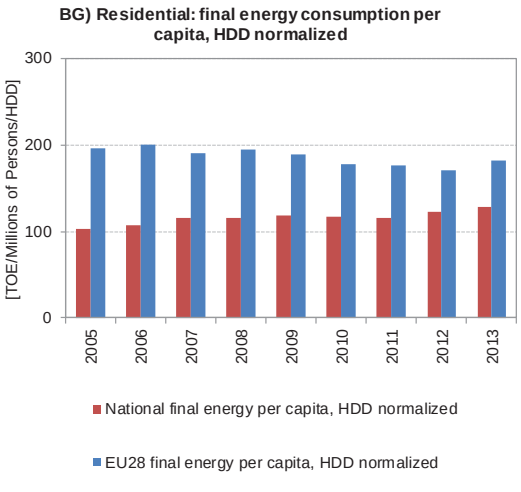

BG) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

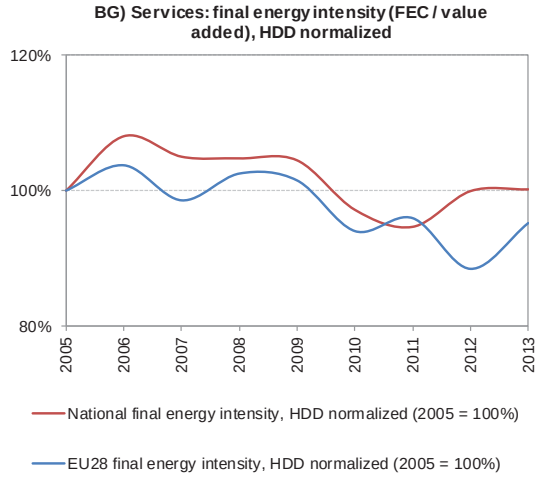

BG) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

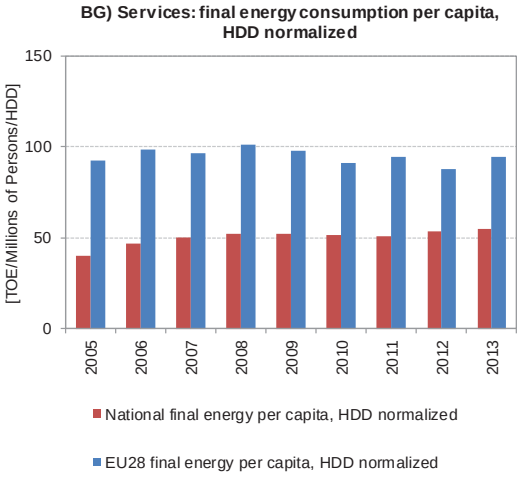

BG) Transport: final energy consumption
National final energy of transport (pipeline transport excl.) (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

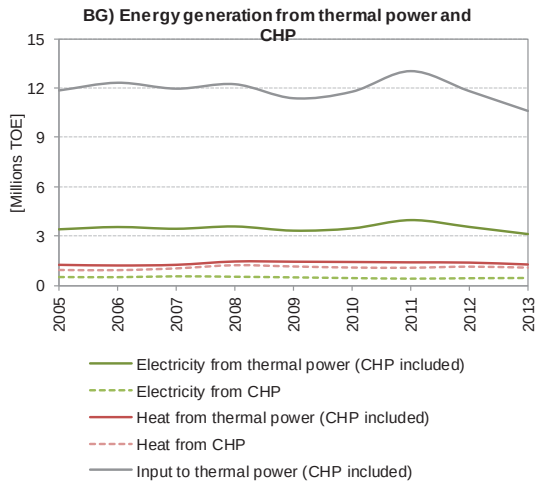

BG) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

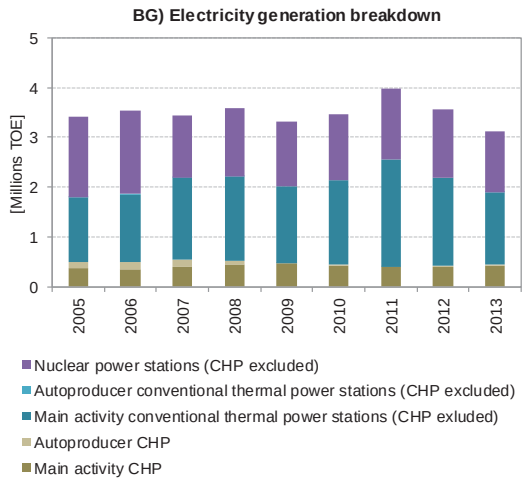

BG) Residential: final energy consumption, HDD normalized vs disposable income of households
180%
160%
140%
120%
100%
80%
60%
40%
20%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


BG) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

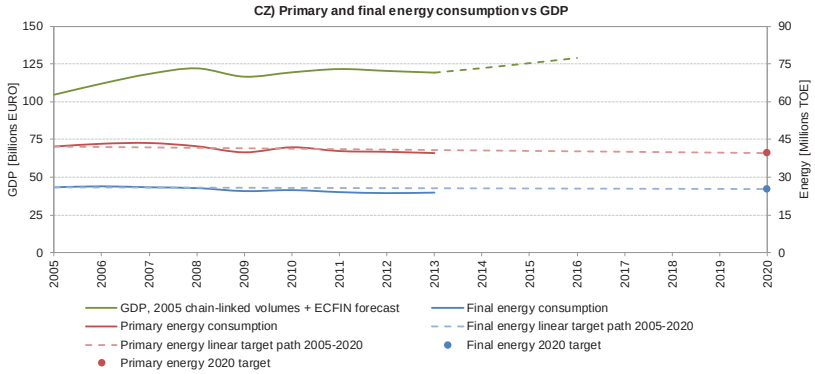

BG) Services: final energy intensity (FEC / value added), HDD normalized
120%
100%
80%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

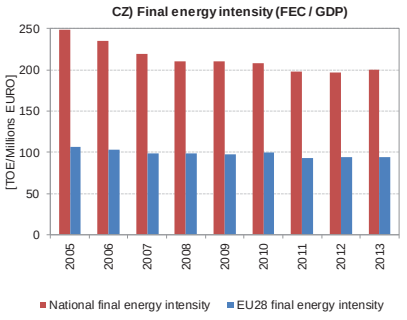

BG) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

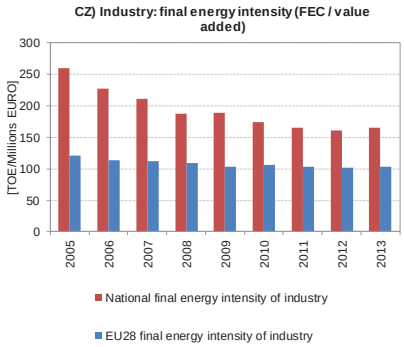

BG) Energy generation from thermal power and CHP
[Millions TOE]
15
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

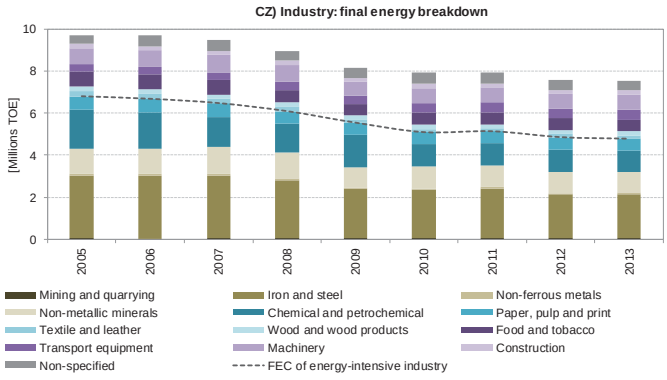

BG) Electricity generation breakdown
[Millions TOE]
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

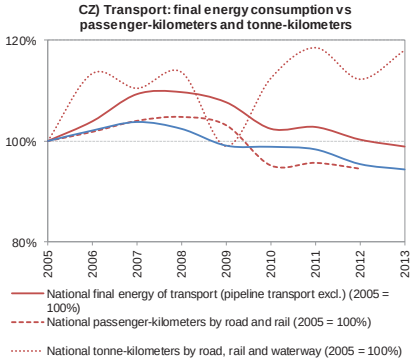
4. Czech Republic

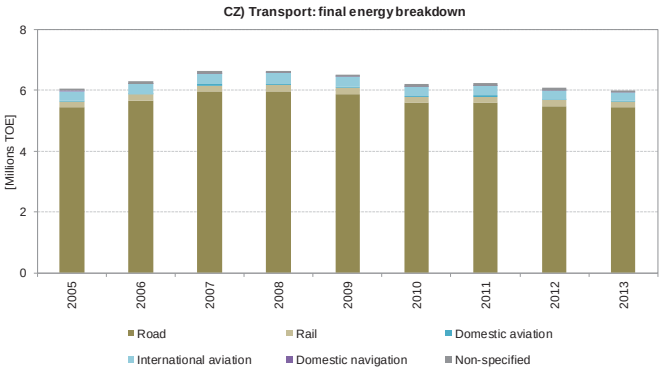


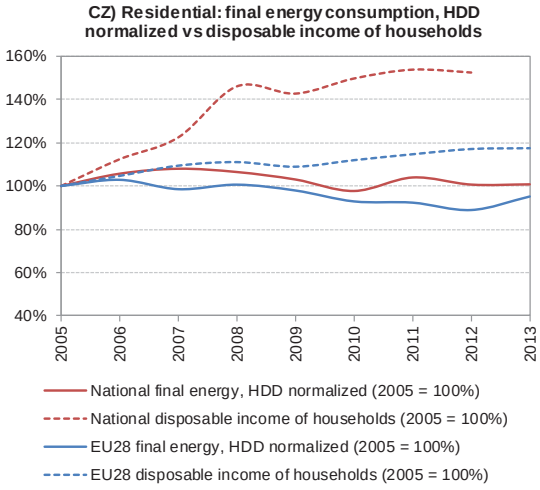


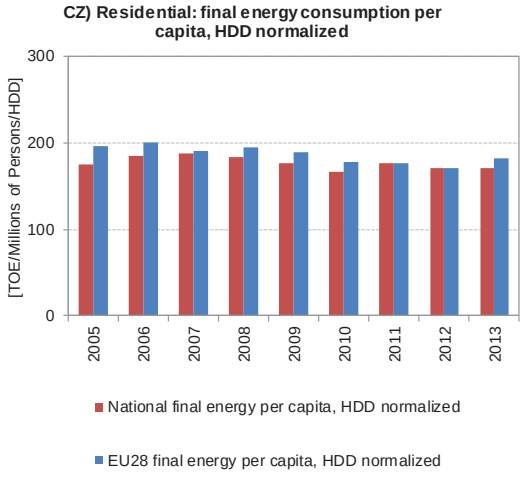


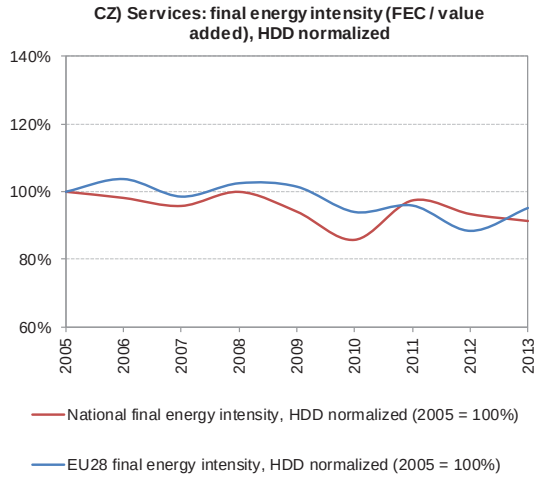


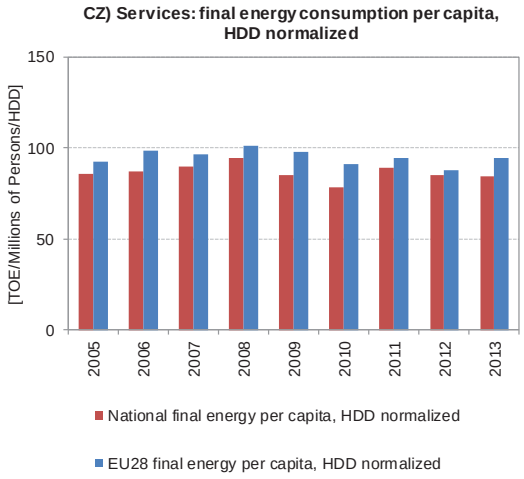


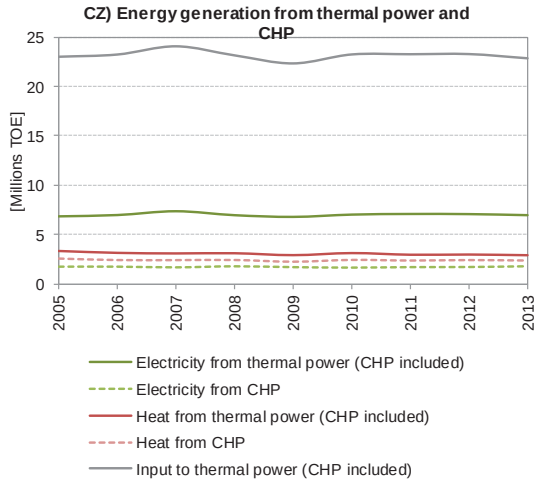


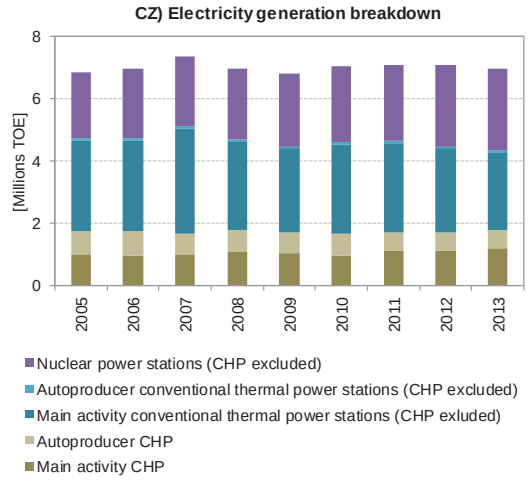

CZ) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


CZ) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

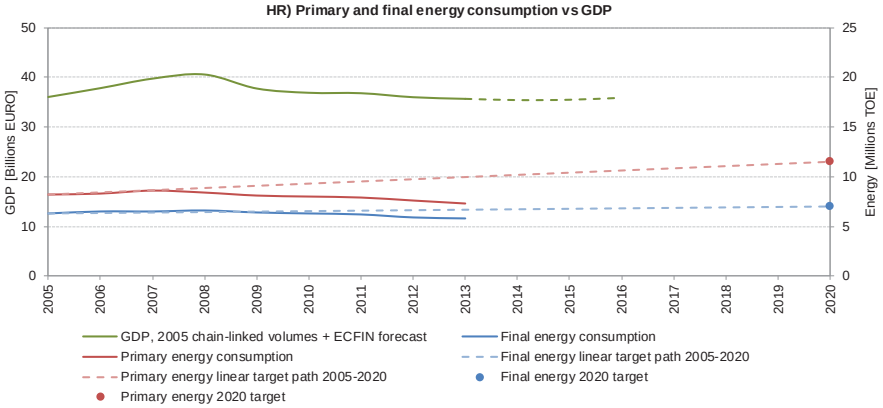

CZ) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

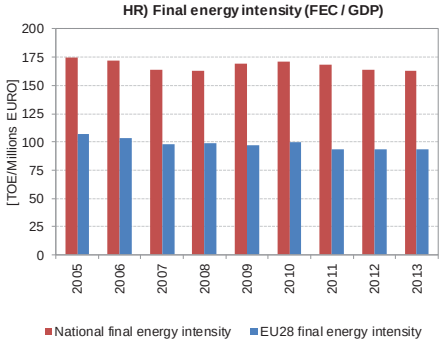

CZ) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

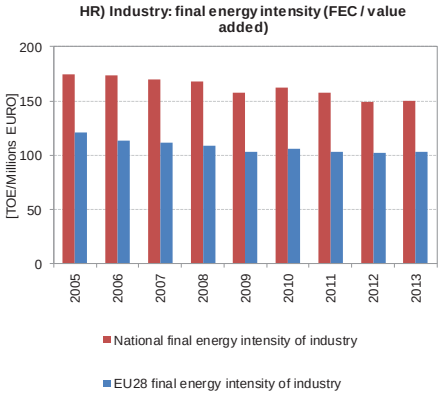

CZ) Energy generation from thermal power and CHP
[Millions TOE]
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

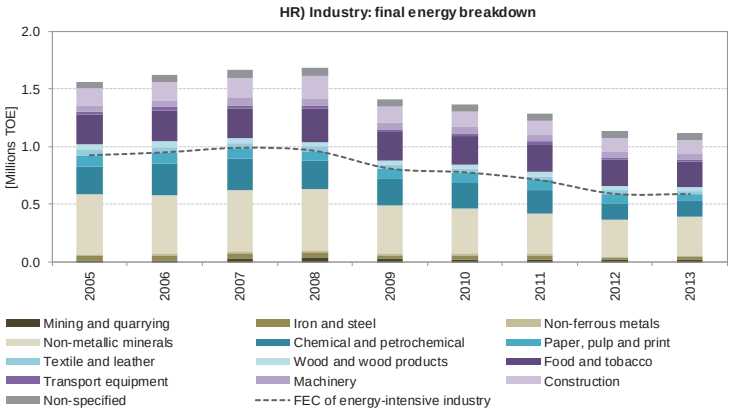

CZ) Electricity generation breakdown
[Millions TOE]
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

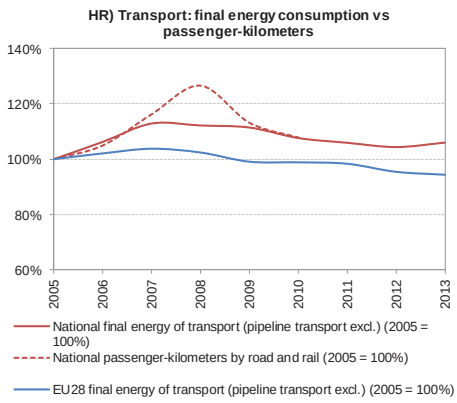
5. Croatia

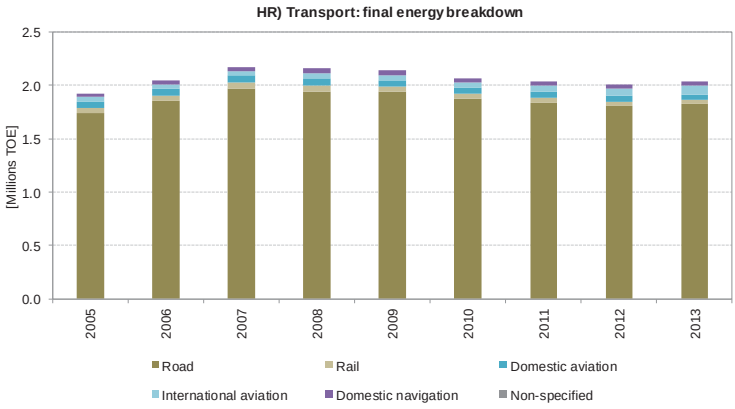

HR) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

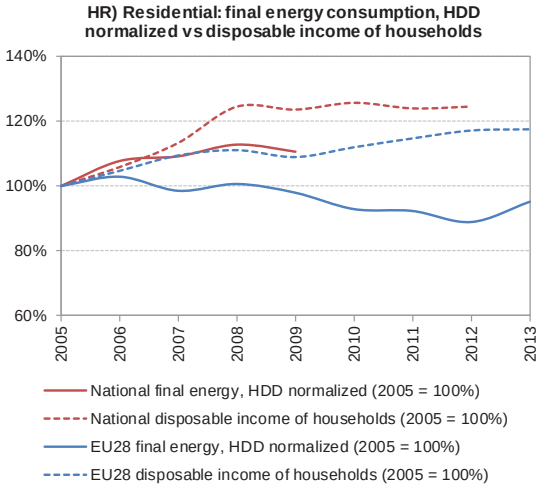

HR) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

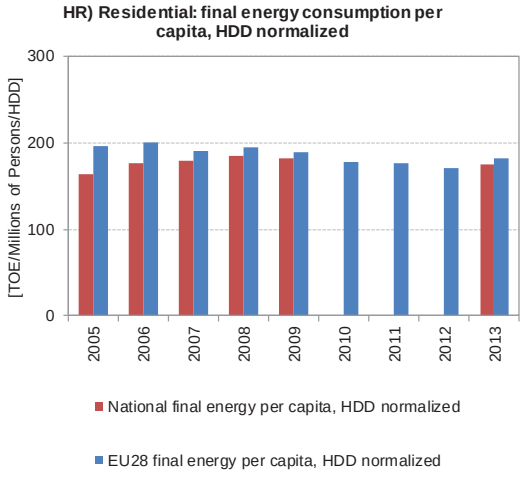

HR) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

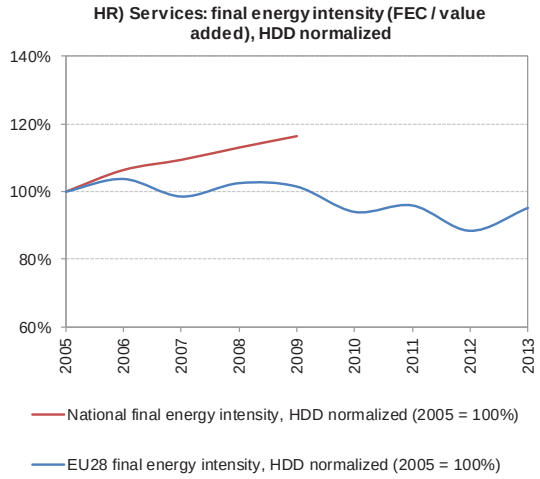

HR) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

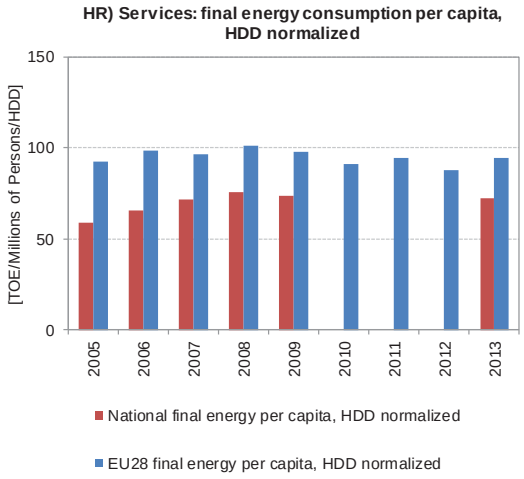

HR) Transport: final energy consumption vs passenger-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

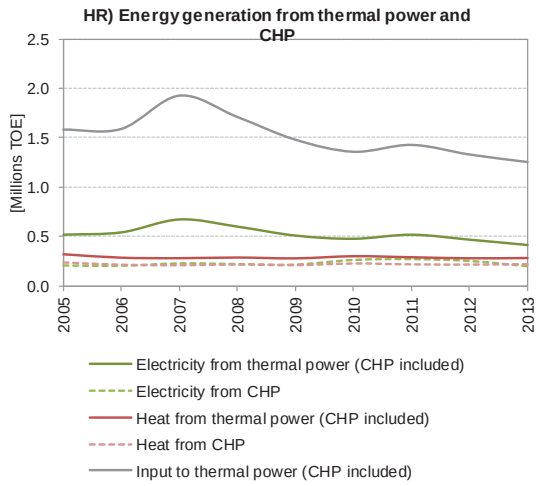

HR) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

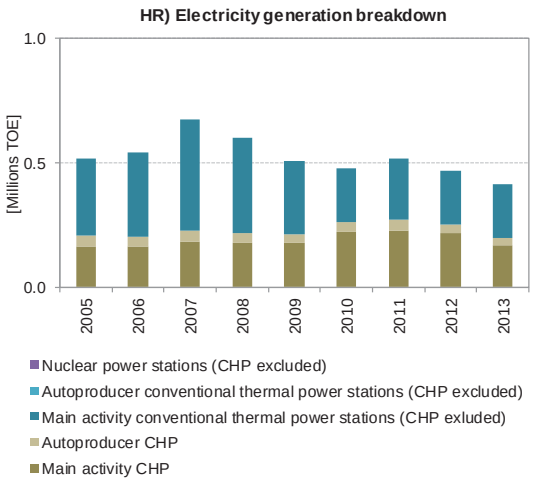

HR) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


HR) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

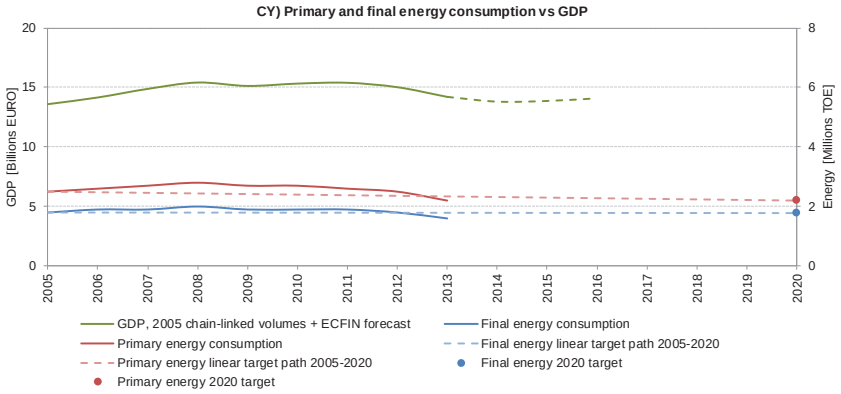

HR) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

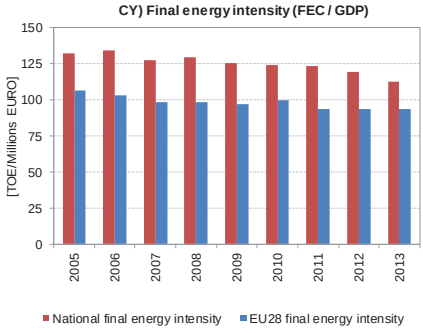

HR) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

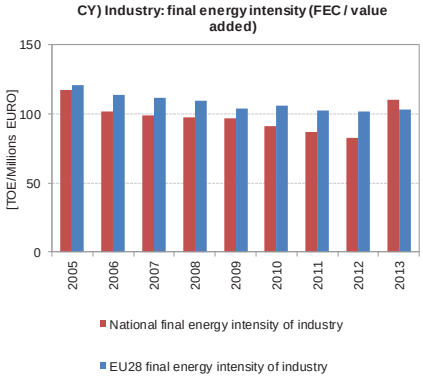

HR) Energy generation from thermal power and CHP
[Millions TOE]
2.5
2.0
1.5
1.0
0.5
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

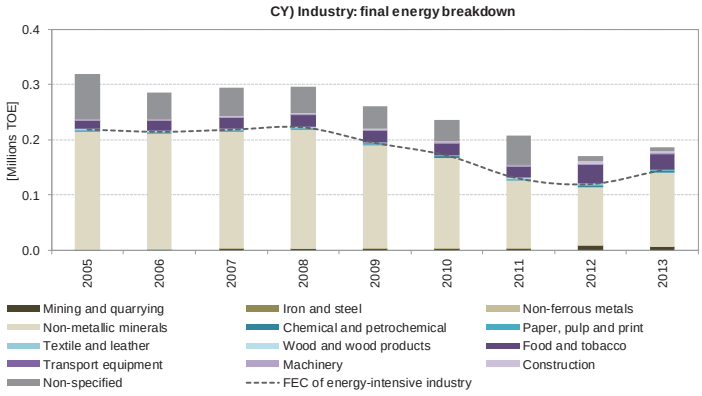

HR) Electricity generation breakdown
[Millions TOE]
1.0
0.5
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

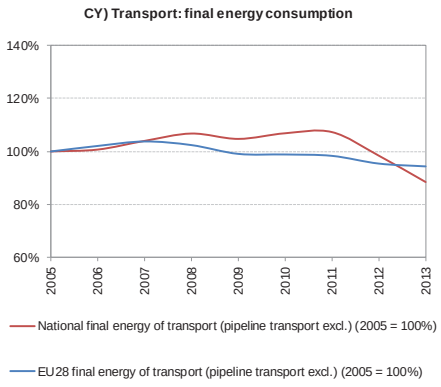
6. Cyprus

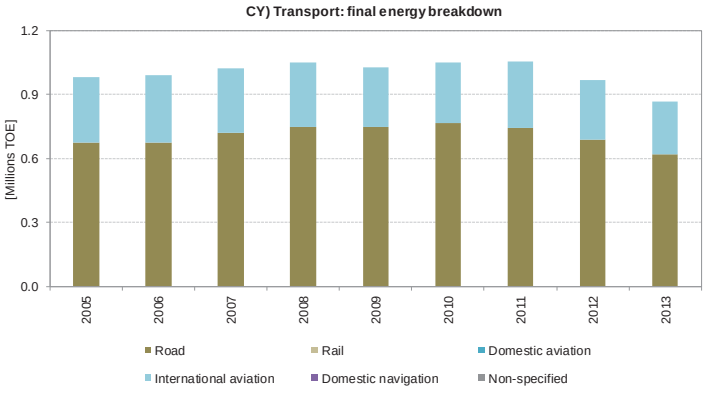

CY) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

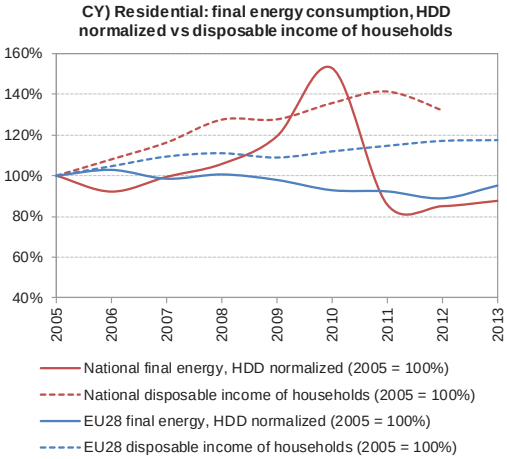

CY) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

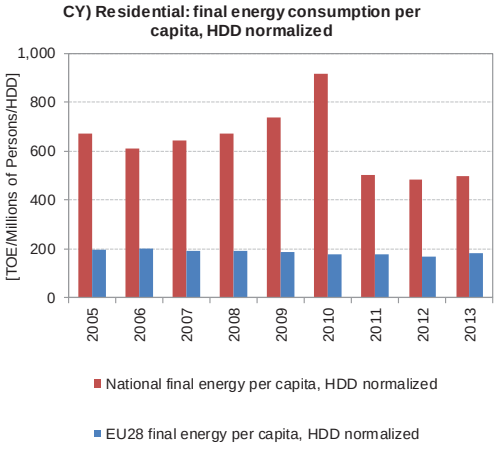

CY) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

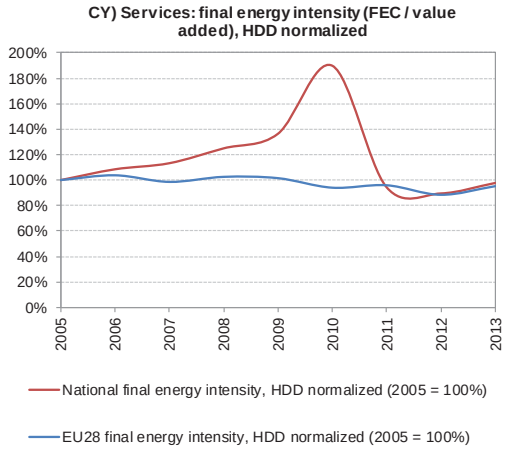

CY) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

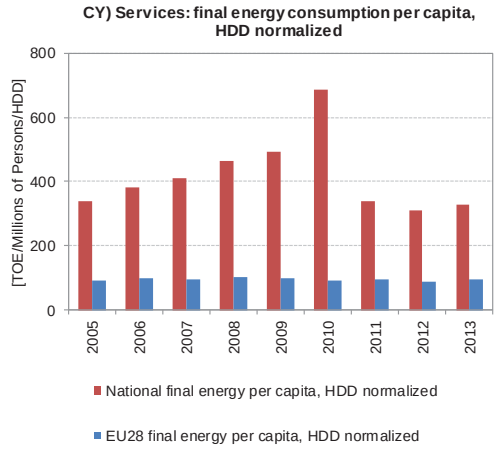

CY) Transport: final energy consumption
National final energy of transport (pipeline transport excl.) (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

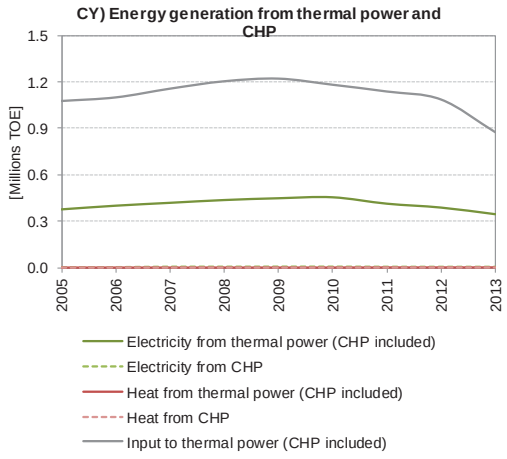

CY) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

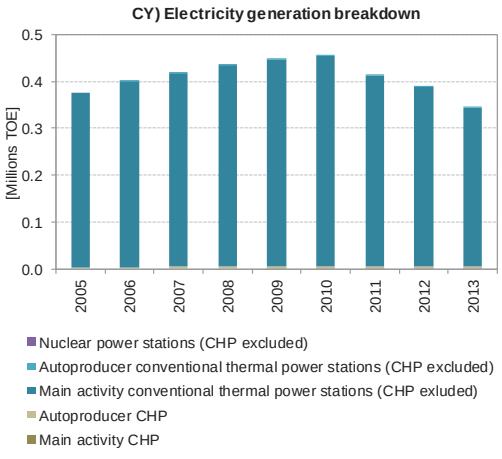

CY) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


CY) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
1,000
800
600
400
200
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

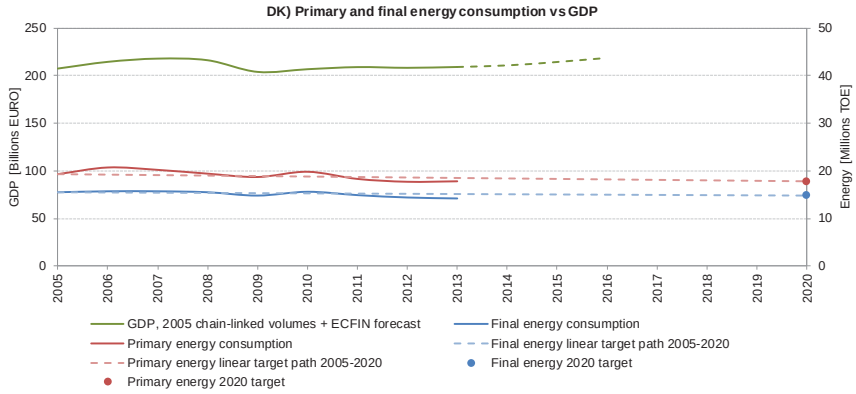

CY) Services: final energy intensity (FEC / value added), HDD normalized
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

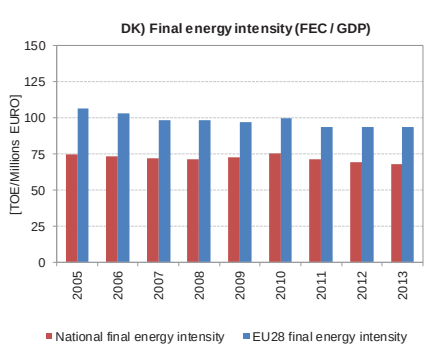

CY) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
800
600
400
200
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

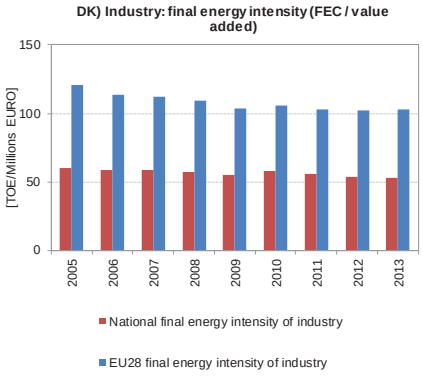

CY) Energy generation from thermal power and CHP
[Millions TOE]
1.5
1.2
0.9
0.6
0.3
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

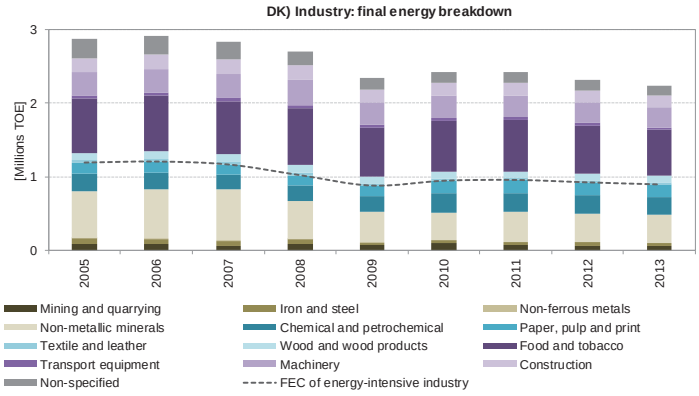

CY) Electricity generation breakdown
[Millions TOE]
0.5
0.4
0.3
0.2
0.1
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

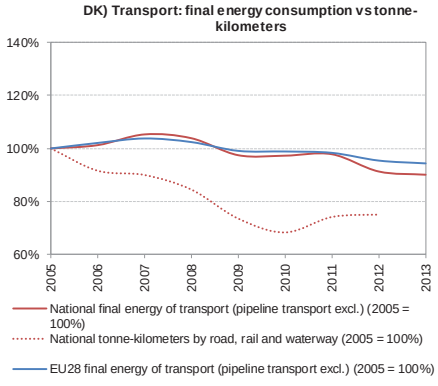
7. Denmark

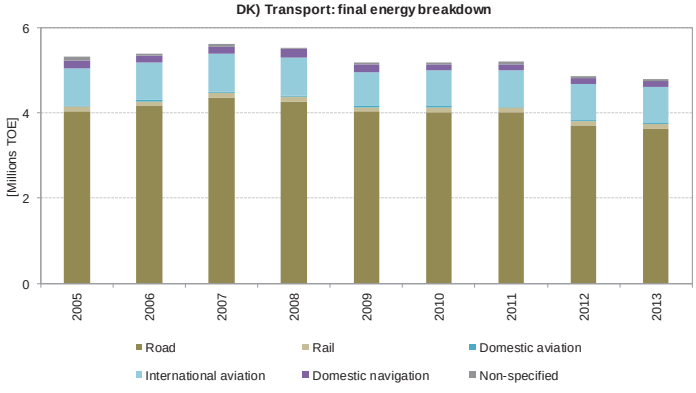

DK) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

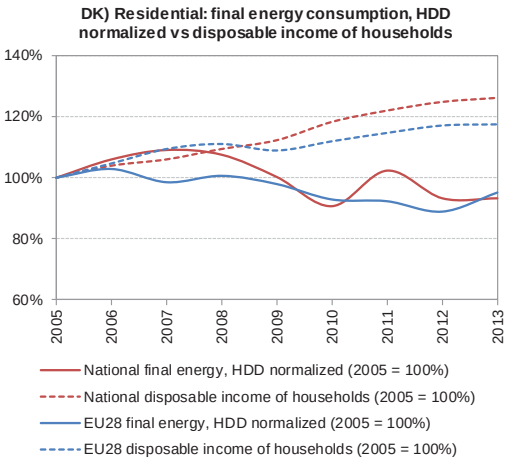

DK) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

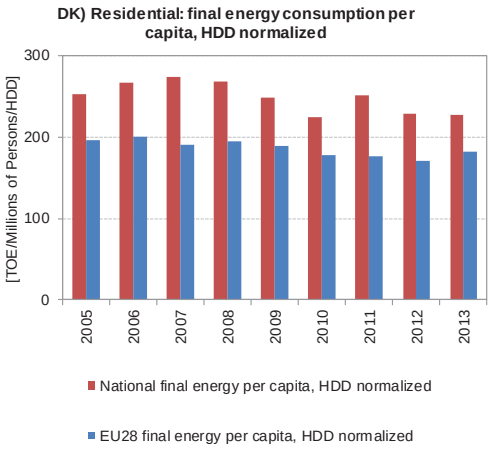

DK) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

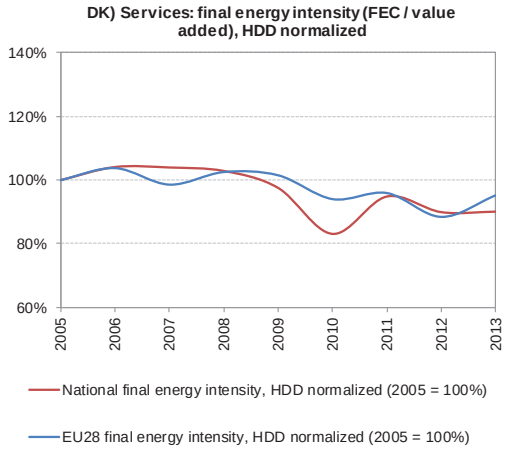

DK) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

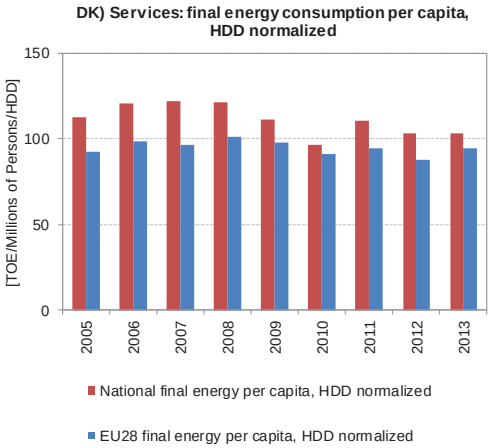

DK) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

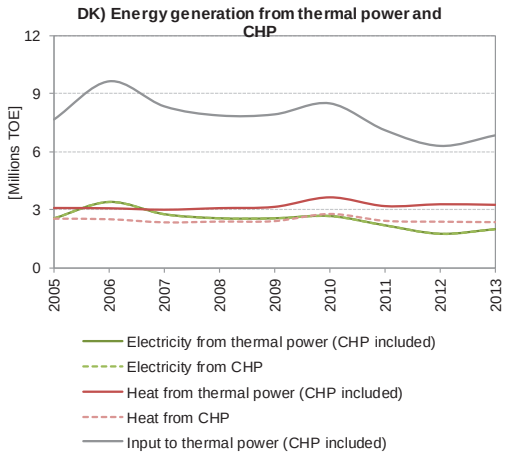

DK) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

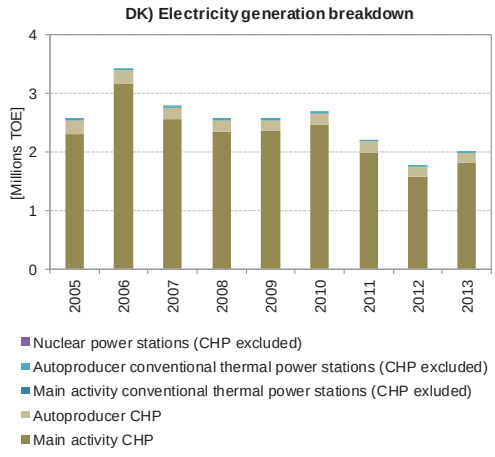

DK) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


DK) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized


DK) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)


DK) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized


DK) Energy generation from thermal power and CHP
[Millions TOE]
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)


DK) Electricity generation breakdown
[Millions TOE]
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

EUROPEAN
COMMISSION

Brussels, 18.11.2015
SWD(2015) 245 final

PART 2/2

COMMISSION STAFF WORKING DOCUMENT
Accompanying the document

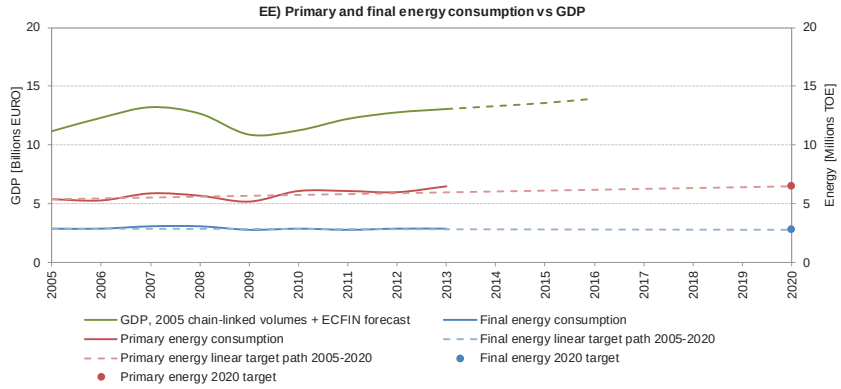
REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL

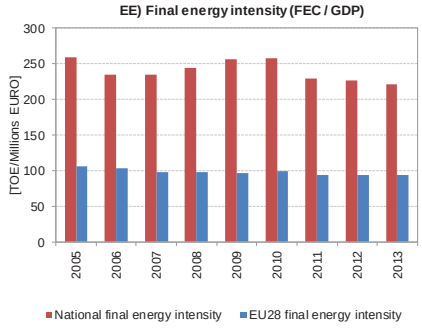
Assessment of the progress made by Member States towards the national energy efficiency targets for 2020 and towards the implementation of the Energy Efficiency Directive 2012/27/EU as required by Article 24 (3) of Energy Efficiency Directive 2012/27/EU

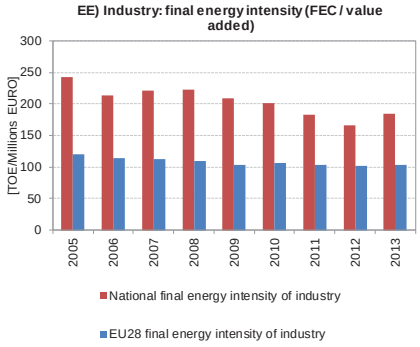
{COM(2015) 574 final}

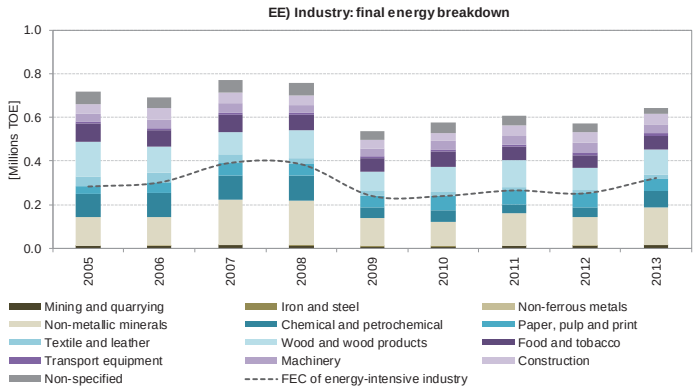
TABLE OF CONTENTS

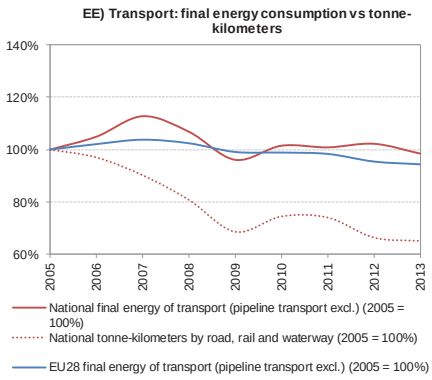
8. Estonia

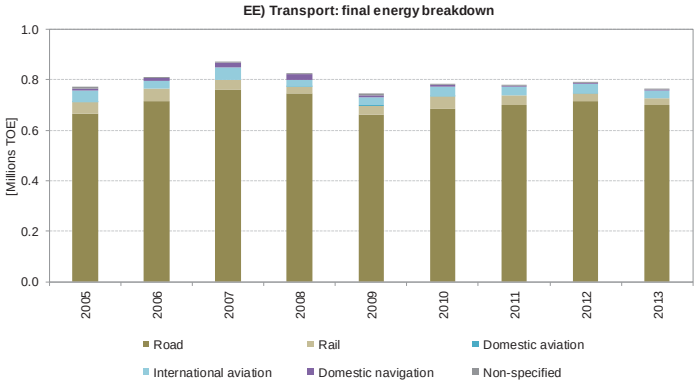

EE) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

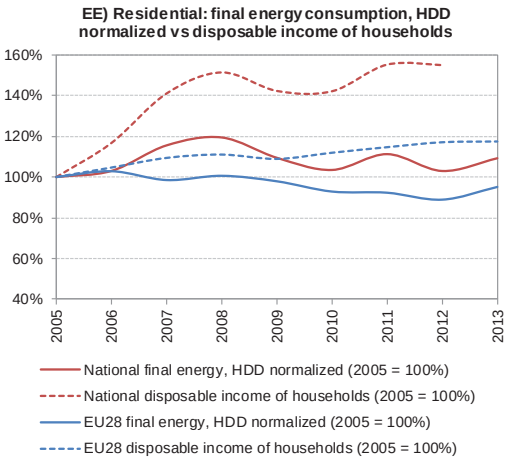

EE) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

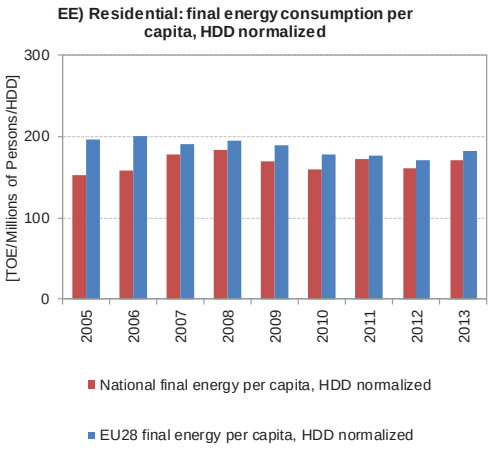

EE) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

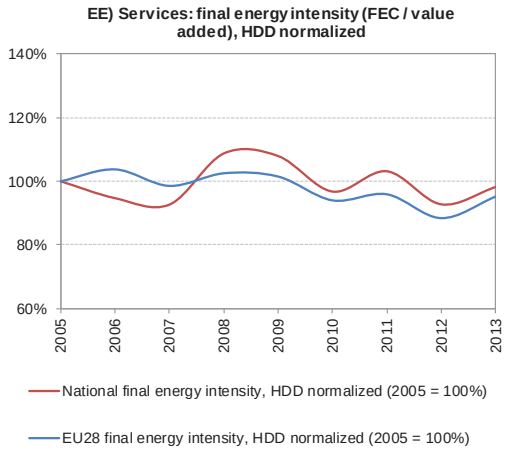

EE) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

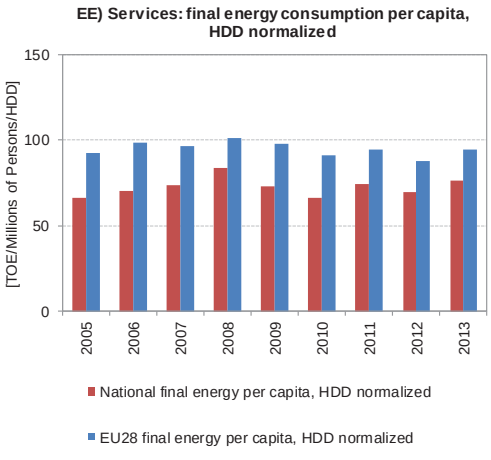

EE) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

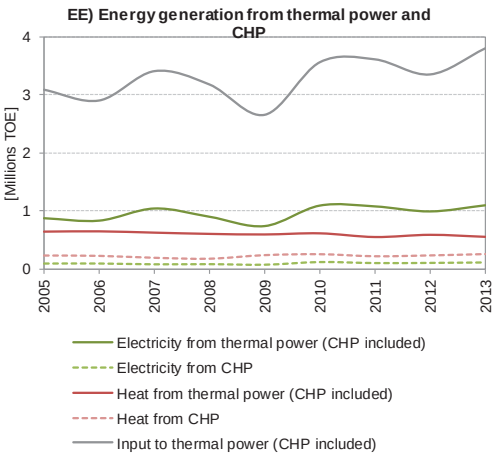

EE) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

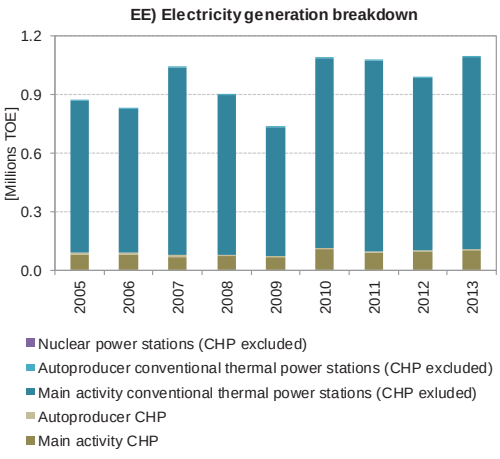

EE) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


EE) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

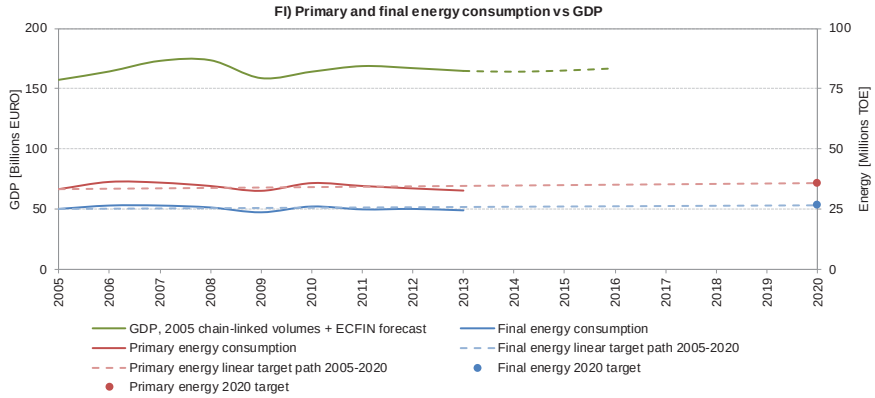

EE) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

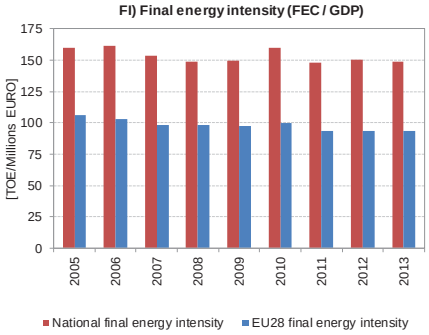

EE) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

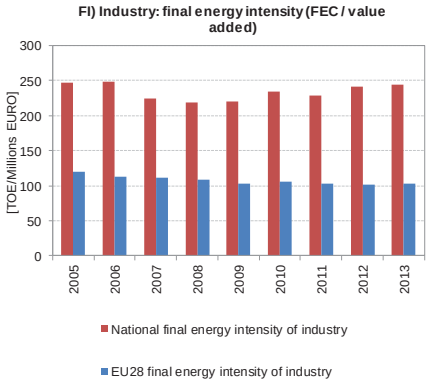

EE) Energy generation from thermal power and CHP
[Millions TOE]
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

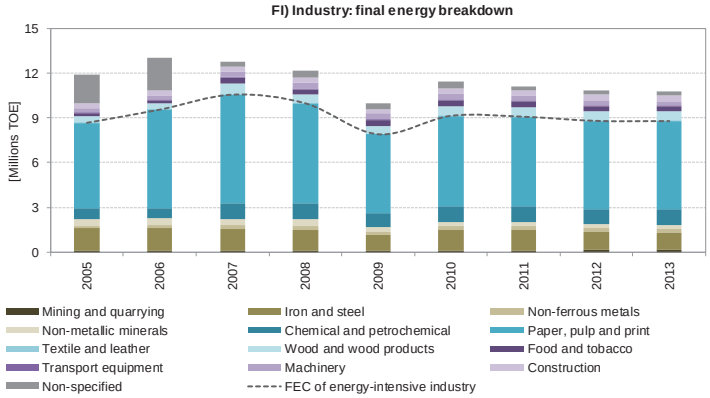

EE) Electricity generation breakdown
[Millions TOE]
1.2
0.9
0.6
0.3
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

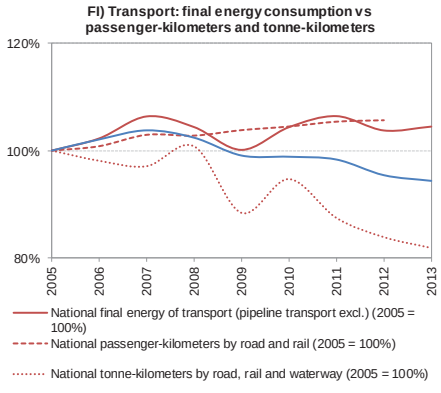
9. Finland

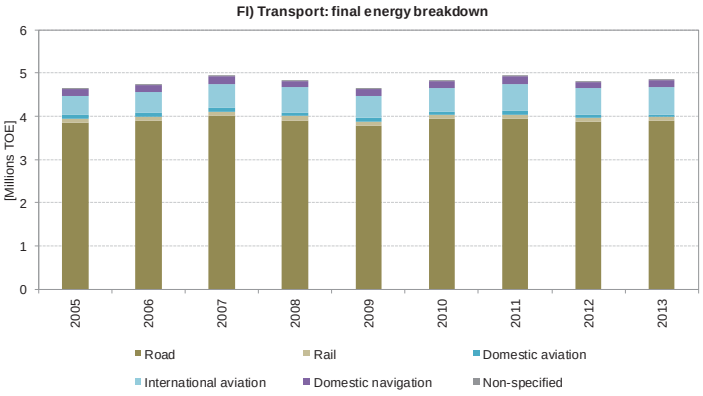

FI) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

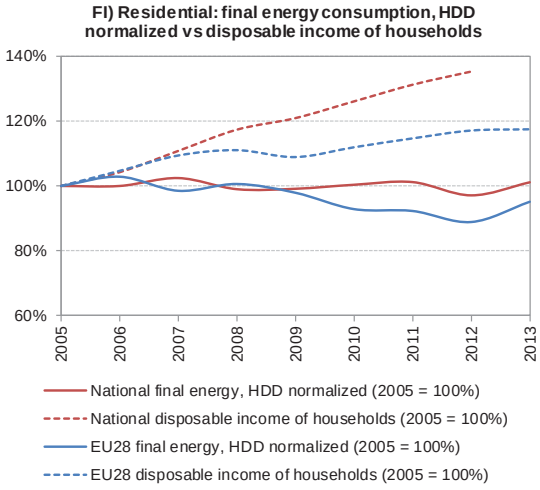

FI) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

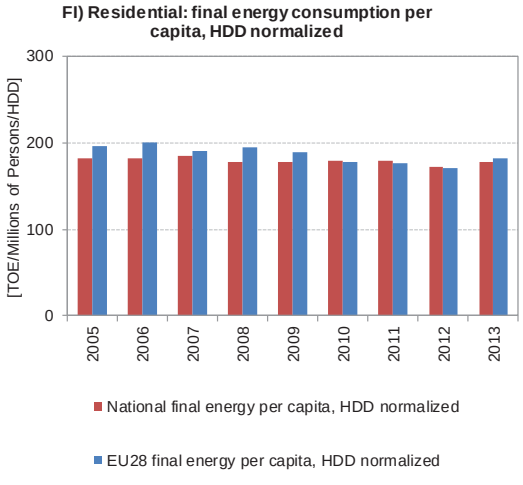

FI) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

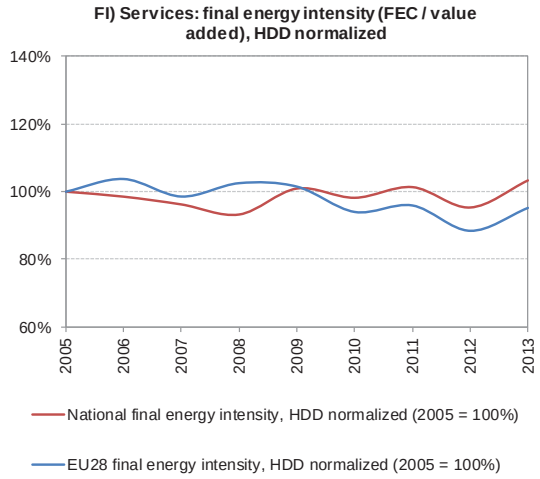

FI) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

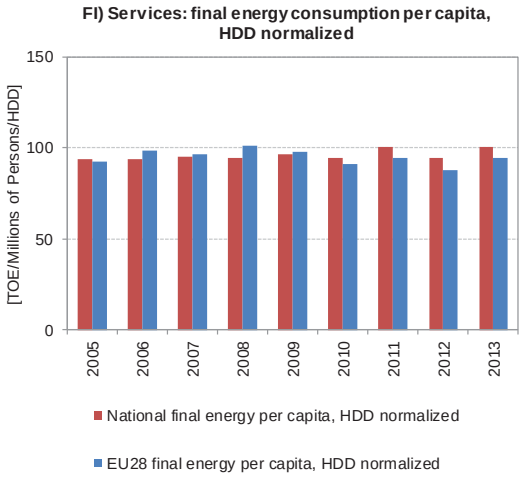

FI) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

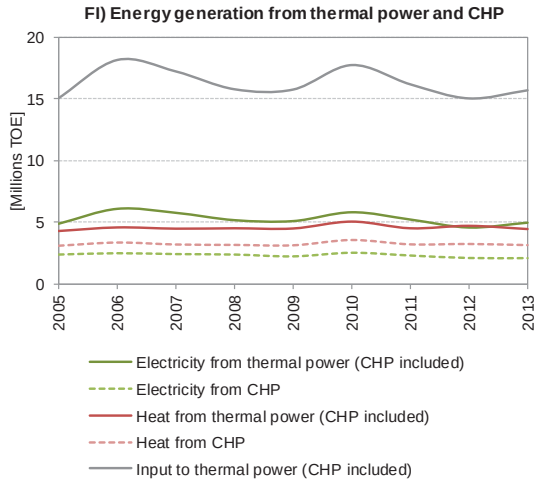

FI) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

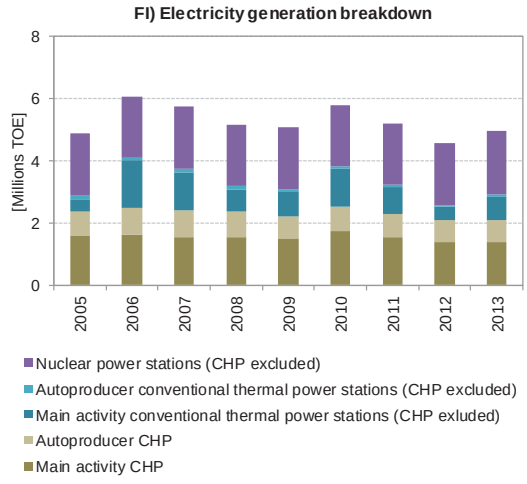

FI) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


FI) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

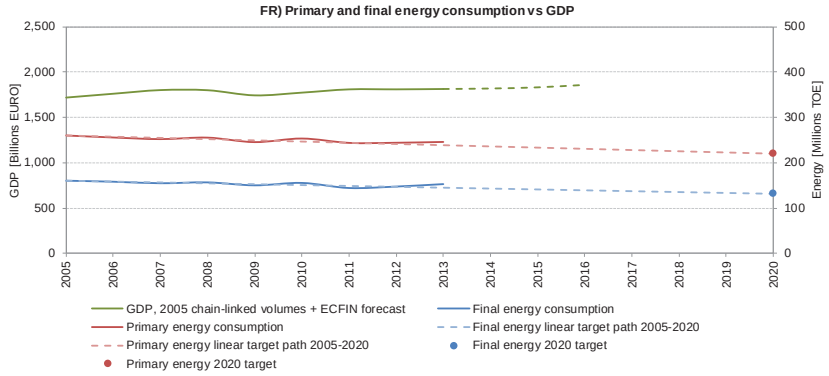

FI) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

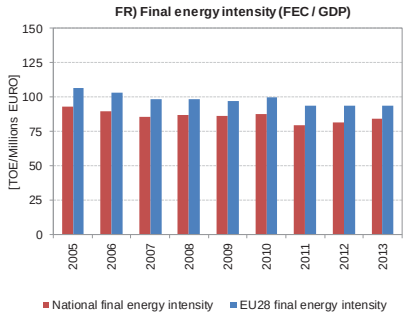

FI) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

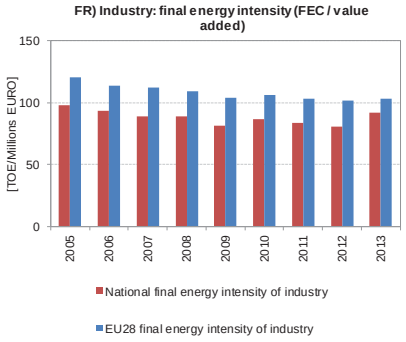

FI) Energy generation from thermal power and CHP
[Millions TOE]
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

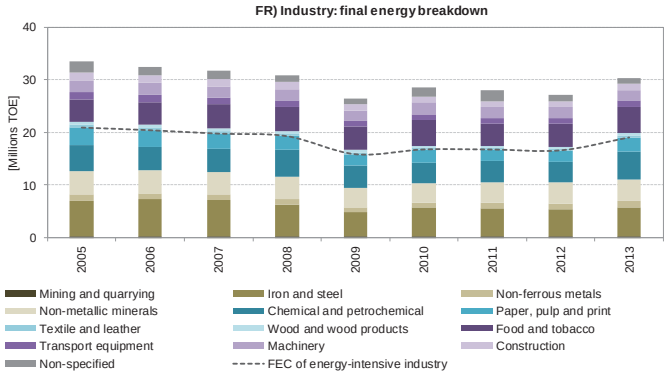

FI) Electricity generation breakdown
[Millions TOE]
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

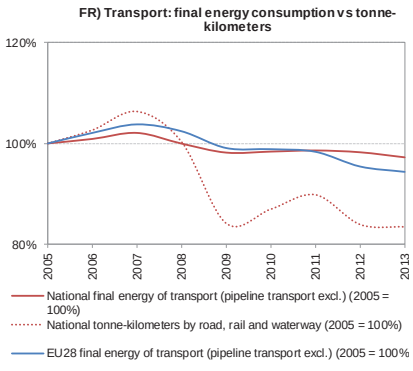
10. France

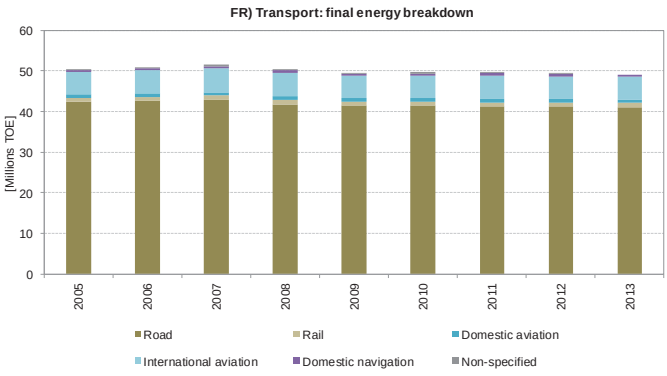

FR) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

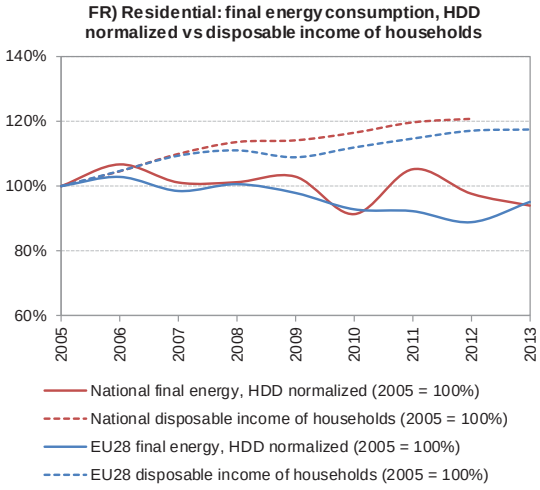

FR) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

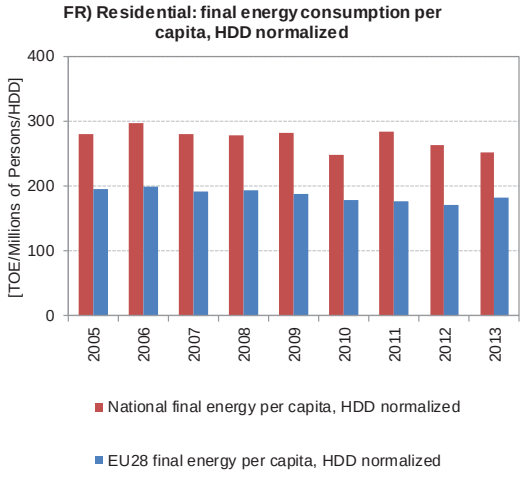

FR) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

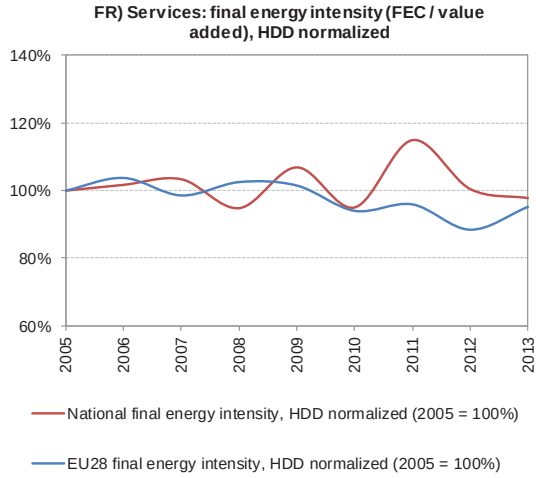

FR) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Non-metallic minerals
Textile and leather
Transport equipment
Non-specified
Iron and steel
Chemical and petrochemical
Wood and wood products
Machinery
FEC of energy-intensive industry
Non-ferrous metals
Paper, pulp and print
Food and tobacco
Construction

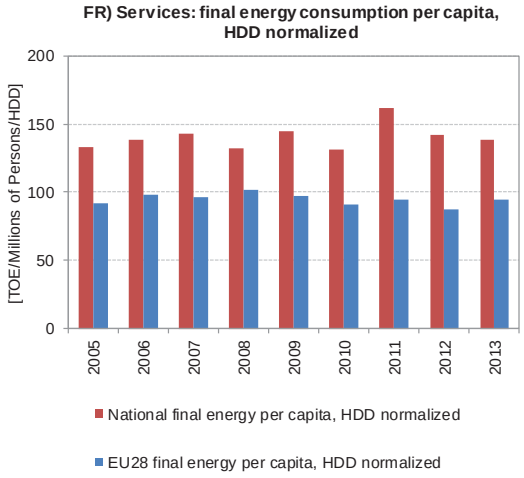

FR) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%

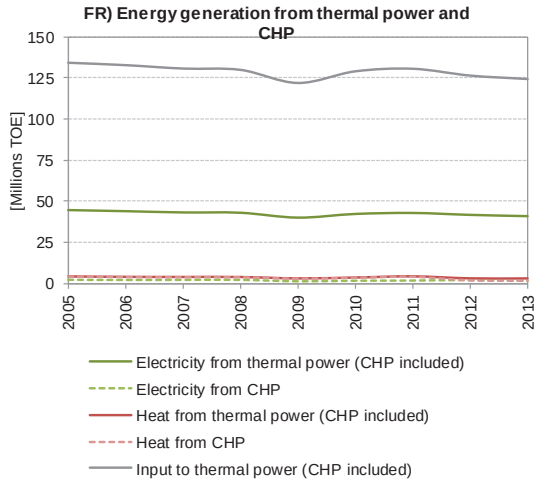

FR) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

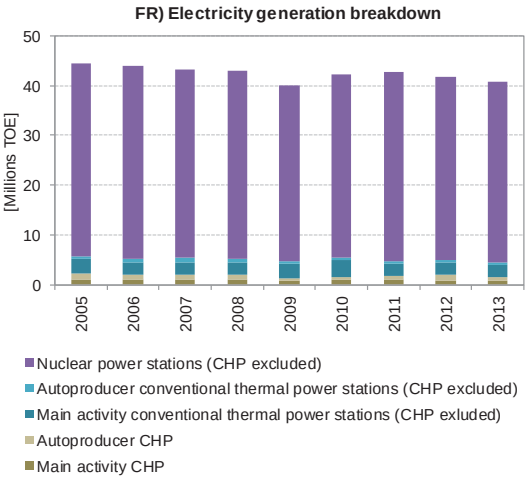

FR) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


FR) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

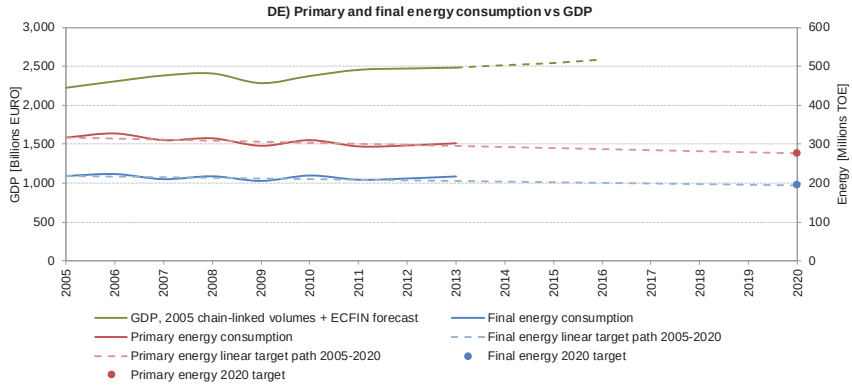

FR) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

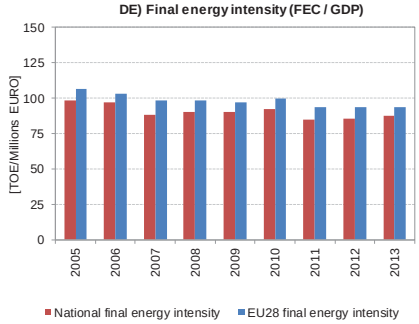

FR) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

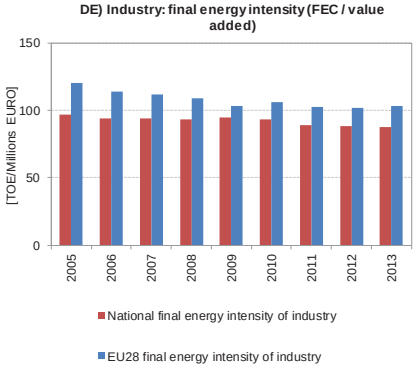

FR) Energy generation from thermal power and CHP
[Millions TOE]
150
125
100
75
50
25
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

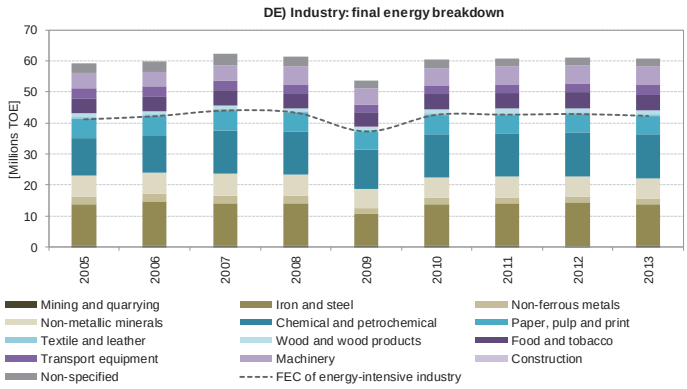

FR) Electricity generation breakdown
[Millions TOE]
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

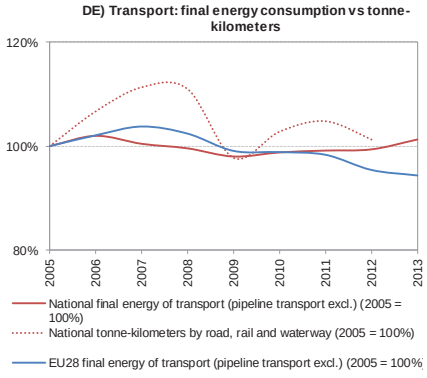
11. Germany

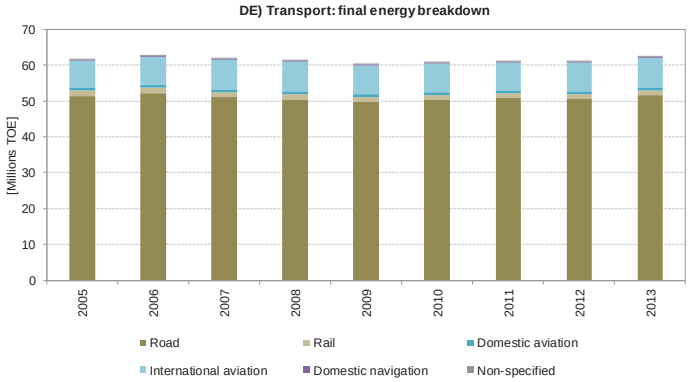

DE) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

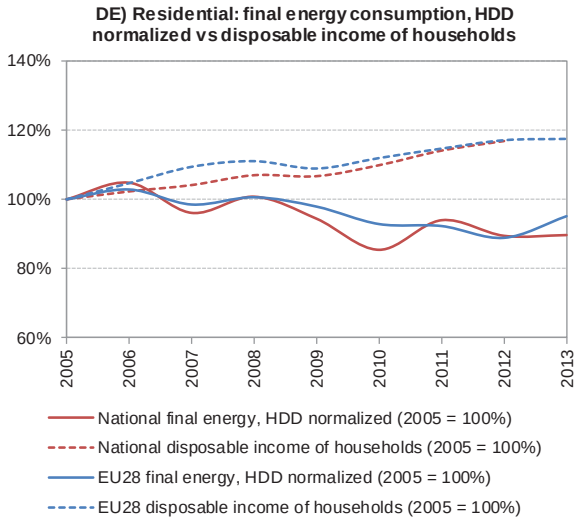

DE) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

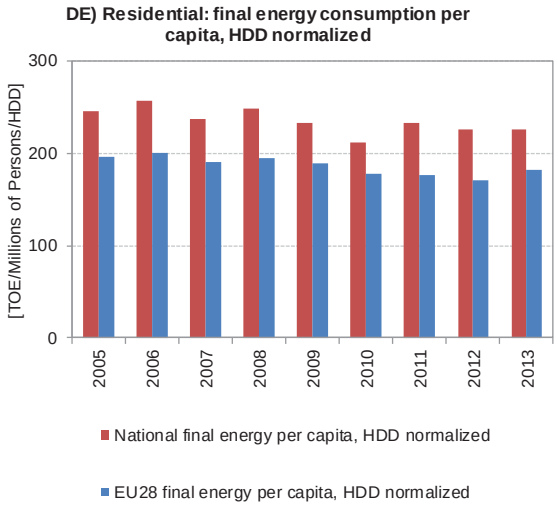

DE) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

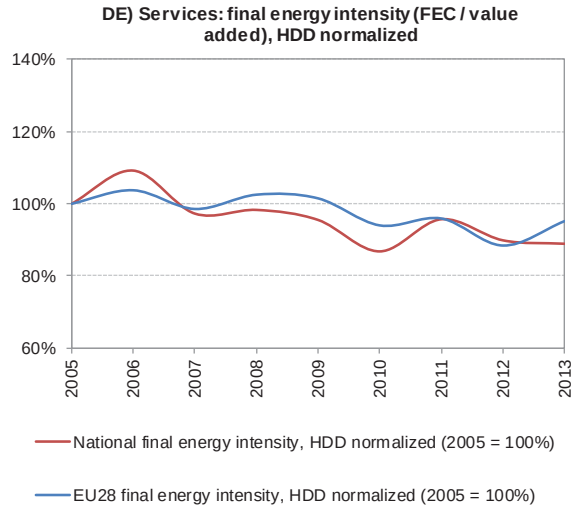

DE) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

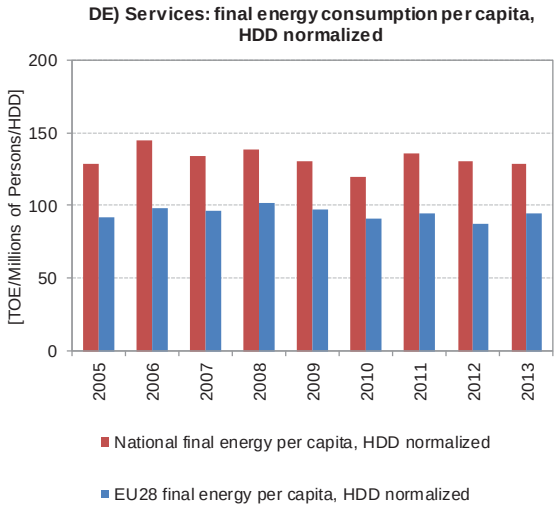

DE) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%

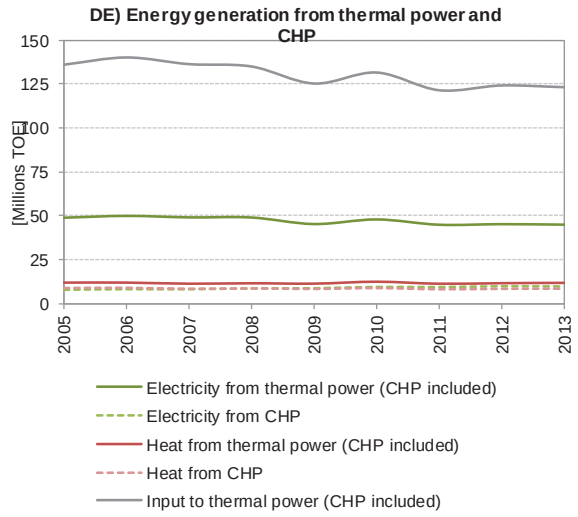

DE) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

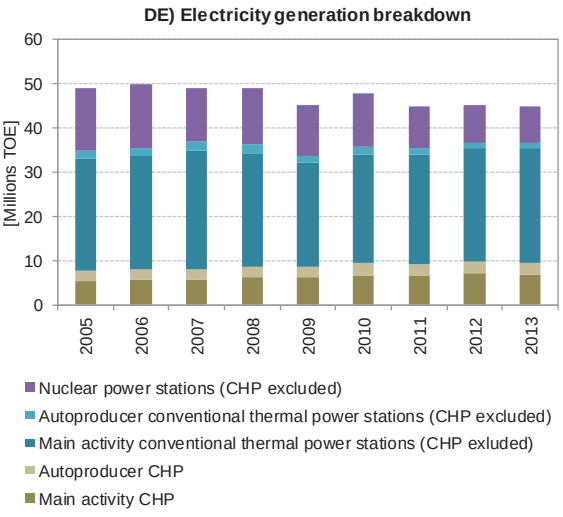

DE) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


DE) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

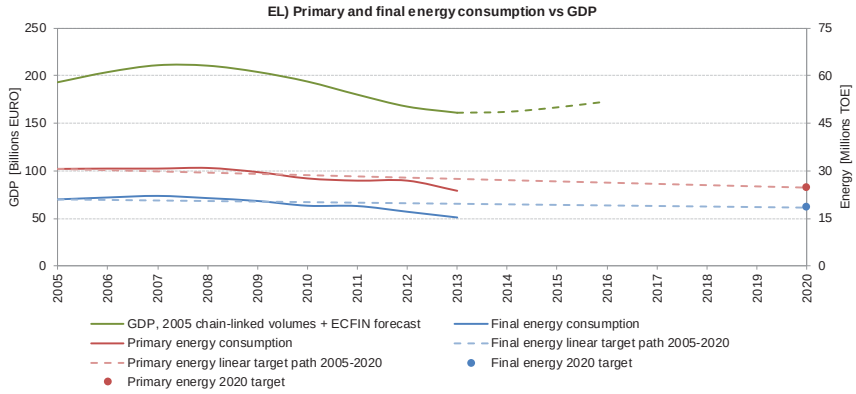

DE) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

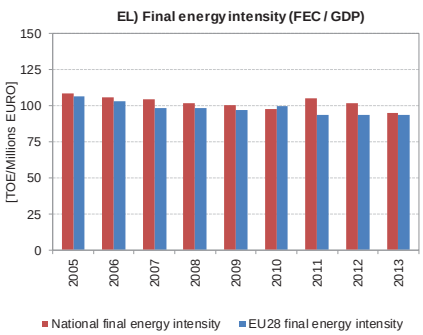

DE) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

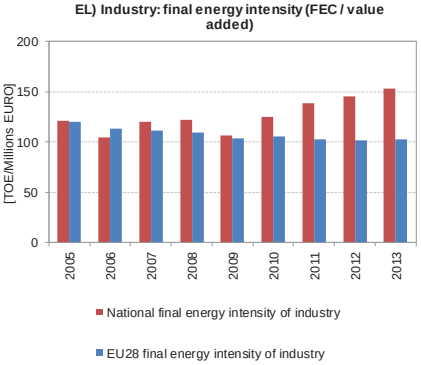

DE) Energy generation from thermal power and CHP
[Millions TOE]
150
125
100
75
50
25
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

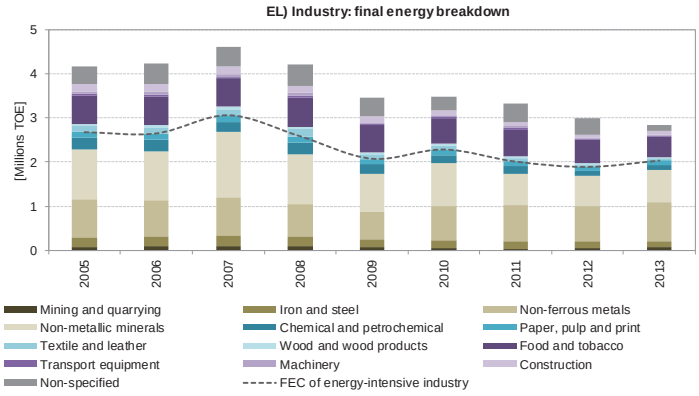

DE) Electricity generation breakdown
[Millions TOE]
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

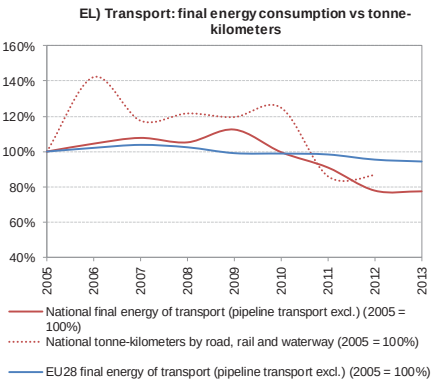
12. Greece

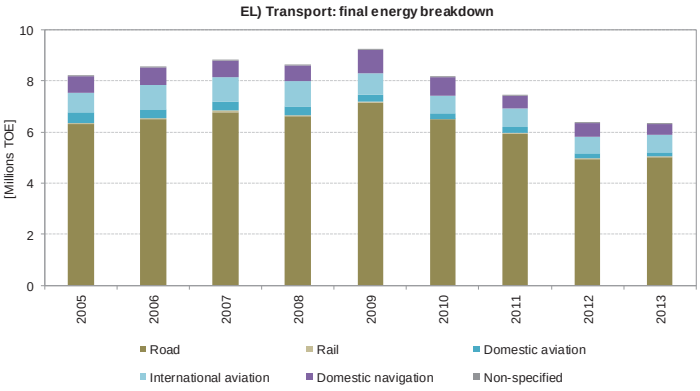

EL) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

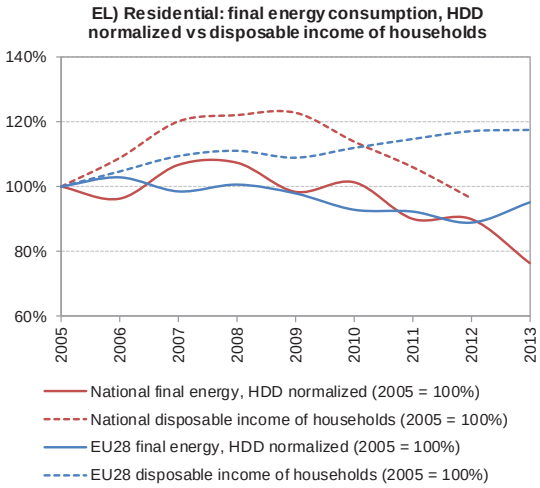

EL) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

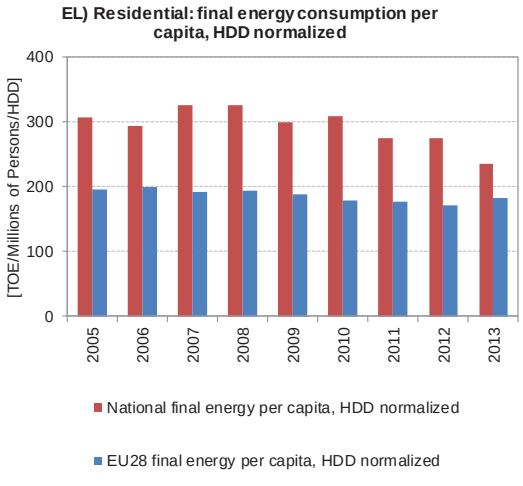

EL) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

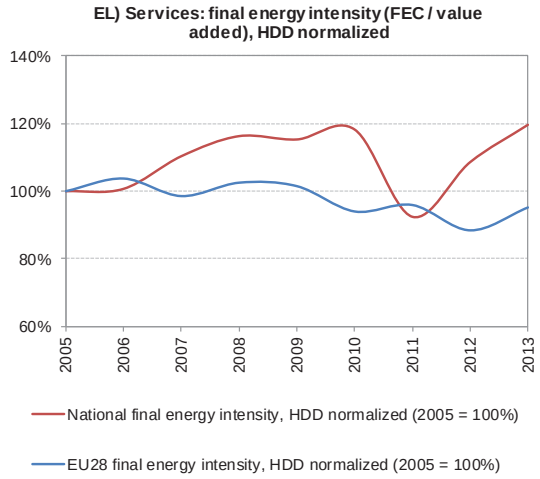

EL) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

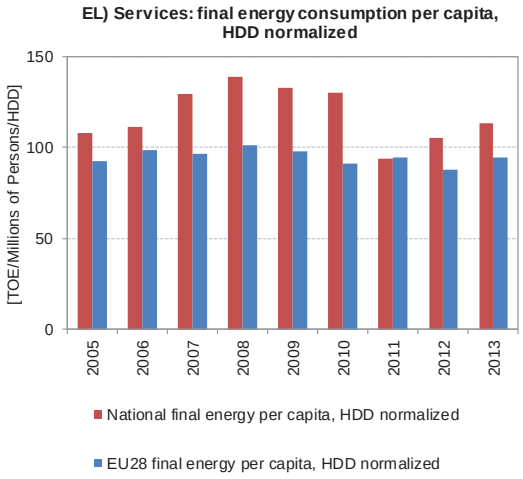

EL) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

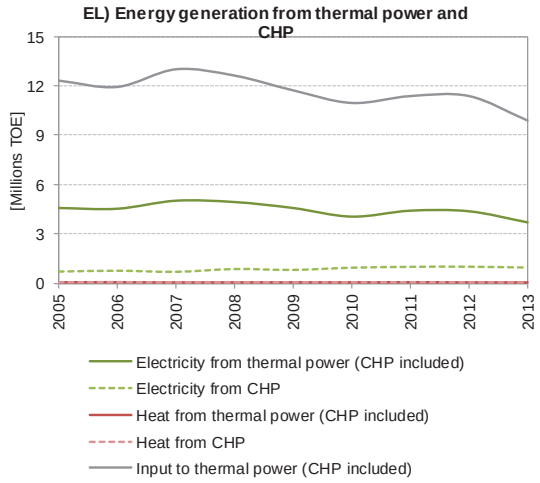

EL) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

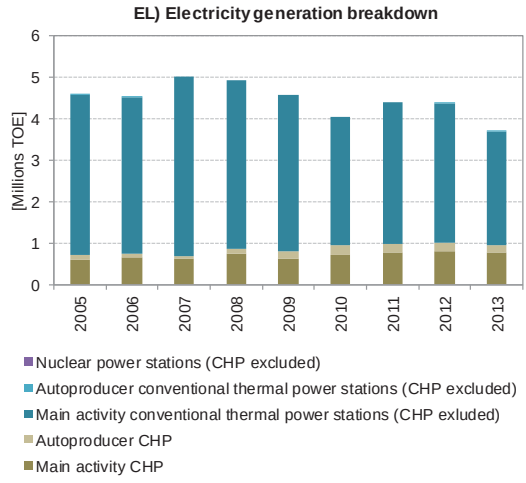

EL) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


EL) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

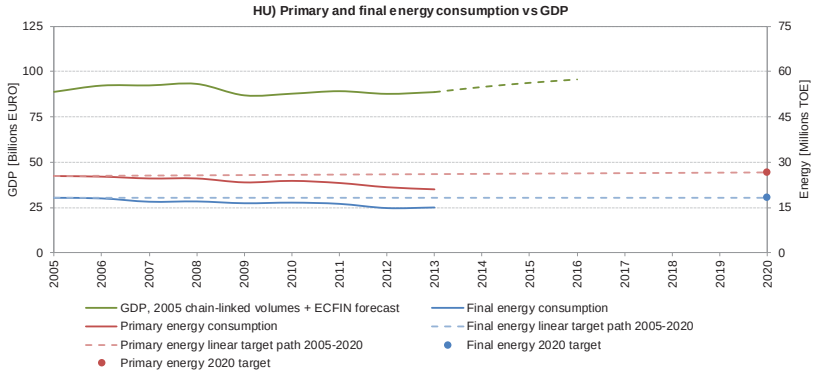

EL) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

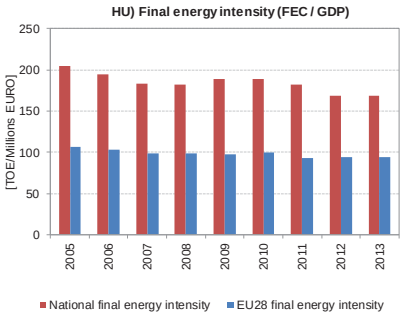

EL) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

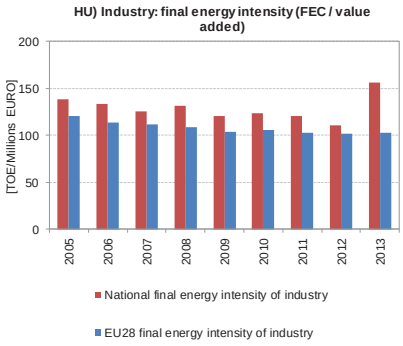

EL) Energy generation from thermal power and CHP
[Millions TOE]
15
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

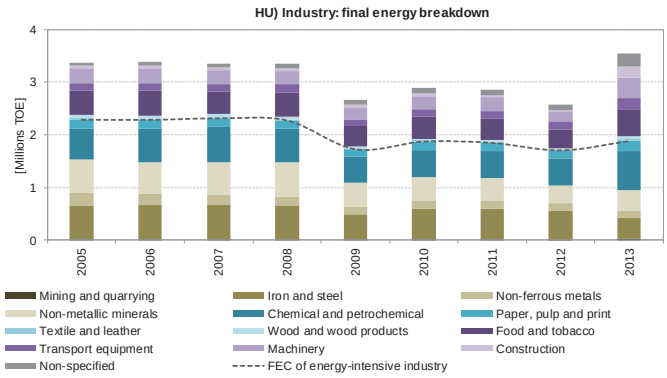

EL) Electricity generation breakdown
[Millions TOE]
6
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

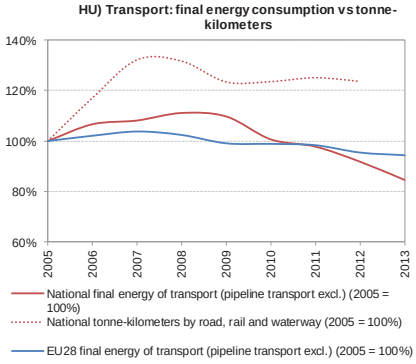
13. Hungary

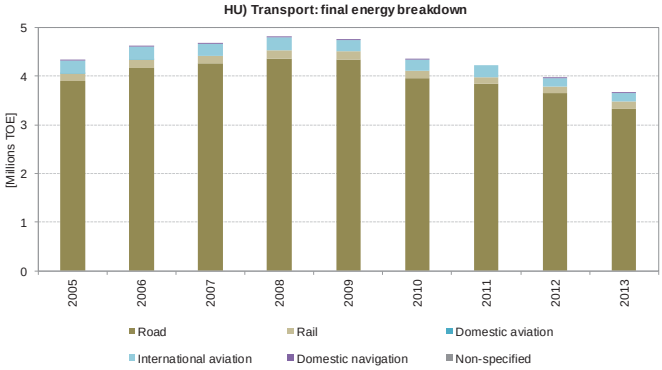

HU) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

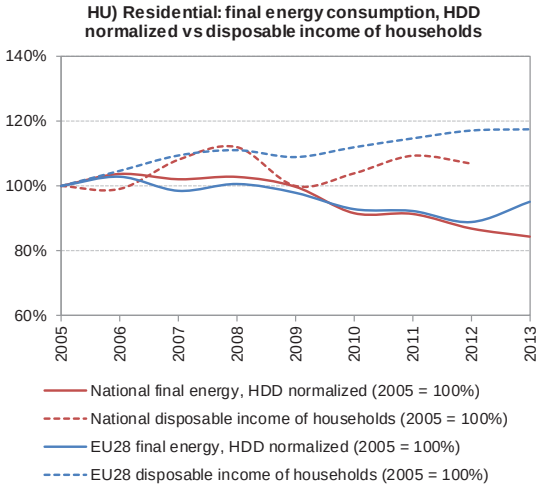

HU) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

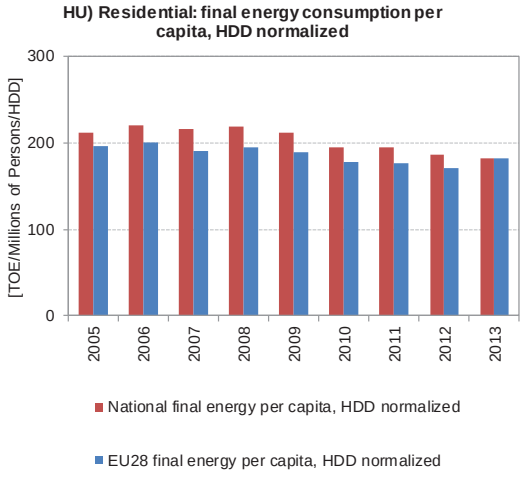

HU) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

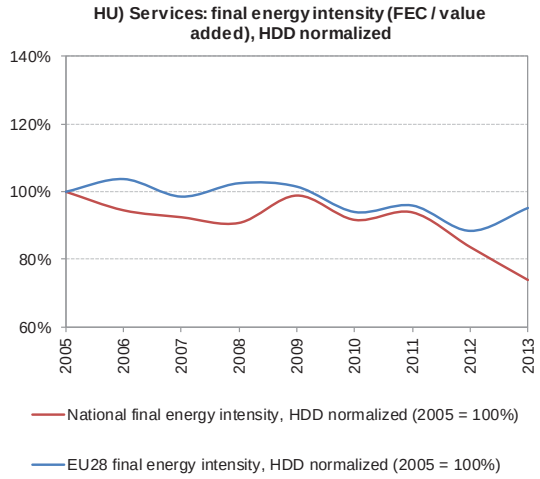

HU) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

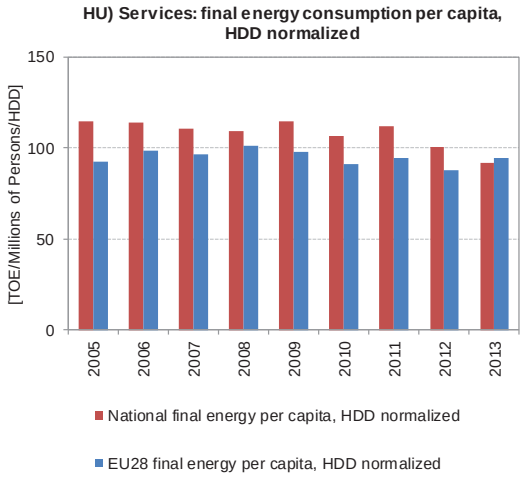

HU) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

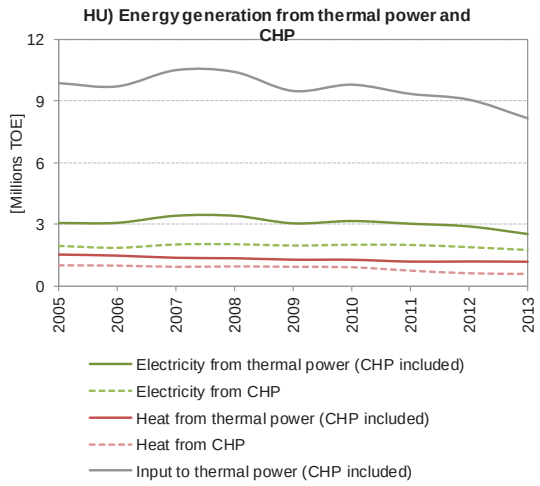

HU) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

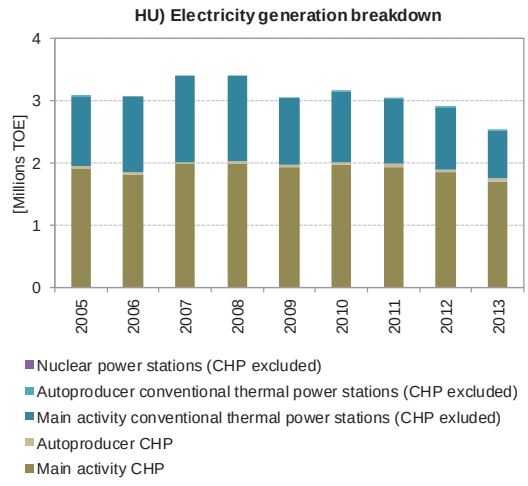

HU) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


HU) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

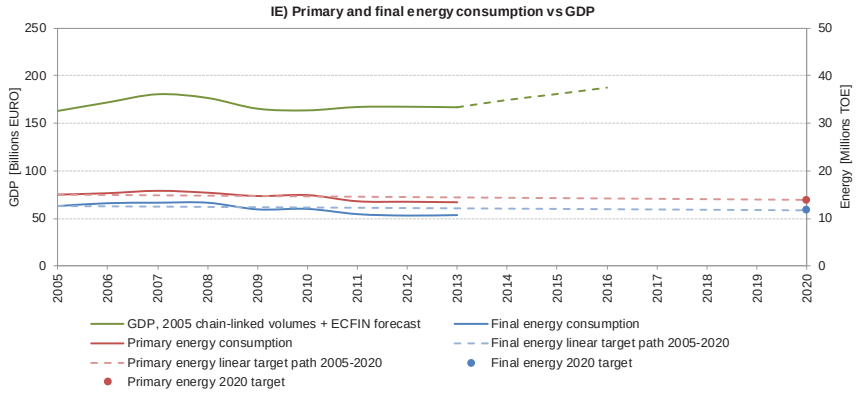

HU) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

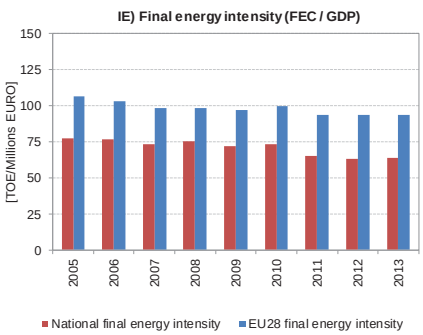

HU) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

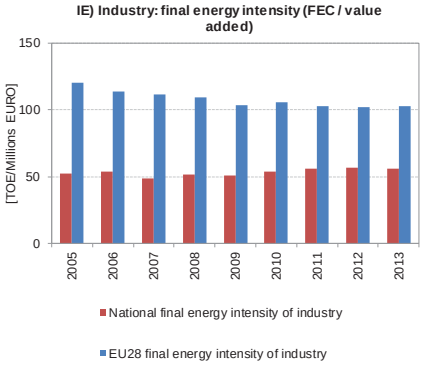

HU) Energy generation from thermal power and CHP
[Millions TOE]
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

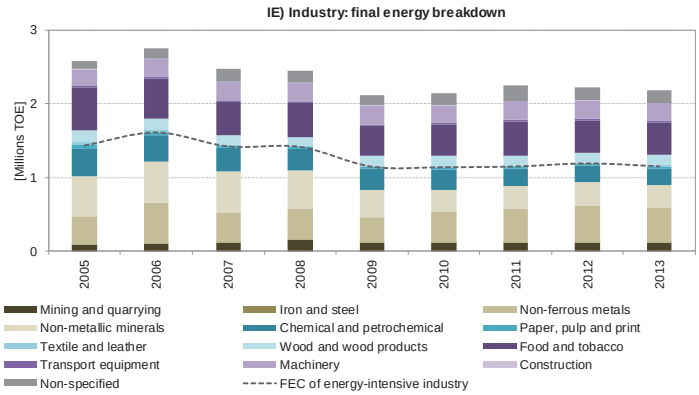

HU) Electricity generation breakdown
[Millions TOE]
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

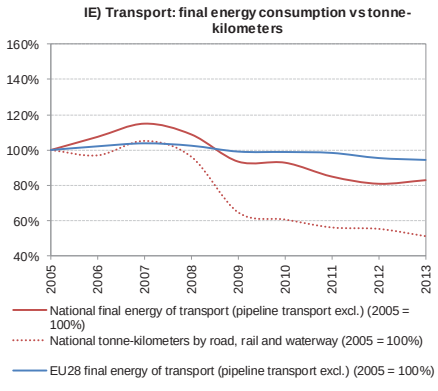
14. Ireland

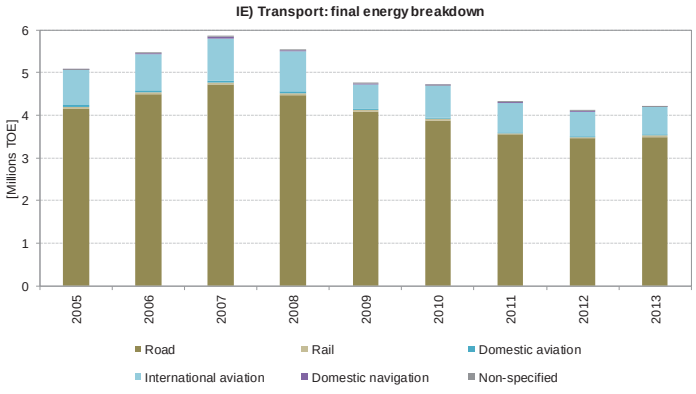

IE) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

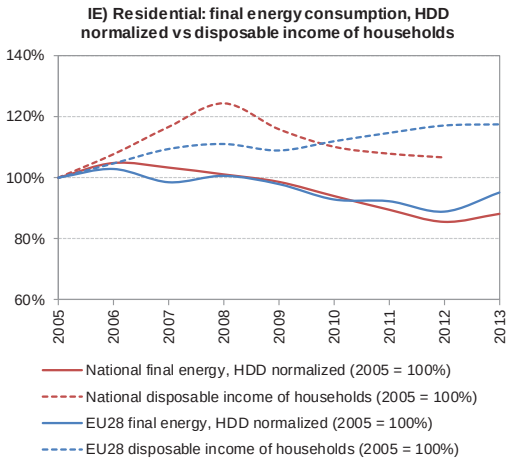

IE) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

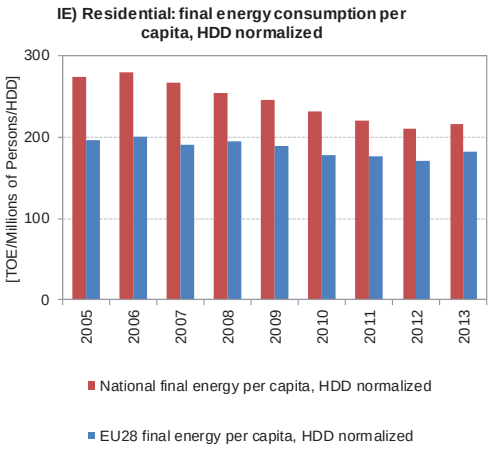

IE) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

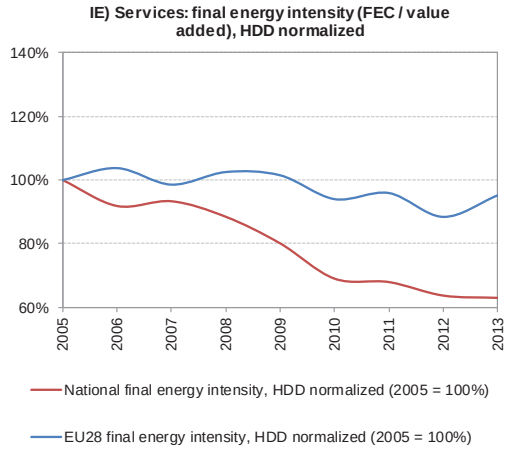

IE) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

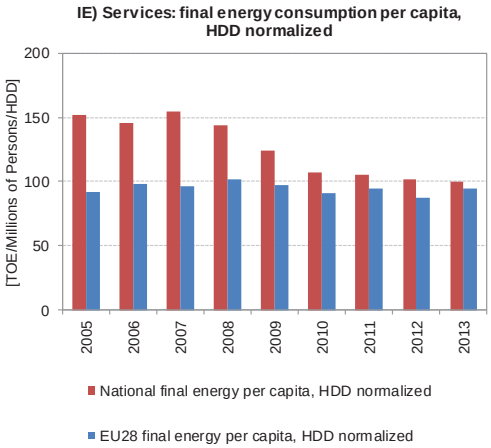

IE) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

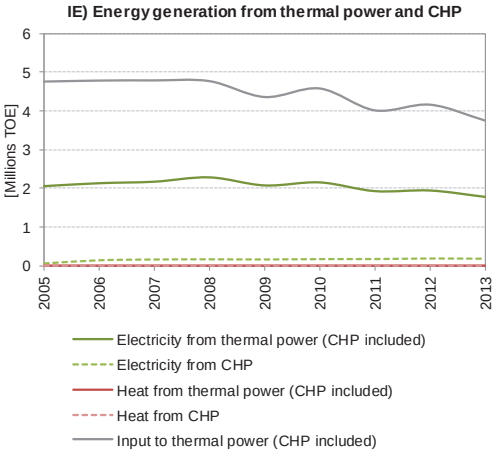

IE) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

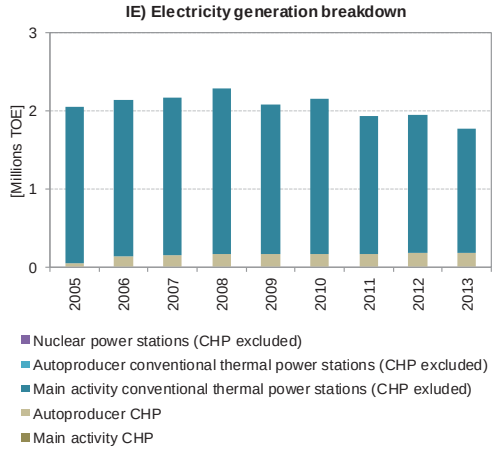

IE) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


IE) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

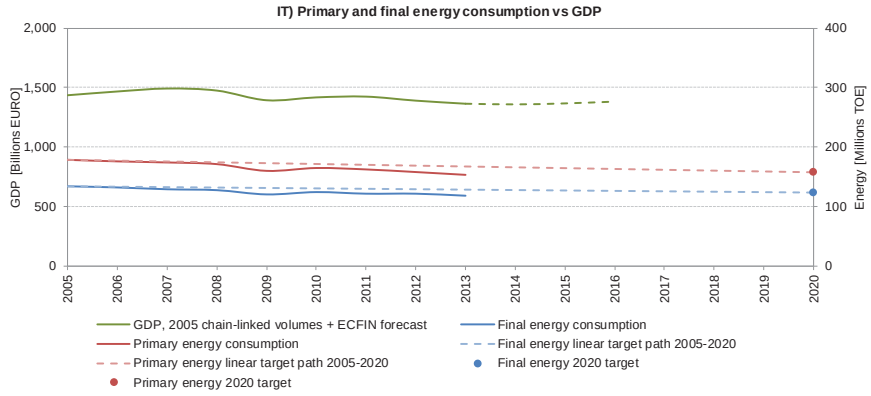

IE) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

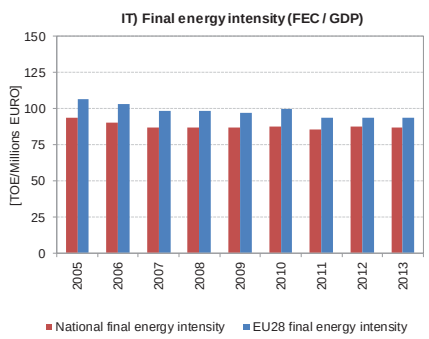

IE) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

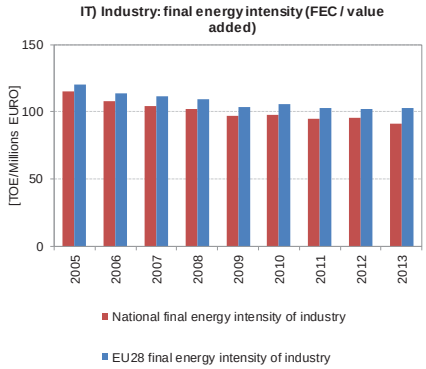

IE) Energy generation from thermal power and CHP
[Millions TOE]
6
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

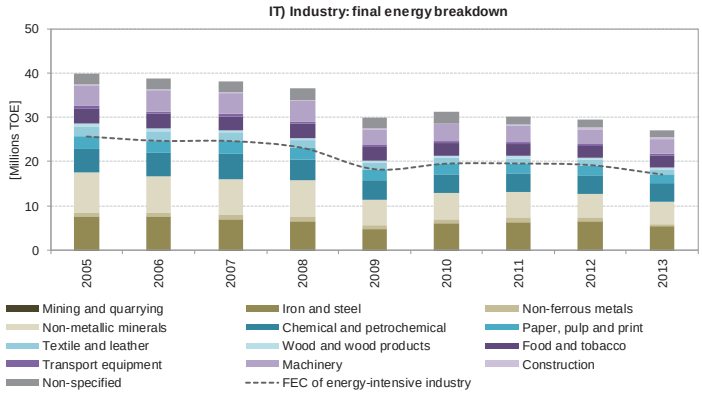

IE) Electricity generation breakdown
[Millions TOE]
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

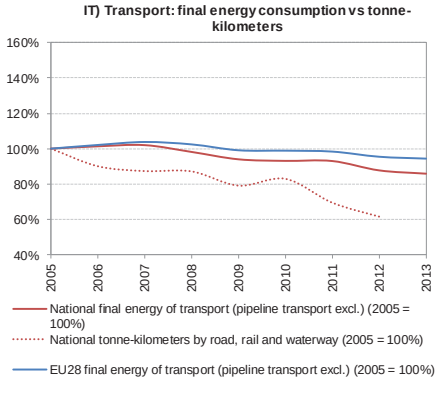
15. Italy

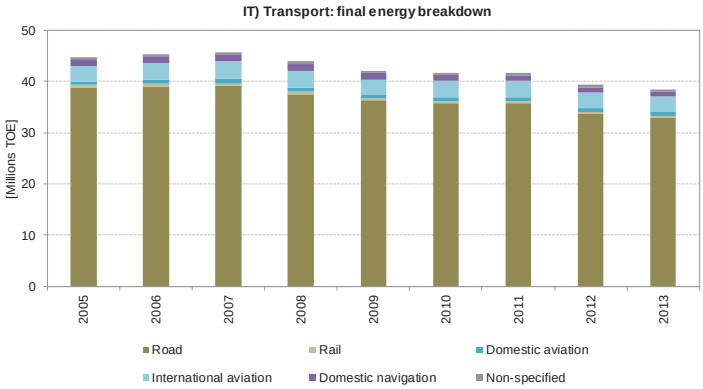

IT) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

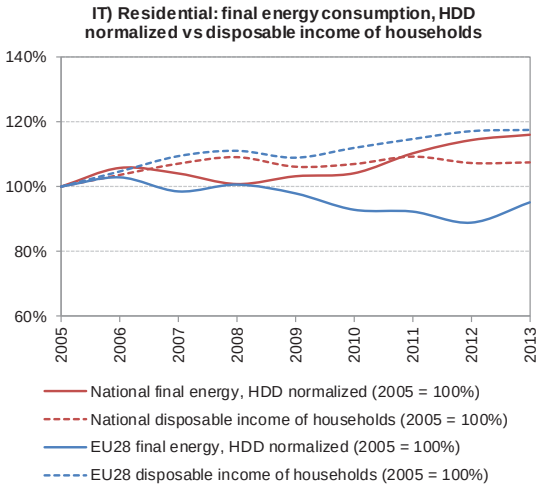

IT) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

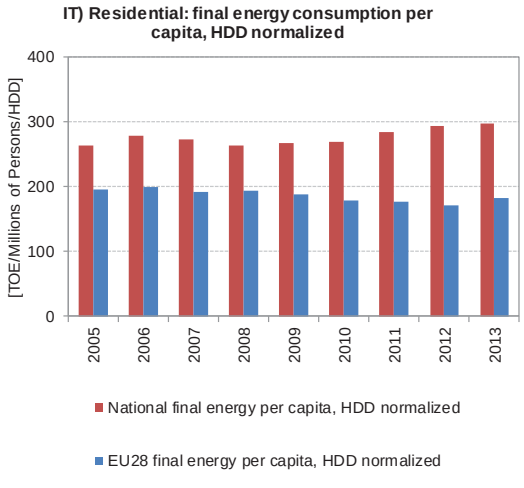

IT) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

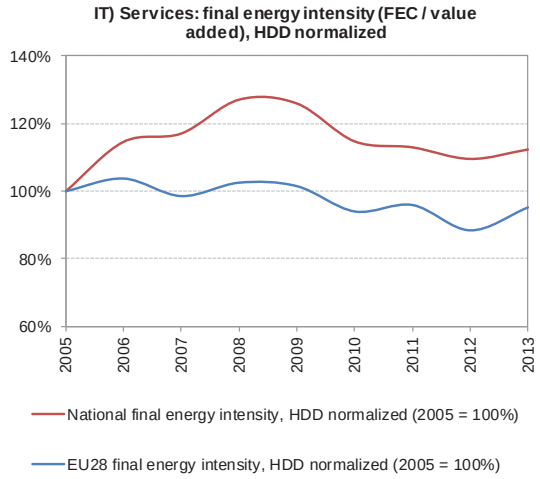

IT) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

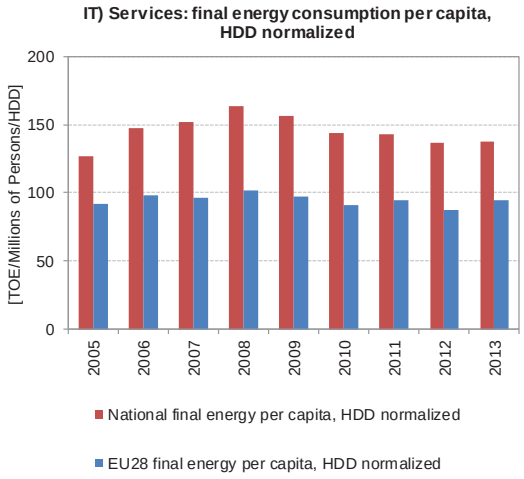

IT) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

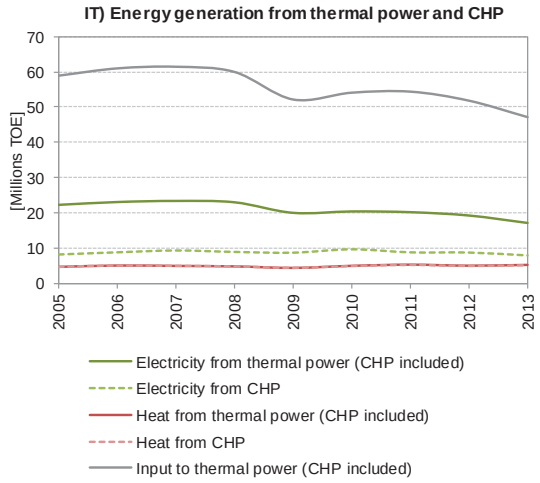

IT) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

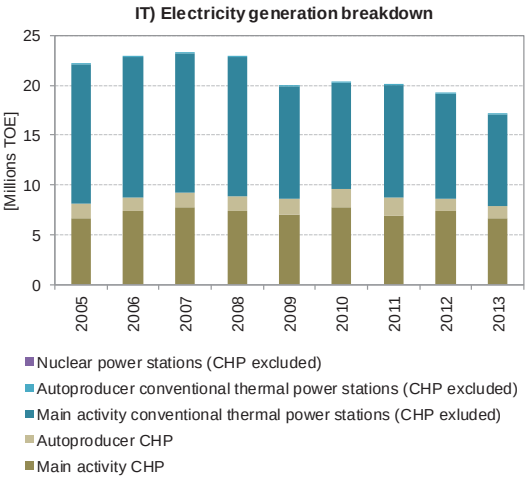

IT) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


IT) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

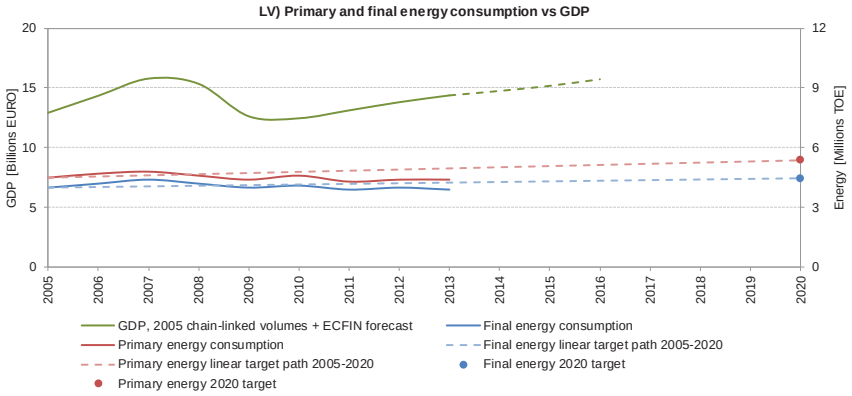

IT) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

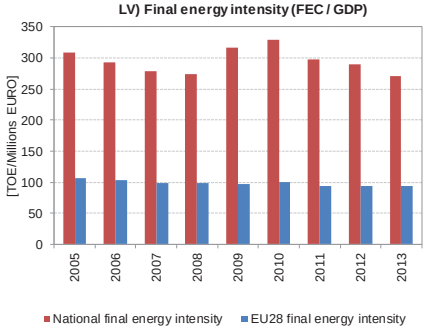

IT) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

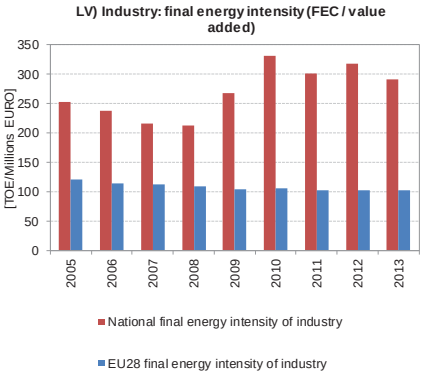

IT) Energy generation from thermal power and CHP
[Millions TOE]
70
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

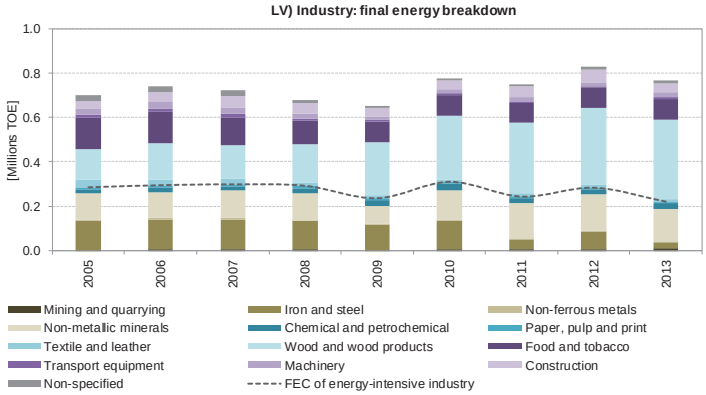

IT) Electricity generation breakdown
[Millions TOE]
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

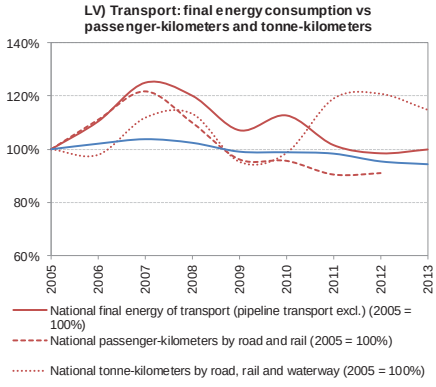
16. Latvia

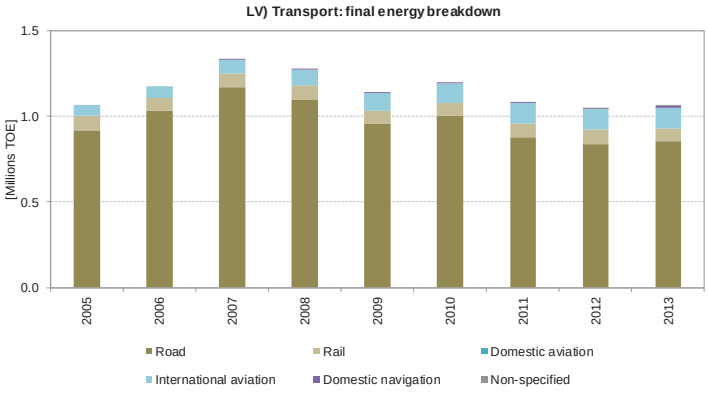

LV) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

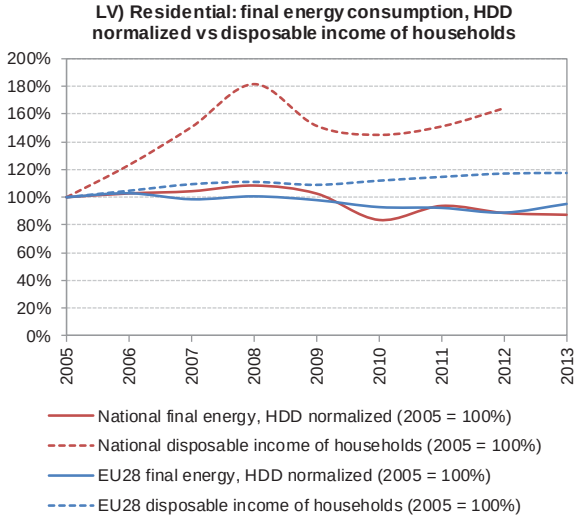

LV) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

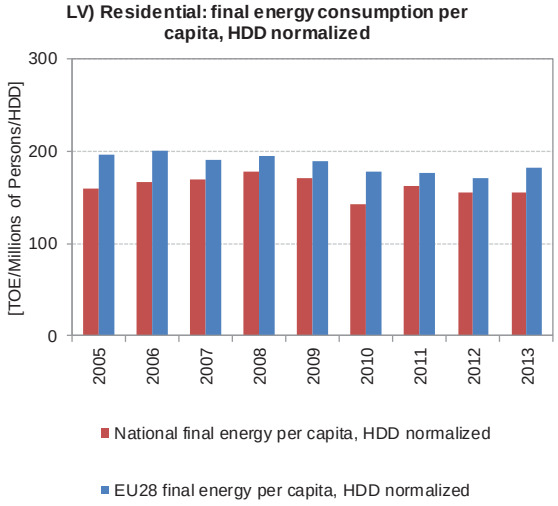

LV) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

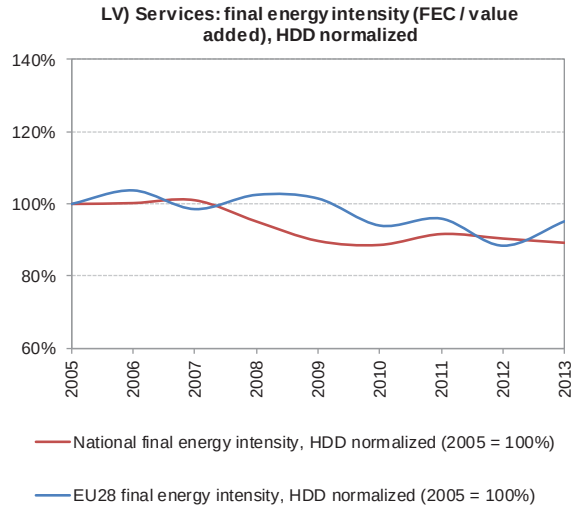

LV) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

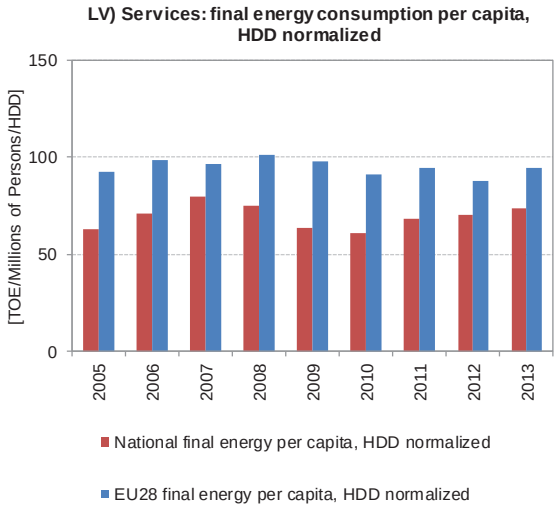

LV) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

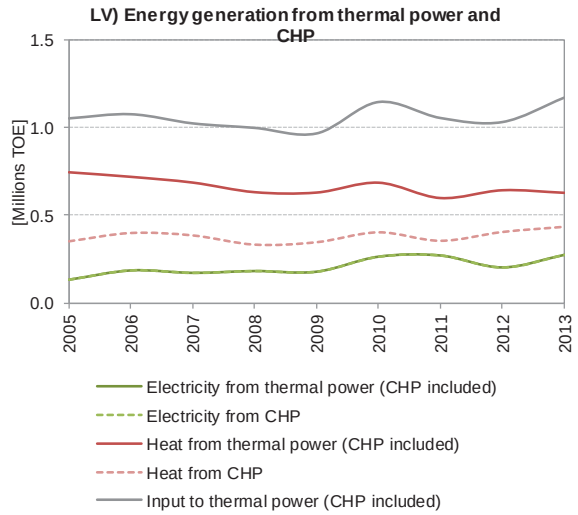

LV) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

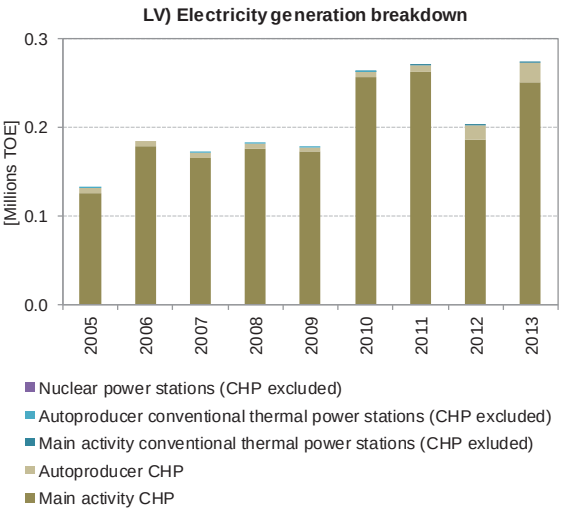

LV) Residential: final energy consumption, HDD normalized vs disposable income of households
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


LV) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

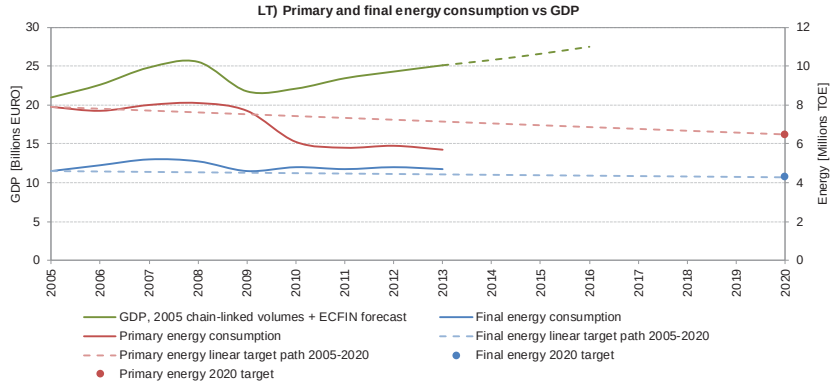

LV) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

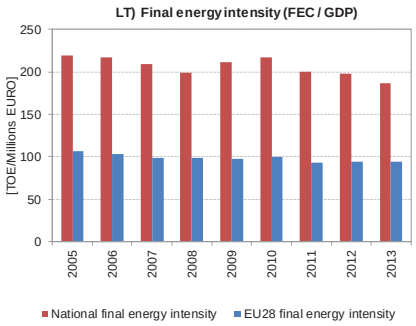

LV) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

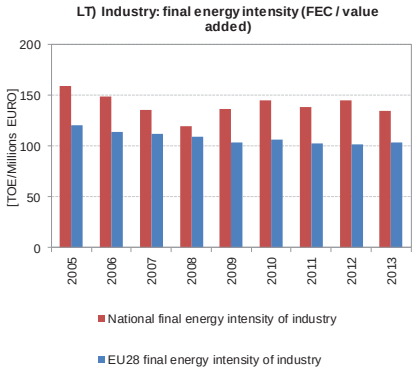

LV) Energy generation from thermal power and CHP
[Millions TOE]
1.5
1.0
0.5
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

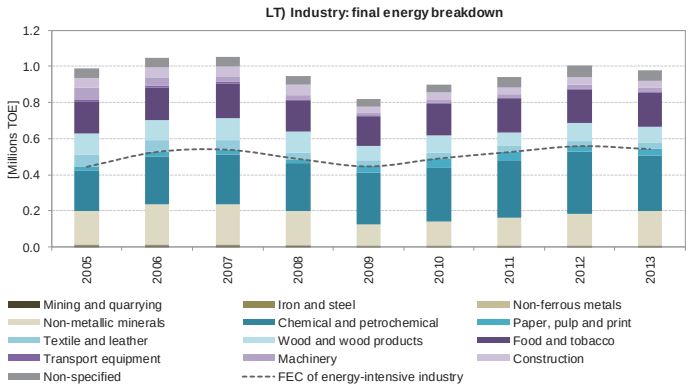

LV) Electricity generation breakdown
[Millions TOE]
0.3
0.2
0.1
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

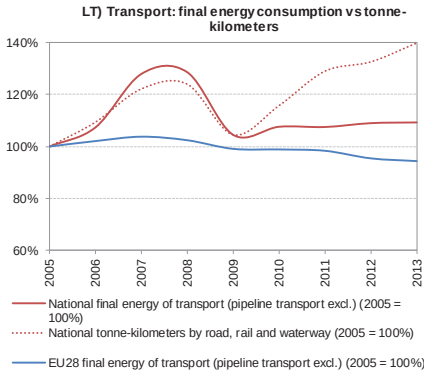
17. Lithuania

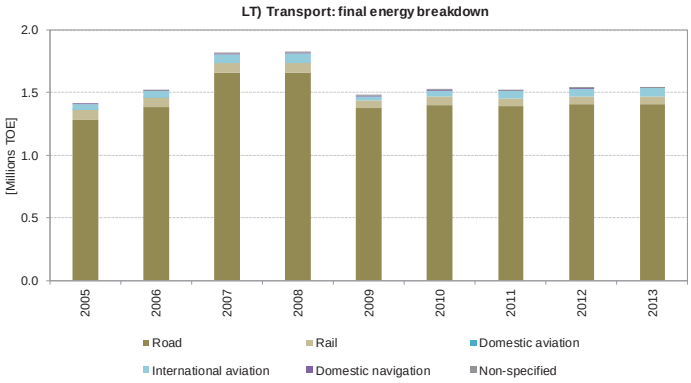


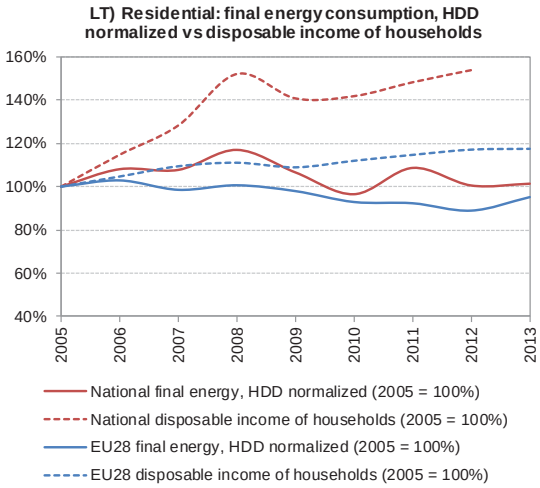


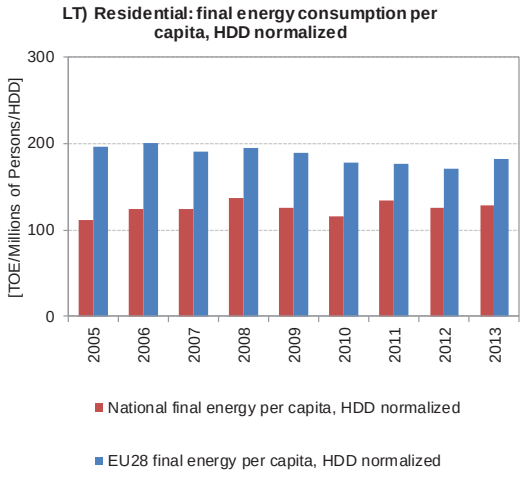


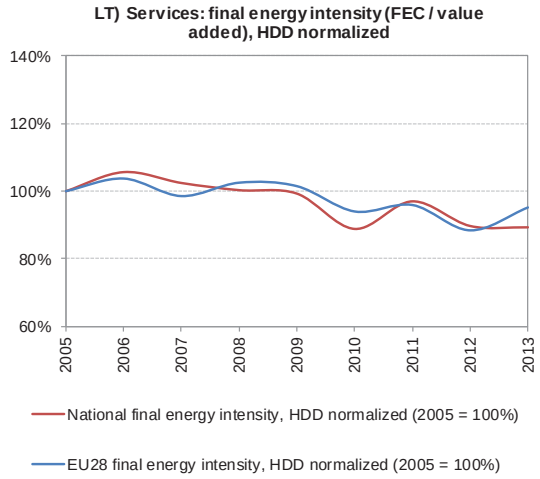


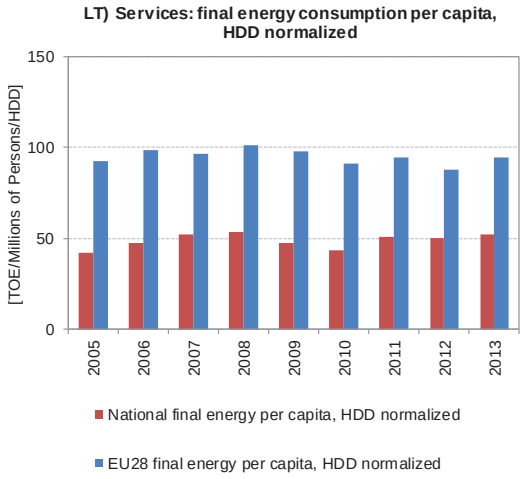


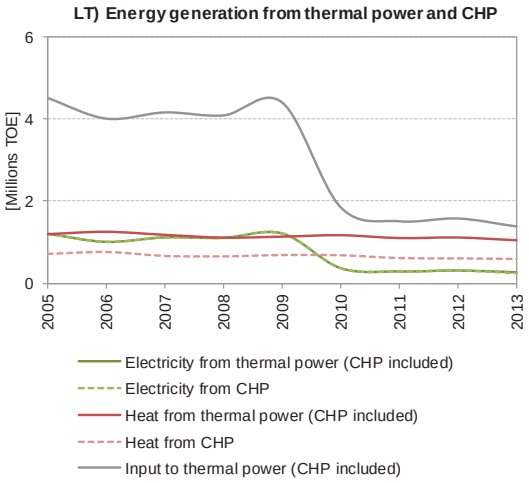


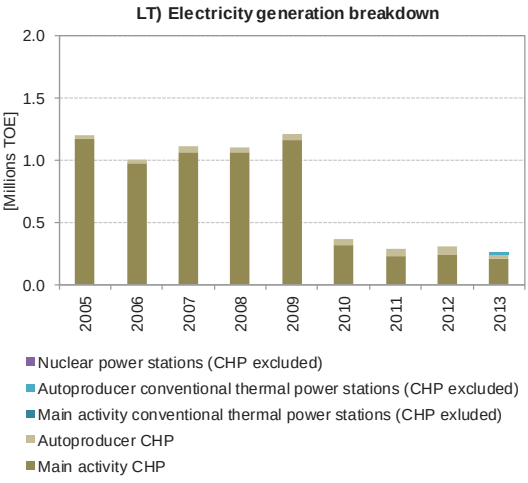

LT) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


LT) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

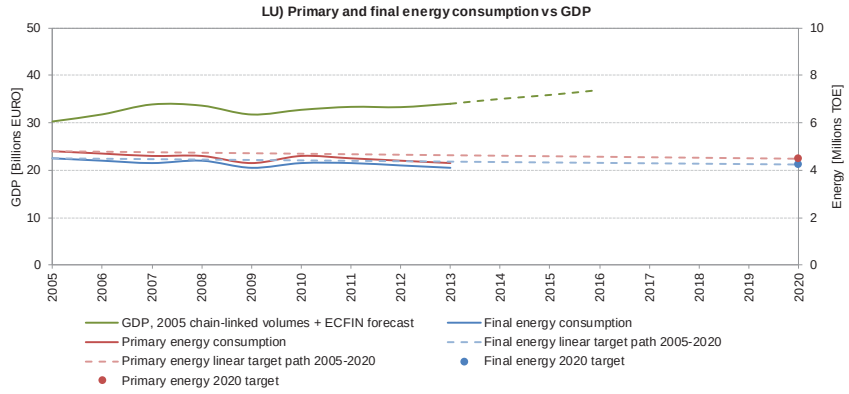

LT) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

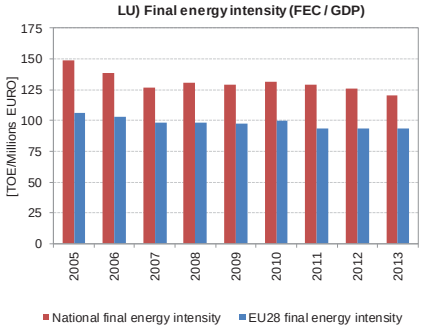

LT) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

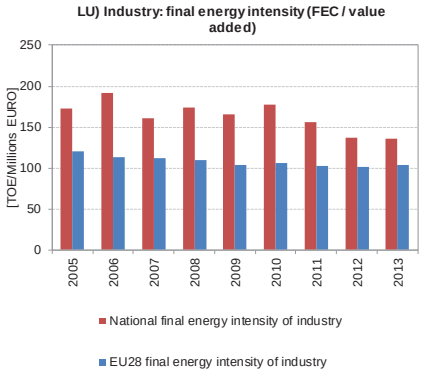

LT) Energy generation from thermal power and CHP
[Millions TOE]
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

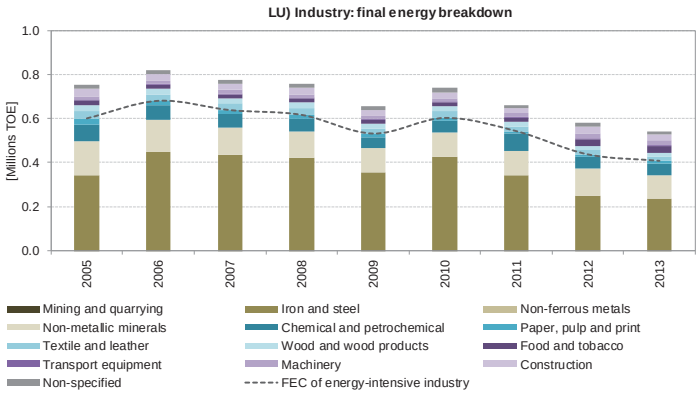

LT) Electricity generation breakdown
[Millions TOE]
2.0
1.5
1.0
0.5
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

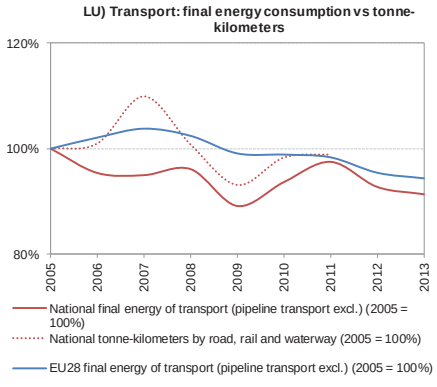
18. Luxembourg

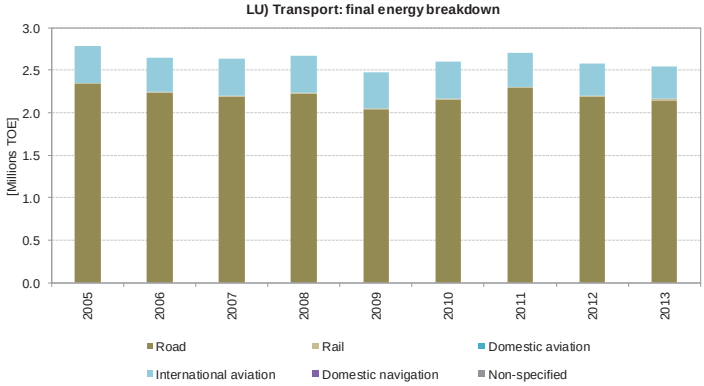


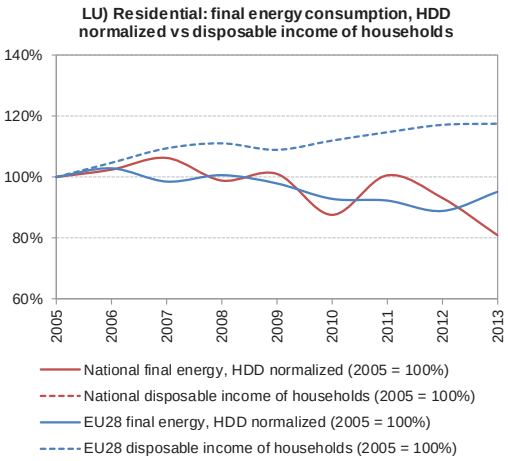


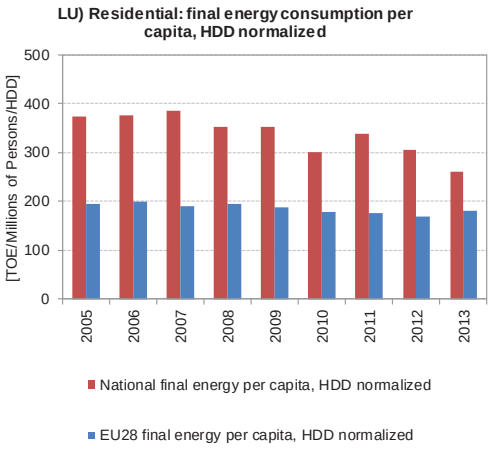


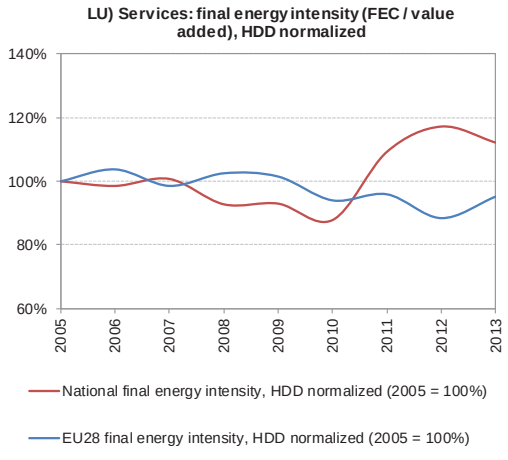


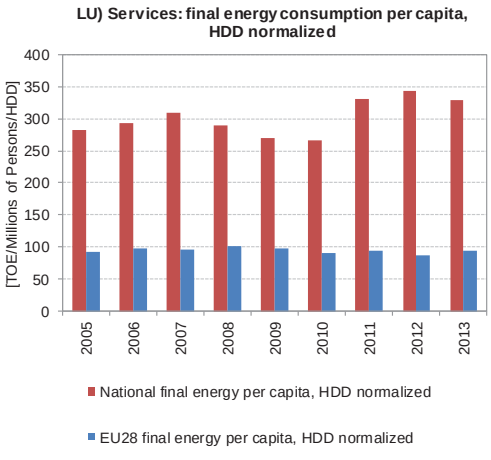


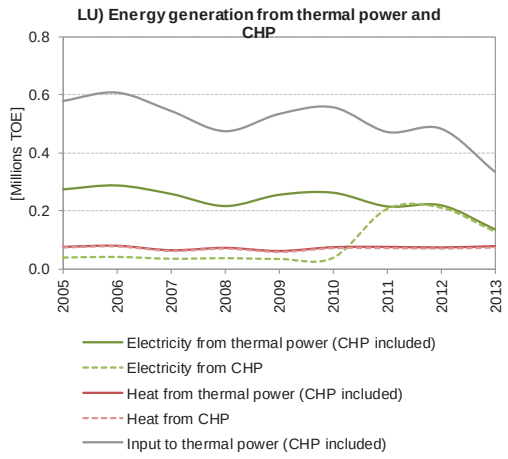


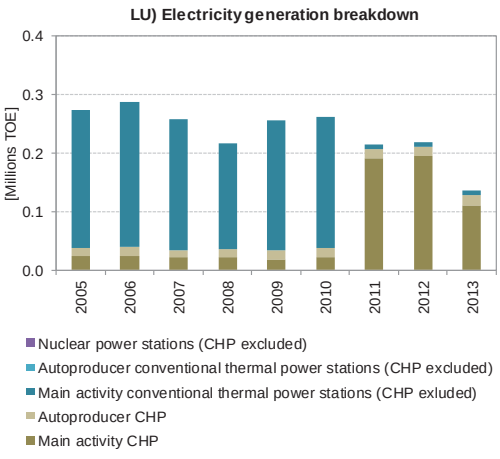

LU) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


LU) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

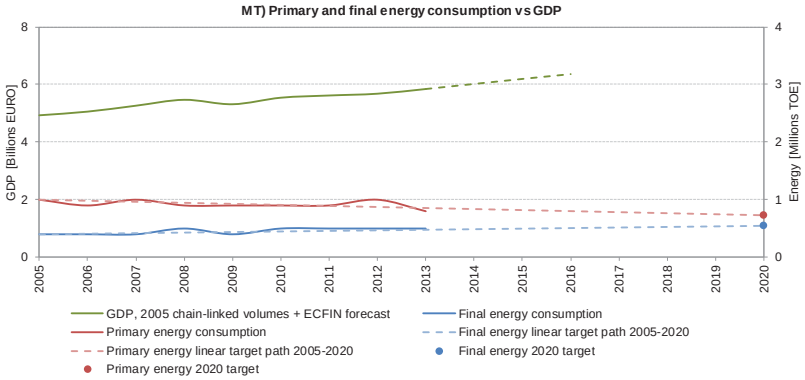

LU) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

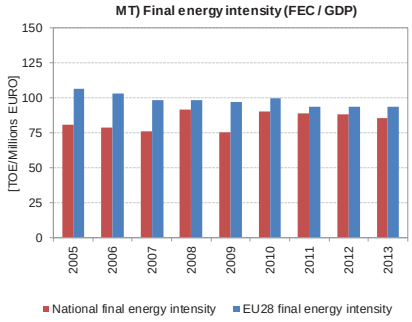

LU) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
400
350
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

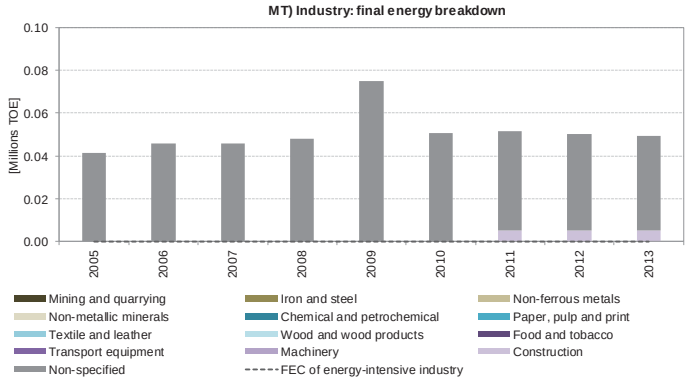

LU) Energy generation from thermal power and CHP
[Millions TOE]
0.8
0.6
0.4
0.2
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

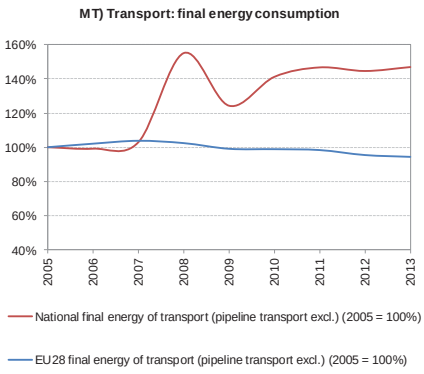

LU) Electricity generation breakdown
[Millions TOE]
0.4
0.3
0.2
0.1
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

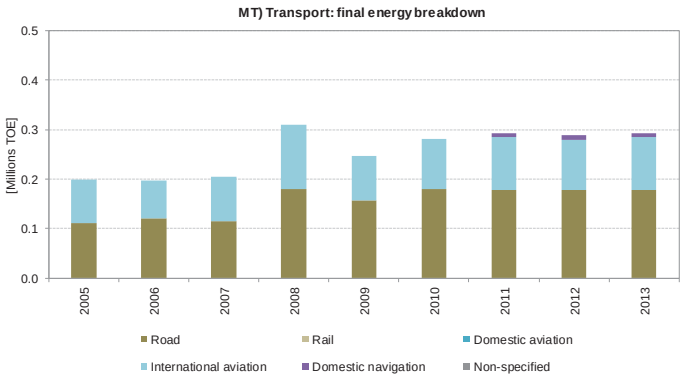
19. Malta

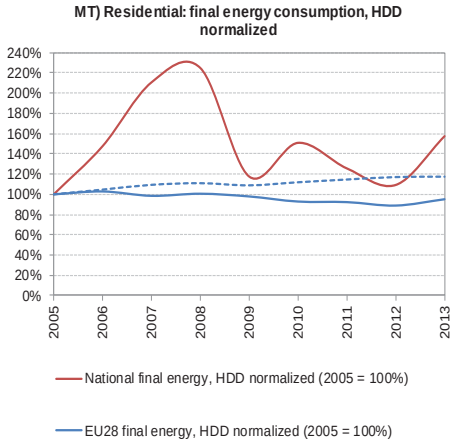

MT) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

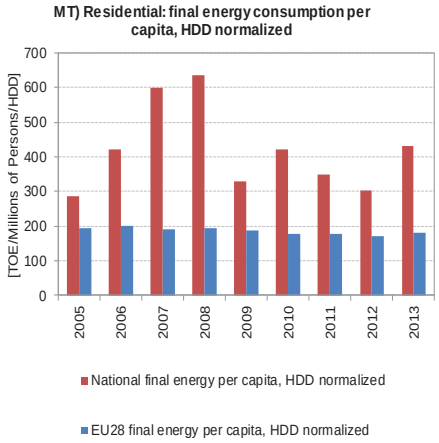

MT) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

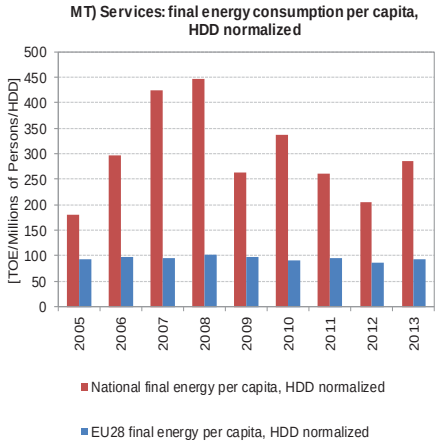

MT) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

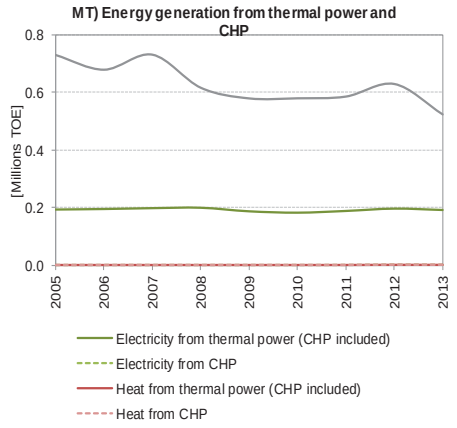

MT) Transport: final energy consumption
National final energy of transport (pipeline transport excl.) (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

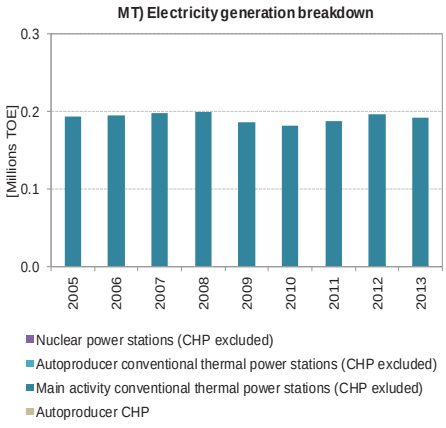

MT) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified


MT) Residential: final energy consumption, HDD normalized
240%
220%
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)

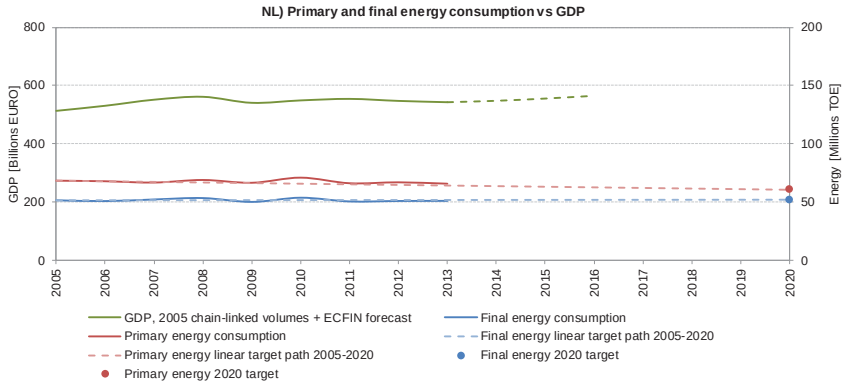

MT) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
700
600
500
400
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

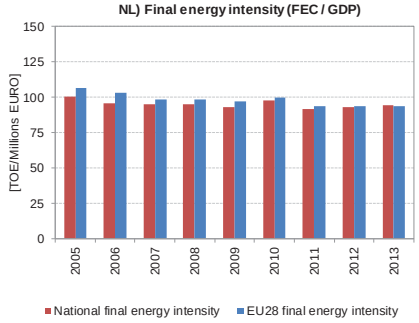

MT) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
500
450
400
350
300
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

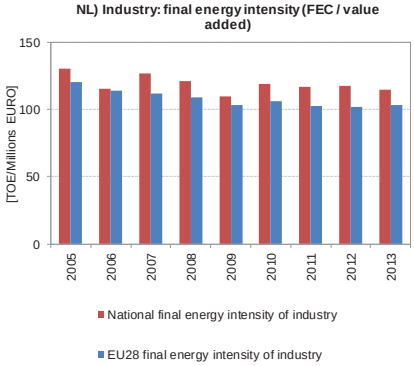

MT) Energy generation from thermal power and CHP
[Millions TOE]
0.8
0.6
0.4
0.2
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP

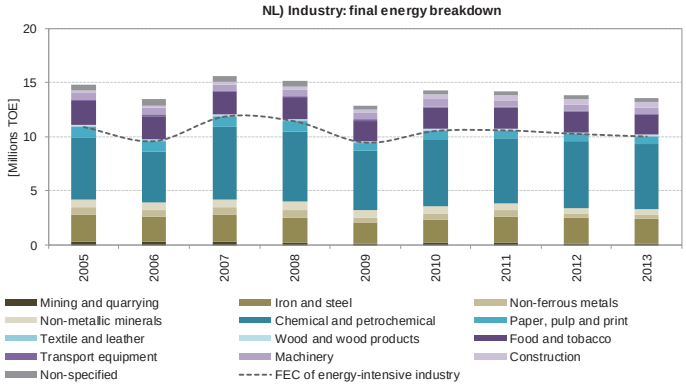

MT) Electricity generation breakdown
[Millions TOE]
0.3
0.2
0.1
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP

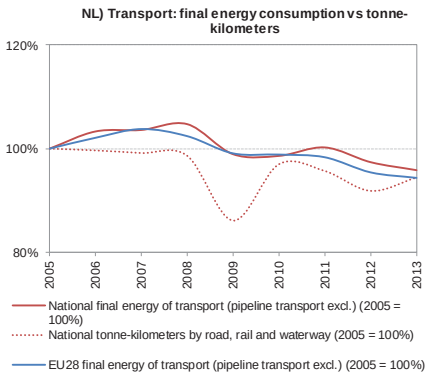
20. Netherlands

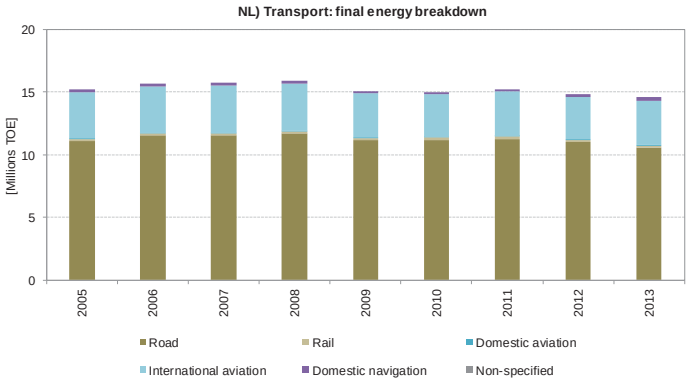


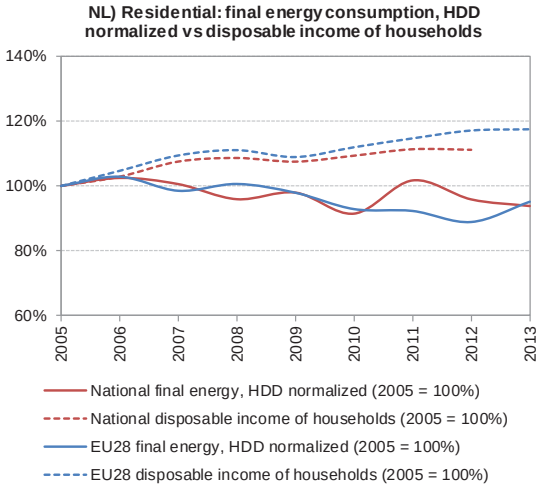


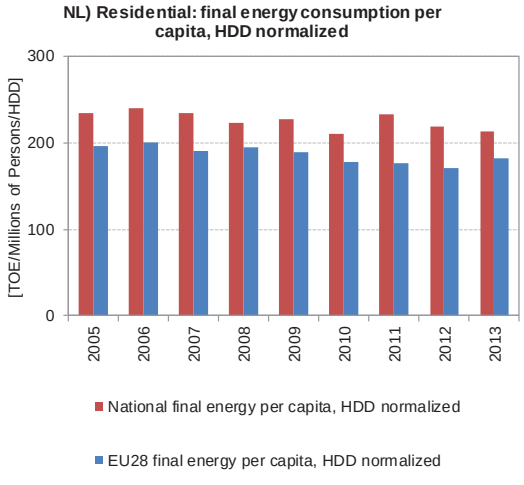


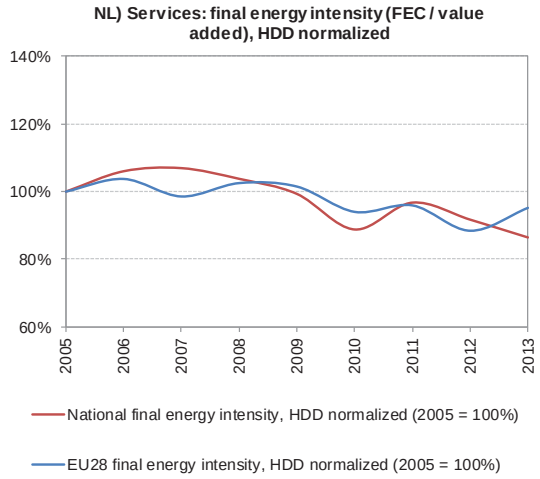


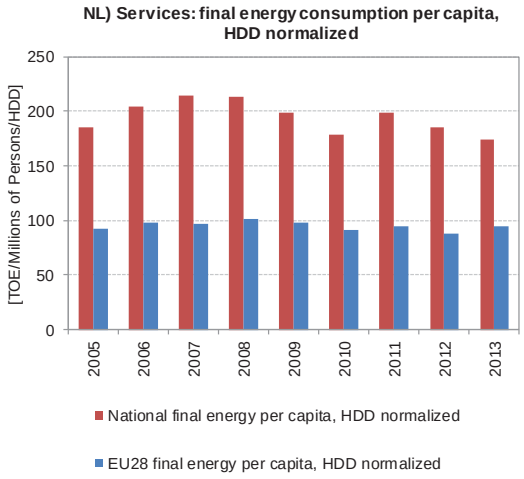


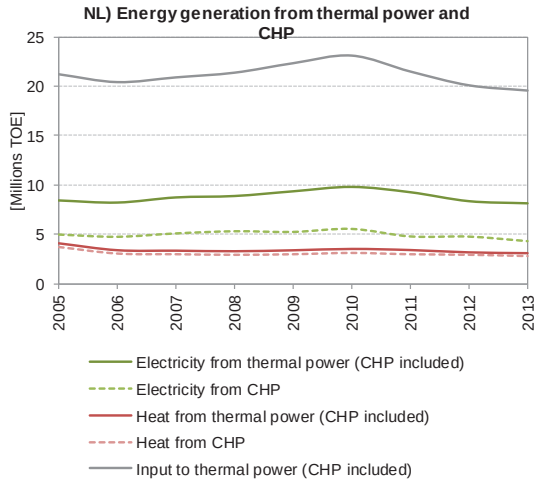


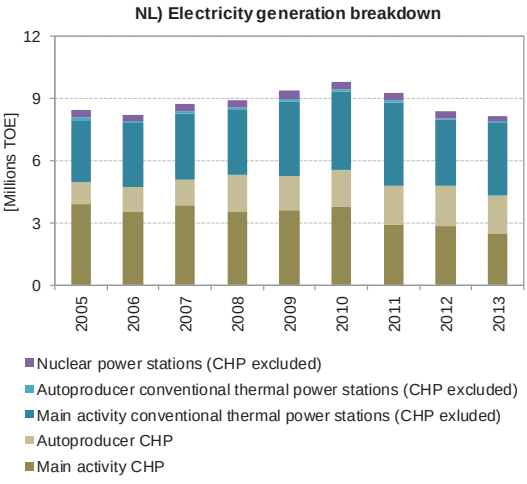

NL) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


NL) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

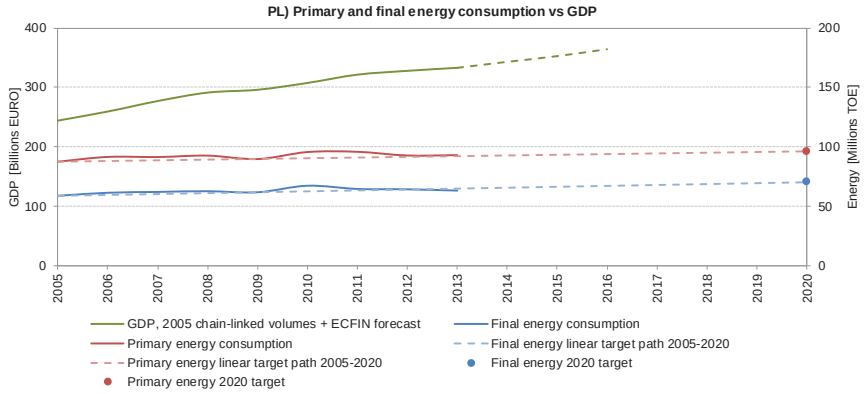

NL) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

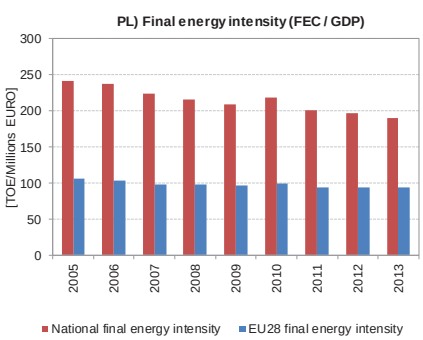

NL) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
250
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

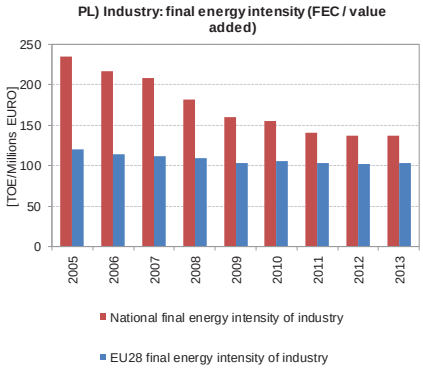

NL) Energy generation from thermal power and CHP
[Millions TOE]
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

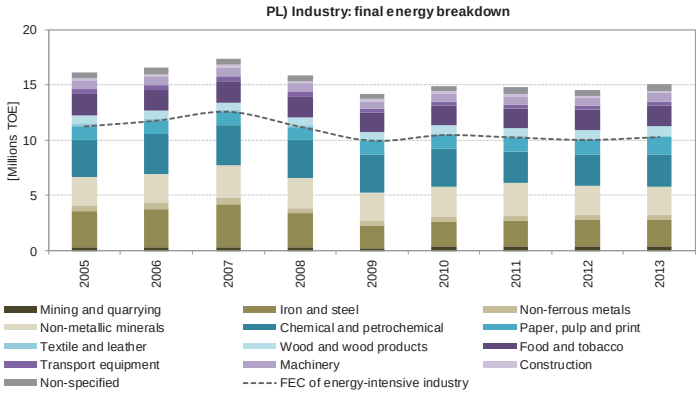

NL) Electricity generation breakdown
[Millions TOE]
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

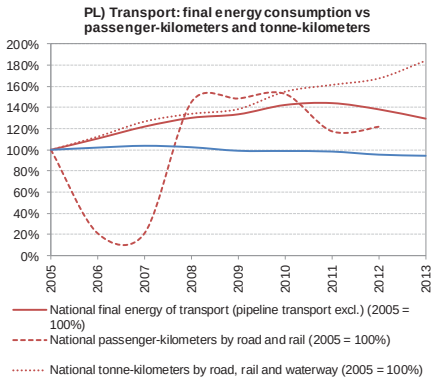
21. Poland

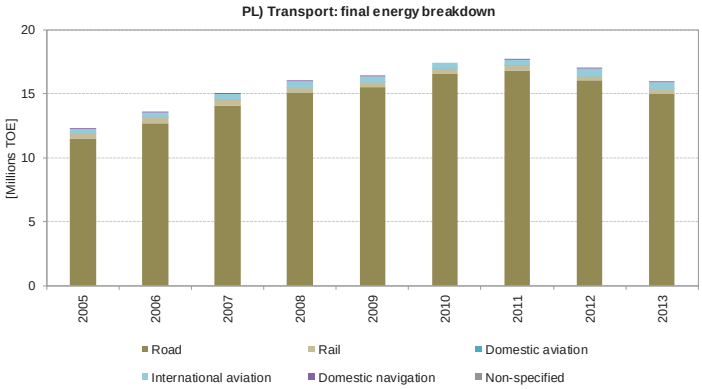

PL) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

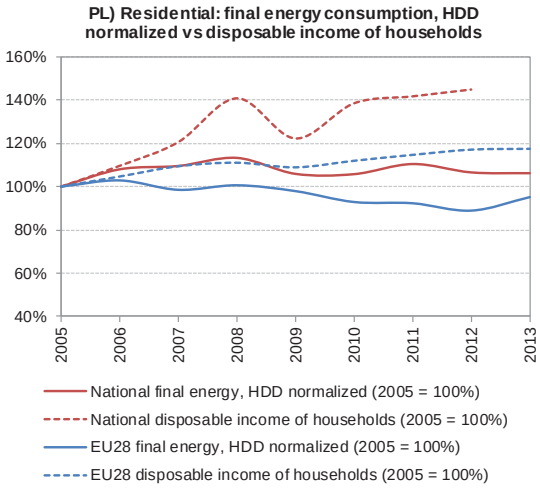

PL) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

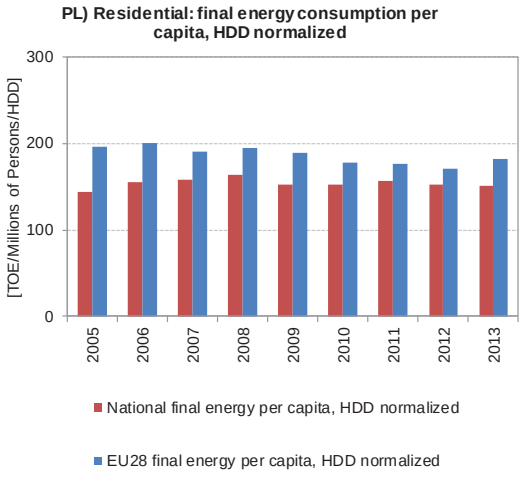

PL) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

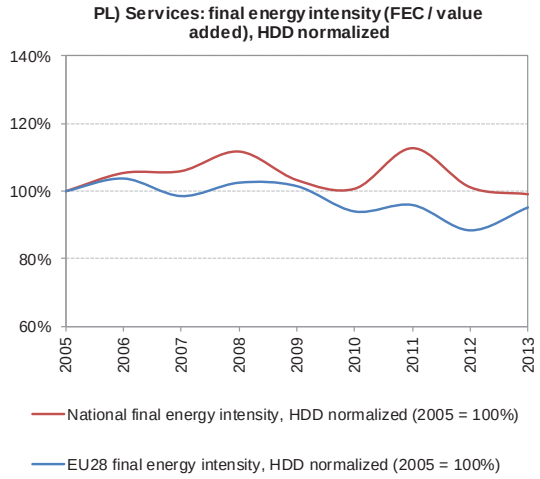

PL) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

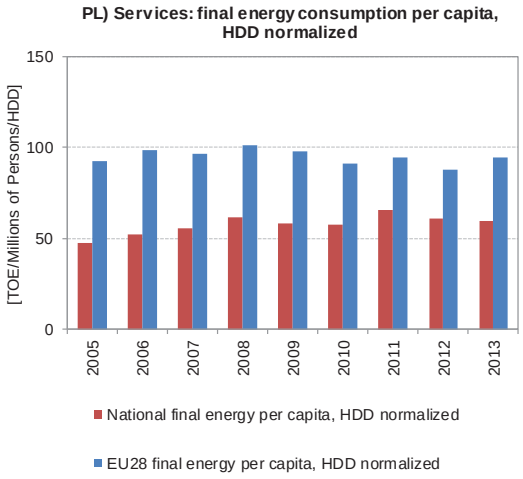

PL) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

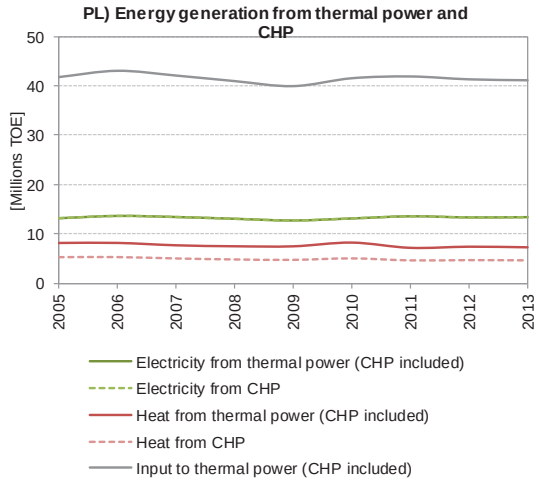

PL) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

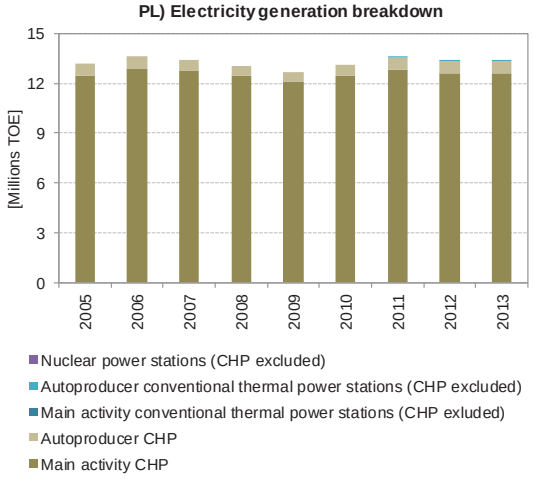

PL) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


PL) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

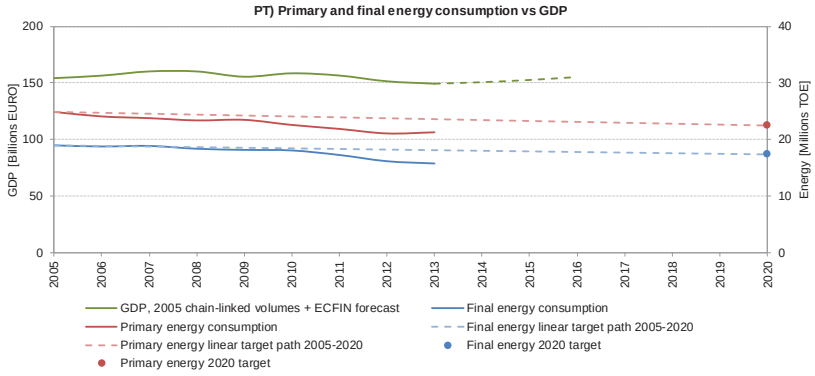

PL) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

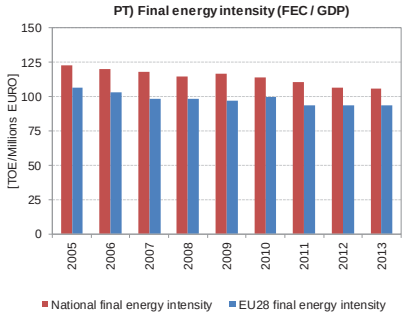

PL) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

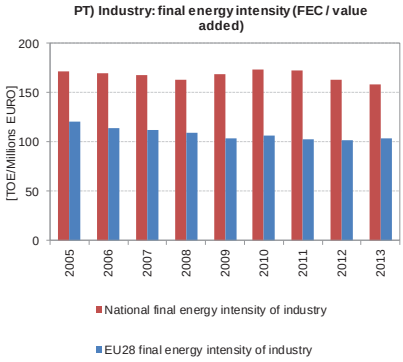

PL) Energy generation from thermal power and CHP
[Millions TOE]
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

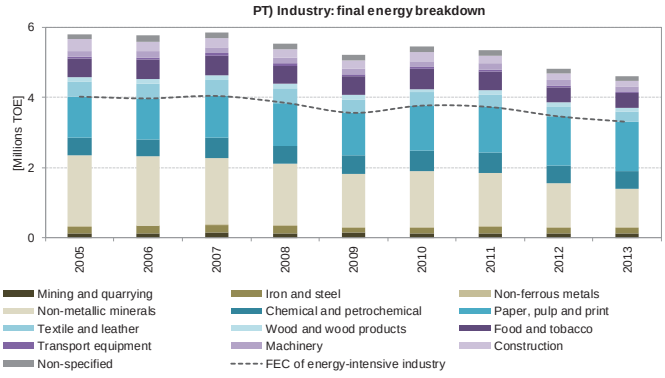

PL) Electricity generation breakdown
[Millions TOE]
15
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

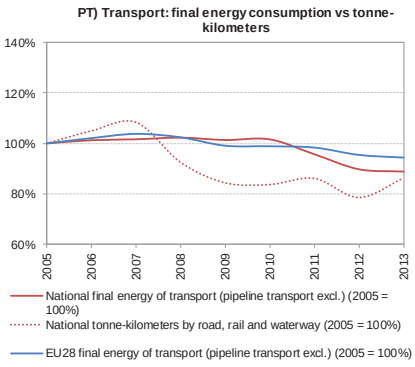
22. Portugal

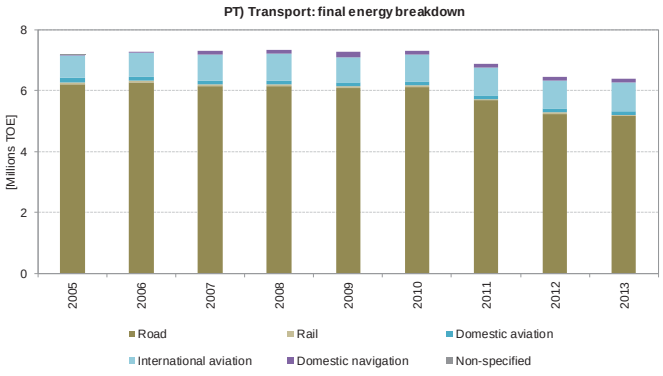

PT) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

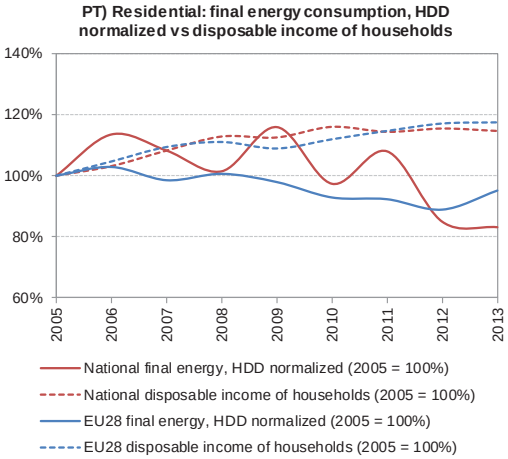

PT) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

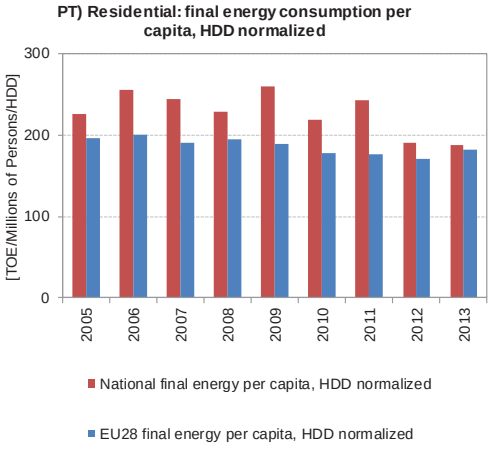

PT) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

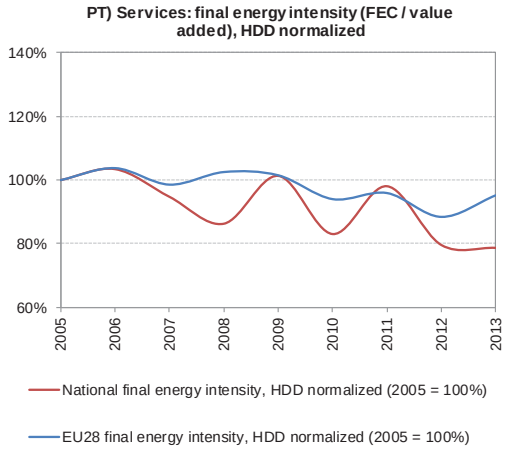

PT) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Non-metallic minerals
Textile and leather
Transport equipment
Non-specified
Iron and steel
Chemical and petrochemical
Wood and wood products
Machinery
FEC of energy-intensive industry
Non-ferrous metals
Paper, pulp and print
Food and tobacco
Construction

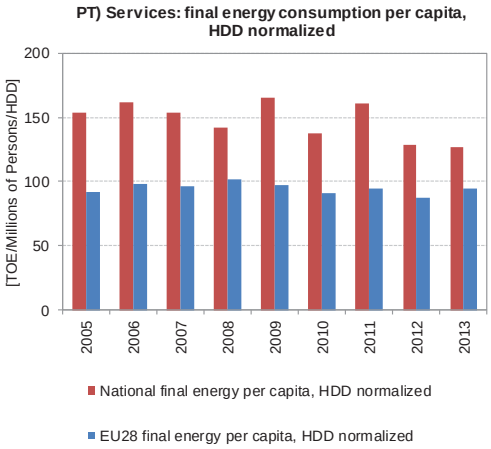

PT) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

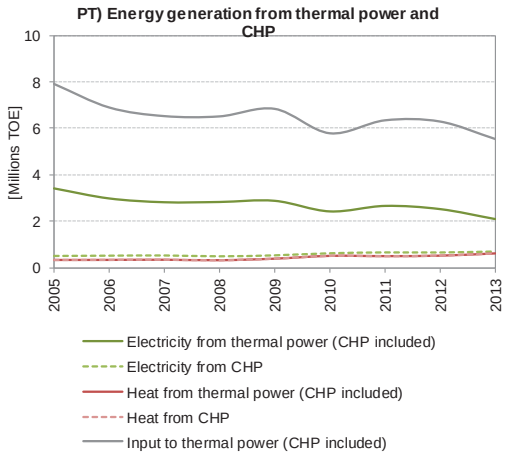

PT) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

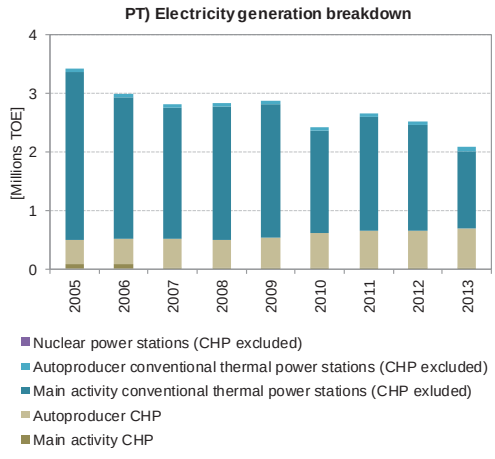

PT) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


PT) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

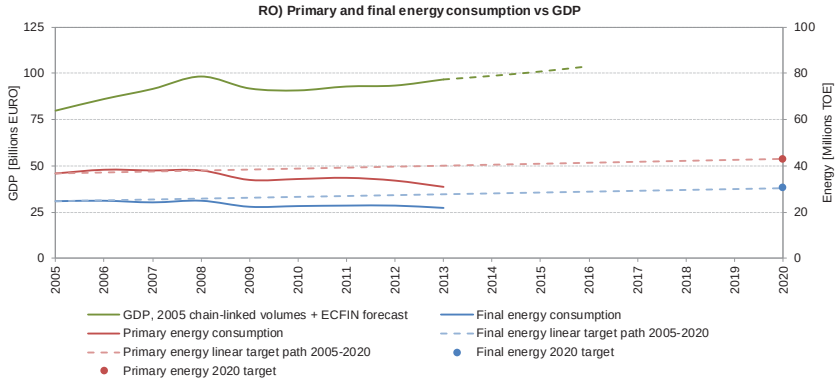

PT) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

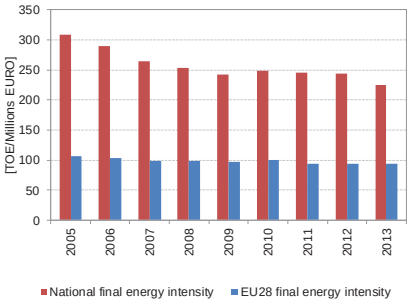

PT) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
200
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

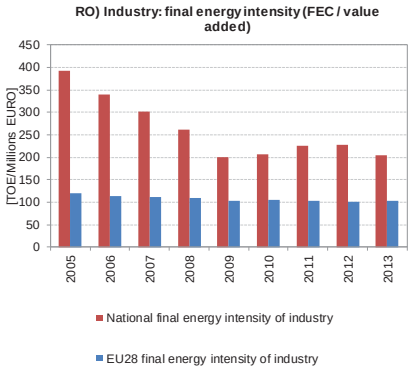

PT) Energy generation from thermal power and CHP
[Millions TOE]
10
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

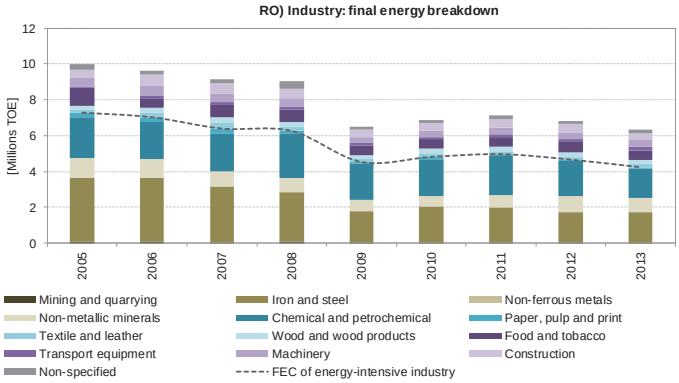

PT) Electricity generation breakdown
[Millions TOE]
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

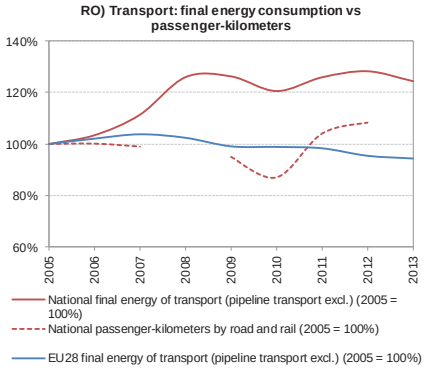
23. Romania

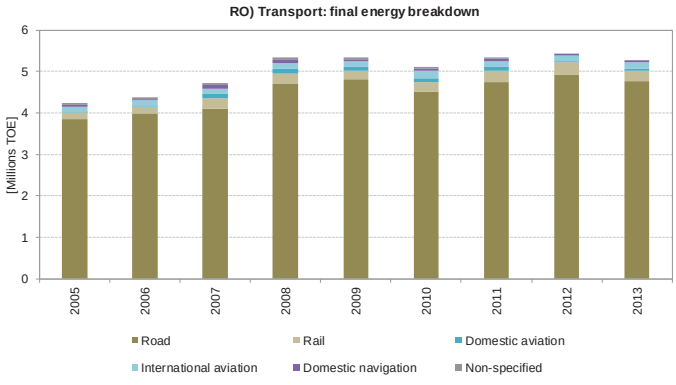

RO) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

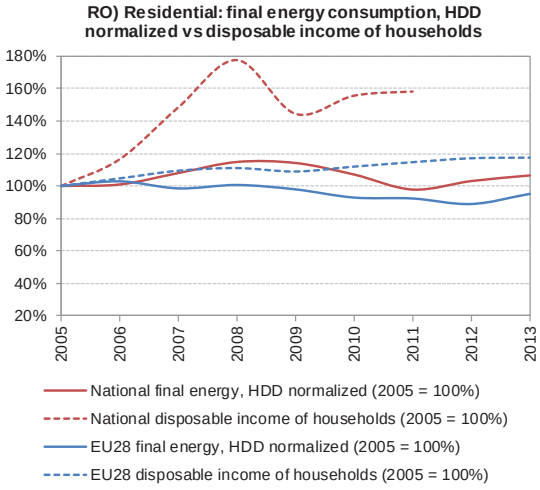

RO) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

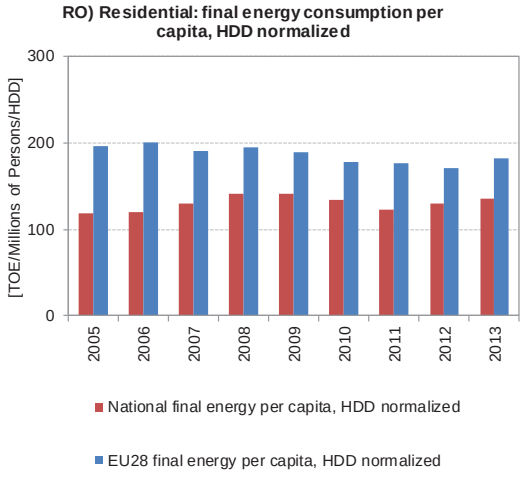

RO) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

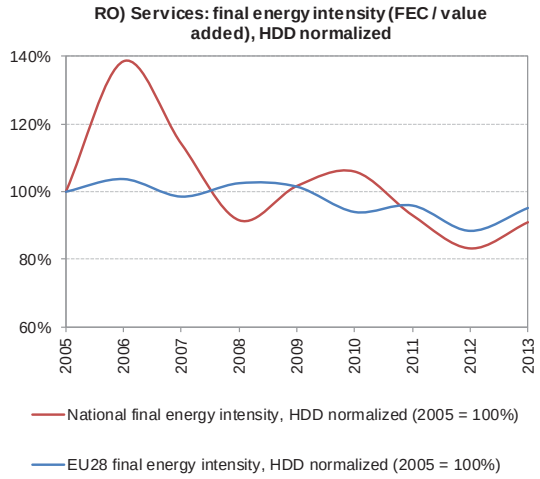

RO) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

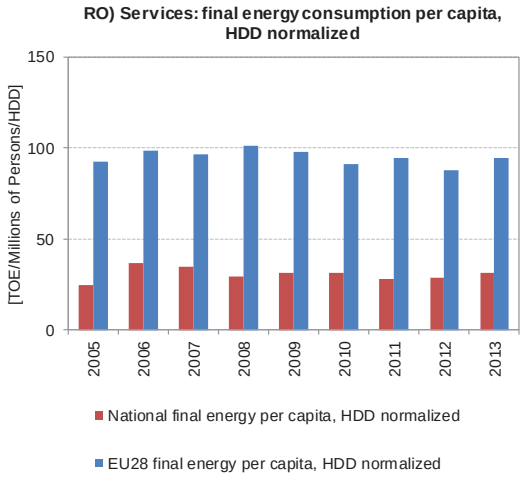

RO) Transport: final energy consumption vs passenger-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

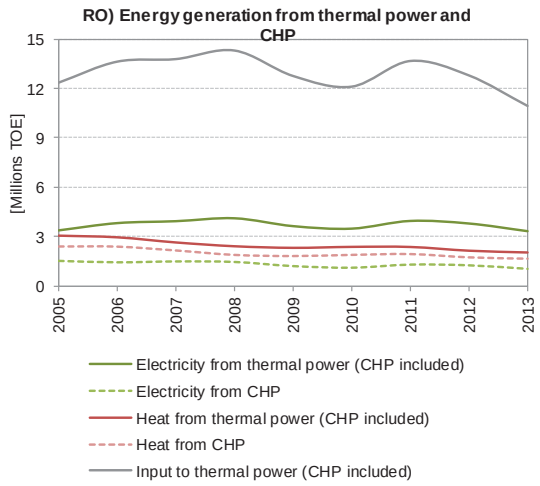

RO) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

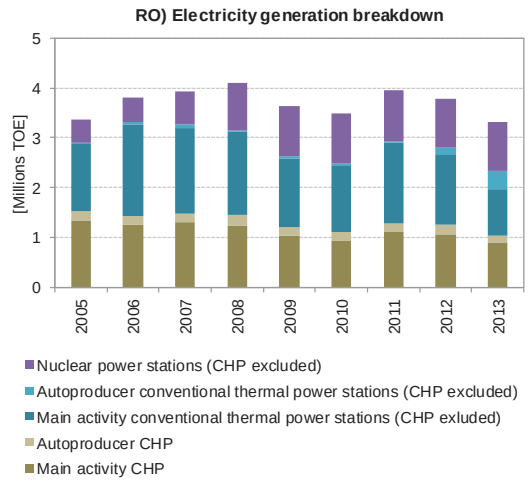

RO) Residential: final energy consumption, HDD normalized vs disposable income of households
180%
160%
140%
120%
100%
80%
60%
40%
20%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


RO) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

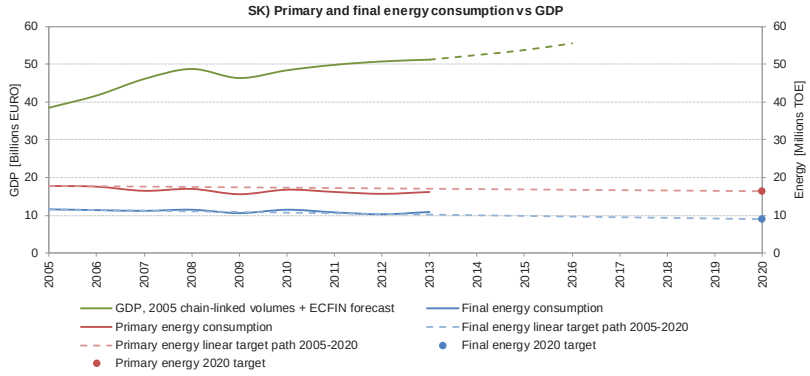

RO) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

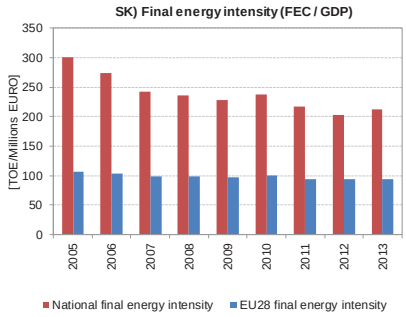

RO) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

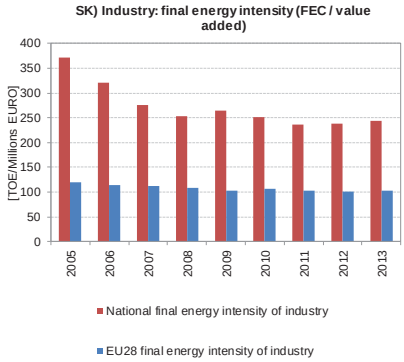

RO) Energy generation from thermal power and CHP
[Millions TOE]
15
12
9
6
3
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

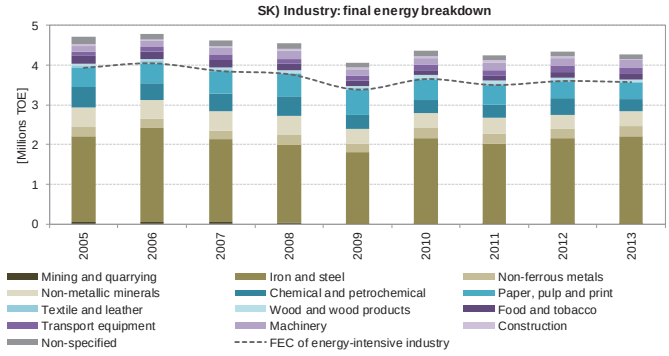

RO) Electricity generation breakdown
[Millions TOE]
5
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

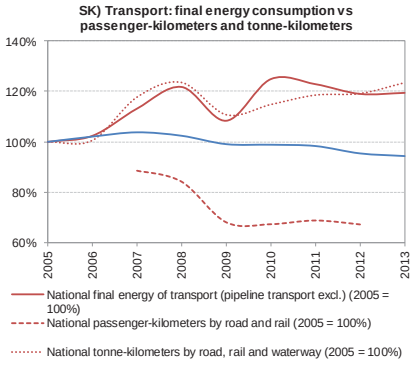
24. Slovakia

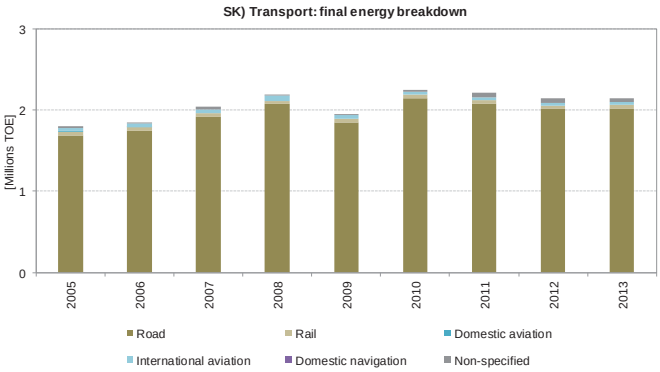

SK) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

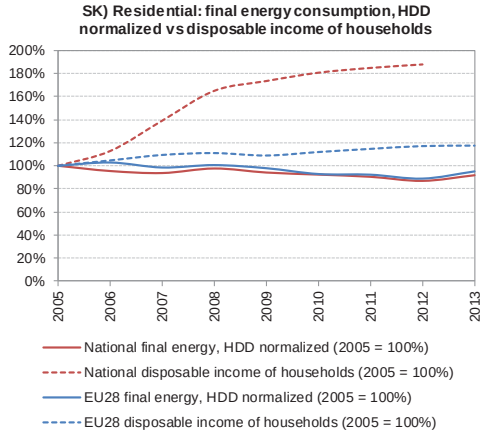

SK) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

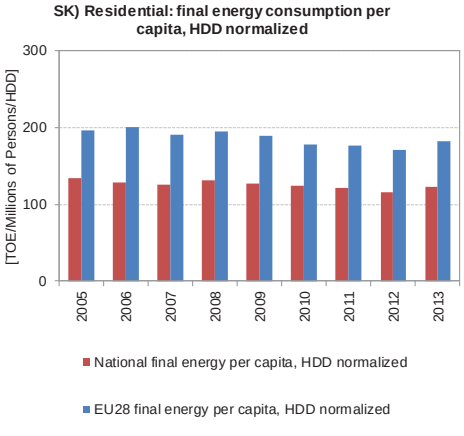

SK) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

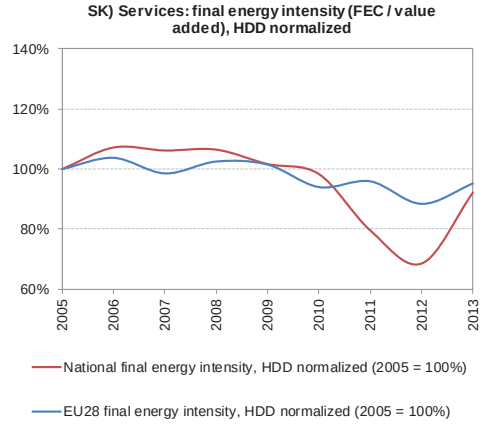

SK) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

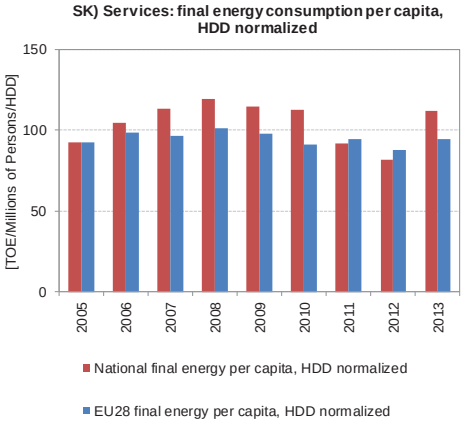

SK) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

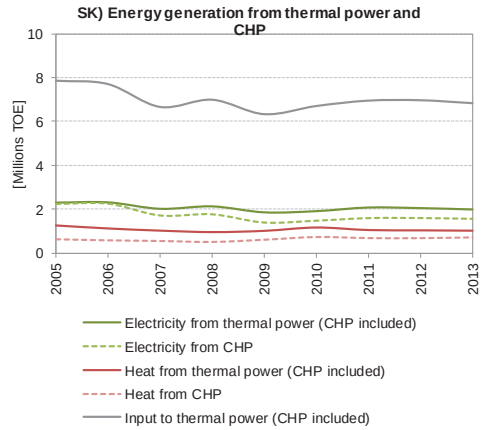

SK) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

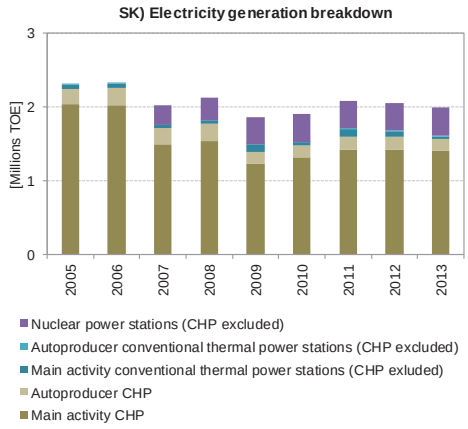

SK) Residential: final energy consumption, HDD normalized vs disposable income of households
200%
180%
160%
140%
120%
100%
80%
60%
40%
20%
0%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


SK) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

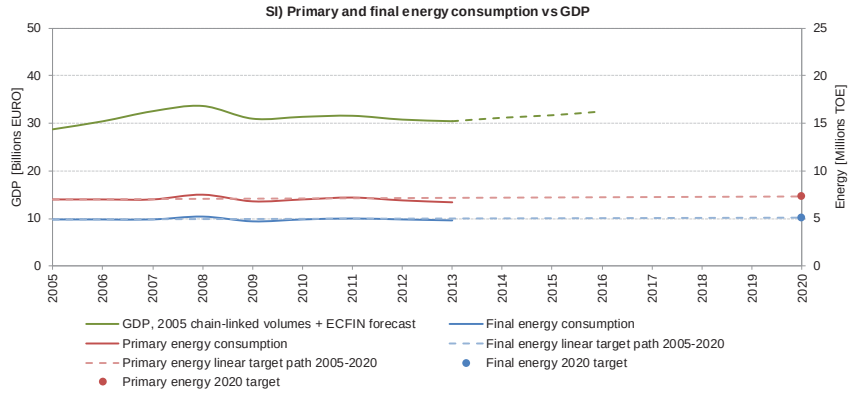

SK) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

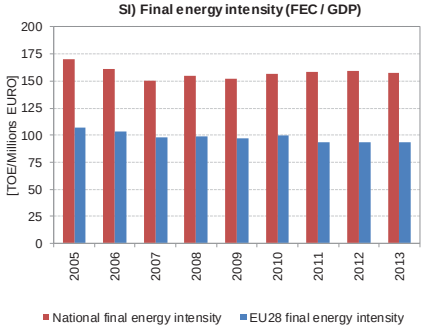

SK) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

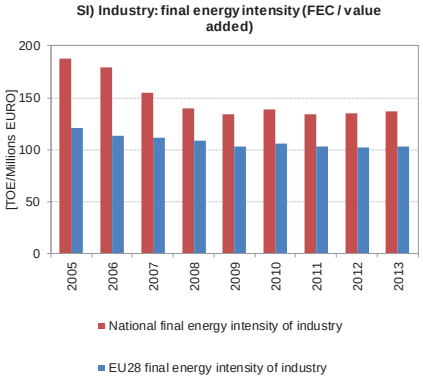

SK) Energy generation from thermal power and CHP
[Millions TOE]
10
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

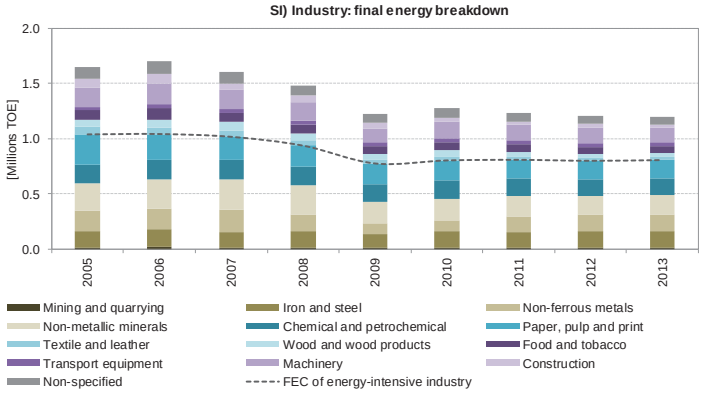

SK) Electricity generation breakdown
[Millions TOE]
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

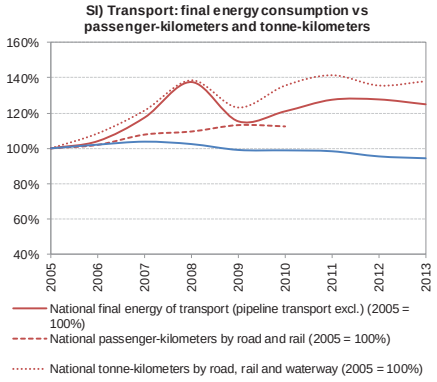
25. Slovenia

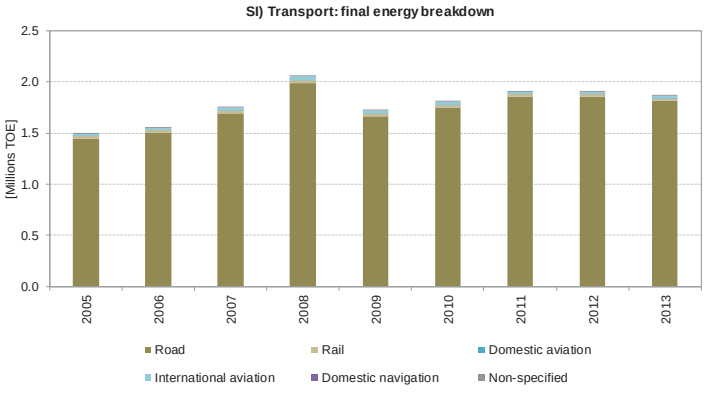

SI) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

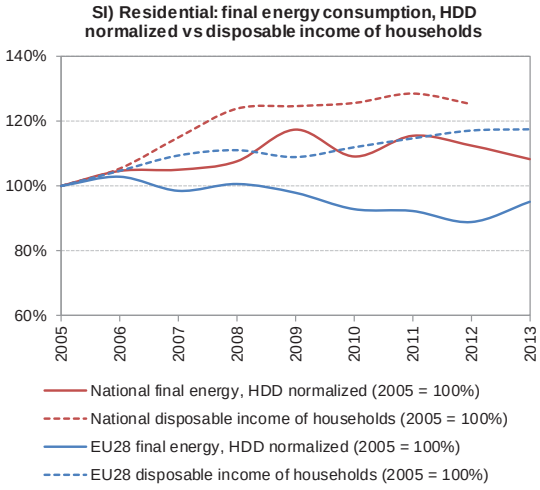

SI) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

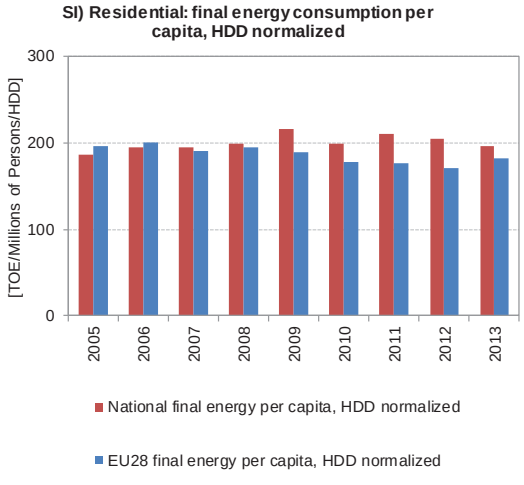

SI) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

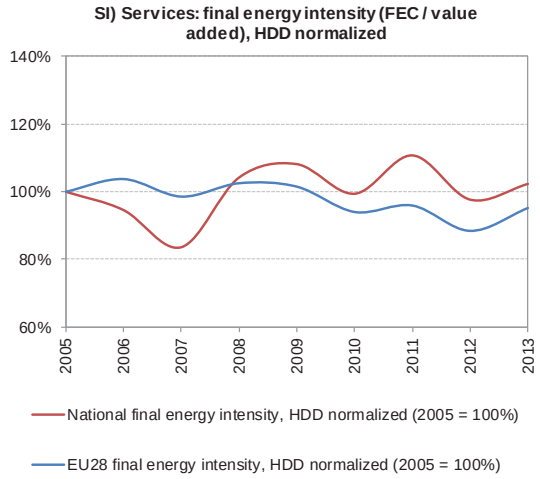

SI) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

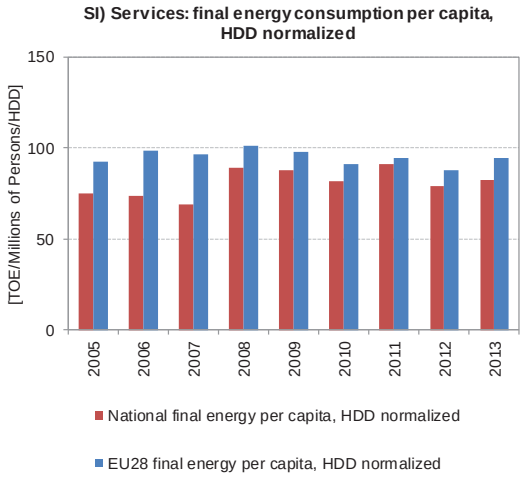

SI) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

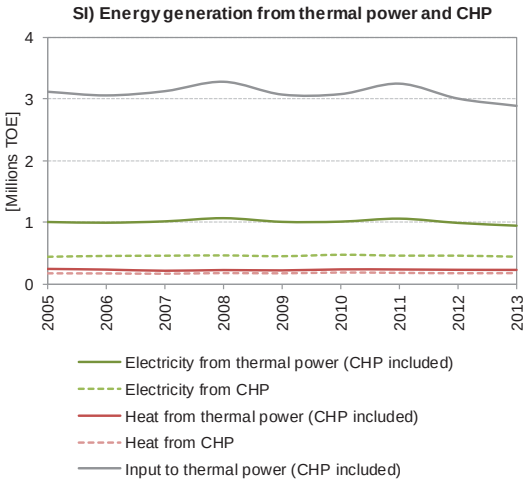

SI) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

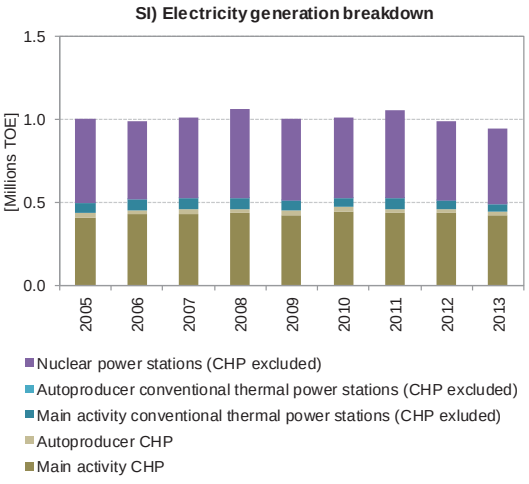

SI) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


SI) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

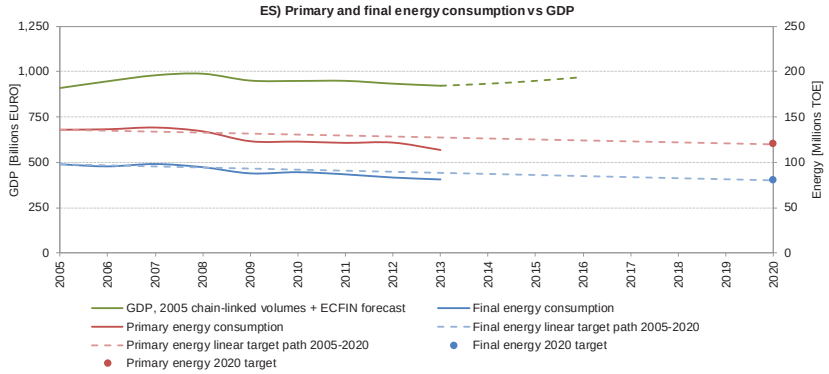

SI) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

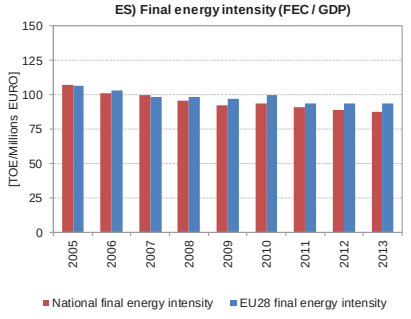

SI) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

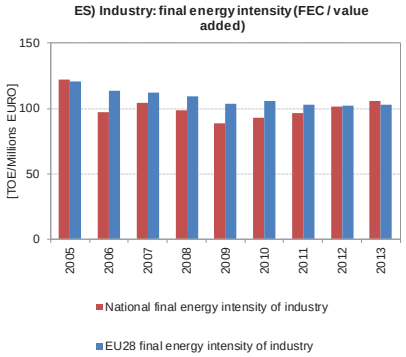

SI) Energy generation from thermal power and CHP
[Millions TOE]
4
3
2
1
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

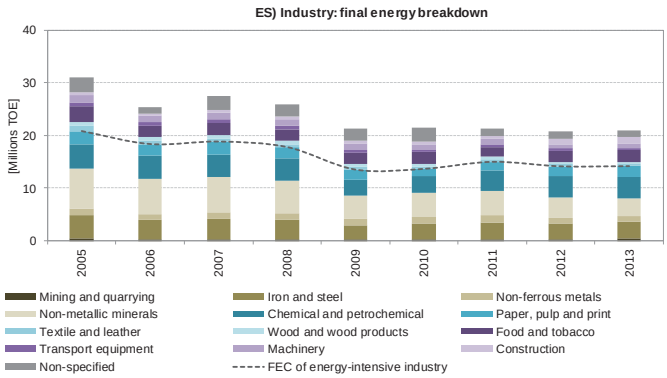

SI) Electricity generation breakdown
[Millions TOE]
1.5
1.0
0.5
0.0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

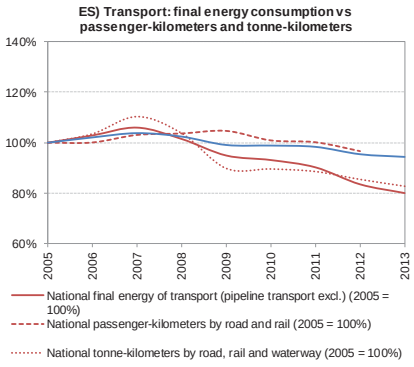
26. Spain

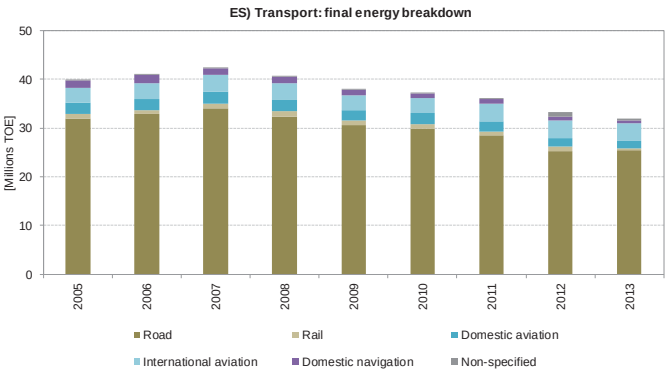

ES) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

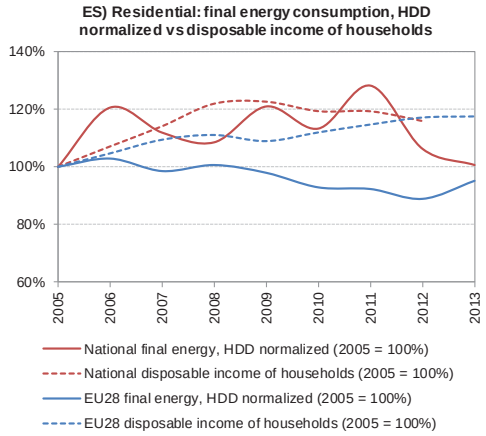

ES) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

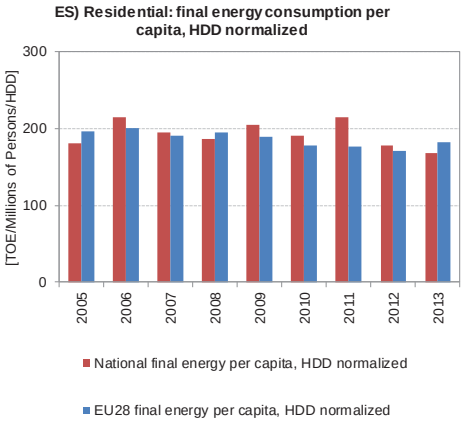

ES) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

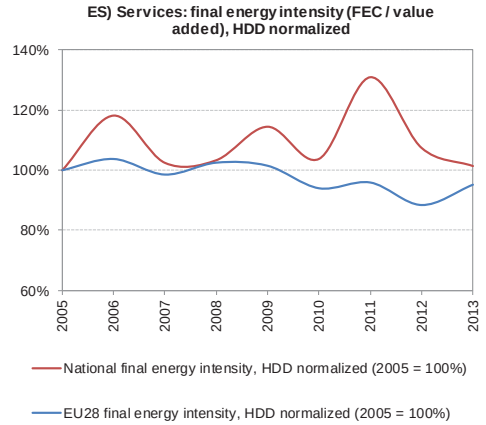

ES) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

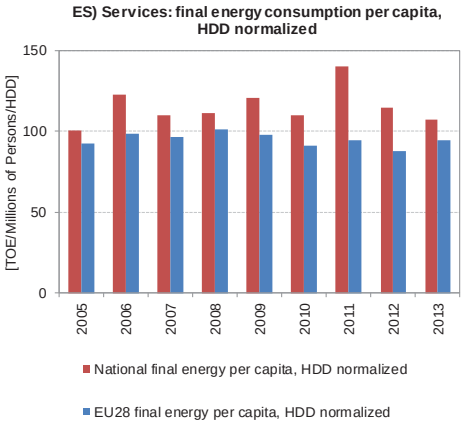

ES) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

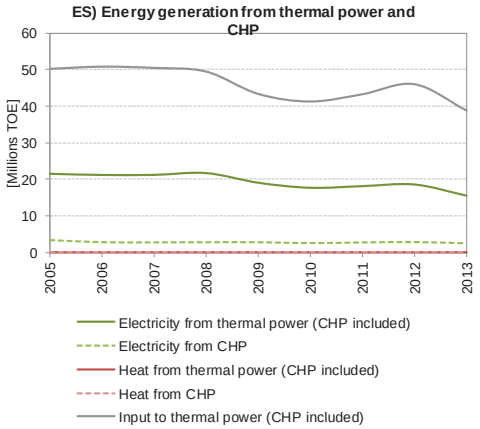

ES) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

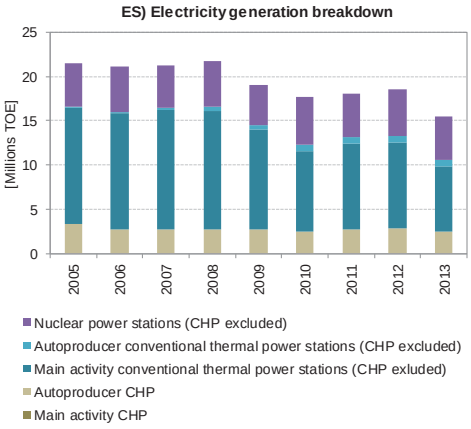

ES) Residential: final energy consumption, HDD normalized vs disposable income of households
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


ES) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

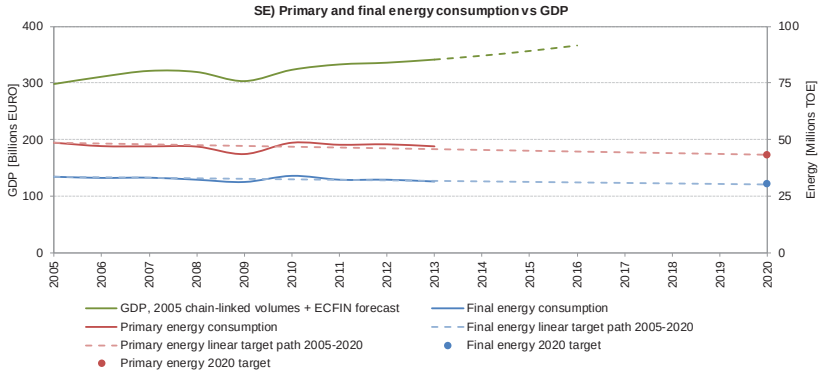

ES) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

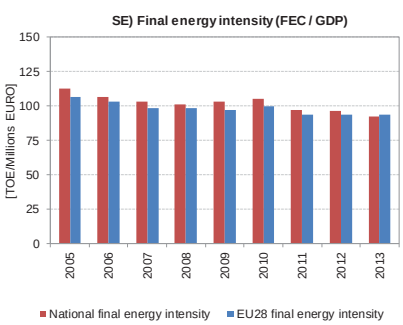

ES) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

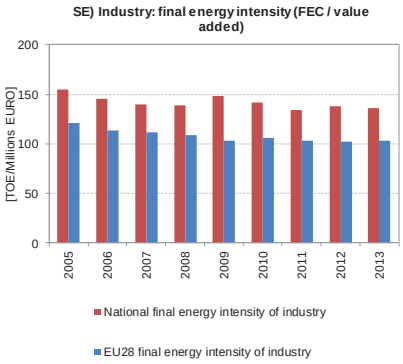

ES) Energy generation from thermal power and CHP
[Millions TOE]
60
50
40
30
20
10
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

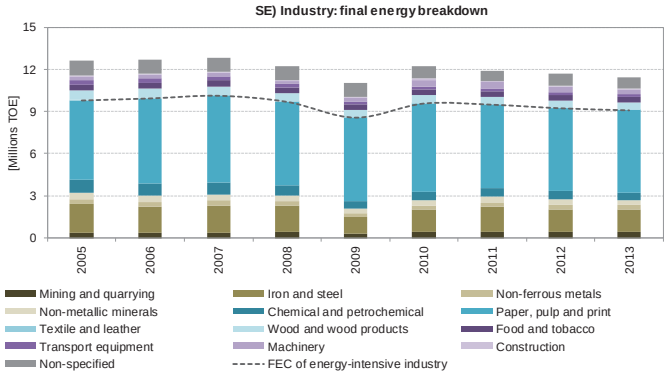

ES) Electricity generation breakdown
[Millions TOE]
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

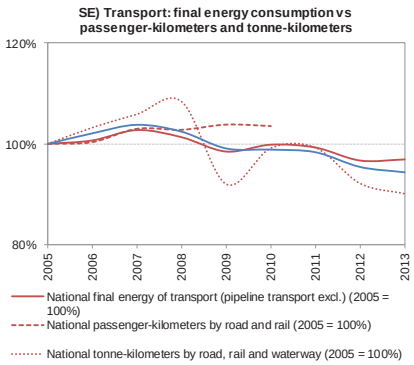
27. Sweden

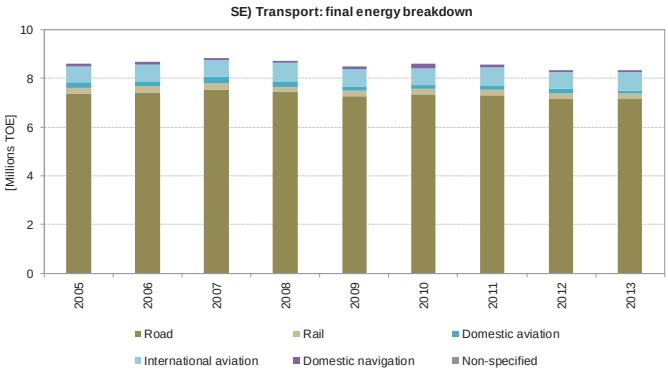

SE) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target

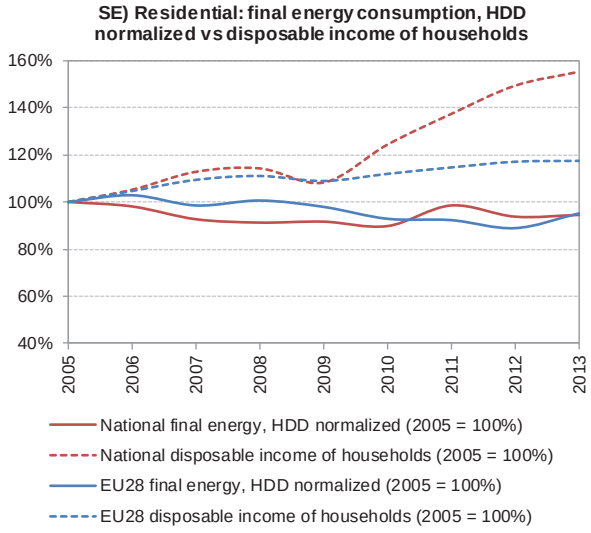

SE) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

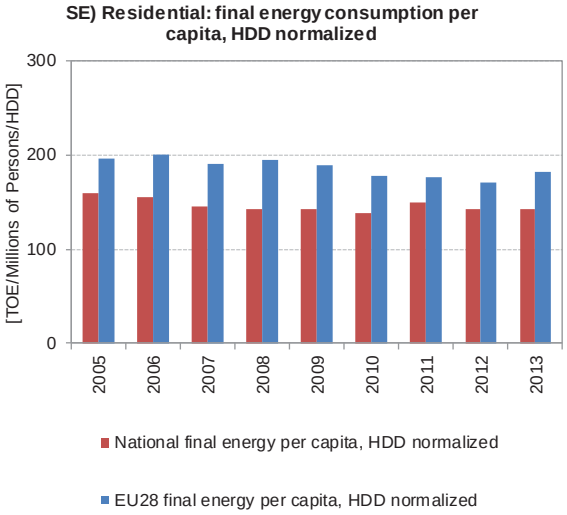

SE) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry

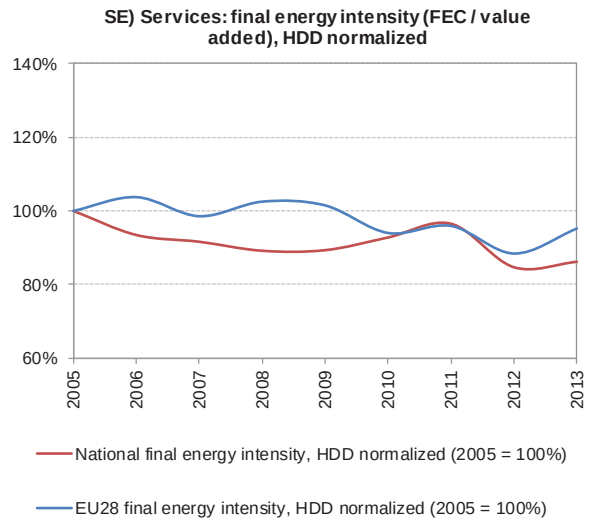

SE) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Iron and steel
Non-ferrous metals
Non-metallic minerals
Chemical and petrochemical
Paper, pulp and print
Textile and leather
Wood and wood products
Food and tobacco
Transport equipment
Machinery
Construction
Non-specified
FEC of energy-intensive industry

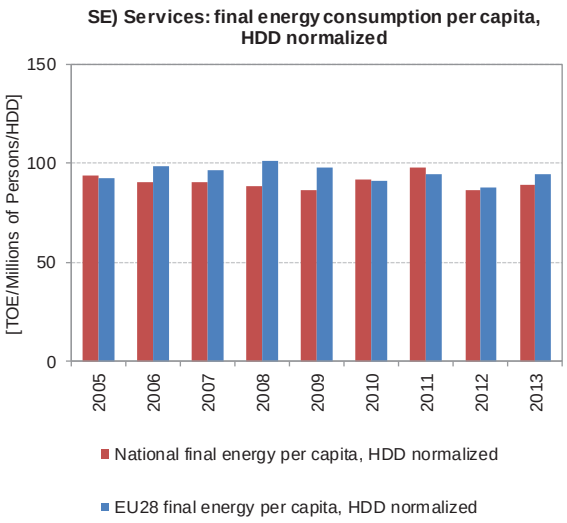

SE) Transport: final energy consumption vs passenger-kilometers and tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National passenger-kilometers by road and rail (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)

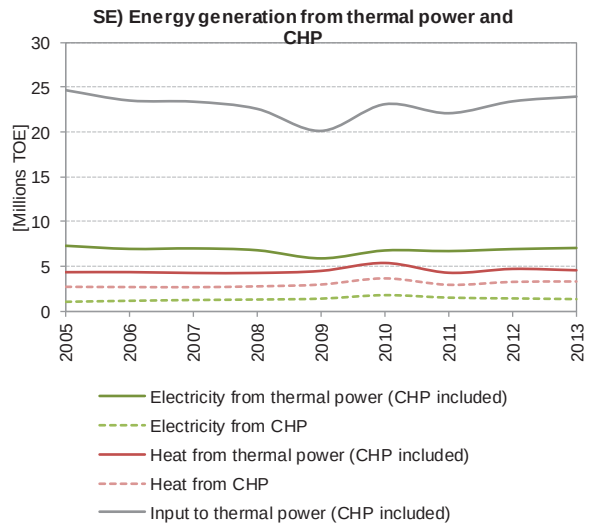

SE) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

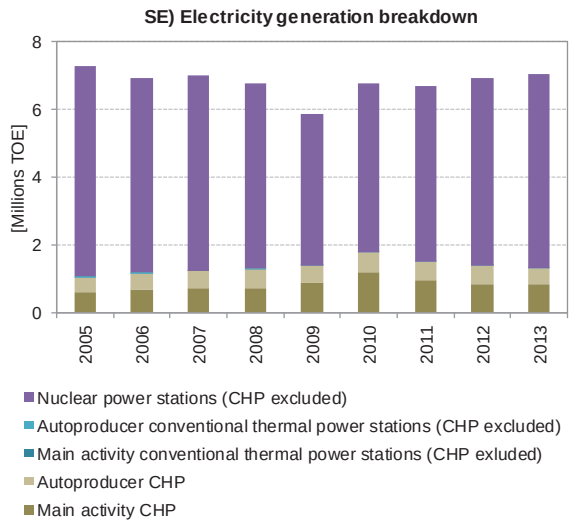

SE) Residential: final energy consumption, HDD normalized vs disposable income of households
160%
140%
120%
100%
80%
60%
40%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)


SE) Residential: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
300
200
100
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

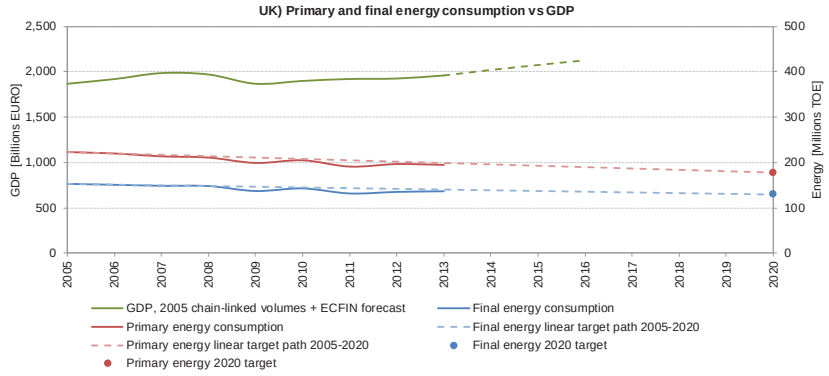

SE) Services: final energy intensity (FEC / value added), HDD normalized
140%
120%
100%
80%
60%
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

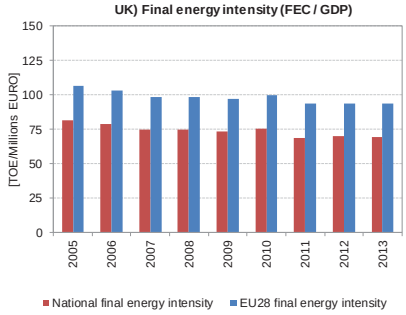

SE) Services: final energy consumption per capita, HDD normalized
[TOE/Millions of Persons/HDD]
150
100
50
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

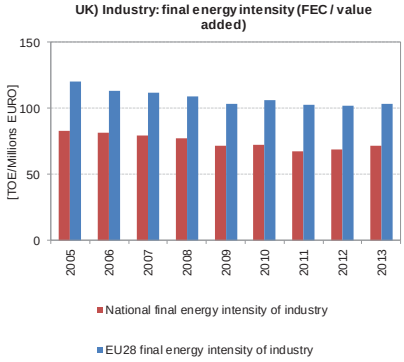

SE) Energy generation from thermal power and CHP
[Millions TOE]
30
25
20
15
10
5
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

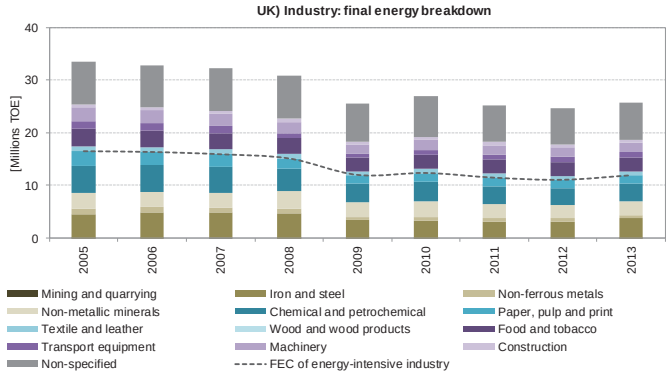

SE) Electricity generation breakdown
[Millions TOE]
8
6
4
2
0
2005
2006
2007
2008
2009
2010
2011
2012
2013
Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP

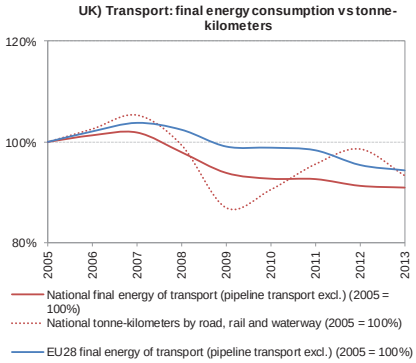
28. UK

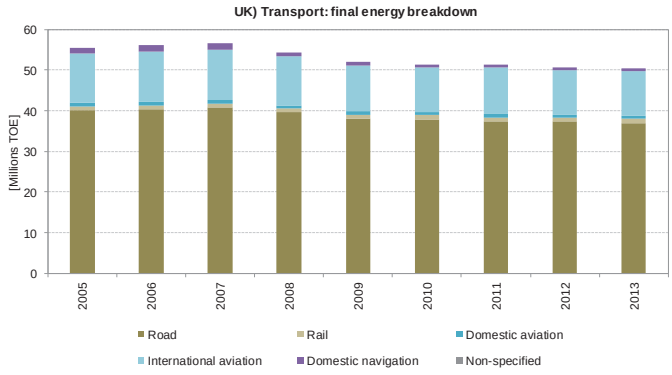

UK) Primary and final energy consumption vs GDP
GDP [Billions EURO]
Energy [Millions TOE]
GDP, 2005 chain-linked volumes + ECFIN forecast
Primary energy consumption
Primary energy linear target path 2005-2020
Primary energy 2020 target
Final energy consumption
Final energy linear target path 2005-2020
Final energy 2020 target


UK) Final energy intensity (FEC / GDP)
[TOE/Millions EURO]
National final energy intensity
EU28 final energy intensity

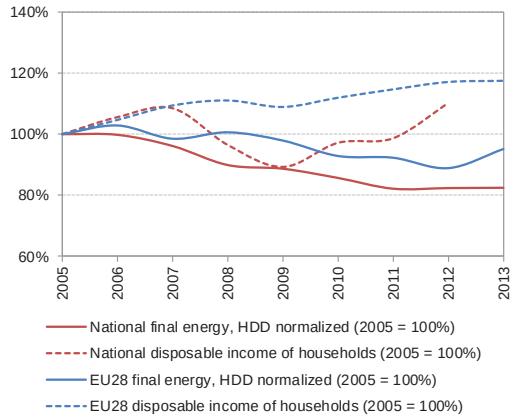

UK) Industry: final energy intensity (FEC / value added)
[TOE/Millions EURO]
National final energy intensity of industry
EU28 final energy intensity of industry


UK) Industry: final energy breakdown
[Millions TOE]
Mining and quarrying
Non-metallic minerals
Textile and leather
Transport equipment
Non-specified
Iron and steel
Chemical and petrochemical
Wood and wood products
Machinery
FEC of energy-intensive industry
Non-ferrous metals
Paper, pulp and print
Food and tobacco
Construction


UK) Transport: final energy consumption vs tonne-kilometers
National final energy of transport (pipeline transport excl.) (2005 = 100%)
National tonne-kilometers by road, rail and waterway (2005 = 100%)
EU28 final energy of transport (pipeline transport excl.) (2005 = 100%)

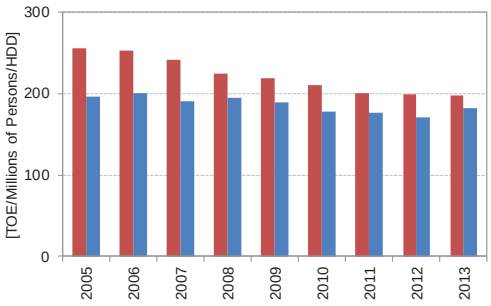

UK) Transport: final energy breakdown
[Millions TOE]
Road
Rail
Domestic aviation
International aviation
Domestic navigation
Non-specified

UK) Residential: final energy consumption, HDD normalized vs disposable income of households



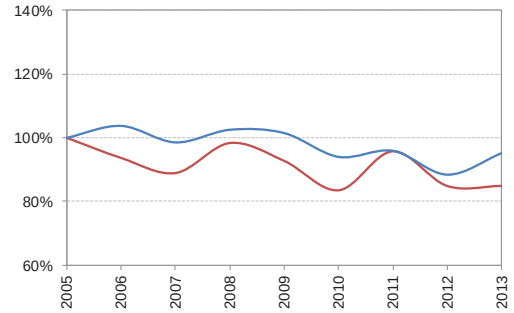
National final energy, HDD normalized (2005 = 100%)
National disposable income of households (2005 = 100%)
EU28 final energy, HDD normalized (2005 = 100%)
EU28 disposable income of households (2005 = 100%)

UK) Residential: final energy consumption per capita, HDD normalized



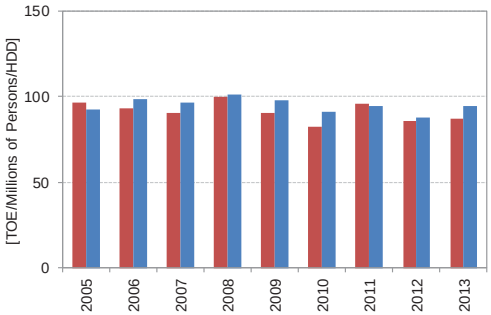
National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

UK) Services: final energy intensity (FEC / value added), HDD normalized



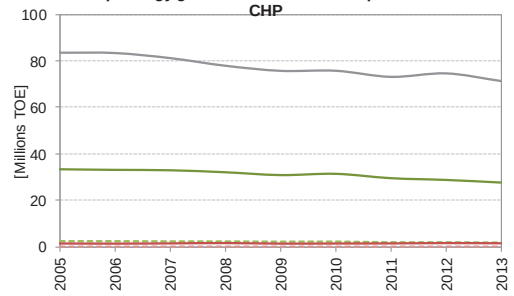
National final energy intensity, HDD normalized (2005 = 100%)
EU28 final energy intensity, HDD normalized (2005 = 100%)

UK) Services: final energy consumption per capita, HDD normalized



National final energy per capita, HDD normalized
EU28 final energy per capita, HDD normalized

UK) Energy generation from thermal power and CHP



Electricity from thermal power (CHP included)
Electricity from CHP
Heat from thermal power (CHP included)
Heat from CHP
Input to thermal power (CHP included)

UK) Electricity generation breakdown

Nuclear power stations (CHP excluded)
Autoproducer conventional thermal power stations (CHP excluded)
Main activity conventional thermal power stations (CHP exluded)
Autoproducer CHP
Main activity CHP