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 Agency for the Cooperation  
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## ACER/CEER

# Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017

## Electricity and Gas Retail Markets Volume

September 2018



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# ACER/CEER

## Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2017

### Electricity and Gas Retail Markets Volume

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## Executive summary

- 1 This Volume of the MMR provides an assessment of the level of and trends in the retail energy prices for households and industry in Member States (MSs) of the European Union (EU) and the Energy Community Contracting Parties (EnC CPs)<sup>1</sup>. In addition, for the household segment, the Volume examines the main price components and drivers behind the recent trends in retail energy prices, as well as the mark-ups and the responsiveness of the energy component of the retail prices to changes in wholesale energy prices.

### EUROPEAN UNION

- 2 As in previous years, retail electricity and gas prices for both households and industrial consumers continued to vary greatly across Europe, reflecting the heterogeneity of national energy and taxation policies. For household consumers, the prices in the highest-priced MSs are still more than three times higher than those in the lowest-priced MSs. These differences are even bigger in the industrial segment, with respective electricity and gas prices five and four times higher in the highest-priced MSs.
- 3 In 2017, household consumers further benefitted from the falling retail energy prices as the downward price trend that started in 2016 continued, reversing the trend of rising prices observed in the period between 2008 and 2015. In the household segment, the average electricity price fell by 0.4% to 20.4 euro cents/kWh, while the average gas price fell by 3.3% to 6.1 euro cents/kWh. In the industrial segment, electricity prices fell, on average, by 1.9% to 10.4 euro cents/kWh while gas prices remained on average almost unchanged at 2.5 euro cents/kWh.
- 4 Compared to 2008, the average electricity price has risen by 25.9% and by 3.7% for household and industrial consumers, respectively. Gas prices have risen by 5.2% for household consumers, but have decreased by 28.6% for industrial consumers.
- 5 The results of the analysis show that the falling wholesale electricity and gas prices and lower taxes in electricity contributed the most to the new trend of lower prices for household consumers. Over the 2015 - 2017 period, the energy component of electricity and gas retail prices declined further and its share in the final retail prices fell from 37% to 35% in electricity, and from 52% to 49% in gas. In addition, in electricity the proportion of taxes in the final price declined for the first time, from 25% in 2016 to 23% in 2017.
- 6 However, as changes in retail prices have often not been responsive to changes in wholesale prices, it is also clear that the savings made from the reduction in wholesale prices were not always and everywhere passed on to household consumers. The link between retail and wholesale prices is still weak in many countries. In line with the results from the previous years, the energy component of retail prices and wholesale prices seem to correlate better in two groups of countries but for different reasons. Prices correlate well in those competitive markets where the offers available to consumers contain a direct reference to wholesale prices/costs. In addition, a good correlation is observed also in certain countries with regulated retail prices, where such regulated prices are indexed to wholesale prices.
- 7 Retail mark-ups in both the electricity and gas household segment across the EU decreased on average in 2017 compared to 2016.

1 The Energy Community is an international organisation dealing with energy policy, bringing together the EU and countries of South-East Europe and the Black Sea regions. At present, the Energy Community has nine Contracting Parties: Albania, Bosnia and Herzegovina, Georgia, Kosovo\*, the Former Yugoslav Republic (FYR) of Macedonia, Moldova, Montenegro, Serbia and Ukraine. Throughout this document the symbol \* refers to the following statement: *"This designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Advisory Opinion on the Kosovo declaration of independence"*.

## ENERGY COMMUNITY CONTRACTING PARTIES

- 8 In the period between 2013 and 2017, the average electricity price for households in the EnC CPs, without Ukraine, increased by 11%, while average industrial prices decreased by almost 20%. Over the same period, electricity prices for households in Ukraine registered an increase of 34% and industry prices a decrease of around 36%.
- 9 In the EnC, contrary to the trends observed in the EU, the industrial gas prices are, on average, higher than household prices. Gas prices for households in Ukraine and other EnC CPs were developing in opposite directions. Average gas household and industry prices in the EnC CPs, without Ukraine, decreased by 30% between 2013 and 2017. On the other side, household gas prices in Ukraine increased by more than 170%, while the industry prices registered trend similar to the one of the other EnC CPs.
- 10 When examining the price breakdown, the composition of the final household price for both gas and electricity varies widely across EnC CPs. A clear trend is difficult to detect which is most likely due to the heterogeneity of the EnC CPs.

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## Introduction

- 11 The Market Monitoring Report (MMR), which is in its seventh edition, consists of four volumes, respectively on: Electricity Wholesale Markets, Gas Wholesale Markets, Electricity and Gas Retail Markets, and Consumer Protection and Empowerment. It covers the European Union (EU) Members States (MSs) and, for selected topics, also the Contracting Parties (CPs) of the Energy Community (EnC)<sup>2</sup>.
- 12 The main objective of the Retail Volume is to report on the results of monitoring of the retail markets and in particular, the electricity and gas prices for household and industrial consumers throughout Europe<sup>3</sup>.
- 13 This year's Retail Volume is thematically aligned with the previous editions of the MMR. In addition, it reintroduces the analysis of the mark-ups and the responsiveness of the retail component of energy prices for households to wholesale energy prices.
- 14 This document is structured in three chapters. Chapter 1 examines the level and evolution of retail electricity and gas prices for households and industrial consumers in the EU and EnC CPs. Chapter 2 covers the structure of the final price for households in the EU and EnC CPs, based on the standard incumbents' offers in capital cities, and the evolution of its various cost components. Chapter 3 provides the results of the analysis of the mark-ups and the relationship between the wholesale energy prices and the retail component of energy prices for households in the EU.

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2 The analysis includes EnC CPs, for which the NRAs provided data. However, data was not consistently available for all EnC CPs. For all the analyses presented in this volume, data availability is specified.

3 Throughout this volume, the 'EU' analysis refers to the 28 MSs of the EU (EU28), while 'Europe' refers to the EU28 and Norway. Where other European countries such as CPs of the EnC are included in the analysis, this is explicitly mentioned.



# 1. Level and evolution of retail energy prices

15 Retail energy prices constitute an important part of household and industrial consumers' expenditure. This Chapter examines the level of retail energy prices in 2017 and their trends over the 2008-2017 period at the EU and EnC CP level and for individual countries. In this context, the retail energy prices are final prices paid by consumers and consist of the energy commodity price, regulated transmission and distribution charges, levies and taxes (local, national, environmental, as applicable) and the value-added tax (VAT). Therefore, the terms 'retail prices' and 'final prices' are used interchangeably through the Report.

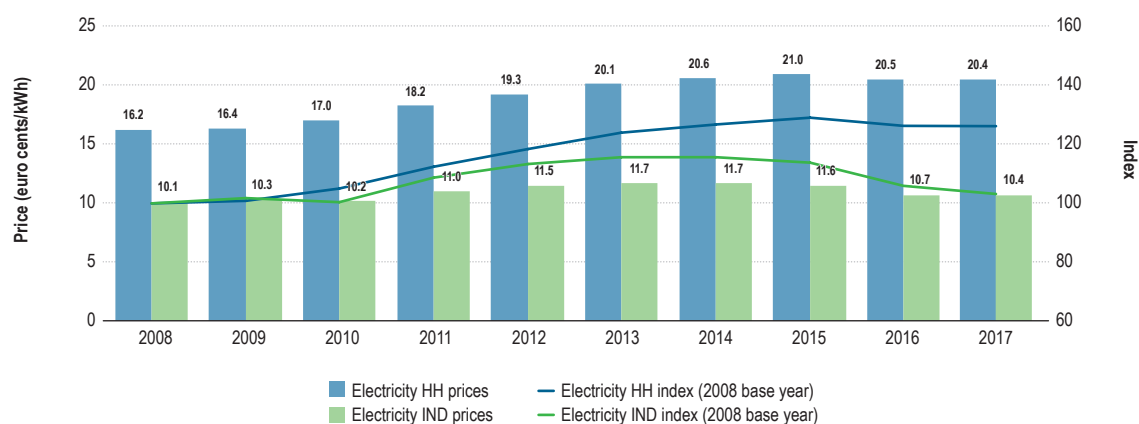
## 1.1 Electricity prices for households and industry

### 1.1.1 European Union

16 As shown in Figure 1, electricity prices for EU households continued to decrease in 2017, on average<sup>4</sup> by 0.4% to 20.4 euro cents/kWh with respect to the previous year. Over the same period, electricity prices for industrial consumers decreased for the fourth consecutive year, by an additional 1.9% to 10.4 euro cents/kWh, which is just over half the price paid by household consumers.

17 Compared to 2008 the average electricity prices for household consumers across the EU increased significantly, by 25.9%, while industrial prices increased by only 3.7% over the same period. This substantially higher price increase for households reflects mainly increases in charges for renewable energy sources (RES charges), often not applied in the industrial segment. As shown in Figure 10, the average relative share of RES charges in final electricity prices for households has more than doubled over the 2012-2017 period, from 6% in 2012 to 14% in 2017.

Figure 1: Trends in final electricity prices for household and industrial consumers in EU – 2008–2017 (euro cents/kWh and index change, 2008 = 100)

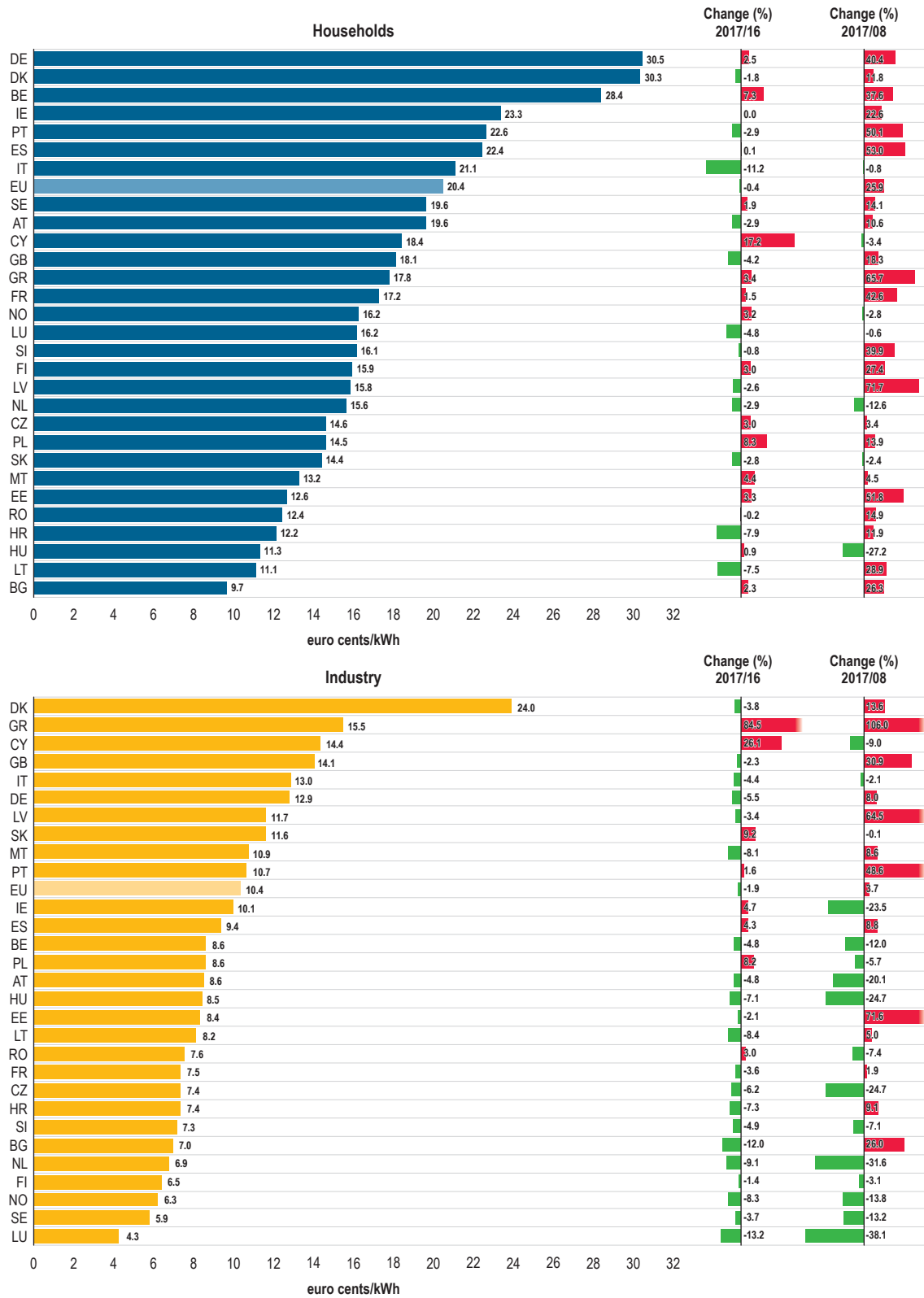


Source: ACER calculations based on Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) and Band IE: 20,000–70,000 MWh (industrial electricity consumption) (29 May 2018).

Note: Prices in nominal terms.

18 In line with the findings from previous years, there are large differences in the electricity price levels the EU and Norway, as shown in Figure 2. In Germany, the MS with the highest household prices (30.5 euro cents/kWh), consumers pay more than three times the price paid by Bulgarian consumers (9.7 euro cents/kWh). These differences are even higher in the industrial segment, as industrial electricity prices in Denmark (24.0 euro cents/kWh) are more than five times higher than those in Luxembourg (4.3 euro cents/kWh).

Figure 2: Final electricity prices for households and industrial consumers in the EU MSs and Norway in 2017 (euro cents/kWh) and changes compared to 2016 and 2008 (%)



Source: ACER calculations based on Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) and Band IE: 20,000–70,000 MWh (industrial electricity consumption) (29 May 2018).

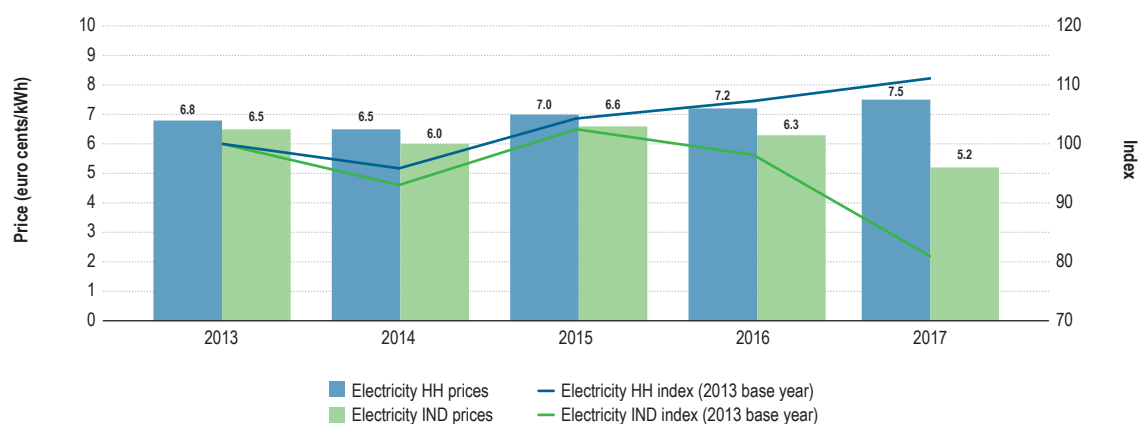
Note: Prices in nominal terms. For GB, Eurostat' data available only for the UK as a whole is used.

- 19 Compared to 2016, the largest price decreases for household consumers were recorded in Italy (-11.2%) and Croatia (-7.9%), while in Cyprus and Poland electricity prices increased by 17.2% and 8.3% respectively. In the industrial segment, prices decreased further in the majority of countries, but increased considerably in Cyprus (26.1%) and Greece (13.1%).
- 20 Over the 2008 – 2017 period, electricity prices for household consumers decreased in seven countries, with the highest decreases recorded in Hungary (27.2%) and the Netherlands (12.6 %), while prices increased in the remaining countries. Over the same period, industrial prices decreased in many countries, although there were also some notable price increases (i.e. 64.5% in Latvia, 48.6% in Portugal 71.6% in Estonia).

### 1.1.2 Energy Community

- 21 In the EnC, the upward trend in final household prices as well as the downward trend in final industry prices continued in 2017. This trend, however, has different dynamics in Ukraine and in the other EnC CPs. In the period between 2013 and 2017, electricity prices for households in the EnC CPs without Ukraine increased, on average, by 11%, while industrial prices decreased on average by 19%, as shown in Figure 3. Over the same period, electricity prices for households in Ukraine registered an increase of 34% and industry prices a decrease of around 36%. The unwinding of cross-subsidisation partially explains the average price convergence between the two segments.
- 22 In 2017, the average electricity price for household consumers in EnC CPs without Ukraine was 7.5 euro cents/kWh, which is 2.7 times less than the average EU electricity price for households in the same year. Household consumers in Ukraine paid in 2017, on average, even two times less than in the other EnC CPs - only 3.9 euro cents/kWh. Figure 4 provides more clarity on the dynamics of household electricity prices per EnC CP between 2013 and 2017.

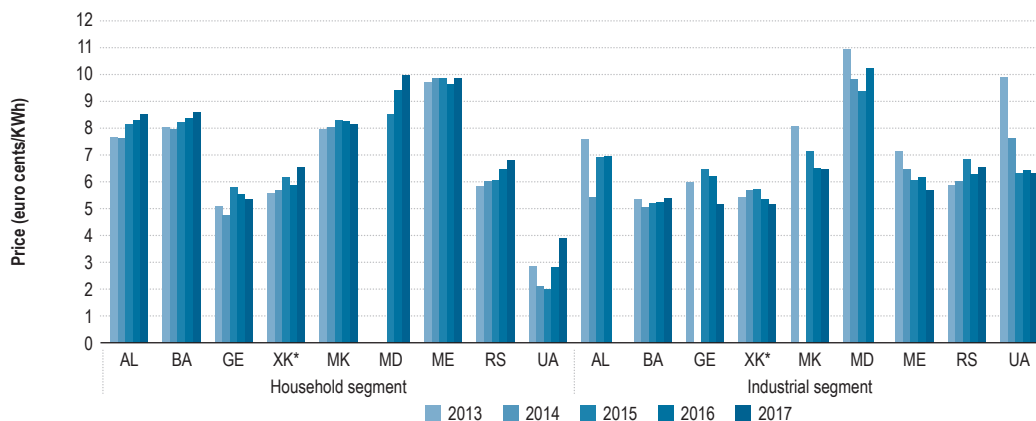
Figure 3: Trends in final electricity prices for household and industrial consumers in EnC CPs without Ukraine – 2013–2017 (euro cents/kWh and index change, 2013 = 100)



Source: ACER calculations based on Eurostat, NRAs, EnC Secretariat.

Note: This Figure is based on bi-annual data provided by Eurostat for consumption band DC: 2,500-5,000 kWh (household electricity consumption) for Albania (AL), Bosnia and Herzegovina (BA), the FYR of Macedonia (MK), Kosovo\* (XK\*), Montenegro (ME) and Serbia (RS) and consumption band IE: 20,000-70,000 MWh (industrial electricity consumption) for Bosnia and Herzegovina, the FYR of Macedonia, Kosovo\*, Montenegro and Serbia. Information on prices in Moldova and Ukraine is partially based on Eurostat, the remaining data is provided by the NRAs. All information on prices in Georgia is provided by the relevant NRA. Prices in nominal terms.

Figure 4: Final electricity prices in nominal terms for household and industrial consumers in EnC CPs – 2013–2016 (euro cents/kWh)



Source: ACER calculations based on Eurostat, NRAs, EnC Secretariat.

Note: This figure is based on the data listed in the note under Figure 3. Prices in nominal terms.

- 23 There are large differences in electricity price levels across the EnC CPs. In general, household electricity prices in 2017 were the highest in Moldova (10 euro cents/kWh), where consumers paid, on average, 2.5 times the price paid by consumers in Ukraine. With the exception of Georgia and FYR of Macedonia, where household prices slightly decreased in comparison to the previous year, in all other EnC CPs the electricity prices for households increased, in Ukraine by as much as 36%. Over the period 2013-2017 the household electricity prices increased in all EnC CPs. End consumer prices for households were still regulated in all EnC CPs, sometimes resulting in prices below actual costs.
- 24 In the majority of the EnC CPs, electricity prices for industrial consumers decreased between 2013 and 2017<sup>5</sup>. The biggest drop (36%) is observed in Ukraine, where prices fell from 9.91 euro cents/kWh in 2013 to 6.3 euro cents/kWh in 2017. The lowest electricity prices for industrial consumers were in Georgia and Kosovo\*, with 5.1 euro cents/kWh, whereas the highest industrial price was reported in Serbia (6.58 euro cents/kWh)<sup>6</sup>. On average, in 2017, electricity prices for industrial segment in the EnC CPs were half of the average electricity prices for industry in the EU MSs.

## 1.2 Gas prices for households and industry

### 1.2.1 European Union

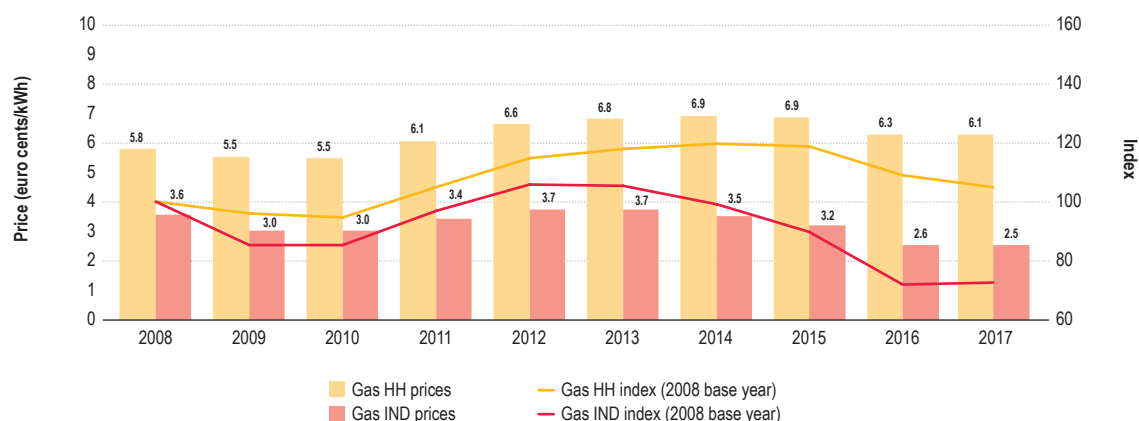
- 25 In 2017, the average gas prices across the EU fell on average by 3.3% for household consumers, but slightly increased for industrial consumers by 1.4%, settling at 6.1 euro cents/kWh and at 2.5 euro cents/kWh respectively. Since 2008, the average<sup>7</sup> final gas price for household consumers increased by 5.3%, but decreased by a significant 28.6% for industrial consumers.
- 26 As shown in Figure 5, household consumers have benefited from lower gas prices since 2016, with the average gas price paid by EU household consumers decreasing by 11.4%. On the other hand, the industrial gas consumers have benefited from lower prices since 2014, and an average price decrease of 31.4% over this period.

5 In case of Albania and Moldova, the information on electricity prices for industry was not available for 2017, therefore the growth is measured for the period 2013-2016 only.

6 Here it should be noted that in 2016 the highest electricity price for industry was registered in Moldova - 10.25 euro cents/kWh, which is close to the average EU level. The information for 2017 was not available.

7 See footnote 4.

Figure 5: Trends in final gas prices for household and industrial consumers in EU MSs – 2008–2017 (euro cents/kWh and index change, 2008 = 100)

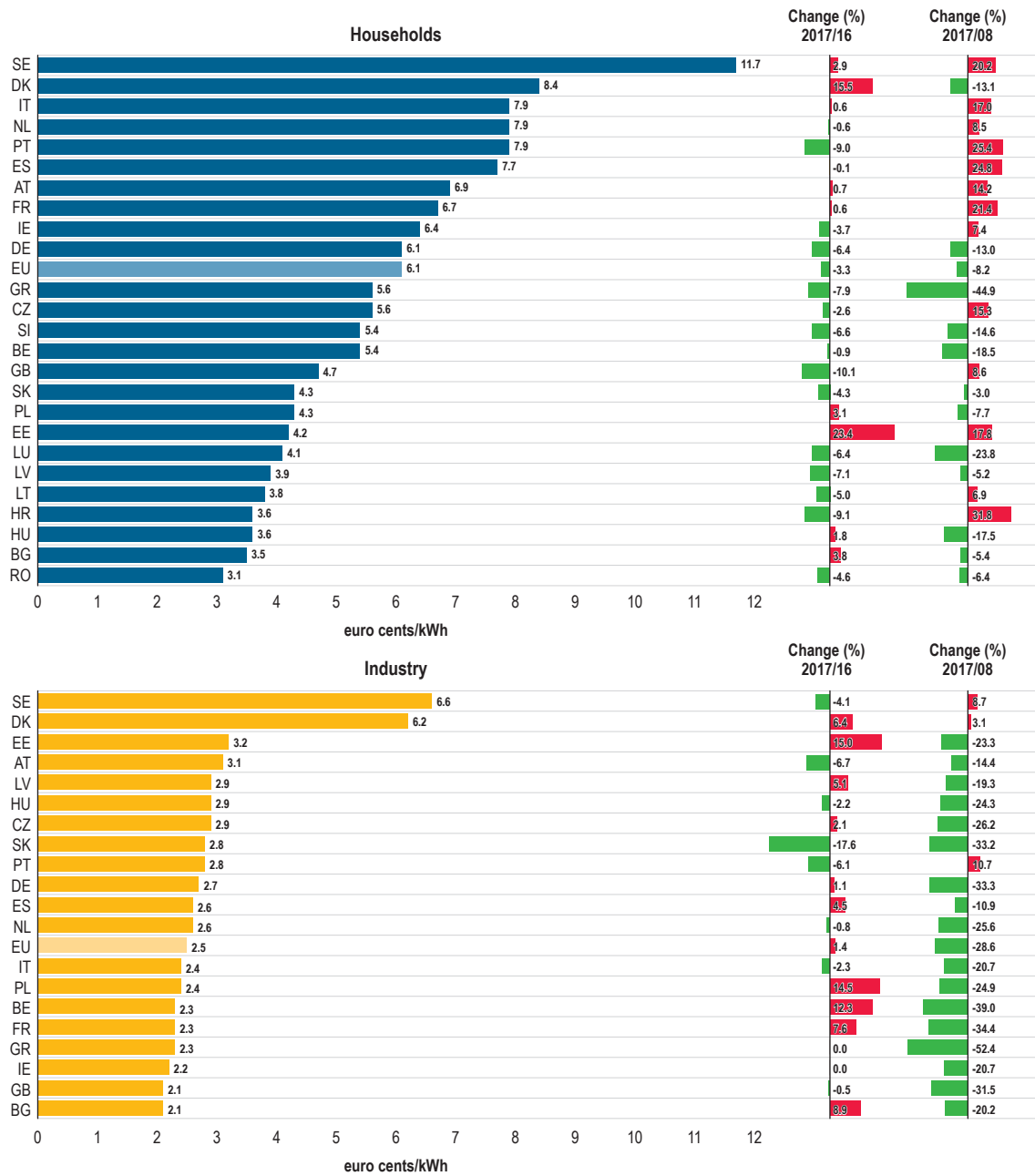


Source: ACER calculations based on Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) - (29 May 2018).

Note: Prices in nominal terms.

- 27 However, similarly to the electricity retail market, there are large discrepancies across the EU. Figure 6 shows that the final price paid by household gas consumers in Sweden (11.69 euro cents/kWh) was almost four times higher than the 3.13 euro cents/kWh paid by Romanian consumers. In the industrial segment, the prices paid by consumers in Sweden (6.6 euro cents/kWh) are more than three-time higher than the prices paid by consumers in Great Britain (2.1 euro cents/kWh).
- 28 Figure 6 also shows that compared to 2016, gas prices for households decreased by 3.3% on average, with decreases recorded in the majority of countries and notable price increases only in Estonia (23.4%) and Denmark (15.5%). At the same time, industrial gas prices increased by 2.1% on average, with highest increases recorded in Greece (15%) and France (14.5%).
- 29 Over the 2008 – 2017 period, gas prices for households increased on average by 5.3%, with price increases and decreases recorded in the same number of countries (13). On the contrary, in the industrial segment, over the same period, prices decreased (28.6 % on average) in all but three countries (Sweden, Denmark and Portugal).

Figure 6: Final gas prices for households and industrial consumers in the EU MSs in 2017 (euro cents/kWh) and changes compared to 2016 and 2008 (%)



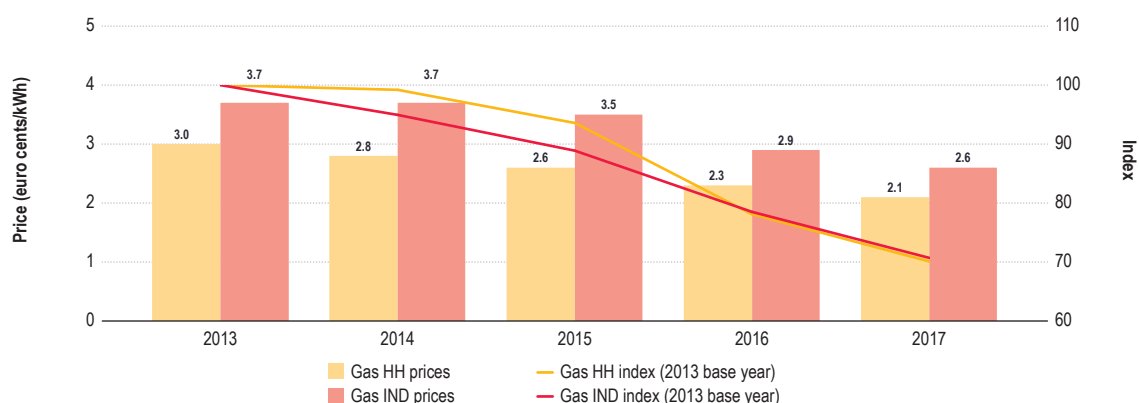
Source: ACER calculations based on Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) - (29 May 2018).

Note: Prices in nominal terms. For Greece (households and industry) and Ireland (industry), the 'change 2017/08' is with respect to 2012 and for Austria (industry) with respect to 2013 as the data for earlier years is not available. Data on industrial prices in Croatia, Lithuania, Luxembourg and Slovenia is not available. Prices in nominal terms. For GB, Eurostat' data available only for the UK as a whole is used.

## 1.2.2 Energy Community

- 30 In the EnC, contrary to the trends observed in the EU, the industrial gas prices are, on average, higher than household prices.
- 31 Gas prices for households in Ukraine and other EnC CPs were developing in opposite directions. Figure 7 shows the trends in final gas prices for industrial and household consumers in the EnC CPs, without Ukraine, over the past five years. Between 2013 and 2017, average gas household prices in these CPs decreased by 30%. Over the same period, households in Ukraine, as shown in Figure 8, saw increase of gas prices of more than 170%. Gas household prices in Ukraine increased from 2014 onwards following the Cabinet of Minister's resolution to stepwise increase gas household prices in line with an agreement made with the International Monetary Fund.
- 32 Between 2013 and 2017, average industrial gas prices decreased in the EnC CPs, by 32% on average. However, industrial prices in Ukraine registered a year-on-year increase of 29%, resulting in almost 30% higher prices on average than in the EU in 2017. One of the reasons for increased industrial prices in Ukraine is certainly the rise of the weighted average import price by 13.5% between 2016 and 2017. As in 2016, all imported gas in 2017 came to Ukraine through EU MSs. Average prices for industry segment in the other EnC CPs are close to the industry gas prices in the EU MSs.

Figure 7: Trends in final gas prices for industrial and household consumers in EnC CPs without Ukraine – 2013–2017 (euro cents/kWh and index change, 2013 = 100)

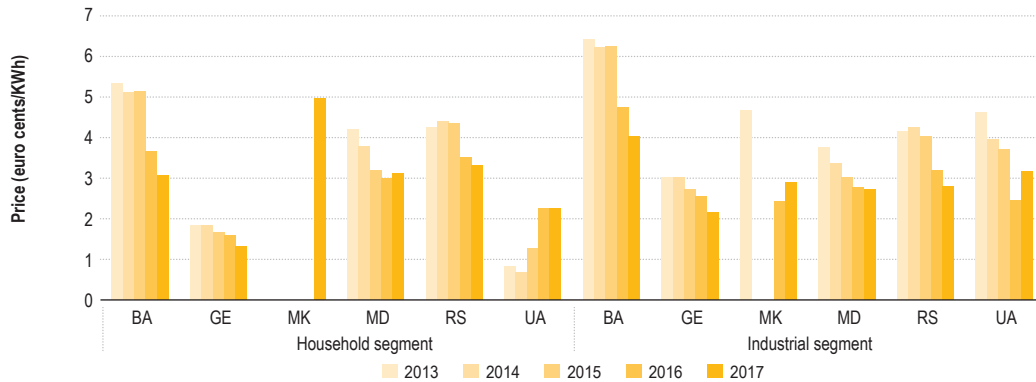


Source: ACER calculations based on Eurostat, NRAs, EnC Secretariat.

Note: This Figure is based on bi-annual data provided by Eurostat for consumption bands D2: 20–200 GJ (household gas consumption) and consumption band I5: 1,000,000–4,000,000 GJ (industrial gas consumption). Household prices for the FYR of Macedonia are available only as of 2017. Prices in nominal terms.

- 33 Figure 8 shows that, similarly to the situation in the EU, national discrepancies are observed in the level of household and industrial gas prices across the EnC CPs. The final price paid by household gas consumers in the FYR of Macedonia (5.0 euro cents/kWh) was more than twice the 2.2 euro cents/kWh paid by Ukrainian households. In the industrial segment, the prices paid by consumers in Bosnia and Herzegovina (4.0 euro cents/kWh) were almost 50% higher than the prices paid by consumers in Moldova (2.7 euro cents/kWh).
- 34 The observed discrepancies originate partially from the different regulatory approach and levels of cross-subsidisation in consumer gas prices between the industrial and household segments. For example, in 2017, household gas prices were regulated in all EnC CPs except the FYR of Macedonia, while industrial gas prices were regulated in Bosnia and Herzegovina, Moldova and partially in Serbia<sup>8</sup>. The degree of cross-subsidisation decreased over the observed period.

Figure 8: Final gas prices in nominal terms for household and industrial consumers in EnC CPs – 2013–2017 (euro cents/kWh)



Source: ACER calculations, based on Eurostat, NRAs, EnC Secretariat.

Note: This figure is based on the data listed in the note under Figure 7. Prices in nominal terms.

## 2. Structure and drivers of energy prices for households

35 Electricity and gas prices depend on their constitutive components, which include energy costs, network charges, charges for renewable energy sources (RES charges), other taxes and charges and value added tax (VAT).

### Main components of the electricity and gas prices paid by household consumers

- **Energy costs** - reflect mainly the cost of purchasing electricity and gas on the wholesale market, but also suppliers' operating costs to run the business, including sales and billing, and profit margin.
- **Network costs** – the rates charged for transmission and distribution of energy to end users, including transmission and distribution losses, system operation costs (excluding imbalance charges) and metering and meter rental.
- **'RES charges'** – levies for government policies to support renewable energy sources.
- **Other taxes and charges** – including: (i) taxes and charges for promoting and improving energy efficiency and combined heat and power generation, (ii) taxes and charges related to air quality and environmental proposes, (iii) taxes and charges related to CO2 and other greenhouse gas emissions, (iv) taxes and charges related to the nuclear sector, capacity payments, energy security and generation adequacy, (v) energy consumption tax, and (vi) other taxes and charges not covered by any of these points and/or not linked to the energy sector.
- **VAT** – Value Added Tax.

36 In order to understand the main drivers behind the change in the final price, this Section presents the results of the analysis of the structure of the final price and the relative changes of each component over time. The analysis is based on the data on the breakdown of the standard incumbent electricity and gas offers available in the capital city of each country to household consumers with an annual consumption of 3,500 kWh for electricity and 11,000 kWh for gas. The Agency collects the data directly from publicly available price comparison websites.

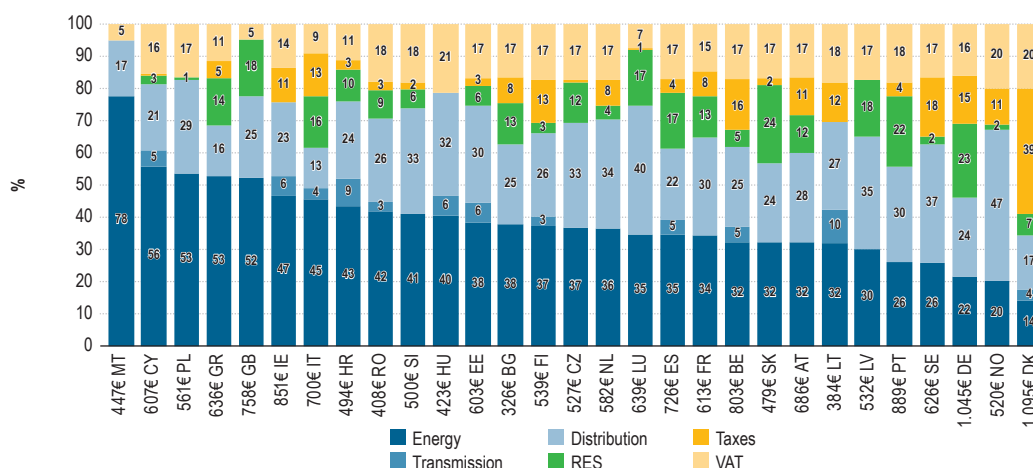


## 2.1 Electricity price breakdown

### 2.1.1 European Union

- 37 Figure 9 illustrates the breakdown of the final electricity price, based on the standard incumbent offer available in each EU capital city and Oslo at the end of 2017. It shows that the composition of the final electricity bill for household consumers continued to vary greatly across countries. For example, the energy component accounted for 78% of the final bill in Malta, but only for 14% in Denmark.
- 38 The share of network charges in the final price was the highest in Norway<sup>9</sup>, where they accounted for 47% of the standard incumbent offer, and the lowest in Italy and Greece, accounting for 17% of the final price. RES charges accounted for more than 20% in the total incumbent offer in Germany, Portugal and Slovakia, while the retail electricity markets in Hungary, Denmark and Norway had the highest share of VAT in the final price. In addition, 22 NRAs reported other taxes and charges, ranging from less than 1% of the final price in Cyprus to 39% in Denmark<sup>10</sup>.

Figure 9: Breakdown of incumbents' standard electricity offers for households in capital cities – November/December 2017 (%)



Source: ACER calculations based on data collected via ACER Retail Database (2018).

Note: The breakdown for Germany refers to the national average, instead of the standard incumbent offer, which is collected by the German NRA. The Greek and Cypriot NRA did not provide the required data for calculating the electricity price breakdown for 2017 and for these two countries the breakdown is based on data for 2016.

- 39 Figure 10 below shows that in 2017, on average<sup>11</sup>, 35% of the final price consisted of the energy component (contestable charges), while the remaining 65% of the electricity bill consisted of non-contestable charges, i.e. the sum of network costs, taxes, levies and other charges.
- 40 Figure 10 also shows that the relative share of the energy component in the final price has declined considerably over the recent years from 41% in 2012 to 35% in 2017, which reflects the decreasing wholesale<sup>12</sup> electricity prices and better market functioning. On the other hand, the share of RES charges increased almost every year over this period and has more than doubled, from 6% in 2012 to 14% in 2017.
- 41 At the same time, the share of network component remained almost unchanged, while the relative share of VAT and other taxes decreased by 3%, with 2% of this decrease observed in 2017.

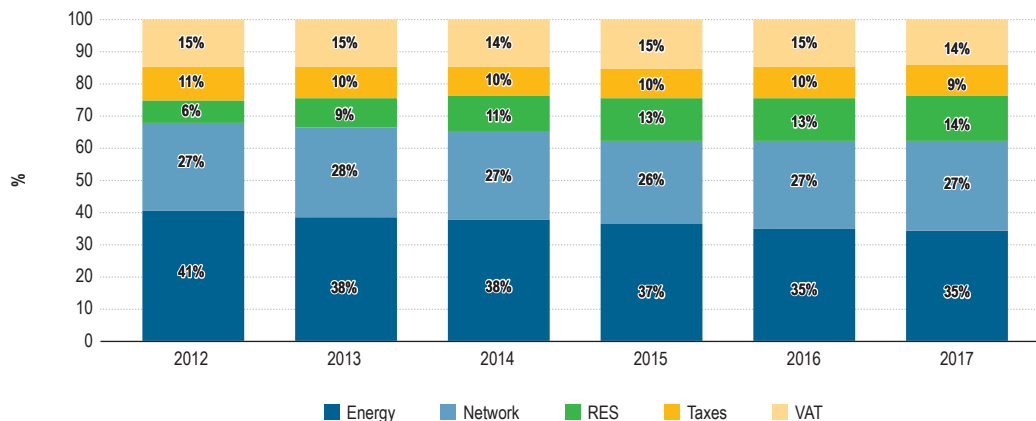
9 The average consumption in Norway is approximately four times higher than the average consumption profile presented in the breakdown. Network charges comprise in that case around 30% of the final price.

10 Including support for electricity production from local CHP, compensation for CO2 tax and subsidies for energy research. In Denmark, all these tax sub-components, as well as RES, are part of the PSO (public service obligation) payment. According to Danish National Report 2017 (covering 2016), the cost of PSO will gradually be reduced and abolished in 2022 for all electricity consumers and will be instead financed by the government's annual budget.

11 See note under [Figure 10](#).

12 See the Electricity Wholesale Market Volume of the MMR 2017.

Figure 10: Weighted average breakdown of incumbents' standard electricity offers for households in capital cities – 2012–2017 (%)

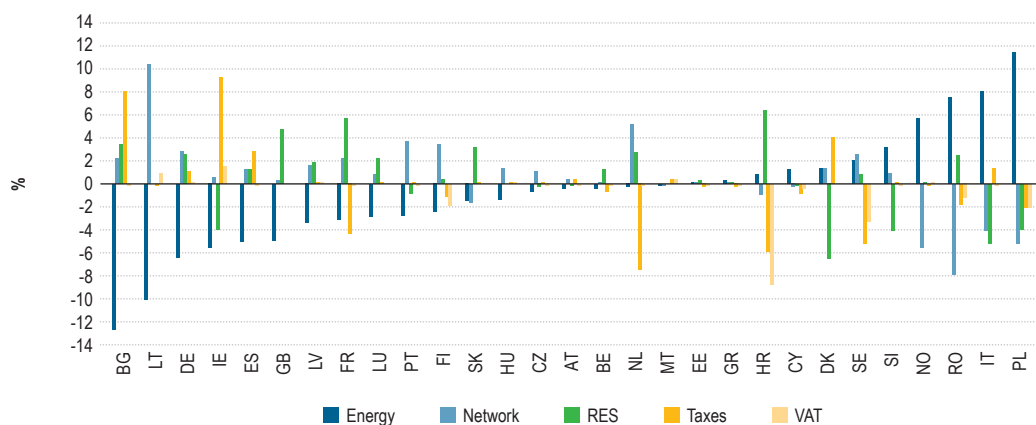


Source: Source: ACER calculations based on data from price comparison tools, incumbent suppliers' websites, NRAs, collected via ACER Retail Database (2018).

Note: For the purpose of this analysis, the average electricity price for household consumers in the EU is based on the standard incumbent offers for an annual pan-European average consumption of 3,500 kWh/year, weighted by total household consumption in each MSs, which is provided by CEER.

42 The developments at national level, over the period from 2015 to 2017, characterised by the new trend of falling retail electricity prices, display important discrepancies between countries, as shown in Figure 11 below. Over this period, the relative share of the energy component in the final price decreased or remained stable in two thirds of the countries and increased in the remaining countries. In addition, taxes, including VAT, decreased by 1% or more in relative terms in nine countries, while they were higher by 1% or more in five countries. In Croatia, from 1 January 2017 the VAT rate on electricity consumption for households was lowered from 25% to 13%.

Figure 11: Change in the relative contribution of each component to the final electricity price for households – 2015–2017 (%)



Source: ACER calculations based data from price comparison tools, incumbent suppliers' websites and NRAs, collected via ACER Retail Database (2018).

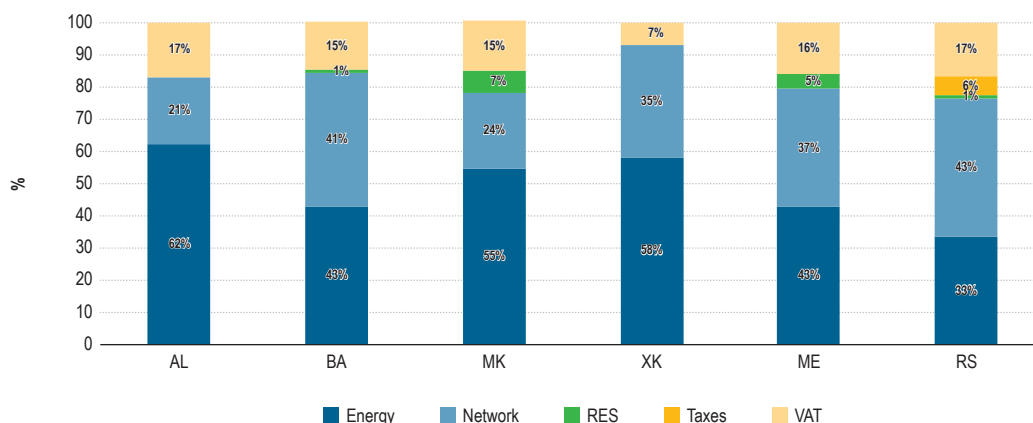
Note: The Figure is based on changes in the proportion of each component in the incumbents' standard electricity offer in capital cities from 2015 to 2017. The data are presented in ascending order by change in the energy charges.

43 However, in several countries the decrease in the relative share of the energy component in the final price was offset by increasing relative share of RES charges (e.g. Ireland, Spain, Germany, France, Latvia) and network costs (e.g. Lithuania, Portugal, Finland, France).

### 2.1.2 Energy Community

- 44 Figure 12 shows the breakdown of final electricity price for households in capital cities of the EnC CPs in November/December 2017, based on a consumption profile of 3,500 kWh per year. The composition of final household electricity price varies widely across EnC CPs. The share of the energy component in the final bill was the highest in Albania (62%) and the lowest in Serbia (33%). The major part of the energy component relates to the cost of purchasing electricity on the wholesale market.
- 45 In EnC CPs, the share of network costs in the total household electricity price ranged between 21% in Albania and 43% in Serbia.
- 46 Finally, the share of RES charges in the final price gives an indication of the support for renewable electricity production to the extent that it is financed by the electricity tariff. In Albania and Kosovo\*, no RES support mechanism was reported by the NRAs for 2017. In all other EnC CPs, the RES support accounted between 1% (Bosnia and Herzegovina and Serbia) and 7% (FYR of Macedonia) of the final household electricity price.

Figure 12: Breakdown of incumbents' standard electricity offers for households in EnC capital cities – November/December 2017 (%)

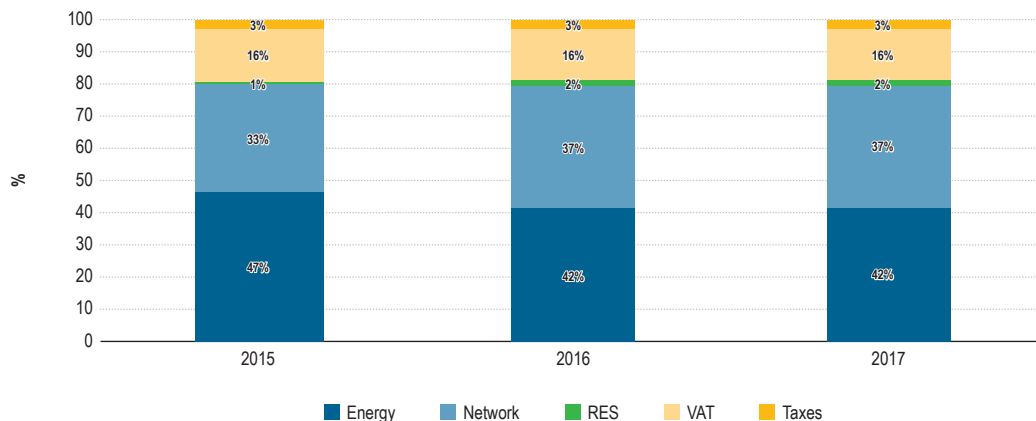


Source: EnC Secretariat calculations, based on ACER's methodology and data provided by NRAs (2018).

Note: The NRAs of Georgia, Moldova and Ukraine did not provide the required data for calculating the electricity price breakdown.

- 47 Figure 13 shows the weighted average final price breakdown of the incumbents' standard offers for electricity household consumers in EnC capitals in 2015, 2016 and 2017. Compared to 2015, the structure of household electricity prices evolved towards a lower share of the energy component (42% instead of 47%) and a higher share of the network component (37% instead of 33%). The share of RES charges slightly increased in the same period- from 1% to 2%.

Figure 13: Weighted average breakdown of incumbents' standard electricity offers for households in EnC capitals – 2015–2017 (%)

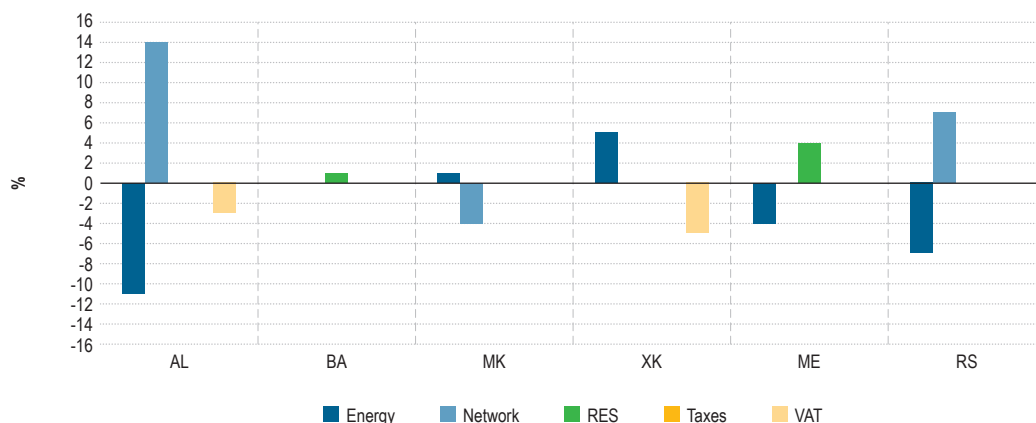


Source: EnC Secretariat calculations, based on ACER's methodology and data provided by NRAs (2018).

Note: This Figure is based on data provided by the respective NRAs for the electricity breakdown for Albania, Bosnia and Herzegovina, the FYR of Macedonia, Kosovo\*, Montenegro and Serbia, weighted by the total household electricity consumption in each country. The NRAs of Georgia, Moldova and Ukraine did not provide the required data for calculating the electricity price breakdown.

48 Figure 14 shows the major changes in electricity price breakdowns between 2015 and 2017 occurred in individual EnC CPs. While in Albania and Serbia the decrease in the energy component was offset by increasing network component, in Montenegro the energy component decline was compensated by an increase in the share of RES charge. In FYR of Macedonia and Kosovo\* the shares of energy component increased in the same period, while the contributions of network charges and VAT decreased.

Figure 14: Change in the relative contribution of each component to the final electricity price for households – 2015–2017 (%)



Source: EnC Secretariat calculations, based on ACER's methodology and data provided by NRAs (2018).

Note: This Figure is based on the data listed in the note under Figure 13.

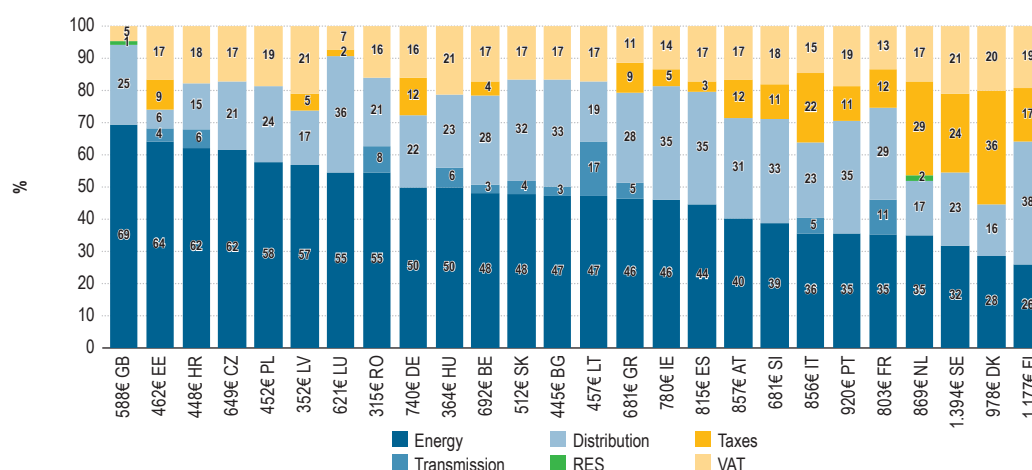
## 2.2 Gas price breakdown

### 2.2.1 European Union

49 Figure 15 shows the breakdown<sup>13</sup> of the final gas price based on the standard incumbent gas offer available to households in each capital city at the end of 2017, for which data was available and where a gas retail market exists. It illustrates that the composition of the final gas bill for household consumers continued to vary greatly across MSs. For example, the energy component accounted for 79% of the final bill in Great Britain, while it represented only 26% of the final bill in Finland.

50 Network costs, including both distribution and transmission network costs, accounted for the largest share in the final price in France (40%) and Finland (38%). Hungary, Latvia and Sweden have the highest share of VAT in the final gas price (21%), while Denmark and the Netherlands are the countries with the highest proportion of taxes and charges.

Figure 15: Breakdown of incumbents' standard gas offers for households in EU capitals – November/December 2017 (%)



Source: ACER calculations based on data from price comparison tools, incumbent suppliers' websites and NRAs, collected via ACER Retail Database (2018).

Note: Cyprus, Malta and Norway are not included in this Figure, due to small or non-existent gas markets for household consumers. The natural gas prices for Sweden refer to Gothenburg. The breakdown for Germany refers to the national average, instead of the standard incumbent offer, which is collected by the German NRA.

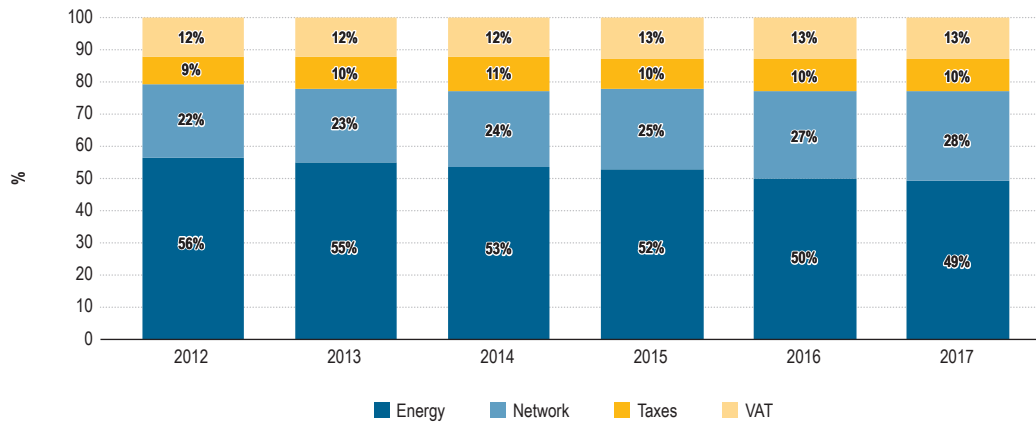
51 As shown in Figure 16, on average<sup>14</sup> half of the final price paid in 2017 by end consumers covered the energy component of their annual gas bill, while the other half covered the sum of the network costs, taxes, levies and other charges.

52 While the energy component showed a steady decline between 2012 and 2017, the non-contestable component saw an upward trend. In particular, the share of the energy component in the final price dropped from 56% to 50%, whereas the share of network costs and taxes (VAT and other taxes) increased by five and two percentage points, respectively.

13 Similarly to the MMR covering 2015, the gas analysis for 2016 is based on an annual pan-European consumption profile of 11,000 kWh.

14 See note under [Figure 10](#).

Figure 16: Weighted average breakdown of incumbents' standard gas offers for households in capital cities of the EU – 2012–2016 (%)

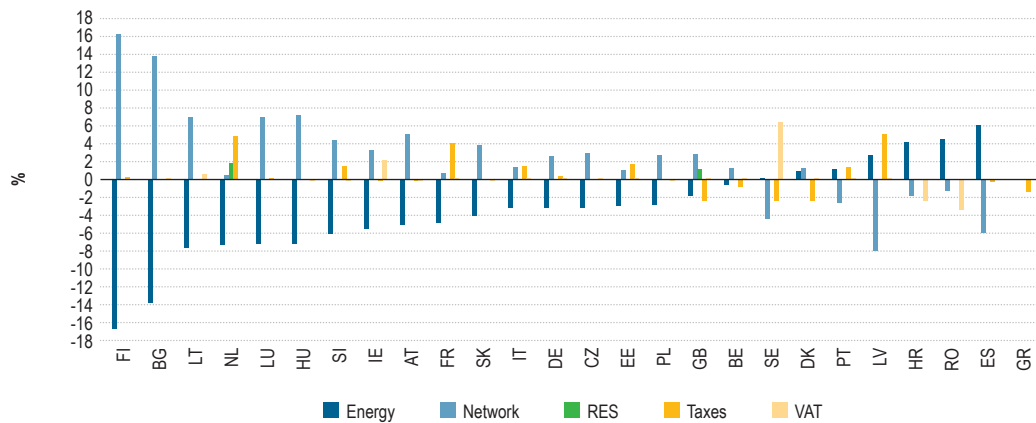


Source: ACER calculations based on data from price comparison tools, incumbent suppliers' websites, NRAs, collected via ACER Retail Database (2018).

Note: For the purpose of this analysis, the average gas price for household consumers in the EU is based on the standard incumbent offers for an average consumption of 11,000 kWh/year, weighted by total household consumption in each MSs, which is provided by CEER.

53 As in electricity, the developments at the national level between 2015 and 2017, covering the new trend of falling retail gas prices, display important discrepancies, as shown in Figure 17 below. In addition, the impact of the falling wholesale price is more visible in gas. Over this period, the relative share of the energy component in the final price decreased in three quarters of the countries and increased in the remaining six. However, in some countries the decreases in the energy component are offset by relatively higher network charges.

Figure 17: Change in the relative contribution of each component to the final gas price for households – 2015–2017 (%)



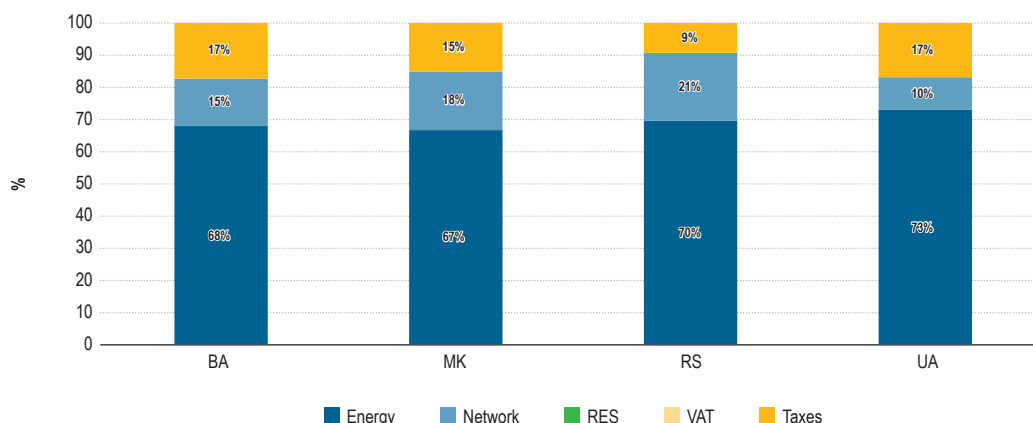
Source: ACER calculations based on CEER, PCTs, incumbent suppliers' websites and NRAs, collected via ACER Retail Database (2018).

Note: This Figure is based on changes in the proportion of each component to the incumbents' standard gas offer in capital cities. The data are presented in ascending order by change in the energy charges. Cyprus, Malta and Norway are not included due to small or non-existent markets for gas household consumers.

### 2.2.2 Energy Community

54 Figure 18 illustrates the breakdown of gas incumbents' standard offers to households in capital cities of the EnC CPs, for which the information was available and where a gas market exists, for an annual consumption profile of 11,000 kWh/year. The share of the energy component in the final gas price in 2017 ranged from 67% in FYR of Macedonia to 73% in Ukraine. The share of network charges, both transmission and distribution, ranged from 10% of the final gas price for consumers in Kiev to 21% for households in Belgrade.

Figure 18: Breakdown of incumbents' standard gas offers for households in EnC capitals – November–December 2017 (%)

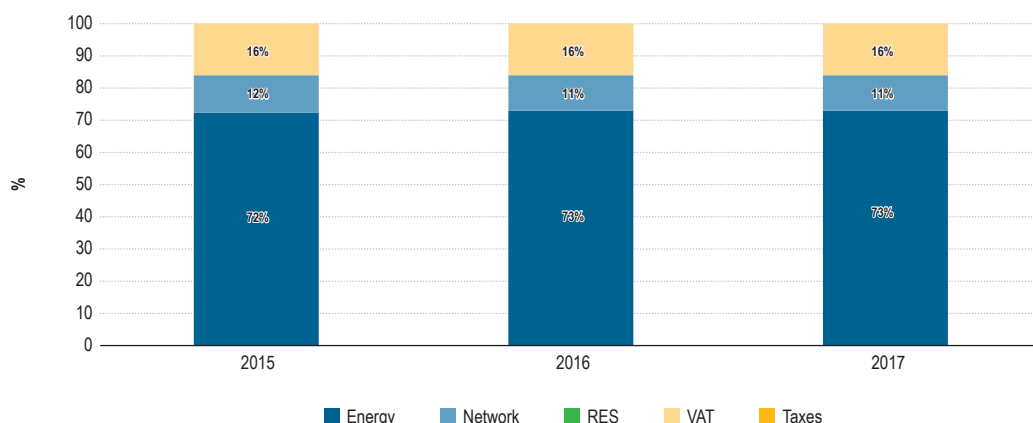


Source: EnC Secretariat calculations, based on ACER's methodology and data provided by NRAs (2018).

Note: Georgia and Moldova are not included in this Figure due to insufficient data. Other EnC CPs have no gas market.

55 The weighted average breakdown of gas prices in the EnC CPs' capitals remained almost stable throughout the period 2015-2017. Compared to 2015, the relative share of the energy component increased by one percentage in 2017, while the share of network charges decreased.

Figure 19: Weighted average breakdown of incumbents' standard gas offers for households in EnC capitals – 2015–2017 (%)

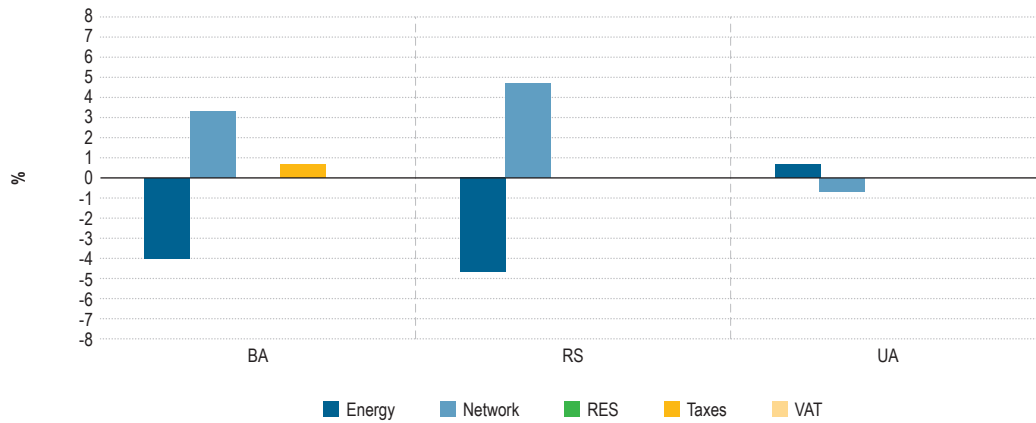


Source: EnC Secretariat calculations, based on ACER's methodology and data provided by NRAs (2018).

Note: This Figure is based on data provided by the respective NRAs for the gas breakdown for Bosnia and Herzegovina, Serbia and Ukraine, weighted by the total household gas consumption in each country. For the FYR of Macedonia the information on final gas price breakdown is available only as of 2017.

56 Figure 20 shows the changes in gas price breakdowns between 2015 and 2017 occurred in individual EnC CPs. While in Bosnia and Herzegovina and in Serbia the decrease in the energy component was offset by an increasing network component, in Ukraine the change was in the opposite direction: a slight increase of the energy component share (one percentage point) and a decline of the network component share. Only in Bosnia and Herzegovina, there was also a minor increase of one percentage point in the relative share of VAT in the final price.

Figure 20: Change in the relative contribution of each component to the final gas price for households – 2015–2017 (%)



Source: EnC Secretariat calculations, based on ACER’s methodology and data provided by NRAs (2018).

Note: This figure is based on the data listed in the note under Figure 19.



### 3. Relationship between the wholesale price and the energy component of the retail price for households in the European Union

57 This Chapter assesses the evolution of mark-ups from 2012 to 2017 and the responsiveness of the energy component of retail prices to changes in the wholesale price from 2008 to 2017 for electricity and from 2012 to 2017 for gas. The analysis is performed for the household segments.

58 The mark-up is an indicator of the theoretical gross 'profitability' of suppliers, as well as an indicator of the level of responsiveness of retail energy prices to changes in prices on wholesale markets. Mark-ups are not the same as profits, because suppliers have additional operating costs (e.g. marketing, sales, consumer services, overhead, etc.) in bringing a product to the market. The gross 'profitability' level is the difference between prices charged to consumers and the estimated costs to supply them with energy. When procurement is made at higher cost, for example due to more expensive bilateral contracts, this would reduce profits. This analysis is based on the assumption that suppliers are rational and apply a 'close-to-optimal' procurement strategy, as detailed in the methodology and data underlying mark-ups in retail markets. The wholesale prices used by the Agency to calculate mark-ups aim to reflect the procurement costs of a typical supplier buying a mix of forward and shorter term products in the wholesale market. Specific regulatory arrangements that may exist in certain MSs aiming to determine the market timeframes, the products or the prices at which suppliers shall procure energy are ignored, unless the relevant wholesale market is illiquid<sup>15</sup>.

59 The degree of alignment between the evolution of the energy component of retail prices and wholesale prices over time could be used as an indicator of the effectiveness of competition in retail energy markets.

#### 3.1 Mark-up

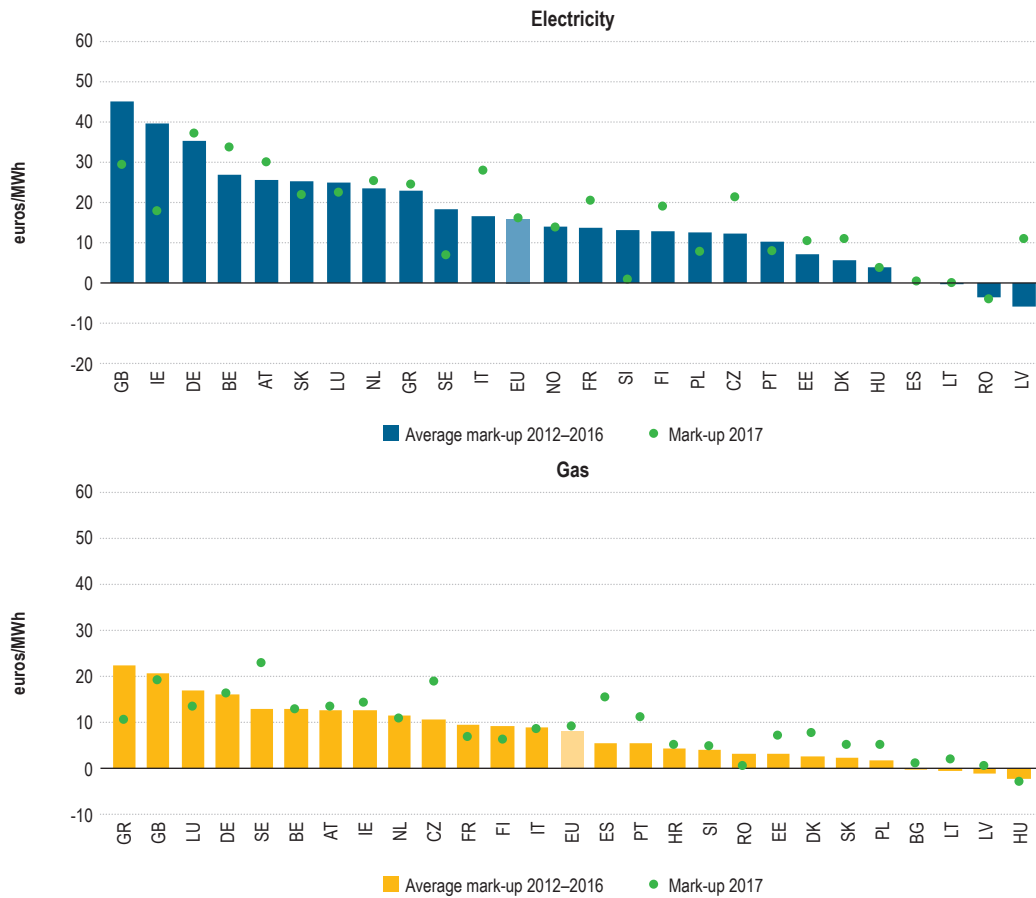
60 Figure 21 shows that the estimated average mark-ups in the retail electricity and gas markets for the household segment vary widely across countries. The average retail mark-ups in the electricity and gas household segment across the EU remained relatively unchanged in 2017 compared to the 2012-2016 average.

61 The highest mark-ups in the household segment of the electricity retail markets in 2017 were observed of Germany, Belgium, Austria and Great Britain. In the household segment of the retail gas markets in 2017, the highest mark-ups were observed of Sweden, Great Britain and the Czech Republic. The lowest positive mark-ups were observed in the household segment of the electricity markets of Lithuania and Slovenia and of the gas markets in Romania and Latvia.

62 Figure 21 also shows that, on average in the EU, the electricity mark-up is about twice as high as the gas mark-up, when expressed in euros/MWh. However, as a principal factor driving the level of mark-ups are, inter alia, differences in average consumption levels (i.e. 3.500 kWh for electricity and 11.000 kWh for gas) the average mark-up per consumer would be actually higher in gas than in electricity. Similarly, the average electricity mark-up over the 2012-2016 period in Sweden measured in euros/MWh ranks relatively low, but measured in euros/consumer it would be higher than that in Great Britain as the average annual electricity consumption per household consumer in Sweden of approximately 9,000 kWh is much higher than in Great Britain (i.e. 3,100 kWh).

15 See Annex 6 of 'ACER/CEER Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2014': [https://www.acer.europa.eu/Official\\_documents/Acts\\_of\\_the\\_Agency/Publication/ACER\\_Market\\_Monitoring\\_Report\\_2015.pdf](https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf)

Figure 21: Average annual mark-up in retail electricity and gas markets for household consumers in EU MSs and Norway from 2012–2016 and annual mark-up in 2017 (euros/MWh)



Source: ACER calculations based on ACER Retail Database (2018), Eurostat (29 May 2018), NRAs, European power exchanges data (2018).  
 Note: This Figure includes average annual mark-ups in the retail electricity and gas markets for household consumers for the 2012–2017 period. Bulgaria (no electricity wholesale market) and Croatia (day-ahead wholesale market was launched in February 2015) are not included in the analysis for electricity. Cyprus and Malta are not included, because they have neither wholesale electricity markets nor retail gas markets. Norway has no significant gas market, so is not included in the chart. The energy component of the gas retail price is based on the standard incumbents offer available in each EU capital at the end of the year.

- 63 In some countries with regulated<sup>16</sup> prices, average mark-ups for the monitored period were negative because the energy component of the retail prices was set at a level below wholesale energy costs. For the average mark-up over 2012-2016 period, this is the case in Latvia, Romania<sup>17</sup> and Lithuania for electricity and in Hungary, Latvia, Lithuania and Bulgaria for gas. However, the mark-up turned positive in 2017 in all the mentioned MSs apart from Romania and Hungary, which may signal a change in the trend. Annex I provides more details on the evolution and occurrence of the mark-up in each country.
- 64 Regulating end-user prices below energy sourcing costs may seem attractive to consumers in the short term. However, such a policy is an absolute barrier to market entry, and hence, to competition. In markets with persistent negative mark-ups, market participants do not receive the right signals, eventually to the detriment of consumers. On the one hand, consumers are not paying the actual cost for the energy they consume, and therefore, are not receiving the correct price signals regarding their consumption. On the other hand, negative mark-ups may have a negative impact on long-term investments in electricity and gas infrastructure, as well as on the emergence of new market players, due to the uncertainty of suppliers' return on investments in the long term.

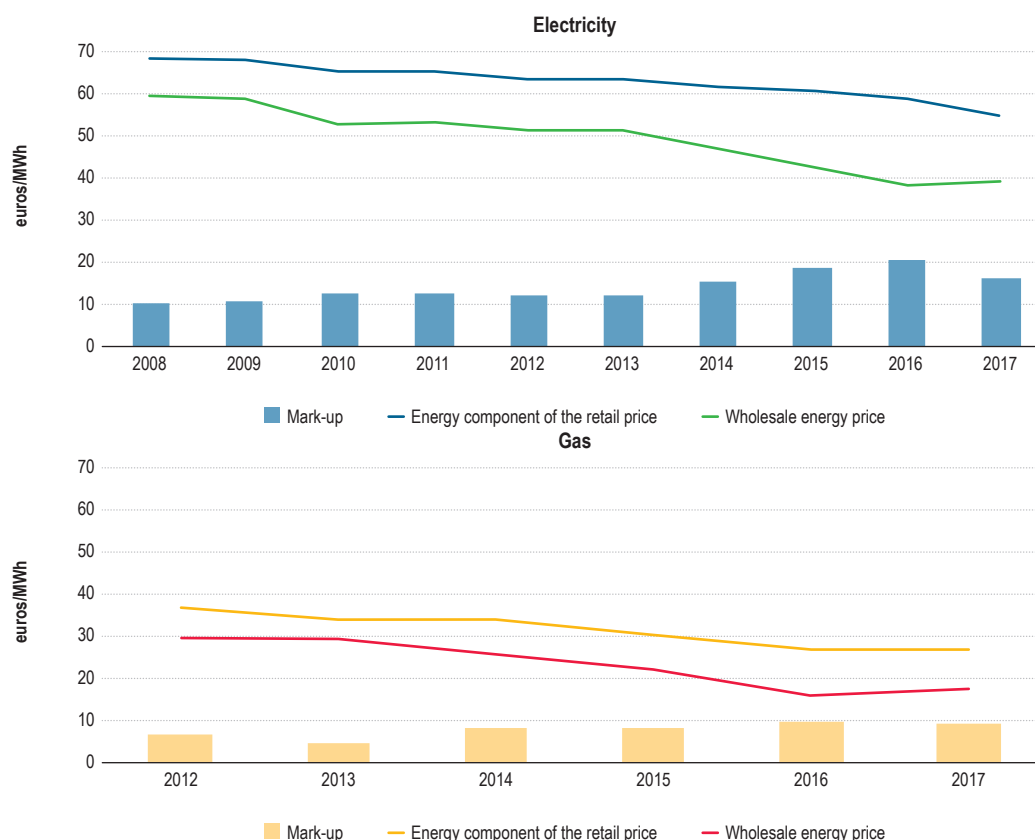
16 The distinction between countries with regulated and non-regulated prices is based on 'CEER Retail Markets Monitoring Report', November 2017 (Chapter 4): <https://www.ceer.eu/documents/104400/6122966/Retail+Market+Monitoring+Report/56216063-66c8-0469-7aa0-9f321b196f9f>

17 In previous MMRs, retail gas mark-ups in Romania were calculated with data from Eurostat for retail gas prices and long-term import contracts for wholesale gas prices. As gas imports have decreased from 24.32% in 2012 to 2.39% in 2015, gas import prices are no longer representative of this market. For 2016 and 2017 they have been replaced by gas price from the centralised market - trading platforms. As result, the gas mark-up in Romania moved into a positive territory.

### 3.2 Responsiveness of the energy component of the retail price to wholesale energy price

65 Figure 22 shows the responsiveness of the energy component of retail prices to changes in the wholesale energy price and the evolution of the mark-up over the 2008–2017 period for electricity and the 2012–2017 period for gas on EU level<sup>18</sup>.

Figure 22: Responsiveness of the energy component of the retail prices to changes in wholesale prices and evaluation of mark-ups in the household segments from 2008 to 2017 for electricity and from 2012 to 2017 in gas (euros/MWh)



Source: ACER Retail Database (2018), Eurostat (29 May 2018), NRAs, European power exchanges data (2018) and ACER calculations.

Note: Gas data available only for the period 2012 – 2017. Prices in nominal terms. The energy component of the gas retail price is based on the standard incumbents offer available in each EU capital at the end of the year.

66 In electricity, the data show a relatively strong relation between the two components from 2008 to 2013 and from 2016–2017. The main divergence from this trend was observed over the 2013–2016 period, where the decrease in wholesale prices was not followed by a similar decrease in the energy component of the retail prices. Overall, the energy component of electricity prices decreased, on average, by 21% over the 2008 to 2017 period, while at the same time wholesale prices decreased by 36%. This led to an 51% increase in mark-ups over this period.

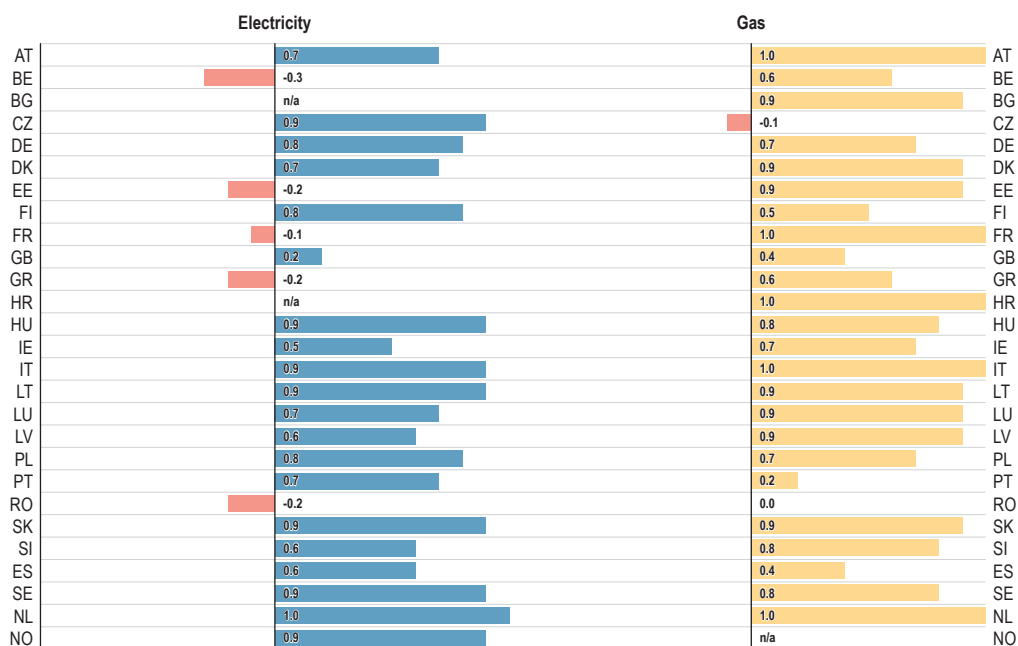
67 Over the 2012 – 2017 period in the household gas market, the average retail energy component and the average wholesale price decreased by 27.0% and 40.3% respectively, while the average mark-up increased by 31.1%. The downward slopes of the average wholesale price and of the average energy components of retail price diverged somewhat in 2015–2016, when the average retail energy component did not follow the sharp downward trend in the average wholesale gas price; in the 2016–2017 period, retail prices remained at the level of the 2015–2016 period, on average, despite slightly higher wholesale prices.

68 When comparing the evolution of the retail and wholesale prices of gas and electricity over time, the responsiveness of the energy component of the retail prices to wholesale energy prices for gas is higher than for electricity. This is also clearly visible in the evolution of the mark-ups for electricity.

69 Figure 23 illustrates the relationship between the change in the energy component of retail prices and in wholesale prices in the electricity and gas markets for household consumers in EU MSs and Norway, expressed by the correlation coefficient of these two variables<sup>19</sup>. If two variables in a country correlate well, this should be reflected in a positive high value of the correlation coefficient, while the negative and low value imply a weak correlation.

70 Figure 23 is based on the data behind the charts for individual countries presented in Annex 1, which show the degree of correlation between the energy component of retail prices and the wholesale prices for household at national level.

Figure 23: Correlation between the retail energy component and wholesale energy prices for household consumers in electricity (2008 – 2017) and gas markets (2012-2017) in EU MSs and Norway – (correlation coefficient)



Source: ACER Retail Database (2018), Eurostat (29 May 2018), NRAs, European power exchanges data (2018) and ACER calculations.  
 Note: The energy component of the gas retail price is based on the standard incumbents offer available in each EU capital at the end of the year.

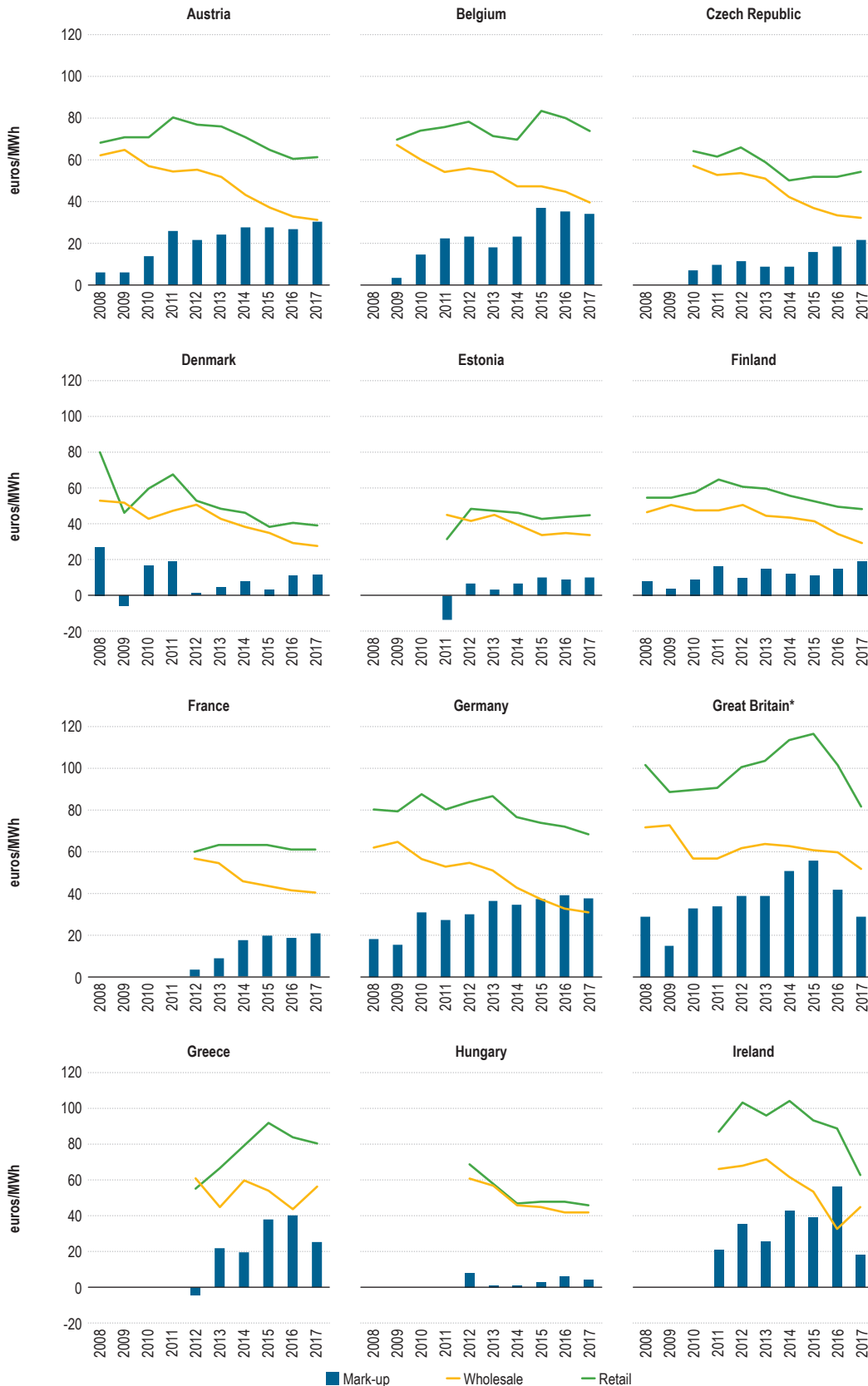
71 However, the link between wholesale and retail energy markets is weak in several countries as the changes in retail prices have not been responsive to changes in the wholesale price.

72 As per previous reports, the energy component of retail prices and wholesale prices seem to correlate better in two groups of countries, but for different reasons. Prices correlate well in those competitive markets where final retail prices closely follow the wholesale market price, i.e. the offers available to consumers contain a direct reference to wholesale costs and a mark-up, e.g. electricity markets in Norway, Sweden, and Finland. In addition, a good correlation is observed in certain countries with regulated retail electricity prices, e.g. in Denmark, Hungary and Poland. In these countries, retail household prices are set closely to follow changes in wholesale prices.

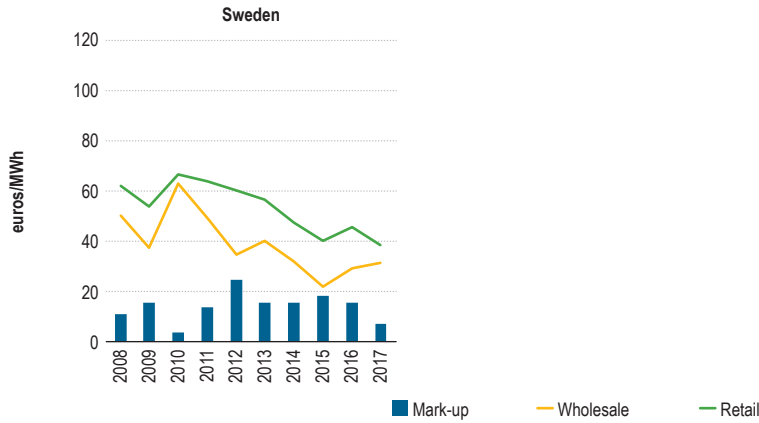
19 Figure 23 is based on the individual charts presented in [Figure A1-1](#) and [Figure A1-2](#) in the Annex 1.

# Annex 1: The relationship between retail and wholesale prices in electricity and gas markets for households by country

Figure A1-1: Responsiveness of the energy component of the retail electricity price to electricity wholesale price and evaluation of mark-up in household segment from 2008 to 2017 (euros/MWh)







Source: NRAs and European power exchanges data (2018) and ACER calculation

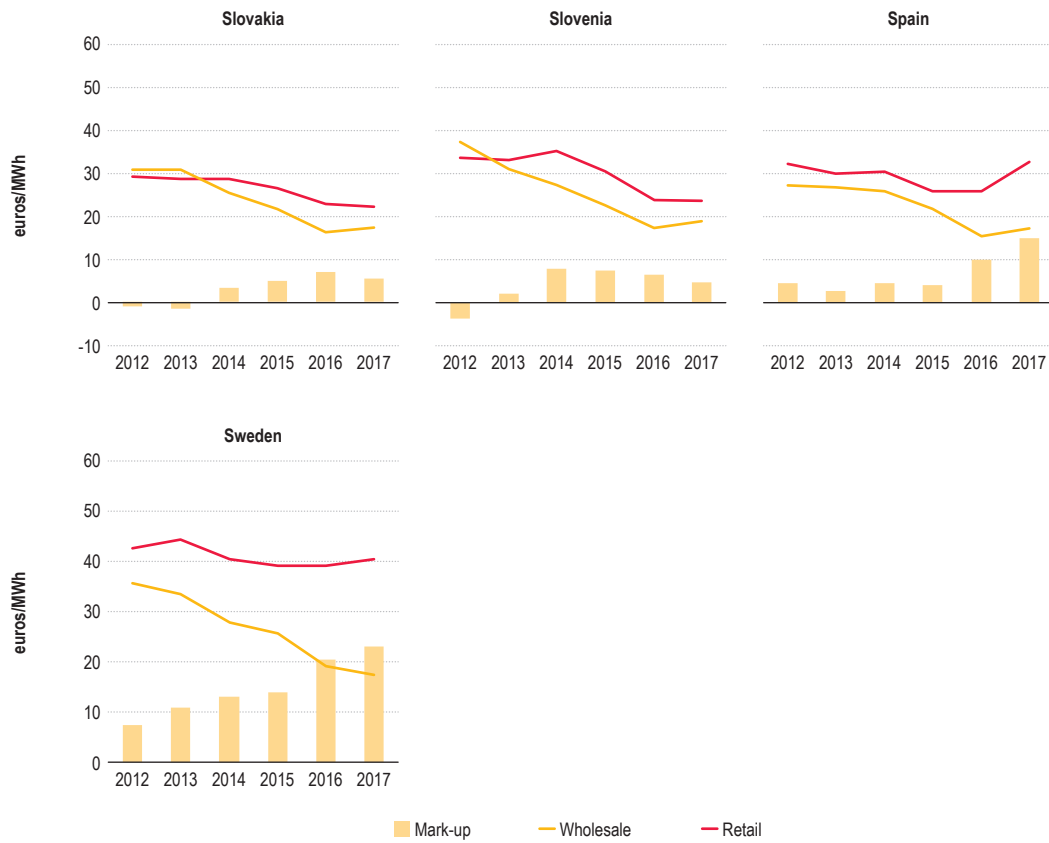
Note: In the legends to all charts, the term 'Retail' refers to the 'Energy component of the retail price' and term 'Wholesale' to the 'Wholesale energy price'.

Figure A1-2: Responsiveness of the energy component of the retail gas price to wholesale gas price and evaluation of mark-up in household segment from 2008 to 2017 (euros/MWh)









Source: ACER Database, Eurostat, NRAs and European power exchanges data (2018) and ACER calculations.

Note: In the legend to all charts, the term 'Retail' refers to the 'Energy component of the retail price' and term 'Wholesale' to the 'Wholesale energy price'. The energy component of the gas retail price is based on the standard incumbents offer available in each EU capital at the end of the year.

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