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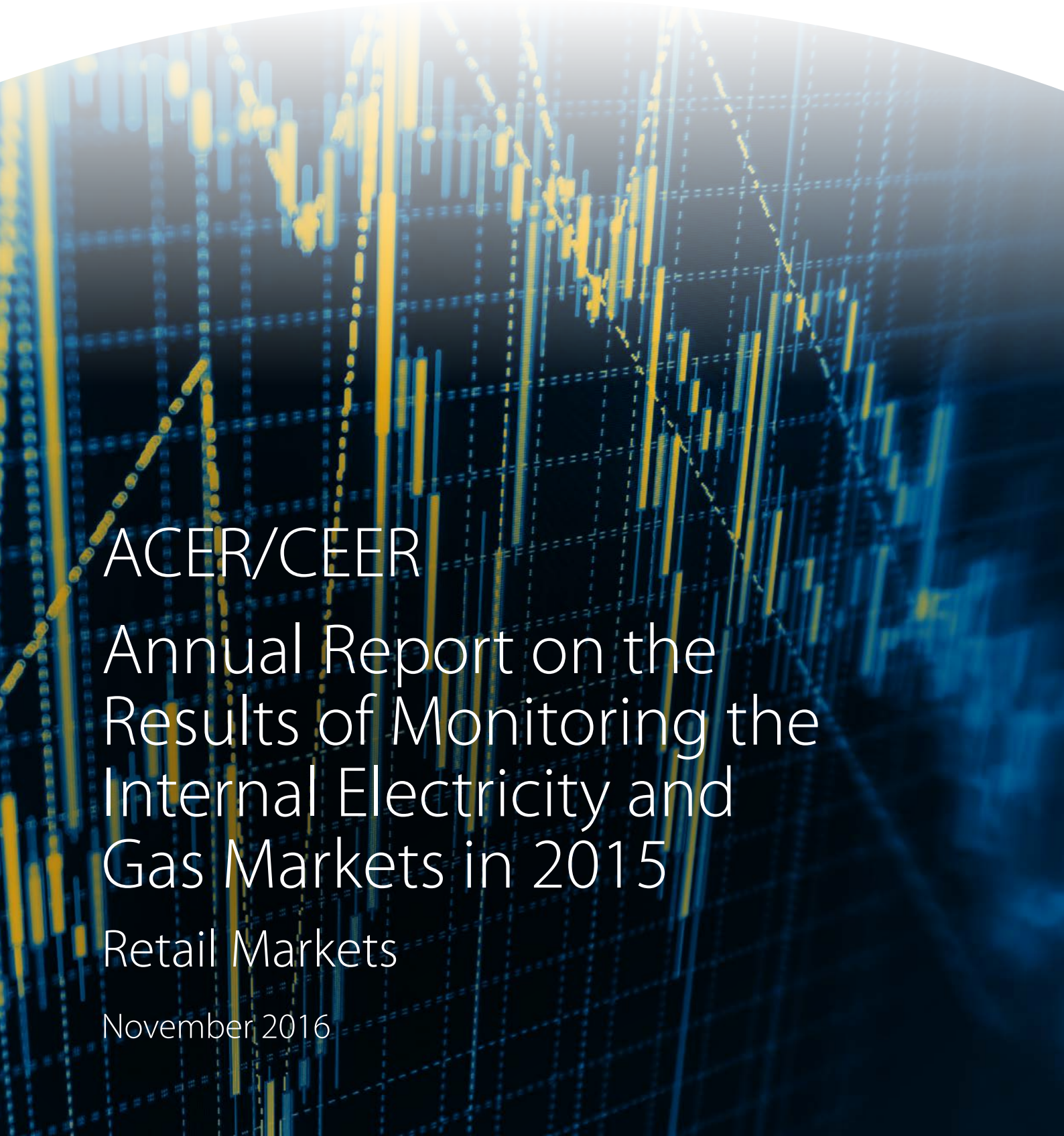

ACER/CEER
Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2015
Retail Markets

November 2016

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Annual Report on the Results of Monitoring the Internal Electricity and Gas Markets in 2015

Retail Markets

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1 Introduction

1 The Electricity and Gas Retail Markets volume is one of four volumes that make up the Market Monitoring Report (MMR). The other volumes are Electricity Wholesale Markets, Gas Wholesale Markets, and Customer Protection and Empowerment.

2 The analysis presented in the Electricity and Gas Retail Markets volume is similar in scope to the one presented in last year's MMR[1]. It covers the main price and demand trends, assesses the level of competition in retail markets across EU Member States (MSs) and discusses why the energy component of the final consumer price still varies significantly from MS to MS.

3 The analytical approach used to assess the level of competition in each country is the conventional structure-conduct-performance framework, which explores a range of retail market indicators (e.g. market structure and concentration, net entry, mark-ups, the relationship between wholesale and retail energy prices, consumer switching activity and consumer experiences) and their interrelations.

4 Furthermore, in this volume, the Agency for the Cooperation of Energy Regulators ("the Agency" or "ACER") and the Council of European Energy Regulators (CEER) extends and complements the scope of its analysis on retail markets by including, for the first time, an assessment of the state of play of dynamic pricing to electricity and gas household consumers.

5 This document is structured as follows: Chapter 2 presents the main trends in electricity and gas demand; Chapter 3 presents developments in retail prices, for the first time also covering the Energy Community Contracting Parties; Chapter 4 assesses offers available to consumers; Chapter 5 describes the state of play in dynamic pricing in Europe; Chapter 6 assesses the relative level of competition in retail energy markets; Chapter 7 presents the relationship between the wholesale price and the energy component of the retail price; Chapter 8 focuses on regulatory intervention in retail price-setting mechanisms. To ease readability of this volume, each Chapter starts with a summary that explains its aim and structure as well as outlines the main market monitoring findings.

1 See MMR 2015, available at: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf.

2 Consumer demand

Chapter summary

Prompted by economic recovery, decreasing wholesale prices and a colder winter, total electricity consumption in Europe and electricity consumption by the household segment increased in 2015 by 2.1% and 4.2%, respectively, compared to the previous year, while total gas consumption and gas consumption by the household segment increased by 4.4% and 4.7%, respectively. Despite these increases, the 2015 total levels of electricity and gas consumption were still below the pre-economic crisis levels of 2008.

6 In 2015, European[2] electricity demand by end consumers[3] reached 2,935 TWh, a 2.1% increase compared to the previous year (Figure 1). Electricity end consumer demand increased in all but three countries[4], with the greatest increases observed in Malta (5.8%), Spain (5.4%) and Cyprus (4.4%).

7 European demand for natural gas[5] reached 4,648 TWh in 2015, representing an increase of 4.2% compared to the previous year[6]. The greatest increases were observed in Portugal (11.1%), Bulgaria (10.4%) and Slovakia (9.3%), where the increase was partly due to lower average annual temperatures compared to the previous year.

8 Europe's ongoing economic recovery[7] and falling wholesale electricity and gas prices affected final overall demand. As shown in the Gas Wholesale volume[8], lower gas prices contributed to an increase in industrial demand for gas in Germany, Italy, Spain and the UK[9].

9 An increase in European electricity and gas demand by households was also recorded in 2015. Household demand is heavily affected by weather conditions and was primarily affected, in some countries, by the colder winter of 2014/2015 compared to previous years, and the warmer summer in 2015[10, 11]. Household consumption accounted for 27% and 23% of the overall demand in 2015 for electricity and gas, respectively. Following an increase of 4.4% compared to 2014, electricity demand by households settled at 780 TWh. Similarly, gas demand by households in 2015 increased by 4.7% compared to 2014, reaching 1,122 TWh.

10 Despite the overall increases in total energy consumption in 2015, overall demand levels did not reach the 2008 pre-crisis levels. Electricity and gas consumption 2015 remained lower than 2008 levels by 3.9% and 17.1%, respectively.

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2 Throughout this report, European refers to the EU28 and Norway. Where other European countries, such as Contracting Parties of the Energy Community, are included in the analysis, this is explicitly mentioned.

3 Based on the Eurostat supply category of 'electricity available for the internal market', i.e. the amount of electricity to be sold and supplied to the domestic market, including all losses occurring during transportation and distribution, and the amount of electricity consumed in the energy sector for commercial needs. Therefore, the supply data presented in this report can differ from the demand figures that NRAs have, i.e. data from consumer metering points. Where these differences significantly affect the estimates in the year-on-year data, estimates by NRAs are considered and noted below the figures.

4 Estonia, Finland and Bulgaria, where final electricity demand decreased by 4.7%, 1.0% and 0.9% respectively. In Estonia, the 2015 summer was the hottest in the last century, which increased electricity consumption due to air cooling.

5 Gross inland annual consumption data for 2008–2012. From 2013 onwards, the data presented are the Eurostat monthly supply data category of 'gross inland consumption'. In this category, supply is equal to the sum of production, net imports and stock change.

6 As shown in Figure 1, this is the first increase in overall gas demand after a four–year trend of falling gas demand.

7 EU28 GDP increased by 4.8% in 2015 compared to 2014 and by 12.5% compared to 2008.

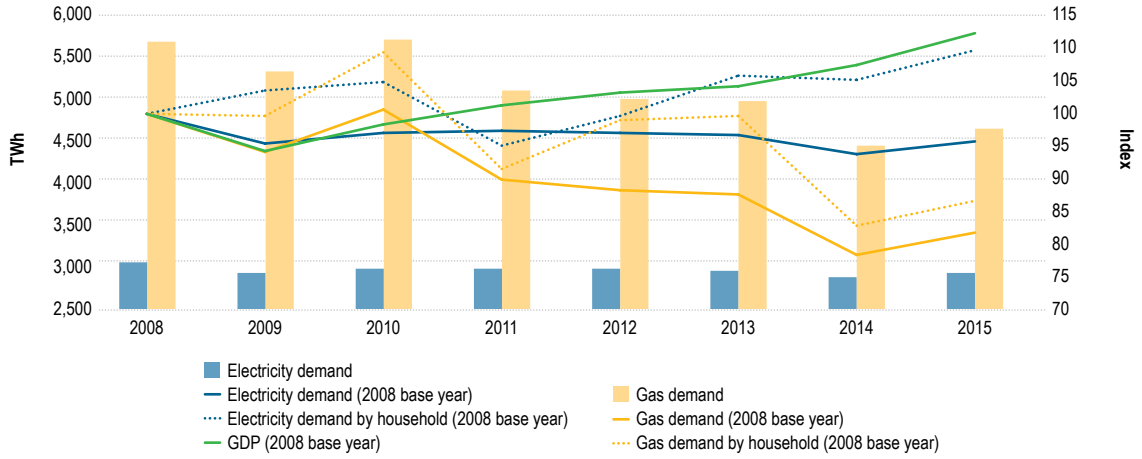
8 See the ACER Gas Wholesale volume, available at: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202015%20-%20GAS.pdf.

9 UK means the United Kingdom (England, Wales, Scotland and Northern Ireland); Ireland means the Republic of Ireland; and Northern Ireland is a constituent country within the UK which shares a land border with the Republic of Ireland. In terms of consistency, data relating to different subsets of the UK are reported separately, depending on availability and source, using the name of the relevant constituent country or subset, for instance Great Britain (GB). Eurostat data are available for the UK as a whole only.

10 Hotter summers affect demand for electricity and gas, because of the need to fuel air conditioning and refrigerating devices.

11 See, for example http://cib.knmi.nl/mediawiki/index.php/2015:_joint_warmest_year_on_record_in_Europe#Annual_mean_temperature, 27 June 2016.

Figure 1: Overall and household demand for electricity and gas in Europe – 2008–2015 (TWh and index change, 2008 = 100)



Source: Eurostat (26 April 2016), CEER National Indicators Database (2016) and ACER calculations.

Note: Overall demand shows electricity available for the internal market and gross inland consumption of gas. Final annual household demand for electricity and gas in 2015 is estimated on the basis of data in the CEER database. In all charts throughout the report: HH = household consumers, IND = industrial consumers, ELE = electricity, GDP = gross domestic product.

11 In addition to the weather, efficiency measures across the EU[12] continued to affect household consumption. While the increased efficiency reduced electricity and gas consumption, more extreme temperatures increased the demand for air cooling in summer and heating in winter in some countries. In the UK, for example, final energy consumption by households increased by 3.6% in 2015 compared to 2014, while the seasonally and temperature-adjusted final energy consumption by households decreased by 1.0%[13] compared to the year before[14].

12 Despite these last year's increases, however, as shown in Figure 25 in the Annex, during the period from 2011 to 2015[15] , typical household electricity consumption decreased in a large majority of MSs.

12 See for example http://www.odyssee-mure.eu/publications/br/energy-efficiency-trends-policies-buildings.pdf, pointing to improved household energy efficiency of 1.8% per year at the EU level since 2000; or https://www.iea.org/publications/freepublications/publication/MediumTermEnergyefficiencyMarketReport2015.pdf.

13 Based on these data, the 2.6% increase in the UK's final demand in 2015 compared to 2014 was due to weather conditions.

14 See the data from the Department for Business, Energy & Industrial Strategy, UK: https://www.gov.uk/government/statistics/total-energy-section-1-energy-trends.

15 With few exceptions, typical country consumption profiles are available only for the period from 2011 onwards.

3 Retail energy prices

Chapter summary

End-user electricity and gas prices and typical[16] consumption profiles, which vary greatly across the EU, are important aspects of household and industrial consumer expenditure.

This Chapter reports on price levels at the European level and across Europe in nominal terms, adjusted for purchasing power[17] (Section 3.1). Additionally, it reports on the breakdown of standard electricity and gas offers in European capital cities and illustrates the most significant changes in the different price components over the period from 2012 to 2015.

In 2015 electricity and gas prices fell, compared to the previous year, for all consumers, except household electricity consumers, who saw prices rise on average across the EU by 1.7%. The 2015 prices for electricity industrial consumers fell by 1.0%, while gas household and industrial prices decreased by 4.2% and 6.0%, respectively.

The price breakdown analysis (Section 3.2) of standard electricity and gas offers[18] across European capital cities at the end of the calendar year, which has been conducted by the Agency and CEER for the fourth consecutive year[19], revealed a further decreasing share of the energy component (i.e. contestable prices) in the price charged to consumers. Over the 2012–2015 period, this share fell from 41% to 37% of the final electricity bill and from 56% to 52% in the case of the final gas bill. The decrease in final end-user prices is a result of falling wholesale prices. For electricity consumers, this decrease was offset by increasing level of non-contestable charges in many European capital cities, among which the charges relating to support schemes for renewable energy sources (RES) increased from 6% to 13% of the end-user price during the same period.

The level of end-user prices in Europe (Section 3.3) continued to vary widely, with Denmark recording the highest household prices for electricity, and Sweden for gas.

16 Unless otherwise indicated, prices for the following Eurostat bands are reported on: DC: 2,500–5,000 kWh (electricity households), D2: 20–200 GJ (gas households), IE: 20,000–70,000 MWh (electricity industrial consumers) and I5: 1,000,000–4,000,000 GJ (gas industrial consumers).

17 Nominal terms relates to prices in euros, which are unadjusted for inflation or purchasing power. Prices which reflect purchasing power are corrected for purchasing power standard (PPS). PPS is the technical term used by Eurostat for the common currency in which national accounts aggregates are expressed when adjusted for price level differences using PPP (purchasing power parity). Therefore, PPP can be interpreted as the exchange rate of PPS against the euro.

18 The analysis of offers may differ from the prices reported to Eurostat for a number of reasons. These include consumption profiles underpinning data collection across capital cities in Europe, i.e. 4,000 kWh annually of electricity consumed and 15,000 kWh annually of gas consumed, and the fact that offers to consumers at the end of the year may differ from the actual contractual price paid by consumers throughout the year.

19 In 2015, the consumption profiles which are the basis for the breakdown analysis were adapted to reflect changes in the typical consumption profiles in MSs. While the first three years (2012–2014) reported on offer data for 4,000 kWh annually of electricity consumed and 15,000 kWh annually of gas consumed, the 2015 data refer to a profile of 3,500 kWh of electricity and 11,000 kWh of gas consumed annually. When a change is analysed year-on-year and in euros/kWh and where a trend has been exacerbated due to a change in consumption profile, this is clearly indicated in the report. The data in this chapter reporting on offers for the specific consumption profiles in capital cities at the end of the year 2015 may differ for some countries from the results in Section 3.1 reporting on the annual prices paid by consumers of specific Eurostat consumption bands at the national level (not only capital cities).

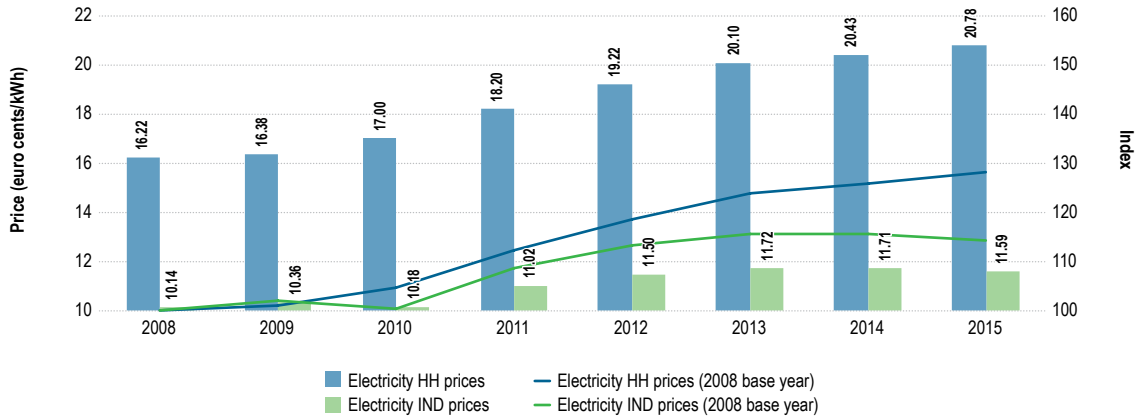
3.1 Electricity and gas retail prices

3.1.1 Retail prices in the EU MSs

13 Since 2008, electricity prices have risen by 28% and 14% for household and industrial consumers, respectively (right vertical axis of Figure 2).

14 In 2015, the average EU28 electricity post-tax total price (POTP)[20] for household consumers settled at 20.78 euro cents/kWh, having increased by 1.7% compared to 2014.

Figure 2: Electricity POTP trends for household and industrial consumers in EU28 – 2008–2015 (euro cents/kWh and index change, 2008 = 100)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands DC: 2,500–5,000 kWh (household electricity consumption) and IE: 20,000–70,000 MWh (industrial electricity consumption). The right vertical axis shows an index change compared to the base year of 2008.

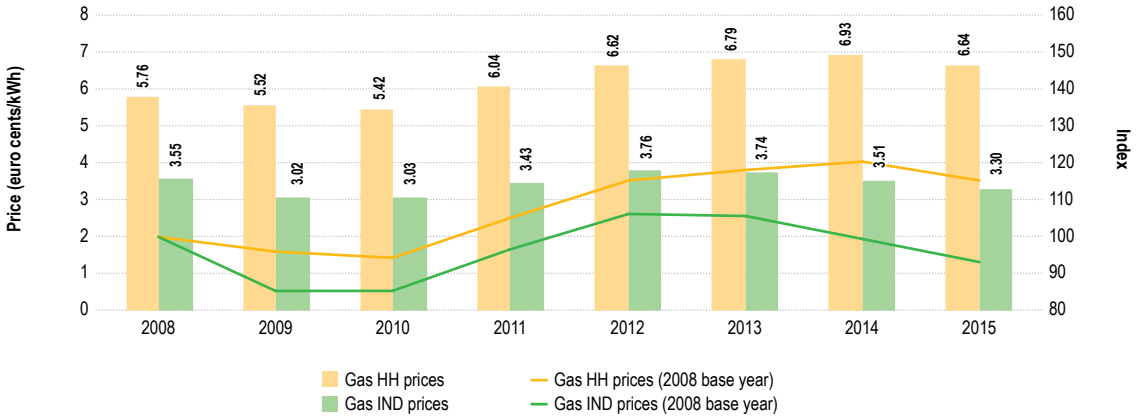
15 On average, the 2015 electricity price for industrial consumers was 11.59 euro cents/kWh, having decreased by 1.0% compared to 2014. This downward trend was first indicated in 2014, when industrial electricity prices fell by 0.1% compared to 2013.

16 Unlike the increasing electricity household prices, gas household prices decreased between 2014 and 2015 by 4.2%, settling on average at 6.64 euro cents/kWh. This is the first significant decrease for this segment since 2010, when household consumers last enjoyed lower prices compared to the year before. The 2015 gas price exceeded the 2008 level by 15%.

17 Industrial consumers' gas prices continued to decrease between 2014 and 2015, by 6.0%, settling on average at 3.30 euro cents/kWh (Figure 3). Significant decreases in gas prices for industrial consumers in 2014 and 2015 contributed to the 2015 price levels, which are 7% lower than in 2008.

20 Post-tax total price (POTP) is defined as the sum of the commodity price, regulated transmission and distribution charges, and retail components (billing, metering, customer services and margin), plus VAT, levies (as applicable: local, national, environmental, etc.) and any surcharges (as applicable). On the contrary, the pre-tax total price (PTP) is defined as the sum of the commodity price, regulated transmission and distribution charges, and retail components (billing, metering, customer services and a fair margin on such services).

Figure 3: Gas POTP trends for household and industrial consumers in EU28 – 2008–2015 (euro cents/kWh and index change, 2008 = 100)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands D2: 20–200 GJ (household gas consumption) and I5: 1,000,000–4,000,000 GJ (industrial gas consumption). Bi-annual data for consumption band I4 (100,000 GJ–1,000,000 GJ) is used for Croatia, Lithuania, Luxembourg, Ireland and Slovenia. The right vertical axis shows an index change compared to the base year of 2008.

3.1.2 Retail prices in nominal and real terms across the EU MSs and the Energy Community Contracting Parties[21]

18 Over the years, the MMR has consistently reported on the great diversity in electricity and gas prices for household and industrial consumers across the EU MSs and Norway. In 2015, these disparities remained. For instance, the final price of electricity for household consumers in Denmark, the country with the highest price in Europe (30.55 euro cents/kWh), was more than three times higher than in Bulgaria (9.49 euro cents/kWh) and almost 10 euro cents/kWh higher than the European average. Swedish household consumers paid the most for gas (11.52 euro cents/kWh), i.e. more than three times the price of gas incurred by Romanian consumers (3.55 euro cents/kWh) and almost 5 euro cents/kWh higher than the EU28 average (Figure 26 and Figure 27 in the Annex).

19 Overall, in 2015, industrial consumers of electricity and gas in Europe paid considerably lower prices than households (Figure 2 and Figure 3) mainly due to the overall volumes of electricity and gas they consumed. Electricity for industrial consumers was cheapest in Sweden[22] (5.79 euro cents/kWh) and most expensive in Denmark (24.43 euro cents/kWh) in terms of POTP. Similarly, industrial gas prices were highest in Sweden (7.43 euro cents/kWh), followed by Denmark (6.56 euro cents/kWh), while the lowest prices were in Lithuania (2.35 euro cents/kWh).

20 In the retail markets of the Energy Community Contracting Parties (EnC CPs)[23], there is almost no difference in electricity and gas prices between the industrial and household segments (Figure 26 in the Annex). The reasons for this are not clear. However, it is worth mentioning that price regulation in the EnC CPs is not only applied in the household segment, but also in the industrial segment[24].

21 The information presented in this chapter is subject to data available from Eurostat, i.e. retail prices for electricity and gas in the Energy Community Contracting Parties (Albania, Bosnia and Herzegovina Bosnia, Kosovo, Republic of Macedonia, Moldova, Montenegro, Serbia and Ukraine) for the selected consumption bands.

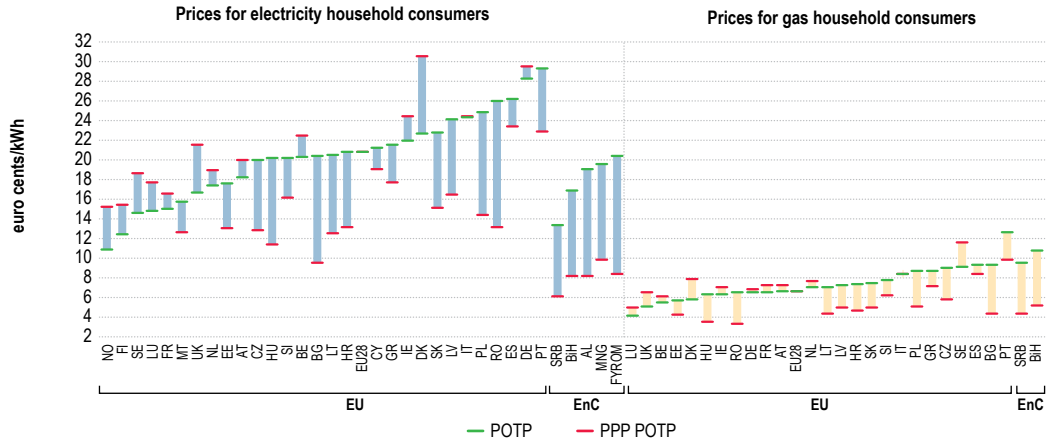
22 In addition to Sweden, the other three Nordic countries (Norway, Finland and Denmark) incur the lowest electricity prices for industrial consumers in Europe (expressed in PTP, i.e. excluding VAT and recoverable taxes).

23 See further: https://www.energy-community.org/portal/page/portal/ENC_HOME/ENERGY_COMMUNITY/Who_are_we. The analysis in this report only includes the countries, for which data is available in Eurostat.

24 For further information, see the Energy Community Regulatory Board (ECRB) Market Monitoring Report 2015 Electricity and Gas Markets in the Energy Community https://www.energy-community.org/portal/page/portal/ENC_HOME/DOCS/4120377/310EA70C92EB668EE053C92FA8C042FA.pdf.

21 The disparities in household electricity and gas prices across the EU and in the EnC CPs are pronounced, even if the purchasing power of the local market is considered. In 2015, electricity prices for household consumers ranged from 10.85 euro cents/kWh in Norway to 29.31 euro cents/kWh in Portugal, while gas prices ranged from 4.09 euro cents/kWh in Luxembourg to 12.57 euro cents/kWh in Portugal. The greatest differences between electricity and gas household prices in nominal and PPP terms were observed in Romania and Bulgaria (Figure 4).

Figure 4: Difference between the POTPs in nominal terms and PPP for electricity and gas household consumers – 2015 (euro cents/kWh)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The blue dotted line indicates the difference between the POTP in real and nominal terms. For example, in Norway, the price of electricity for household consumers in nominal terms (15.24 euro cents/kWh) is higher than the price in real terms (10.85 euro cents/kWh). The difference of 4.39 euro cents/kWh is represented by the blue dotted line. The figure is based on bi-annual data provided by Eurostat for consumption bands DC: 2,500–5,000 kWh (household electricity consumption) and D2: 20–200 GJ (household gas consumption). Data for Kosovo and Moldavia are not shown for electricity and gas prices, as there are no PPP prices available in Eurostat for these countries. Prices for Ukraine are not available in Eurostat for the price bands in question.

22 In real terms, gas prices in the countries of the Energy Community for industrial and household consumers were significantly higher than in the EU28 and Norway (Figure 26 and Figure 27 in the Annex). This could be explained by the absence of competition and gas spot markets, which drive gas wholesale prices down in the EU.

3.2 Electricity and gas price breakdown

23 For the fourth consecutive year, the MMR presents the break-down of standard electricity and gas offers available to consumers in European capital cities. This year's analysis provides, to the extent possible given the available data, a more detailed break-down into sub-components by distinguishing between transmission and distribution charges, value-added tax (VAT), energy-related and other taxes and charges.

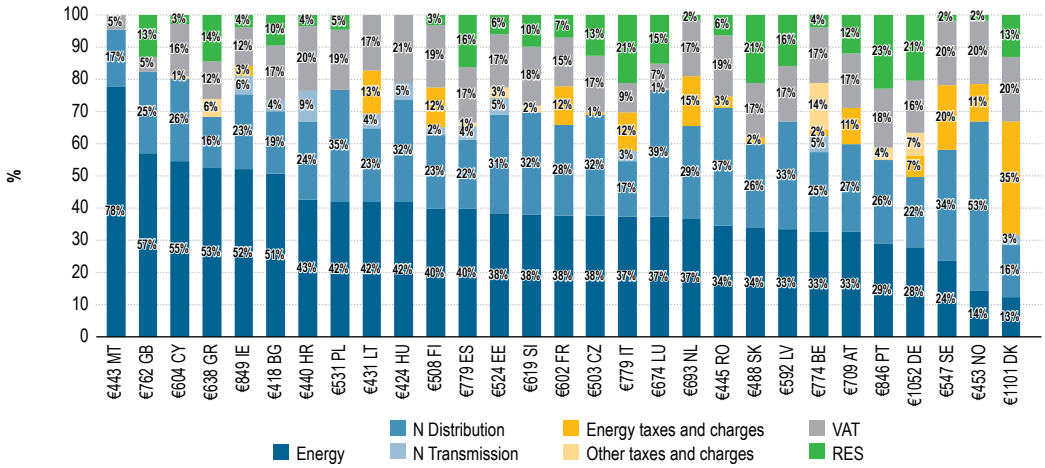
24 The data for 2015 show the break-down for annual electricity and gas consumption profiles of 3,500 kWh and 11,000 kWh, respectively, which are lower than the profiles used for 2012, 2013 and 2014 (4,000 kWh and 15,000 kWh annually). These profiles were lowered at the request of the National Regulatory Authorities (NRAs) due to the falling typical household consumption across Europe (paragraph (11)), and, therefore, to better represent the breakdown for household consumers. The consumption profile change can also affect the individual components of the standard offers. This change constitutes a series break, which hampers the year-on-year price change analysis in this year's MMR for some capital cities. The 2014–2015 price changes are shown only for those capital cities for which comparable data could be obtained in parallel (i.e. for an electricity and gas annual consumption profile of 4,000 kWh and 15,000 kWh, respectively).

25 In 2015, the composition of the final electricity price for household consumers continued to vary greatly across Europe (Figure 5). In all but six European capital cities, the energy component[25] accounted for less than 50% of the final electricity price charged to household consumers.

25 In some markets, where, for example, price regulation is applied, or where there is lack of unbundling, other charges which are not strictly related to the energy component increase the energy component shown in the breakdown of standard offers for electricity and gas.

26 The major part of the energy component reflected the cost of purchasing electricity on the wholesale market, while the cost of retailers for supplying electricity[26] to household consumers (i.e. 'supply costs') was on average[27] 11% of the energy component and 5% of the POTP. In Oslo, where the standard offer[28] is a spot-based offer, the share of the supply costs in the final price was the lowest, i.e. 0.6%, while in London, 16.1% of the final bill is charged for the supply of electricity.

Figure 5: POTP electricity break-down of the incumbents' standard offers for households in capital cities – November–December 2015 (%)



Source: ACER Retail Database (2016)[29] and NRAs.

Note: For some capital cities, the final price shown next to the country code for the consumption of 3,500 kWh per household annually is not the most representative. The average consumption and the connection capacity were significantly lower in Italy (2,014 kWh in 2015). In Romania, average consumption is approximately 1,400 kWh and in Lithuania 1,600 kWh annually. On the other hand, in Norway, Sweden (for individual houses) and Finland, average demand is significantly higher than the average profile from the ACER Retail Database (over 15,000 kWh, 20,000 and 7,000 kWh respectively). In the case of Denmark, the break-down refers to the average variable price in Copenhagen, with the presented RES charges equalling public service obligation taxes (PSO) charges. In Dublin, RES charges, which are a renewable part of the PSO charges, have been separated in the figure. In Berlin, the average of all offers is presented instead of the incumbent's standard offer. In Malta, a charge for the support of RES is not included in the electricity tariff, as the support for RES is financed through national taxes in the national budget. In Spain, RES support has been estimated as a share of the network tariff set by the government.

27 Network charges[30] as a share of the total offer price for electricity were the highest in Oslo[31] (53%), followed by Luxembourg (39%), and the lowest in Athens (16%). Twelve MSs were able to break the network charges further. As shown in Figure 5, in these capital cities, distribution costs accounted for the majority of network costs (81% of network charges and 23% of the final price on average), while transmission costs accounted for 17% of the network charges and 5% of the final price[32].

26 These costs typically include supplier's operational costs and a margin.

27 This estimate relates to the average of the ten capital cities for which information could be obtained (Amsterdam, Bucharest, Helsinki, London, Nicosia, Oslo, Rome, Sofia, Vilnius and Zagreb).

28 The standard offer refers to the offer for 3,500 kWh of electricity which was most commonly applied to household consumers in capital cities at the end of 2015.

29 The ACER Retail Database is based on information from price comparison tools, NRAs and suppliers. For a large majority of capital cities, where price comparison tools enable such a search, the offers are direct debit, single-unit-rate offers for the annual consumption of 3,500 kWh of electricity and 11,000 kWh of gas. The respective profiles have been calculated as the average consumption for European household consumers based on data provided by NRAs for 2014. National consumption profiles may differ from the consumption pattern used. Fixed-, variable-, mixed-price and spot-based offers are included in the comparison.

30 The 'network charge component' includes the price charged for the following costs: transmission and distribution costs, including transmission and distribution losses, system operation costs (excluding balancing energy) metering and meter rental.

31 The incumbent standard offer in Oslo includes a network charge, which is a national weighted average network charge as opposed to the local distributor's network charge. The reason for this is that Hafslund Nett AS (the distributor in Oslo) applies a much lower (non-representative) network charge for specific consumption. In addition to this, the fixed network charges make up a large share of the total network charges. Therefore, network charges per kWh are higher for lower consumption bands. As average consumption in Norway is approximately four times higher than the average consumption profile presented in the breakdown, network charges comprise a considerably smaller share of the total price for a typical Norwegian consumer (i.e. estimated at 34% in the final price).

32 Other costs, such as metering, balancing transmission and distribution costs, etc. accounted for the remaining 2% of the network charges.

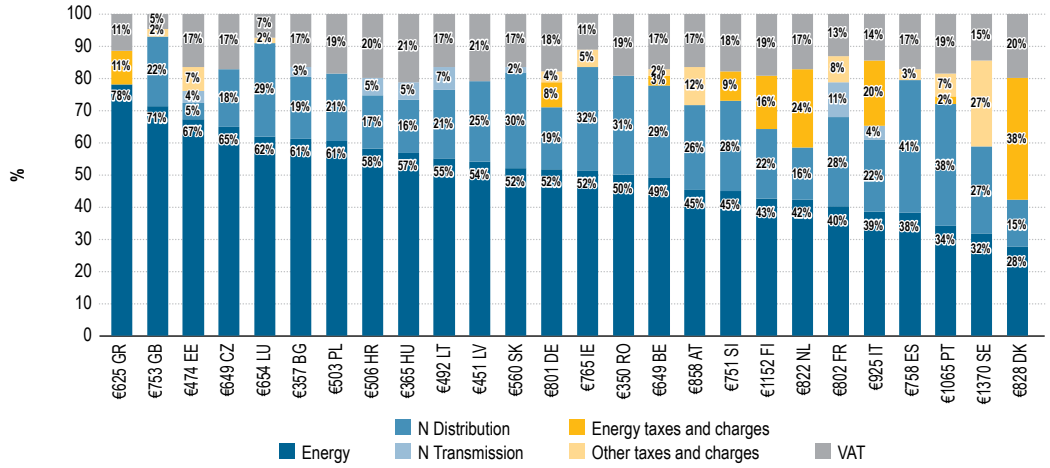
28 Taxes and levies on electricity bills that are meant to cover policy-related costs are eroding the benefits of falling energy prices. In Copenhagen and Berlin, the two capitals with the highest final electricity prices, taxes and levies, including charges relating to support schemes for RES, made up more than 50% of the final price, imposing an annual burden in excess of 500 euros on household consumers. At the other end of the spectrum, consumers in Valetta incurred only 20 euros of VAT charges annually (i.e. 5% of the final price). All in all, the wide differences in the share and the type of taxation[33] imposed on electricity consumers reflect the different national (energy) priorities and policies of MSs.

29 Energy-related taxes and charges, including electricity taxes covering the costs of a country's energy efficiency measures, cogeneration taxes, nuclear levies and concession levies, accounted for more than 10% of the final electricity price in Copenhagen[34], Stockholm, Amsterdam[35], Vilnius, Oslo, Rome[36], Helsinki, Paris and Vienna.

30 Other taxes and charges, such as PSO charges, local and federal taxes, social taxes and others, were the highest in Riga and Brussels (16% and 14% of the final price, respectively), and were also charged to consumers in Berlin, Athens, London, Tallinn, Madrid, Dublin, Luxembourg, Lisbon, Ljubljana, Dublin and Paris.

31 Figure 6 illustrates that the share of energy in the final gas price in 2015 in European capital cities ranged from 28% in Copenhagen to 71% in London. Of the capital cities for which data were available, the wholesale energy costs accounted for the majority share of the energy component, with the remaining covering the supply costs charged by gas suppliers.

Figure 6: POTP gas break-down of incumbents' standard offers for households in capital cities – November–December 2015 (%)



Source: ACER Retail Database (2016) and information from NRAs (2016).

Note: The natural gas prices for Sweden refer specifically to Gothenburg, a very limited area of the country with gas. In Berlin, the break-down refers to the average of all offers (instead of the standard offer). Regarding the price of gas in Athens, the energy component shown includes the network charges (estimated at approximately 160 euros, i.e. 26% of the POTP), which could not be unbundled. Network charges in Riga are estimates, as data were not available. For some countries, the average consumption to which the offers refer is not representative (for example, Portugal, where the typical consumer consumes 234 m^3 a year). In Warsaw, due to a change in methodology, the cost of accessing the transmission system is now recorded under the energy component and cannot be disentangled from it. However, the estimate by URE would correct the split between the components presented in the figure, as follows: energy 52%; network 29%; and taxes 19%.

33 In addition to different VAT rates.

34 Most of the energy taxes on electricity and gas in Denmark are so-called CO2 taxes aimed at covering the costs of promoting energy savings and CO2 reductions. In some parts, the taxes finance part of the state budget.

35 The energy tax charged to electricity and gas consumers in Amsterdam is a pass-through tax by suppliers to end consumers

36 Energy-related taxes in Rome are paid by all energy consumers to cover the general costs of the universal electricity service. A large share, which, for consistency of the analysis with other countries, has been separated from the taxes, are RES charges. The remaining shares are collected to cover the costs of energy-intensive industry, nuclear investments/costs, energy efficiency and other residual surcharges. Consumption taxes, which are charged to electricity consumers, are transferred to the Italian state as general public expenditure.

32 Network charges ranged from 9% of the final price for gas consumers in Tallinn to 41% of the final price for gas consumers in Madrid. The information for the capital cities for which a further split could be provided demonstrates that, expectedly, the distribution of gas, as opposed to transmission[37], accounted for a considerably higher share of the consumers' bills, i.e., on average, 82% of the network charges and 21% of the final price. In Tallinn, Vilnius and Paris, transmission charges on average accounted for 32% of the network costs.

33 Compared to electricity consumers, gas consumers in Europe's capital cities were less exposed to additional energy and other taxes and charges. In eight capital cities, no tax other than VAT was charged to gas household consumers[38]. However, where taxes were charged, they significantly lowered the contestability of the energy component of the final bill.

34 In Copenhagen, energy taxes and charges accounted for the highest share of the final price, at 38%[39], followed by Amsterdam (24%)[40], Rome (20%), Helsinki (16%), Athens (11%) and Ljubljana (9%). The tax in Rome is to cover general public expenditure.

35 In addition to energy-related taxes and VAT, which comprised the majority of total taxes charged to household consumers in most European capitals, other taxes such as PSO tax, excise duty tax, social taxes, local and federal taxes, etc. accounted for 27% of the final price in Gothenburg and 12% in Vienna.

36 The high shares of non-contestable charges in the final price of electricity (and in some countries of gas) reduced the contestability of the overall bill. The energy component itself fell further due to the falling wholesale electricity and gas prices, and as such, reduced the final electricity and gas price for consumers in several European capitals. The next section presents the key component changes in 2015, identifying the most pronounced price drivers in the period from 2012 to 2015 for a selection of countries for which data with comparable consumption profiles could be obtained.

37 Transmission charges on average accounted for 18% of network charges and 4% of the final price.

38 As opposed to only two capital cities in which no tax (other than VAT) was levied on electricity consumption.

39 See footnote 34 for more information on energy taxes in Copenhagen.

40 Similar to taxes imposed on electricity consumers in Amsterdam, energy tax is paid by gas consumers. This is a pass-through tax, which suppliers forward to the state.

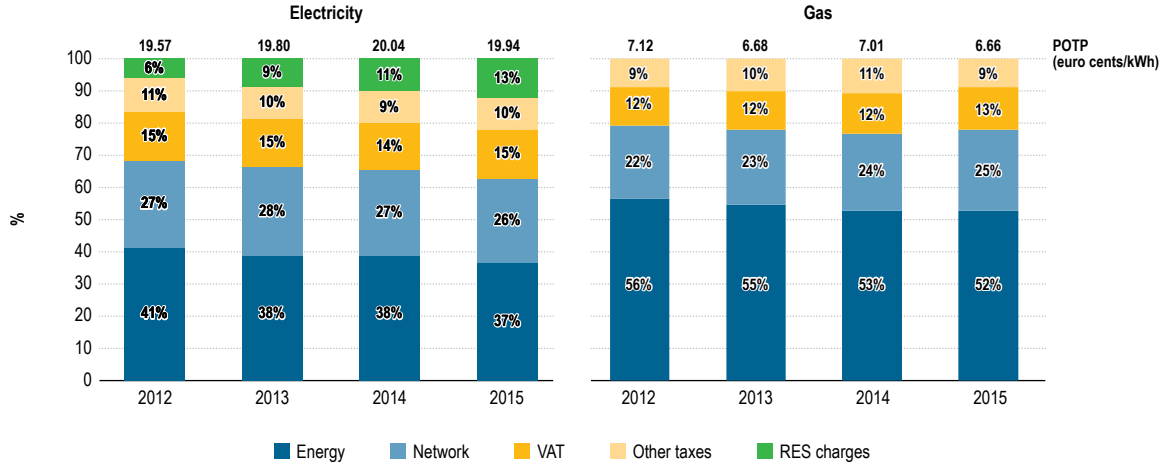
3.3 Trends in electricity and gas components

37 Figure 7 shows that the energy components of electricity and gas prices have fallen since 2012, both as a percentage of the final price (from 41% to an estimated 37% of the final bill in electricity and from 56% to 52% in gas[41]), as well as in nominal terms (falling from 8.0 to 7.4 euro cents/kWh in electricity and from 4.0 to 3.5 euro cents/kWh in gas)[42]. This reflects the falling wholesale energy prices in Europe for the period observed, as shown in Chapter 2 of the Electricity Wholesale Markets volume.[43]

38 Contrary to the falling energy component, RES charges incurred by electricity consumers in Europe have doubled from 6% of the final price in 2012 (1.3 euro cents/kWh) to 13% in 2015 (2.6 euro cents/kWh), increasing the final electricity price. Network charges, VAT and other taxes (including energy and non-energy-related taxes) have not changed considerably during the same period.

39 The average European gas price decreased due to the falling energy component in the period monitored, with nominal non-contestable charges largely unchanged throughout the four years.

Figure 7: POTP electricity and gas break-down of the incumbents' standard offers for households in capital cities of the EU – 2012–2015 (% and euro cents/kWh)



Source: ACER Retail Database (2016) and NRAs.

Note: Based on averages of standard offers for annual consumption of 4,000 kWh electricity and 15,000 kWh gas, weighted by total household consumption in the MSs.

40 Despite the general decreases in the energy component of the electricity price in several capital cities between 2014 and 2015, the final price paid by electricity consumers decreased in that period in ten of them. The increases in the non-contestable charges are fully or partly off-set by the effects of the falling energy component in Amsterdam, Brussels[44], Copenhagen, Lisbon, Luxembourg, Paris, Rome and Vienna. In London, Riga[45], Tallinn and Prague, the non-contestable charges increased in conjunction with the energy component (Figure 8)[46].

41 For comparability, the data for 2015 have been estimated on the basis of previous consumption profiles (i.e. 4,000 kWh of electricity and 15,000 kWh of gas annually).

42 Price components have been weighted according to the total electricity and gas household consumption as reported in the CEER DB in MSs to calculate the weighted European average.

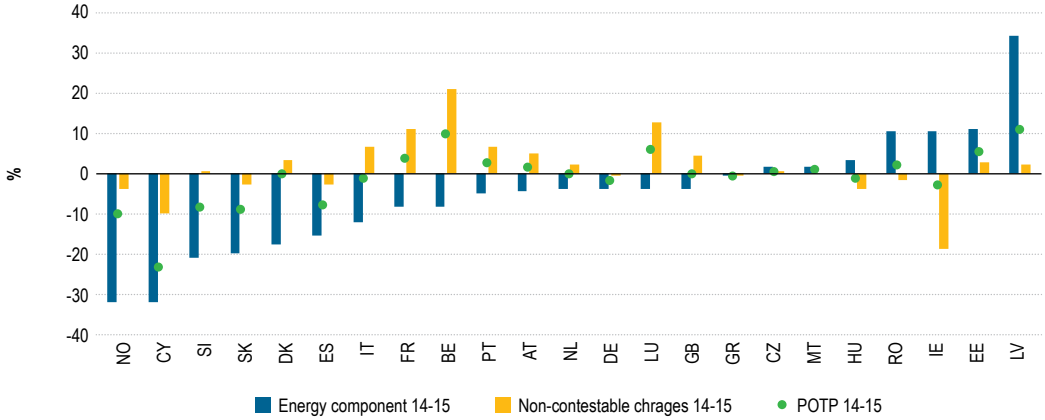
43 Available here: http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202015%20-%20ELECTRICITY.pdf.

44 The increase in non-contestable charges is due to the decision of the Belgian federal government to reinstate 21% VAT on electricity charges to Belgian households. In 2014, the rate was lowered to 6%.

45 In Riga, the energy component increased by more than one third of the 2014 level. This is a result of the opening of the household consumer electricity market as of 1 January 2015, which increased the previously regulated prices in Latvia. These prices were set below the cost levels and were thus expected to increase with market liberalisation. For more details, see previous editions of the Market Monitoring Reports on the regulated low prices in Latvia.

46 The 2012–2015 annual average change shown Figure 30 in the Annex, indicates a falling energy component in most of the selected capital cities in Europe, as well as a simultaneous increase in non-contestable charges in 13 out of 16 selected capital cities. Thus, compared to 2012, the final energy price was higher for consumers in nine capital cities.

Figure 8: The year-on-year change in the electricity energy component, non-contestable part and the POTPs for households – selection of countries in Europe – 2014–2015 (%)



Source: ACER Retail Database (2016) and NRAs.

Note: The year-on-year change for the countries is shown for consumption profile 4,000 kWh annually. For London, the change is calculated on the basis of the pound values.

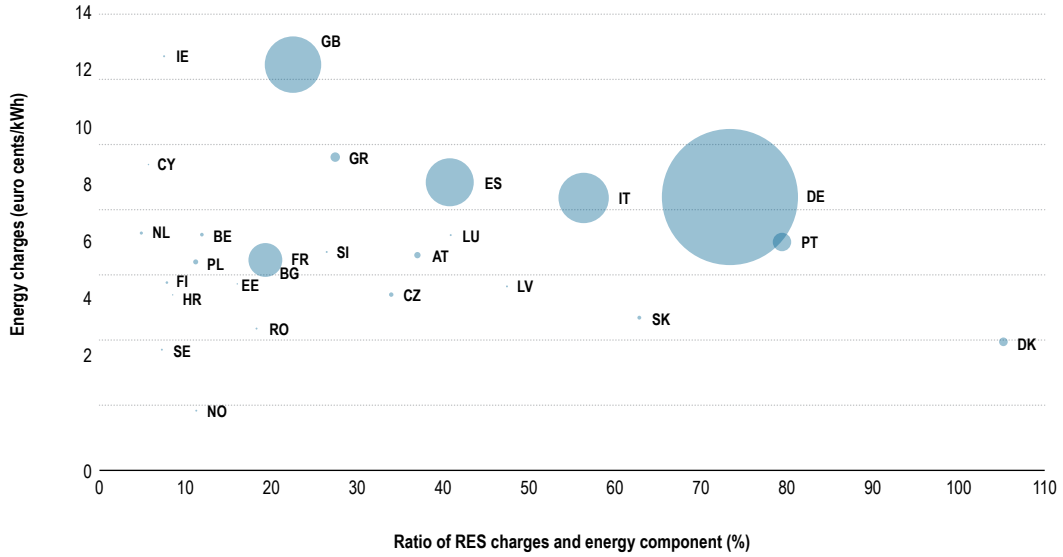
41 Previous MMRs reported on significant shares and increases in RES charges in 2012 and 2013 in Berlin, Copenhagen, Madrid, Rome and Athens[47], the capitals with 'early increases in RES charges'[48]. Similarly, and in conjunction with the falling energy component, the 2015 RES charges in these cities accounted for a significant share of the electricity bill. In Copenhagen, for example, electricity household consumers paid more for RES charges than for the energy component of the electricity consumed, while in Lisbon and Berlin, RES charges reached 79% and 73% of the energy component, respectively (Figure 9).

42 Depending on the size and on when national renewable schemes were effectively implemented, it is likely that these schemes have effected wholesale prices downwards at national level. These lower wholesale prices can affect the wholesale prices in adjacent countries too, through interconnectors, and lower the energy component in the retail prices in these adjacent countries. In particular, early renewable schemes introduced in the countries with RES charges (i.e. charges in the end-users' energy bill to support RES) share these effects with neighbouring countries. For example, renewable energy drove German wholesale prices down and, consequently, the retail energy component – not only in Germany, but also in the Netherlands and Belgium through market coupling – fell (Chapter 7 on the relationship between the wholesale prices and the energy component of retail prices). Furthermore, the increased RES expenditure in the Netherlands and Belgium contributed to the falling energy component for electricity. The magnitude of this distribution effect depends on a range of factors and can therefore differ from MS to MS.

47 See, for example http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf, page 34.

48 Figure 9 points to these countries as those where households overall contributed the most to renewable generation in 2015 through electricity bills. In 2015, and compared to the year before, RES charges and taxes and levies increased the final price in Brussels, London, Luxembourg, Lisbon, Rome, Berlin and Ljubljana (also Figure 31).

Figure 9: Expenditure on RES in relation to energy charges for electricity – 2015



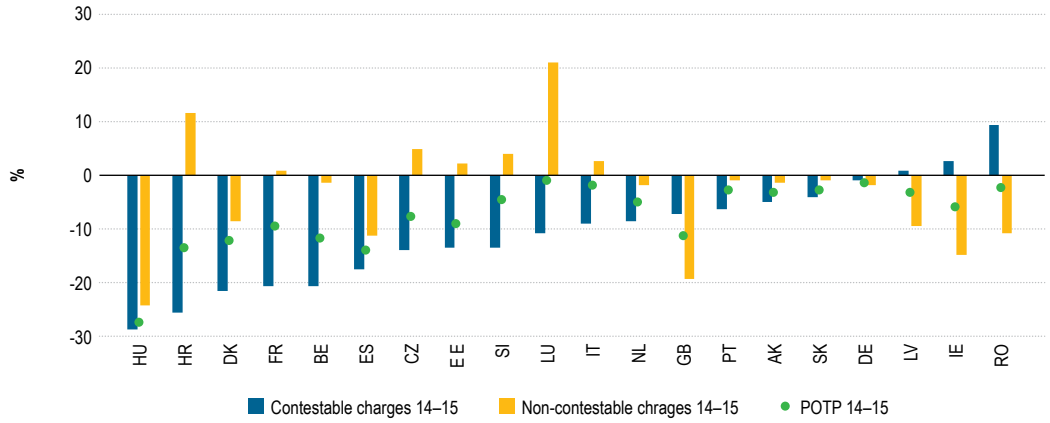
Source: ACER Retail Database (2016) and CEER National Indicators Database (2016).

Note: Based on 3,500 kWh electricity annual consumption. Bubble size represents the size of MSs expenditure on RES through electricity bills. MSs with higher increases in RES charges show higher percentages of RES in the energy component and are therefore plotted more to the right compared to the countries with lower increases in RES (where scores are plotted more to the left of the chart).

43 In 2015, the energy component of the final gas price fell in 16 of the 20 European countries on average by 11% compared to the year before (Figure 10). The final price of gas fell in all of the capital cities in Figure 10, on average by 7%. The main decreases were observed in Budapest (by 27%) and Madrid (by 14%), countries which apply price regulation to gas household consumers.

44 The 2014–2015 component change for the selection of countries shown in Figure 10 is in line with the one for the period 2012–2015 (Figure 32 in the Annex). In addition, it is consistent with the changes in the energy component and the non-contestable charges in previous years, when consumers in Zagreb, Copenhagen, Luxembourg and Budapest were benefiting from falling gas prices.

Figure 10: The year-on-year change in the gas energy component, non-contestable component and the POTPs for households – selection of countries in Europe – 2014–2015 (%)



Source: ACER Retail Database (2016) and NRAs.

Note: The year-on-year change for the countries is shown for consumption profile 15,000 kWh of gas annually. For London, the change is calculated on the basis of the pound values. The increase in the non-contestable charges for Luxembourg is mainly due to a change in the method of determining network tariffs in 2015.

4 Offers available to household consumers

Chapter summary

At the end of 2015, the Agency's retail data-base recorded for household electricity and gas consumers in Europe's capital cities more than 2,400 electricity, 850 gas and more than 350 dual-fuel offers (Section 4.1). In total, approximately 600 offers more than in the previous year.

The number of spot-based offers to electricity and gas consumers, which appeared on price comparison tools in Vienna and Tallinn for the first time in 2015, increased compared to the previous year. At the same time, suppliers in several capital cities offered more fixed-price contracts to consumers. Compared to the previous year, electricity consumers in 2015 also benefitted from a considerable increase in the number of 'green' offers.

The results presented in Section 4.2 indicate that consumers in countries with a longer history of liberalisation tend to benefit from more diverse offers than those in countries which liberalised their retail markets five to ten years ago, with offers displaying several non-price-related characteristics, in particular with regard to the type of energy pricing and with regard to 'green' elements.

45 Offers available to electricity and gas consumers reflect suppliers' pricing, as well as their product differentiation strategies to attract and retain consumers or to increase their margins. Although consumer response is primarily price-driven[49], other elements, which are not exclusively price-related, also play a role in assessing the level of innovation and competition in EU retail energy markets. It is worth mentioning that although more offers appear in markets which were liberalised earlier, more offers per se, in particular if they are bundled with other services, does not necessarily imply more innovation and competition.

46 The Agency has been following the key differentiating elements which accompany the offer prices for electricity and gas in the individual capital cities at the end of each year. These elements include the type of 'fuel' (electricity, gas and dual-fuel, i.e. both electricity and gas), the type of energy pricing (fixed, variable or spot-based), the energy source (fossil or renewable), the inclusion of additional services and other factors (contract duration, electronic billing, etc.). This year's MMR focuses on the key changes in the offers displaying the above elements as a proportion of the total number of offers over the past three years[50] at the European level and according to the maturity of the markets.

49 See Section 2.4.2. in the 2014 MMR.

50 Although the first data collection for the ACER Retail Database began at the end of 2012, the changes with regard to most of the non-price-related elements can be shown only for 2013, 2014 and 2015, as the data for these elements for 2012 were not systematically collected.

4.1 Number and variety of offers in Europe

47 For the fourth consecutive year, the number of offers[51] available to household electricity and gas consumers through the selected price comparison tools in the European capital cities increased compared to the year before. At the end of 2015, more than 2,400 electricity, 850 gas and more than 350 dual fuel offers were available, a year-on-year increase in the total number of offers of approximately 19% (Figure 11).

48 The greatest increase in the number of electricity offers on price comparison tools at the end of 2015 and compared to 2014 occurred in Oslo, from 100 electricity offers in 2014 to more than 300 offers at the end of 2015. This was due to the regulatory change implemented by the Energy Act from April 2015, which required suppliers to announce all their offers on the certified price comparison tool. Case study 1 at the end of this Chapter illustrates the effects of these changes on the popularity of the tool and on switching rates.

49 Household consumers in Berlin were able to choose from the highest number of electricity and gas offers in Europe: in total, more than 750 offers were available to them at the end of 2015. Furthermore, electricity and gas consumers in Stockholm, Helsinki, Prague, Warsaw, Copenhagen and London were free to choose from among the highest number of offers, with – on average – 240 electricity and gas offers available (Figure 33).

50 Contrary to the increasing trend in the number of single electricity and gas offers in European capital cities, dual fuel offers increased only moderately from approximately 320 dual-fuel offers in 14 capital cities at the end of 2013 to just over 350 dual-fuel offers in 11 capital cities by the end of 2015. However, dual-fuel offers accounted for more than 30% of all offers in Amsterdam[52], Dublin, Lisbon, London[53] and Paris.

51 Figure 11 shows that, compared to the previous year, the number of green[54] electricity offers increased in conjunction with the general increase in the number of offers in Berlin, Oslo and Stockholm[55], where the number of green electricity offers is typically high. The overall number of green gas offers, which increased in 2014 compared to 2013 by more than 50 offers in total (the most in Amsterdam and Berlin), remained largely unchanged in 2015 compared to 2014.

51 In total, almost 3,700 direct-debit, single-unit-rate offers electricity and gas, single and dual-fuel offers were screened for the selected electricity and gas consumption profiles of 3,500 kWh and 11,000 kW, respectively in European capital cities. Twenty-three European capital cities were analysed for electricity offers with regard to type of energy pricing, dual-fuel, contract duration, green offers and free additional services. (The capital cities of Bulgaria, Cyprus and Malta are not included, as only one offer was obtained from their respective regulator, while for Hungary, Slovakia and Slovenia, none or only a limited number of the categories were identifiable from the offers downloaded). In the case of gas offers, the analysis of all four categories was completed for 17 European capitals. The capital cities of Estonia, Lithuania, Latvia, Bulgaria, Greece, Croatia and Romania are not included, as only one offer was obtained from the respective NRA, while in the case of Slovenia and Slovakia, the majority of the categories were unidentifiable from the downloaded offers. Due to the lack of relevant data, this analysis does not indicate the popularity of these offers, i.e. how many consumers actually opt for offers with specific parameters. The list of price comparison tools through which the data were collected can be found in the Table 2.

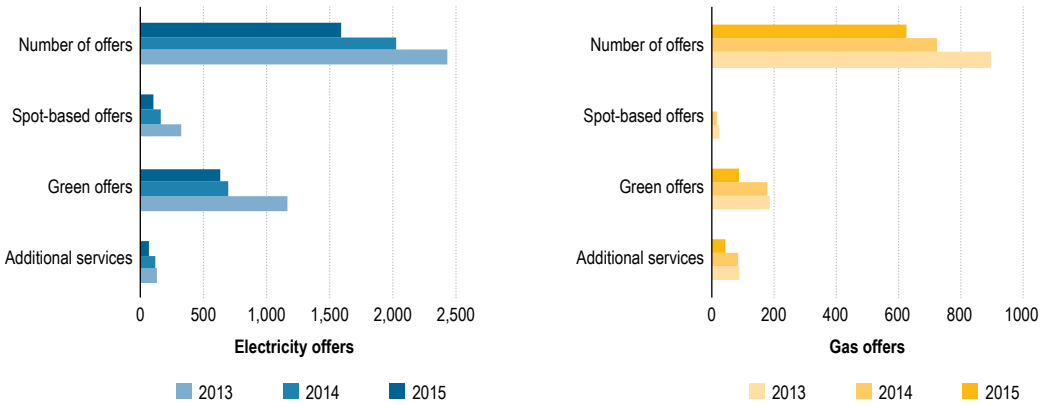
52 In the Netherlands, more than 80% of consumers are on a dual-fuel contract.

53 A large majority of household consumers in London are supplied under dual fuel contracts.

54 Although several interpretations exist as to the percentage of energy sourced from RES, an offer is defined as ‘green’ if 100% of the electricity production comes from RES or, in the absence of information on the input of green sources, if it is labelled as such by the price comparison tool.

55 The increase in these capital cities, where the number of green offers is typically high, is largely due to the general increase in the number of offers. In addition to this, the number of green electricity offers also increased in Vienna, Luxembourg, London and Warsaw.

Figure 11: Overview of the selection of differentiating elements in electricity and gas offers in EU MSs – 2013–2015 (in absolute numbers)



Source: ACER Retail Database (2016).

Note: For the capitals of Cyprus, Malta and Norway, no information on gas offers was collected. The data refer to capital cities, except for the Swedish natural gas offers, where the data refer to the limited area of Sweden with an existing natural gas network – the Gothenburg area. Dual fuel offers are not included in this figure.

52 Fixed-price offers[56, 57] continue to represent the largest share of offers in Europe, with 46% of all electricity and 54% of all gas offers in Europe being fixed price offers at the end of 2015. However, the share of spot-based offers in the total number of offers increased in several capital cities. For instance, spot-based electricity and gas offers are rapidly increasing, especially in the Nordic markets and in Estonia. Despite these developments in spot-based offers, most household consumers in Europe face retail prices that do not reflect the variations in wholesale prices, and consumers do not modify their consumption accordingly (Chapter 5).

53 More than 320 spot-based electricity offers were available to consumers at the end of 2015 in seven European capital cities, twice as many as at the end of 2014. On average, these offers were 5% cheaper than the average final price of all offers. Spot-based electricity offers first appeared in Vienna, Tallinn and Madrid in 2015.

54 Gas consumers in Gothenburg and Copenhagen were the only ones able to choose from almost 20 spot-based offers in total. In Copenhagen, spot-based gas offers accounted for almost one third of all offers on the price comparison tool (Figure 35 in the Annex).

55 Consumers in countries with a longer liberalisation history are able to choose from a considerably larger number of offers, which in general display more non-price-related elements than offers in those markets which have liberalised more recently. Specifically, consumers in countries which liberalised their markets more than ten years ago had on average 191 electricity offers displayed on price comparison tools, more than three offers on average per supplier, with almost half of them green and 10% spot-based, in both cases representing an increase compared to the total number of offers in 2013, the year in which information on non-price-related elements was first systematically collected. The switching rates of electricity household consumers in these markets were considerably higher than in markets which liberalised more recently (9% and 5% respectively on average).

56 Fixed-price offers provide a fixed price for an energy commodity for a definite period, regardless of changes in the market price. Price comparison tools tend to show offers as fixed for a period longer than 12 months (the Nordic electricity market sometimes lists offers as fixed, even if the period is six months only). Variable-price offers are based on a commodity price which the supplier can change at any time to reflect any changes in the wholesale price. In electricity, there is a sub-type of variable-price offer called 'spot-based' (or sometimes 'spot-plus'). This sub-type of variable offer, which appeared in seven European countries at the end of 2015, is shown separately in our analysis under 'spot-based offers'.

57 Compared to 2014, the share of fixed-price electricity offers increased in Vienna, Berlin, Tallinn, Madrid, London, Rome and Zagreb, while the share of fixed-price gas offers in total offers at the end of 2015 increased in Vienna, Brussels, Prague, Berlin, Madrid, Rome and Gothenburg.

Figure 12: Overview of the selection of differentiating elements in electricity and gas offers depending on the number of years since market liberalisation in Europe – 2013–2015

Electricity

MS	Number of countries	Years since liberalisation	Year	Average number of offers	Average number of offers per supplier	Percentage of spot-based offers	Percentage of green offers	Percentage of offers with additional services	Average switching rates
Group I	3	≤5	2015	1	1	0%	0%	0%	0.0%
			2013	1	1	0%	0%	0%	0.0%
Group II	17	5≤10	2015	↑ 33	↑ 2.7	↑ 3%	↓ 15%	↑ 9%	↑ 4.6%
			2014	23		0%	20%	7%	5.3%
			2013	20	2	0%	17%	2%	4.4%
Group III	9	>10	2015	↑ 191	↑ 3.4	↑ 10%	↑ 46%	↓ 7%	↑ 9.9%
			2014	181		8%	37%	8%	9.6%
			2013	127	2.8	7%	33%	10%	9.8%

Gas

MS	Number of countries	Years since liberalisation	Year	Average number of offers	Average number of offers per supplier	Percentage of spot-based offers	Percentage of green offers	Percentage of offers with additional services	Average switching rates
Group I	4	≤5	2015	↑ 4	↑ 1.4	0%	0%	↑ 5%	↑ 6.0%
			2013	3	1.3	0%	0%	0%	0.0%
Group II	15	5≤10	2015	↑ 21	↑ 1.9	↑ 1%	↑ 7%	↑ 7%	↑ 5.2%
			2014	14	1.7	1%	3%	2%	4.4%
			2013	10	1.6	0%	5%	0%	4.9%
Group III	7	>10	2015	↑ 73	↑ 2.9	↑ 4%	↑ 19%	↑ 21%	↑ 9.5%
			2014	63	2.6	2%	20%	20%	10.4%
			2013	59	2.7	0%	6%	11%	8.8%

Source: ACER Retail Database (2016).

Note: Average values are presented for each indicator for the three groups in question. For electricity, the following MSs are included in Group I: Bulgaria, Cyprus and Romania; Group II: Belgium, Croatia, the Czech Republic, Estonia, France, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Poland, Portugal, Romania, Slovakia, Slovenia: and Group III: Austria, Denmark, Finland, Germany, Great Britain, Ireland, the Netherlands, Norway, Spain and Sweden. For gas, Group I consists of Bulgaria, Greece, Latvia and Portugal; Group II: Belgium, Croatia, the Czech Republic, Estonia, France, Hungary, Ireland, Lithuania, Luxembourg, Poland, Romania, Slovakia, Slovenia and Sweden: and Group III consists of Austria, Denmark, Germany, Great Britain, Italy, the Netherlands and Spain.

56 Capital cities of countries with a longer gas market liberalisation history also showed in 2015 a higher number of gas offers on price comparison tools than other capital cities, 4% of which were spot-based and almost a quarter of which were green (Figure 12). The switching rates of gas households in these countries was almost 10% (as opposed to 5% in capital cities in which gas markets were liberalised between five to ten years ago). The 6% switching rate for Group I is fully driven by Portugal which has high switching rates (e.g. of 24% in 2015). Excluding Portugal, the result would drop to zero.

57 Electricity and gas offers with additional free-of-charge and/or payable services (Figure 12) are present in capital cities in most of the markets, the only exception being electricity markets that liberalised less than five years ago[58]. At the end of 2015, offers with additional services frequently appeared in the price comparison tools in Copenhagen, Lisbon, Madrid, Paris, London and Warsaw. In Rome and Prague, additional services were offered to gas consumers. Typically, these additional services may be free online and telephone assistance, membership of the suppliers' exclusive clubs, supermarket points, charity donations, boiler and electrical equipment maintenance, as well as free services, which are offered together with electricity and/or gas in Europe.

58 In all groups, except in capital cities of countries which liberalised their electricity markets more than 10 years ago, the share of offers with additional charge-free or payable services, increased.

4.2 Effect of regulation on the offers on price comparison tools

Case study 1: The effects of the regulatory change on the Norwegian price comparison tool

In 2015, a new and improved price comparison tool (PCT) was launched in Norway, following the implementation of new regulation under the Energy Act which obliged electricity retailers to report all of their offers in the PCT rather than only a selection of them. The PCT was developed by the Norwegian Consumer Council (Forbrukerrådet) on mandate from the Norwegian government, in close cooperation with the Norwegian Water Resources and Energy Directorate (NVE).

The new PCT has significantly improved the ability of Norwegian consumers to compare electricity offers, by presenting all electricity offers available in the market through a user-friendly web-site called Strompris.no.

Background

Forbrukerrådet's new PCT replaced a previous, publicly-run PCT, which had outdated reporting criteria and design, and as a result displayed only a limited number of the offers available in the market. In many cases, retailers chose to meet the reporting obligation only for their cheapest offers, while leaving more expensive offers out of the tool. This resulted in information asymmetries regarding the prices offered by retailers and put consumers at a disadvantage.

A study of market efficiency commissioned by NVE found that 62% of consumers were on contracts that were not available through the previous PCT, and that these contracts were on average more expensive. As consumers were suffering from insufficient comparability and transparency, this adversely affected market efficiency. Moreover, price statistics collected by a number of institutions, e.g. NVE, the national statistical bureau etc., were based on prices that were not representative of what most consumers were paying.

New regulation for the Price Comparison Tool

In 2014, NVE received a mandate from the Norwegian government to develop a new regulation for reporting electricity contracts under the Energy Act for use in the new PCT. With this mandate, NVE has become directly responsible for defining the reporting criteria for the new PCT. The guiding principle of the new regulation was that all retail contracts in the market must be reported, including contracts no longer offered. The new regulation was adopted by the Ministry of Petroleum and Energy, and entered into force on 1 April 2015. NVE will follow up on the regulation by formally supervising the reporting requirements and, when necessary, NVE will be able to set further requirements on the content, form and extent of the reporting in the PCT.

Stakeholder concerns with regard to the new tool

The stakeholders which were consulted throughout the design phase raised some key concerns with regard to the possibility for retailers to define new offers and price structures when deciding on definitions for reporting purposes. For example, retailers were concerned that all individually-concluded agreements with consumers on the basis of an offered price would have to be reported on separately in the tool, as the burden of reporting would limit their ability to offer individual pricing to their customers. NVE balanced these concerns with the need for comparability in the PCT, allowing individual pricing (depending on consumer specifics) within each offer.

Design

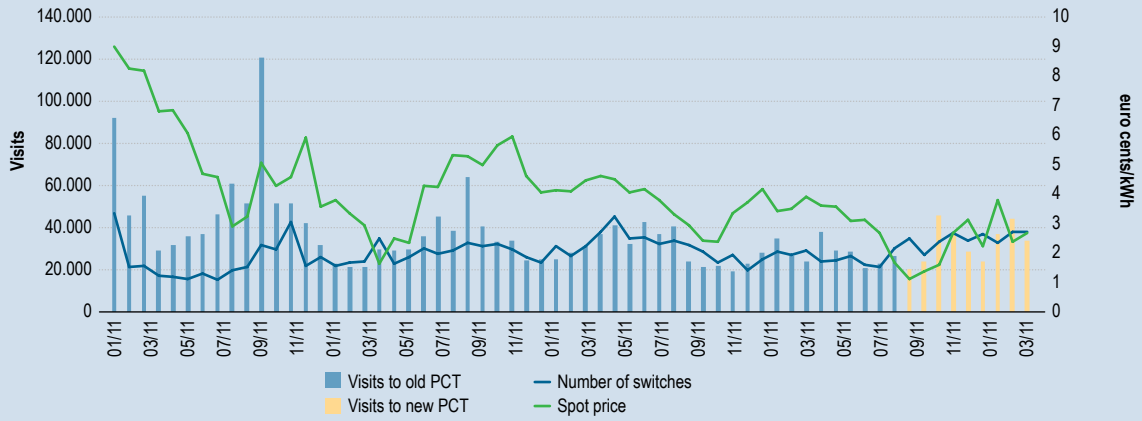
Forbrukerrådet designed the new PCT, having in mind its user-friendliness, enabling consumers to receive a ranking of offers by entering their address and consumption volume in the PCT. The default offer type listed are spot-price offers, linked to the day-ahead wholesale price within the relevant bidding zone in Norway. Consumers can also choose to view rankings of fixed-term fixed-price offers, variable price offers where retailers adjust

the price, or other offers. Offers are ranked according to the expected total monthly price for the consumer, including the network tariff cost.

Comparison of switching and visits between old and new price comparison tool

Forbrukerrådet's new PCT has increased transparency in the retail market and improved the ability of Norwegian consumers to compare electricity contracts. There was a slight increase, of three percent, in the number of annual switches from 2014 to 2015. A first attempt has been made to analyse whether the introduction of the new PCT has had an effect on the number of switches and number of visits to the PCT. The figure below indicates that the launch of the new PCT has not resulted in a noticeable change in the number of switches and visits to the PCT. The overall impact on the market of the new PCT requires further analyses when longer time series become available.

Figure (i): The number of switches before and after the introduction of the new tool – 2015–2016 – Norway

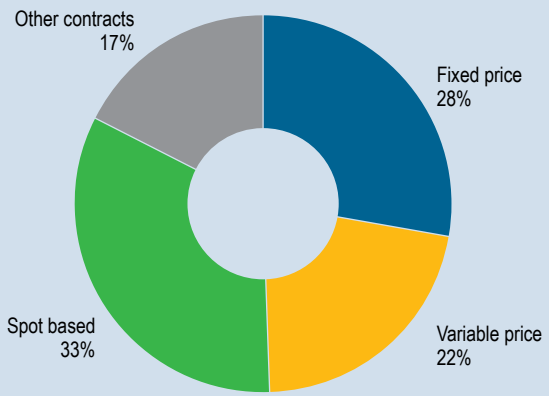


Source: NVE (2016).

Type of energy pricing of offers in the price comparison tool

The contracts offered in Forbrukerrådet's PCT in the period from July 2015 to March 2016 are divided into four main categories (Figure ii). Spot-based offers, i.e. wholesale-based energy pricing; fixed-term, fixed-price contracts; variable price contracts and other offer types of contracts.

Figure (ii): Share of offers according to the type of energy pricing – 2015–2016 – Norway



Source: NVE (2016).

5 Dynamic pricing in the European household segment

Chapter summary

This Chapter presents the state of play in dynamic pricing in Europe (Section 5.1). Dynamic pricing refers to end-user prices that to a varying degree reflect the marginal network costs and/or generation costs of energy which is normally purchased in the wholesale market. However, dynamic pricing has many applications according to the granularity of consumption metering and the dynamic nature of Time-of-Use Tariff (ToU). Furthermore, this Chapter identifies the key barriers to introducing dynamic pricing in supply and network tariffs for household energy consumers (Section 5.2).

Considering all dynamic pricing applications there is significant variation in the penetration of dynamic pricing among household electricity consumers in Europe. Dynamic pricing is more frequently applied in the supply of energy than in network charges. As for gas, dynamic pricing is virtually non-existent, due to the storability of gas and, compared to electricity, the lower probability of peak prices.

Several reasons hamper the penetration of dynamic pricing. Consumers' weak motivation is an important one and explains why investments in and use of devices that are needed to have an automatic response to dynamic pricing are limited. The underlying reasons for the weak motivation include consumers' limited awareness of the possible benefits of dynamic pricing, the perception of insufficient savings to be made and the actual low savings to be made today from demand response, which are due to the currently low volatility of electricity and gas wholesale prices.[59] Furthermore, the increasing presence and popularity of fixed contracts among household consumers in several European countries suggests that consumers might prefer stability in pricing (fixed-price contracts) over a financial reward for adjusting their consumption at times of system scarcity when prices peak (i.e. dynamics in the pricing options available to them).

The experience of the MSs in which deployed smart meters are owned by Distribution System Operators (DSOs) shows that the cost of enabling technologies required to send price signals and to assist automated DR for household consumers is a further barrier. In addition, concerns have been expressed, including by some NRAs regarding the adverse social redistribution effects that dynamic pricing could have on certain consumer categories in the household segment (e.g. large families or vulnerable consumers).

Extensive research has been conducted by some MSs on household consumer response, followed by a limited number of pilot projects to test dynamic pricing in the field. From this rather fragmented experience with implementing DR it is not clear what the true value of DR is for society. In order to foster DR by household consumers, all players involved (DSOs, suppliers, technology providers and NRAs for both the energy and telecom sectors, as well as consumer organisations) will have to clearly state the procedures, assess the benefits and evaluate the risks related to dynamic pricing.

58 The provisions on demand-side flexibility in EU legislation[60] tasks NRAs with encouraging demand response in order to obtain its potential benefits. These include the optimised use of generation, transmission and distribution infrastructure, increased efficiency of the energy system and greater integration of intermittent RES into the energy system.

59 Demand response (DR) can be implicit or explicit. Implicit DR, which is the focus of this Chapter, is to be understood as voluntary changes by end-consumers in their usual electricity consumption patterns in response to short-term (day-ahead and intraday) market signals. Explicit DR means that consumers (on their own or through

59 MSs are required to ensure the implementation of smart metering under EU energy market legislation in the Third Energy Legislative Package (the 3rd Package). The deployment of smart meters is usually subject to a long-term cost-benefit analysis (CBA). Where CBA is positive, there is a roll-out target of 80% market penetration for electricity by 2020. Several NRAs have – over the past years – assessed the roll out of smart meters by performing a CBA.
For more information, see the EC Benchmarking report COM(2014) 356, highlighting – among others - the countries which had decided to roll out smart meters for electricity and gas towards the 2020 target: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0356&from=EN); the New Deal for Energy Consumers
COM(2015) 339 final: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52015DC0339&from=en), as well as general information on the progress of SM deployment process: http://ses.jrc.ec.europa.eu/smart-metering-deployment-european-union.

60 Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity – repealing Directive 2003/54/EC (OJ 2009 L211/55) and Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency (article 15.8), and amending Directives 2009/125/EC and 2010/30/EU, and repealing Directives 2004/8/EC (OJ 2012 L315/1).

"aggregators") are rewarded for their willingness to change their demand for electricity at a given point in time, usually in response to a specific system operators' request.

60 Dynamic prices facilitate DR, as, to varying degrees, they reflect marginal generation costs of energy and/or network costs. As such, consumers have an incentive to change their consumption in response to time-based price signals.

61 Building on the results of previous work[61] on DR, in spring 2016 the Agency conducted a survey among NRAs on the state of dynamic pricing for household consumers in EU MSs. The aim of the survey was to collect information on the status (as of December 2015) of dynamic pricing in European countries, as well as to identify the key barriers to its introduction to households. The following section summarises the key findings.

5.1 State of play of dynamic pricing in the EU MSs

62 Dynamic pricing in electricity and gas supply (and network[62]) tariffs refers to electricity and gas final prices that pass through at least part of the wholesale price volatility (and network costs at peak demand of the relevant network) to the end consumer. Several methods of dynamic pricing exist, depending on two main factors: (i) the granularity of the period during which consumption is metered separately, and (ii) the dynamics/statics of ToU prices. The impact on consumers (who can be rewarded for adapting their energy consumption to price signals, but can also be penalised if they continue to consume at peak times) depends on the combination of these two factors, i.e. "dynamic pricing application", for instance:

a) "static ToU" is a dynamic pricing application in which fixed time bands are set and the price for each time band reflects the average wholesale price in the time band (low granularity-low dynamics). Although less common, a high granularity-low dynamics application is possible, where hourly consumption is priced at monthly average prices;

b) "critical peak pricing" is a dynamic pricing application in which a higher price is charged in limited periods when the consumption peak at the system level occurs (low granularity-high dynamics); and

c) "real-time pricing" is a dynamic pricing application in which the price is posted in real time and communicated to the consumer (high granularity-high dynamics).

63 Figure 13 lists the most commonly applied dynamic pricing methods for supply and network charges in Europe from the least (Time-of-Use Tariff (ToU)) to the most detailed granular method currently applied (real-time hourly pricing based on hourly metering).

64 It is worth mentioning that distribution dynamics (related to network) are different from system dynamics (related to supply), but they can interact, which makes it challenging to expose consumers to the correct cost-reflective price signals. Under some specific conditions, market and network signals might even be contradictory, sending mixed messages to consumers to reduce their consumption based on the local distribution network congestion, but to increase consumption due to low supply prices. Operational and technical conditions must be met by the DSO, who knows the real usage of network nodes, to ensure that consumers incur the cost of the specific peak at the specific transformer for the concerned consumption node. Therefore, coordination challenges may arise.

61 See the MMR of 2013, section 2.4.3 on demand-side flexibility (http://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2014.pdf) and the CEER paper entitled 'CEER Advice on Ensuring Market and Regulatory Arrangements Help Deliver Demand-Side Flexibility', June 2014 (http://www.ceer.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab3/C14-SDE-40-03_CEER%20Advice%20on%20Demand-Side%20Flexibility_26-June-2014.pdf).

62 In this chapter, which covers dynamic pricing to residential consumers, 'network tariffs' mostly refer to distribution tariffs.

Figure 13: Most commonly applied methods of dynamic pricing for electricity and gas supply and network charges

Granularity of DP	Supply	Network
	A time-of-use tariff (ToU) is a price determined in advance which varies by time of day, day of week and/or season of year. It is: • seasonal if it charges different prices at different times of year; • day/night price if it charges different prices depending on the time of the day; • on & off peak if it charges a higher price during times regularly expected to have higher/ lower than usual demand (e.g. weekday early morning, evenings/ weekday midday)	
	A critical peak price/tariff is a price which is higher during a short period which represents the critical peak in consumption	
	Other method of dynamic pricing supply price/tariff, which includes spot-based pricing to consumers on the basis of monthly spot-exchange prices	A dynamic network pricing method combines and defines capacity and energy component according to different pricing arrangements.
		Interruptible network tariff options provide for the option to control a predefined amount of load in return for a lower network tariff.
	A real-time price/tariff is a price that is posted in real time (typically at least hourly) and communicated automatically to the customer as it changes. Hourly real-time electricity/gas supply pricing can be based on hourly metering, whereby consumers pay the wholesale price at the time of consumption.	

Source: ACER (2016).

Note: Hourly real-time pricing can also be based on estimated consumption profiles by individual suppliers, whereby day-ahead hourly prices for each day of the metering period are multiplied by a standard hourly demand profile. Such pricing does not require smart meters and is not considered in the above figure.

65 Based on the definitions of Figure 13, Figure 14 shows that, in electricity, ToU pricing is applied in 17 out of 22 countries whose NRAs responded to the questionnaire. Even though the most commonly applied type of ToU is a day/night differentiation, in some countries the number of time periods of ToU tariffs is higher (e.g. in Italy[63], three time periods are set).

66 Currently, hourly real-time pricing for the supply of electricity is used in only five European countries: Estonia, Romania, Spain Sweden and the UK. Between 25% and 50% of all households in Estonia and Spain incur their supply charges based on hourly pricing[64].

67 Other dynamic pricing methods apply to a large electricity household base in three countries, Denmark, Norway, and Sweden. There, electricity consumers most often incur spot-market-based pricing through the monthly average wholesale price[65]. In this context, Chapter 4 shows that the number of spot-based electricity (and gas) offers on price comparison tools increased over the past two years, for example in Copenhagen, Helsinki, Oslo and Stockholm. In addition, at the end of 2015, spot-based offers first appeared for household consumers in three capital cities (Madrid, Tallinn and Vienna).

68 Real-time pricing and critical peak pricing applies to a smaller proportion of households in the UK, Lithuania, Portugal[66], Romania and France.

69 Similarly to the supply of electricity, ToU is the most common type of dynamic pricing for electricity network charges, applied in 15 out of 22 countries whose NRAs responded to the questionnaire (Figure 14, right-hand panel, first row in the legend i.e. pink colour tones). Other methods exist across Europe, which are in the early implementation stage (Figure 14, different colour dots in the right panel).

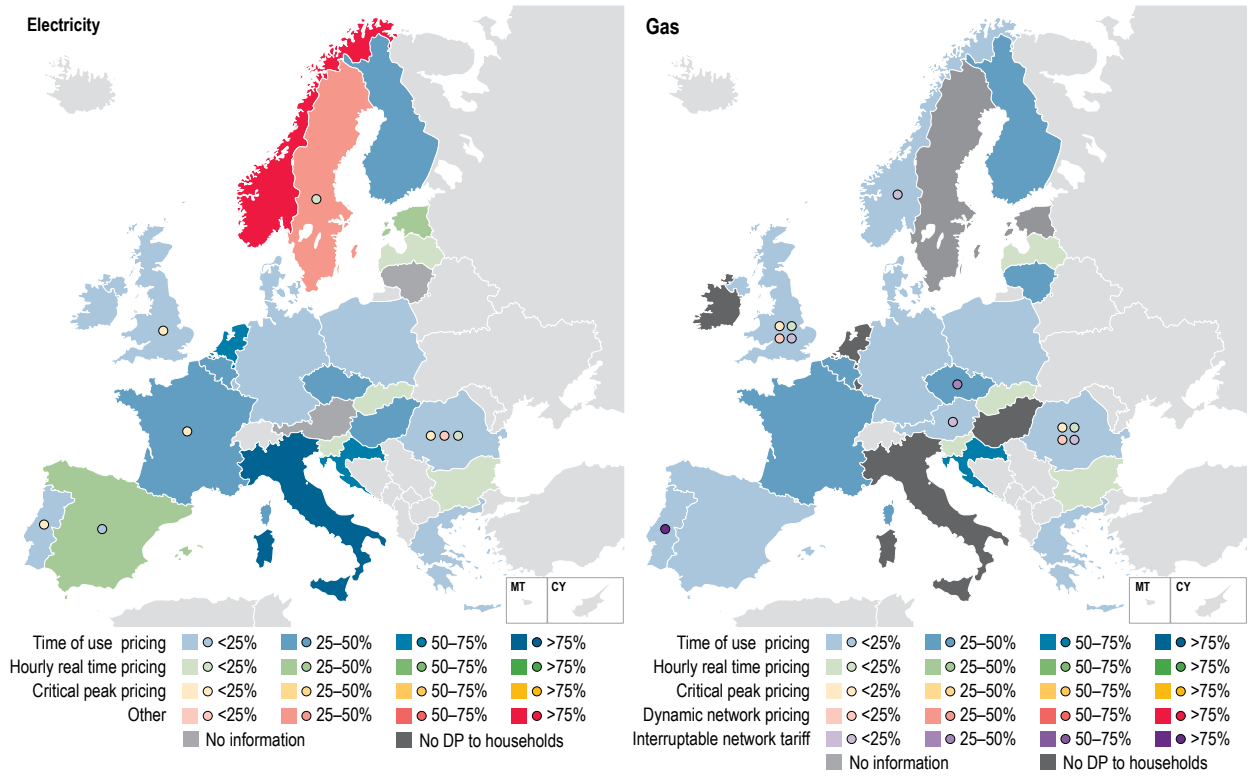
63 In Italy, all low-voltage consumers (both household and business) are mandatorily exposed to ToU pricing if they do not choose a free-market supplier.

64 Since October 2015, Spanish household consumers on Precio voluntario al pequeno consumidor (PVPC) who are equipped with smart meters are billed based on metered hourly consumption. For more details on PVPC, see Case study 3 in last year's MMR.

65 The average monthly wholesale price, which represents the basis of the price for the supply of electricity, can be provided as the average wholesale price of the previous month, or a forecast of the average price. With the current low deployment of smart meters, no hourly consumption is recorded and consumers are billed on a monthly basis. In Denmark, consumers pay for electricity upfront and face subsequent corrections to reflect the real price paid by suppliers on the spot market as opposed to the forecast price. The suppliers' mark-up is added to the wholesale price.

66 In Portugal, some suppliers have recently started to offer products which include real-time pricing based on estimated consumption profiles. The estimated number of household consumers on these products is minimal. Dynamic tariffs projects are expected to start in 2017 for the supply tariffs of electricity in the Azores and Madeira and for the network tariffs in continental Portugal, both initially to industrial consumers.

Figure 14: Share of standard household consumers supplied under dynamic pricing for supply and network charges of electricity in EU MSs – 2015 (%)



Source: ACER Questionnaire on dynamic pricing (2016).

Note: Countries are coloured according to the dynamic pricing method which is the most representative. The coloured dots represent additional dynamic pricing methods which also appear in a country. For example, in Spain 25 to 50% of households incur hourly real-time pricing. However, ToU also applies in supply to less than 25% of electricity households. The Figure does not list pilot projects which are currently ongoing in the MSs. In Belgium, information has been aggregated and may differ for the three regions (Flanders, Wallonia and Brussels). No information could be provided for the network tariffs in Sweden, as the data collected by the NRA are based on exit points rather than household consumers (one exit point can represent several household consumers). 'Other' in Denmark and Norway refers to spot-based pricing to consumers on the basis of monthly spot-exchange prices.

70 Due to the storability of gas and thus subdued volatility of gas prices in recent years (Section 4.5.3 of the Gas Wholesale Market Volume), dynamic pricing is less relevant for household gas consumers than for electricity consumers[67]. Meter readings are usually performed on a bi-annual or annual basis (for households with lower consumption). The survey reveals that ToU pricing for the supply of gas is available only to households in the Netherlands[68]. ToU network tariffs are applied to gas household consumers in Romania.

67 Greater differences between the European gas markets exist in terms of the level of development of wholesale markets than for electricity markets. In addition to this, gas suppliers tend to rely more on prompt and forward products than on spot gas products. See Chapter 4 of the Gas Wholesale Market Volume to read about a supplier's sourcing portfolio.

68 Several NRAs were unable to provide information on the status or percentage share of household consumers who incur dynamic pricing for the supply of gas.

5.2 Barriers to introducing dynamic pricing for household consumers

71 This section presents the key barriers to the introduction of dynamic pricing, which facilitates DR. These barriers have been identified on the basis of the views expressed by NRAs, several of which have gained experiences in the field with introducing DR in their MSs, for example through SM roll-out programmes, CBA, DR-relevant research, pilot projects etc.

72 The Agency has not been able to accurately assess the benefits which could be delivered from the removal of the identified barriers. For example, the Agency cannot estimate to what extent DR would yield a social welfare benefit, if consumers were very responsive to price signals and the most advance technology were in place.

5.2.1 Electricity

73 In electricity supply, unawareness and lack of consumer motivation[69,70] (Figure 15) to react to dynamic pricing, as well as the still limited availability of enabling technology (including smart meters), are the key underlying reasons why this type of pricing in electricity is not introduced in many MSs.

74 The lack of consumers' engagement results from the widespread perception that the savings to be made from DR are limited, mostly due to the current low price volatility[71]. Electricity consumers' motivation is expected to be higher in countries where electricity is preferred for thermal use (i.e. heating, cooling, production of hot water etc.). Moreover, price volatility – if existing – would not be able to be passed through to the customers, as long as they are supplied on the basis of standard load profiles.

75 Furthermore, as shown in Chapter 4, the increasing presence and popularity of fixed contracts among household consumers in several European countries suggests that consumers might prefer stability in pricing (fixed-price contracts) over a financial reward for adjusting their consumption at peak times (i.e. dynamics in the pricing options available to them)[72].

76 The still limited availability and the associated costs of smart meters and other enabling technology[73], such as controlling devices for household appliances and electricity price communicators, which provide accurate information, allowing consumers to make more informed decisions and adapt their behaviour[74] without having to follow the price signals and manually operate electrical appliances in their household to avoid high costs, also represents an important factor.

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69 For further information, see the reports from the following two projects, which analysed the structural and non–structural factors influencing household consumption patterns: NATCONSUMERS, http://natconsumers.eu/about-us/downloadspublic-reports/; and geographical differentiations of consumers' attitudes to active demand; ADVANCED, http://www.advancedfp7.eu/, as well as http://natconsumers.eu/?wpdmdl=1272).

70 While several NRAs are aware that consumer perceptions of saving potential and preference could act as a barrier to dynamic pricing, only a few of them have conducted studies to show the low savings brought about by dynamic pricing. In Flanders, for example, a study (Trilations, commissioned by Eandis and Infrax, 2013, POC II Smart Metering: Energie-Efficiëntie – Resultaat verbruik, available at https://www.infrax.be/nl/over-infrax/energiesector/project-slimme-meters) of energy-efficiency with smart meters (for example, the lasting savings effect on indirect feedback of household consumption) found that consumers could expect only 3.4% in lasting savings for electricity and 0% for gas. In Germany, similar studies were conducted on for the Federation of German Consumer Organisations, vzbv (http://www.wik.org/fileadmin/Studien/2015/Auswirkungen-variabler-Stromtarife-auf-Stromkosten-Haushalte-WIK-vzbv-November-2015.pdf and http://zap.vzbv.de/2e90d180-8aad-4101-83be-40f87bd7a886/Akzeptanz-variable-Stromtarife_Umfrage-Forsa-vzbv-November-2015.pdf).

71 Exceptions exist. For example in Italy, overcapacity due to RES developments, also entails higher volatility in system prices, due to a different RES availability in daytime.

72 In Flanders and Italy, trends show a higher number of switches to fixed-price contracts. In Flanders, the share of electricity consumers on variable contracts fell from approximately 50% of all electricity households in 2012 to 30% in 2015, while in gas it fell from more than 80% in 2012 of all gas household consumers on variable contracts to 56% in 2015. In Italy, one out of two consumers in the free retail market opt for a flat price as opposed to the ToU.

73 Smart appliances are in the very early stages of diffusion among households, as they are still very expensive and based on non-standardised communication protocols. In the past few years, industrial alliances were created to work on the development of standard protocols and programming languages (e.g. www.energy-home.it), in order to accelerate the spread of automation to households and enable appliances from different vendors to connect with each other and respond to signals from the user, the smart meter or the cloud (e.g. price signals provided by the energy supplier).

74 In Belgium, several suppliers have launched a 'Home Energy Management System' scheme, which enables consumers to view and control their consumption.

77 These key factors (i.e. low consumer engagement due to the insufficient savings to be made, high cost of smart meters and other enabling technology) are considered to have influenced the results of the CBAs on smart meter deployment[75] in many MSs. On the basis of the CBA results in these countries, the deployment of smart meters – which is a necessary, albeit not sufficient, technology for DR – was put on hold[76]. As a result, the application of implicit DR is limited.

78 NRAs express a concern that consumers' individual social circumstances may limit their ability to adapt their energy consumption. Factors such as the level of income per family member, high thermal use of electricity (electricity as the heating type), dwelling type (block of flats or a house), household vulnerability[77] etc. might influence households' flexibility and increase their fears of peak pricing[78] with possible unintended distributional effects. These social circumstances considerations are an additional challenge in developing policy in support of DR.

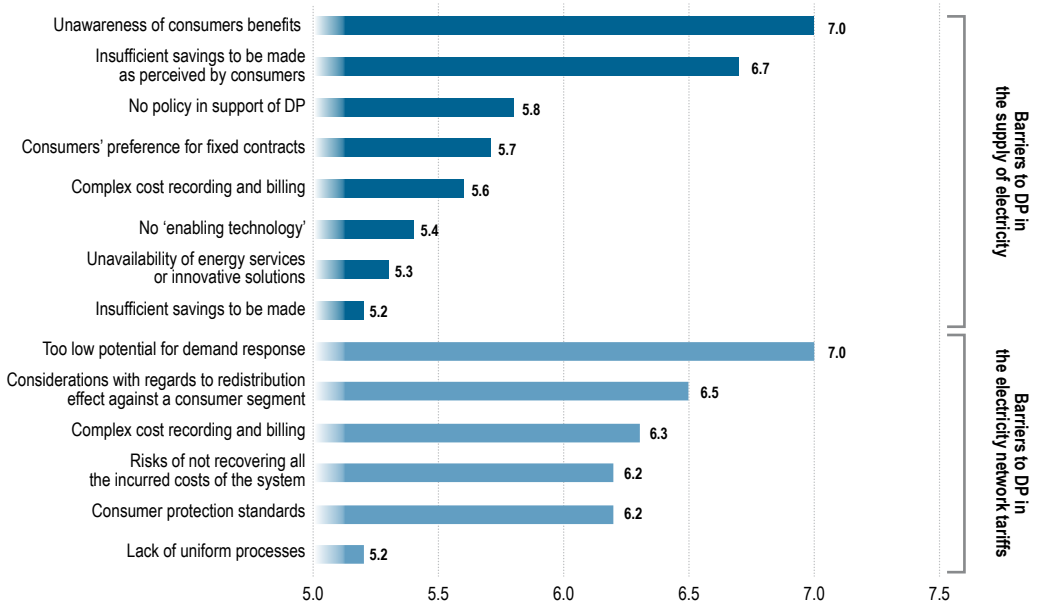
75 To varying degrees, smart meters are currently available in 14 MSs for electricity household consumers (Figure 22 in the Consumer Protection and Empowerment volume) and in four MSs for gas household consumers.

76 In some MSs, SM deployment is still incomplete, with the first roll-outs of smart meters being still in progress. In some other MSs, however (for example, Italy, the UK, Spain, Sweden for electricity), second and third smart-meter generation roll-outs are taking place. These smart meters will increase the granularity of consumption data (i.e. hourly, half hourly or quarter-of-an-hourly data registration) and resolve some interoperability issues which are expected to arise. In the UK, for example, SMETS 1 meters, which are yet to be integrated in the centralised body's system, may not operate in 'smart mode' when a consumer switches supplier. When consumers with a SMETS 1 meter switch supplier, the new supplier may be unable to obtain a remote reading from the smart meter installed by the previous supplier if they use a non-compatible system.

77 Lower income consumers may not be able to afford smart appliances and not all consumers will be able to use energy at low-cost times.

78 With dynamic prices, scope for adapting consumption at peak prices may be considerably limited for a certain type of household. A large family with young children, for example, cannot afford to switch electric heating off in their home in winter, at least not as much as an adult-only household can. As such, large families would carry a large part of the cost of the electricity delivered at peak price, and may – due to this, be forced to opt out from a dynamic price to avoid the risk of being stranded with a peak price.

Figure 15: Underlying barriers to dynamic pricing in electricity supply and network tariffs to household consumers in a selection of EU MSs, ranked by average of all repsondents – 2015 (1 = not at all important, 10 = very important)



Source: ACER Questionnaire on dynamic pricing (2016).

Note: The respondents (NRAs) were asked to rank the barriers on a scale from 1 ('Existence of a barrier which is not at all important') to 10 ('Existence of a barrier which is very important'). The average of the rankings is presented per identified barrier. Only the key barriers are presented. Other barriers, which are not shown in the figure, include (by the falling ranking of the barrier in all MSs): the supply of electricity, considerations about redistribution effects on consumer segments, consumer protection standards, dominant incumbent supplier portfolio, limited functionalities of deployed smart meters, lack of coordination between DSOs and suppliers, data handling and protection[79], dysfunctional wholesale market and lengthy switching procedures; for the network tariffs, support of the currently applied network tariff; a lack of coordination between DSOs and suppliers; the unavailability of a central platform; insufficient/unclear/unregulated data handling and protection; and discriminatory/untimely and non-transparent access to data. In Belgium, data for some barriers differ depending on the region.

5.2.2 Gas

79 In gas supply, the underlying reasons for low dynamic pricing penetration are low gas price volatility, insufficient savings to be made by consumers and the absence of automated enabling technology to help consumers adapt their behaviour to price signals with less effort (automated controlling devices for household appliances, heating etc.). In several countries[80], these factors outweighed the benefits of smart meter deployment, which was consequently put on hold, which in turn limits the application of DR.

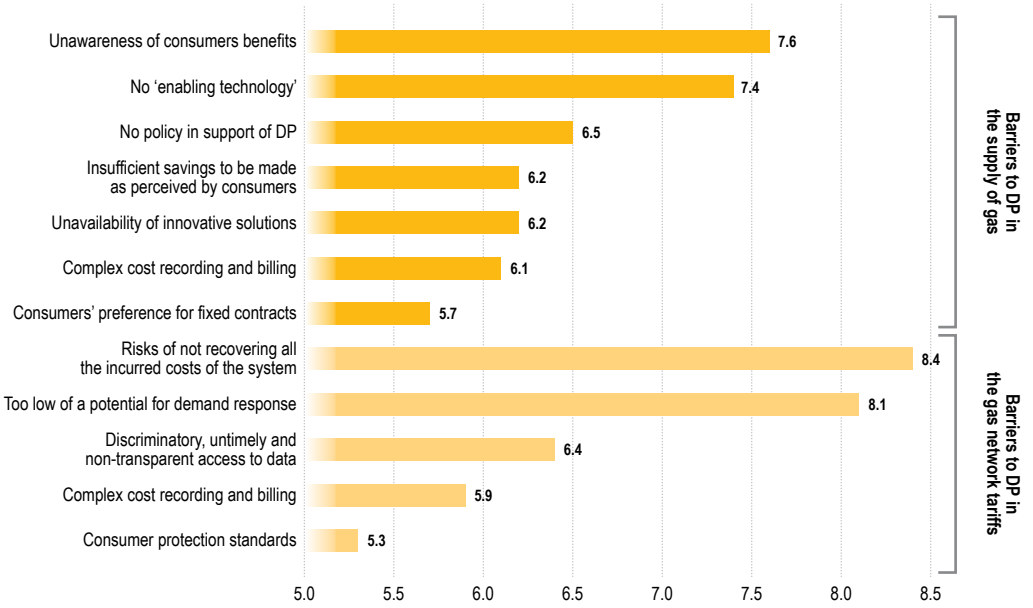
80 The key barrier to introducing more dynamic pricing in gas network tariffs in Europe is the risk that such pricing would not be able to cover all of the system costs for the supply of gas (storage, entry/exit charges etc.) while offering acceptable tariffs for consumers at peak times. In this respect it is worth mentioning that it is difficult to determine the appropriate level of dynamic network tariffs which successfully does both, i.e. provide for a sufficient revenue to cover the system costs throughout the year while providing consumers with efficient signals to react. Further, barriers to dynamic pricing in gas network tariffs include the relatively low penetration of gas to household consumers and the absence of peak loads.

79 This does not constitute a barrier in the Nordic markets, where a data hub will become operational in February 2017, covering Denmark, Finland, Sweden and Norway. The objectives of the data hub are to stimulate competition and innovation, increase transparency through data access and protection and to create efficient retail markets, where increasing amounts of data from smart meters can be sufficiently utilised. Even in countries where central data platforms exist, new challenges are expected with the introduction of dynamic pricing, such as reliability and privacy issues.

80 In particular in Slovakia, Romania, Lithuania, the Czech Republic and Poland.

81 However, experience of dynamic pricing applied to industrial gas consumers, as well as the experience gained from pilot projects currently running in Europe for gas consumers, will prove valuable[81].

Figure 16: Underlying barriers to dynamic pricing in gas supply and network tariffs for household consumers in Europe–2015



Source: ACER Questionnaire on dynamic pricing (2016).

Note: The respondents (NRAs) were asked to rank the barriers on a scale of 1 ('Existence of a barrier which is not at all important') to 10 ('Existence of a barrier which is very important'). The average of the rankings is presented per barrier in the Figure. Other barriers not shown in the Figure included (by the falling ranking of the barrier in all MSs): for the supply of gas, the redistribution effect for some consumer segments, lengthy switching procedures, consumer protection standards, a lack of coordination between DSOs and suppliers, limited functionalities of deployed SMs, data handling and protection standards and dysfunctional wholesale market; for the network tariffs, insufficient/unclear/unregulated data handling and protection standards, the unavailability of data handling solutions (central platform), a lack of coordination between DSOs and suppliers and acceptability and support of the currently applied network tariff. Due to the low deployment of smart meters, the figure does not differentiate between the results of barriers in the MSs with and without SMs.

82 In view of the above, further research is required to assess the net benefits of DR to the system. From a policy perspective it could be helpful to have this research done along the following two lines. First, it should be further assessed to what extent consumers can become responsive and what is needed to make them fully responsive. Second, even if consumers were fully responsive, the benefits would have to be sufficiently high to cover the cost of implementing DR, in which case there would be a net added value of DR for society.

81 Including interruptible tariff options to industrial consumers in Denmark.

6 Relative level of competition in retail energy markets (ARCI)

Chapter summary

Effective competition in retail energy markets requires, inter alia, a sufficient number of suppliers, rewards – in the form of monetary gains and/or better services – for consumers active in the market and simple low-cost and timely switching processes.

This Chapter presents the results of the ACER Retail Competition Index (ARCI) and its nine sub-indicators, which assesses the relative level of competition in retail energy markets at national level across EU MSs and Norway (Sections 6.1 and 6.2). According to the ARCI, the most competitive markets for household consumers in 2015 were the electricity markets in Finland, Sweden, Great Britain, Norway and the Netherlands, and the gas markets in Great Britain, Germany, Belgium, the Netherlands and Italy. This index shows weak retail market competition in household electricity markets in Greece, Bulgaria, Cyprus, Croatia and Lithuania and in household gas markets in Greece, Latvia, Lithuania, Bulgaria and Poland.

The greatest improvements in the relative level of competition between 2014 and 2015 were observed in the electricity markets of Latvia, Malta, Denmark, the Czech Republic and Germany, and in the gas markets of Germany, Portugal, Belgium, Ireland and Italy. The relative level of competition worsened in the electricity markets in Greece, Slovakia and Hungary and in the gas markets of Slovenia, Denmark, Spain and the Czech Republic (Section 6.3).

6.1 ARCI results

83 This Chapter presents, for the second year running, the results from the application of a single composite index – ARCI[82] – to the retail energy markets across the EU MSs. The ARCI assesses the relative competition performance[83] of the retail electricity and gas markets for the household segment at national level in all EU MSs and Norway.

84 The analytical framework used for this analysis is the conventional structure-conduct-performance framework that explores the evolution of a range of market competition indicators, which are separately presented in the Annex. Based on this framework, the composite index is comprised of the following representative indicators:

i) market structure indicators: market concentration ratio, i.e. the market share of the three[84] largest suppliers, i.e. CR3 (2015), the number of suppliers with a market share above 5% measured by metering points (2015), and the ability to compare prices easily (2015);

ii) market conduct indicators: average consumer switching activity, i.e. switching supplier and tariff (2011–2015), consumer inactivity, i.e. percentage of consumers who have not switched from the incumbent (2015), average net market entry (2013–2015) and the number of offers per supplier in capital cities (2015); and

iii) competition performance indicators: consumer satisfaction (does the market meet the expectations, 2015) and the average annual mark-ups (2013–2015).

82 The ARCI is based on the methodology proposed by IPA Advisory Ltd. The report is available at: http://www.acer.europa.eu/en/Electricity/Market%20monitoring/Documents_Public/IPA%20Final%20Report.pdf.

83 This document assesses only competition indicators at national level. Although the regional (several countries) and local dimension (inside a country) dimensions are also very important for a complete assessment of the level of competition in a particular country, this falls beyond the scope of this MMR.

84 For the assessment of the German retail electricity and gas markets throughout this report, the CR3 is replaced with the CR4 (market share of the four largest suppliers), because the CR3 is not available. For Germany, the number of nationwide active suppliers is replaced by the average number of suppliers for household customers in DSO networks, due to the complexity of the German network structure that contains 880 DSO networks for electricity and 714 DSO networks for gas.

85 The ARCI combines these individual indicators into a composite index by normalising and weighting the indicators before aggregating them. Where data are missing, weights for other indicators for that country are increased in order to avoid biasing the composite index downwards[85].

86 The 2015 ARCI result for household electricity and gas retail markets in each EU MS and Norway are presented in Figure 17. This figure illustrates large differences between the relative levels of competition in retail energy markets across countries. The height of the bars shows the scoring, which ranges from zero (a low level of competition) to nine[86] (a high level of competition). The differences in the coloured areas within each bar indicate the contribution of each individual indicator to the overall ARCI score, whereas the diamond shows the relative level of competition in 2014.

87 According to the ARCI, the most competitive household retail markets[87] in 2015 were the electricity markets in Finland, Sweden, Great Britain, Norway and the Netherlands, and the gas markets in Great Britain, Germany, Belgium, the Netherlands and Italy. Household energy markets that show low levels of competition were the electricity markets in Greece, Bulgaria, Cyprus, Croatia and Lithuania, and the gas markets in Greece, Latvia, Lithuania, Bulgaria and Poland. However, in addition to the differences between the overall ARCI results across MSs, the MMR also shows large differences across the three categories of indicators for each MS. For example, while Great Britain scores relatively well on the market structure indicators for electricity, Finland shows better results for the market conduct and competition performance indicators. Indeed, Great Britain seems to have a lack of consumer engagement problem, which suppliers are able to exploit by charging high prices, as concluded by the two-year investigation[88] of the UK Competition & Markets Authority.

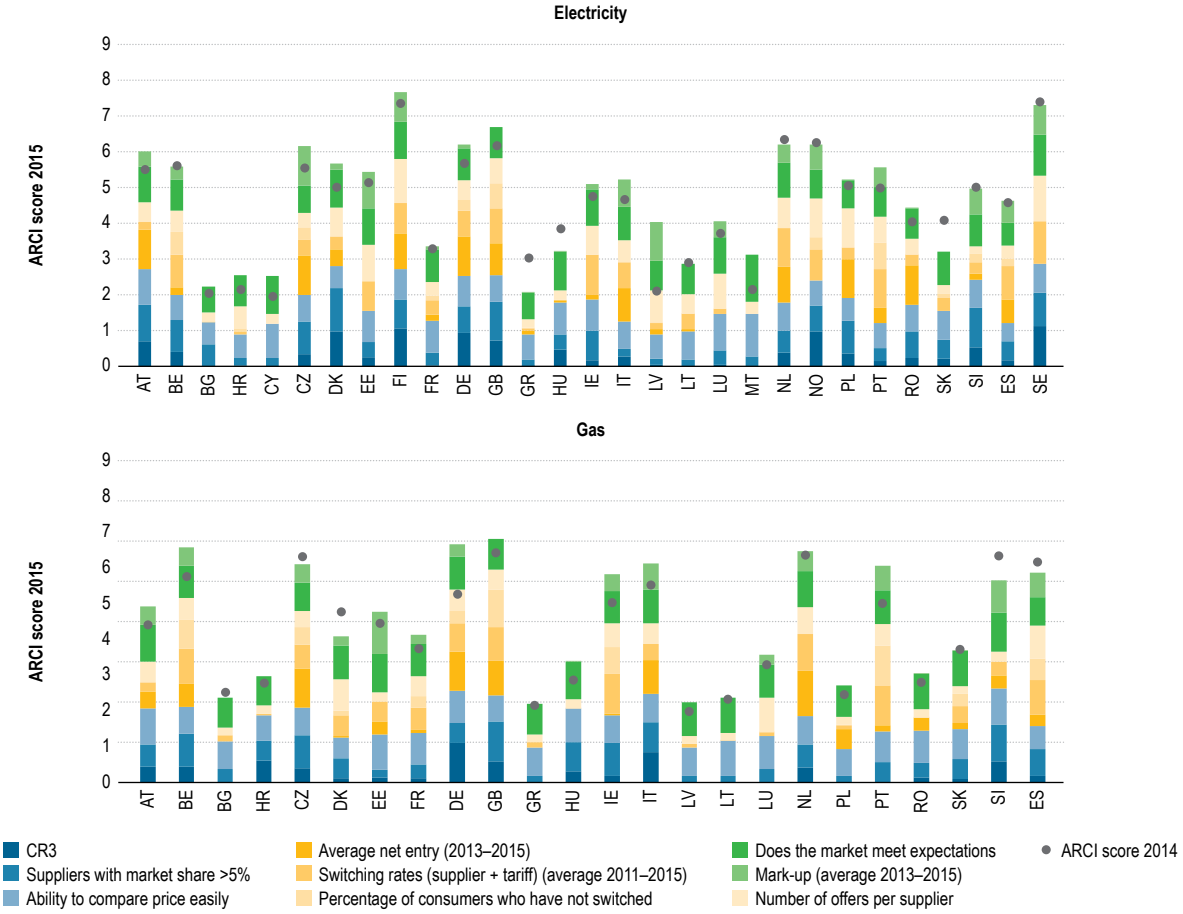
85 As with any methodology, the methodology underlying the ARCI is subject to assumptions and imperfections, which need to be considered when interpreting the results. The key caveats include the following: first, the ARCI is based on individual indicators. Any weakness in these indicators and, in particular, the underlying data will inherently bear on the ARCI results. For example, the granularity of the indicators and/or data may not sufficiently show country-specific particularities. Second, some data were missing and proxy data had to be used. Further, improvement in data availability and quality in the future will enhance the quality of the ARCI results. Third, the selection of the individual indicators may need to be expanded in the future if new important indicators become available covering relevant aspects. The Annex contains the detailed methodology for assessing the level of competition in retail energy markets through the composite index. The methodology developed for the ARCI is likely to evolve over time, because in-depth understanding of how retail energy markets function can advance, and access to better and more detailed data may render more sophisticated indicators available.

86 The maximum theoretical ARCI score can be nine, because the composite indicator is composed of nine equally weighted sub-indicators. The detailed data for each sub-indicator are normalised into a range from zero to 10.

87 This list does not exclude other MSs with relatively well-functioning retail markets.

88 In June 2016, the UK Competition & Markets Authority concluded its investigation of the retail market and found that it is working to the benefit of most consumers, but proposed a substantial reform package aimed at “resetting” the regulatory framework that governs the energy sector, i.e. clarifying and recalibrating the roles and responsibilities of the regulatory bodies and the industry “to help ensure that regulatory and policy decisions in the future are robust, efficient and timely, and driven by a concern for the interests of current and future consumers”. See: https://assets.publishing.service.gov.uk/media/576c23e4ed915d622c000087/Energy-final-report-summary.pdf.

Figure 17: ARCI indicator for retail electricity and gas markets for household consumers in EU MSs and Norway – 2015



Source: ACER Retail Database (2016), CEER National Indicators Database (2016), DG Justice and Consumers (2014 and 2016) and ACER calculations.

Note: Cyprus, Finland, Malta, Norway and Sweden are not included in the assessment of the relative level of competition in retail gas markets due to small or non-existent markets for household consumers. The colour shades within each bar indicate the category within the structure-conduct-performance framework: blue = market structure indicators, orange = market conduct indicators, green = competition performance indicators. The indicator on switching rates is composed of two sub-indicators. For the external switching rates (switching supplier), CEER data for 2011–2015 is included in this figure. For the internal switching rates (switching tariff/contract with the existing supplier), DG Justice data for 2010–2013 is included in this figure due to lacking data for 2014 and 2015. For Bulgaria, no 2015 data were submitted for electricity through the CEER database, as of 27 September 2016. Therefore, the entire electricity analysis presented in this document for Bulgaria is based on 2014 data from the CEER database, with 2015 data whenever available (Eurostat, ACER offer retail database, DG Justice and Consumers).

88 These results indicate that the best performing retail energy markets are moderately concentrated, fully liberalised, have relatively high switching rates (e.g. Great Britain and the Netherlands for both electricity and gas), a relatively high number of offers per supplier (e.g. Sweden and Finland for electricity and the Netherlands for gas), a high number of suppliers with a market share above 5% (e.g. Belgium for both electricity and gas), as well as high average net entry in the market (e.g. Germany both for electricity and gas).

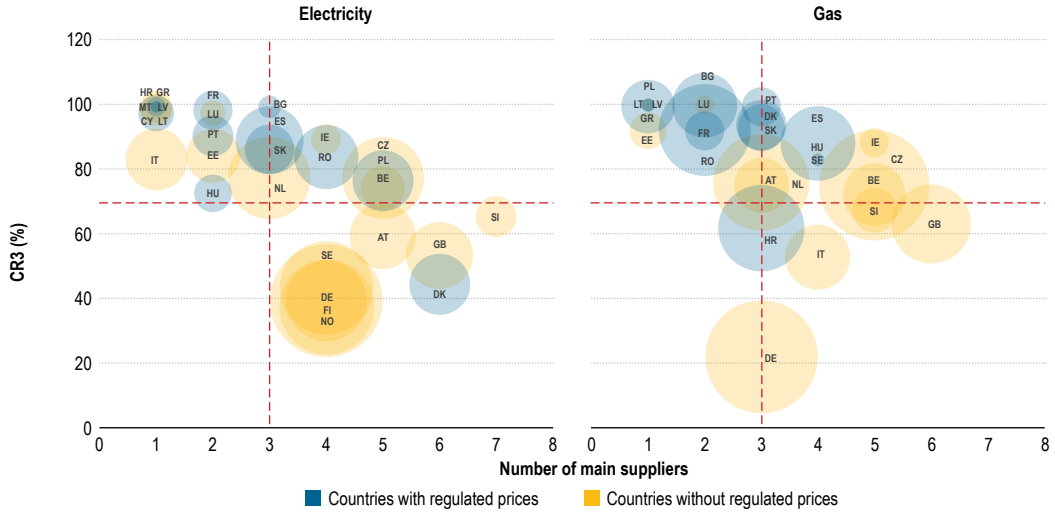
6.2 Key competition drivers

89 In 2015, on the supply side of the market, persistent high levels of retail market concentration for two thirds of the EU MSs explain the ARCI results for many of them. On average[89], the market share of the three largest suppliers (CR3) was over 78% in electricity markets and 83% in gas markets (Figure 18). Additionally, the number of main suppliers with a market share above 5% provides an indication of the degree of competition in a market. In general, a high number of suppliers and low market concentration are considered indicators of competitive markets.

90 Figure 18 shows that smaller suppliers (other than the three dominant ones) compete for more than 30% of the market only in 8 out of the 29 countries for electricity and in 5 out of the 25 countries for gas. This implies that in the remaining MSs, the market share of competitors other than the three largest ones is currently less than 30%.

91 However, even in countries where the number of suppliers seems to be relatively low and market concentration relatively high, markets may still be competitive if there is sufficient rivalry between suppliers and the opportunity for new market participants to enter the market. In a competitive market, new suppliers will enter the market if they believe the profits are sufficiently high and if there are no significant entry barriers (administrative, regulatory, legal, etc.).

Figure 18: Market share of the three largest suppliers (CR3), number of main suppliers and number of nationwide active suppliers in retail electricity and gas markets for households – 2015 (%)



Source: CEER National Indicators Database (2016).

Note: A high number of main suppliers (with market share above 5%) and low market concentration are considered indicators of competitive markets. The size of the circle represents the overall number of nationwide active suppliers in the household segment, i.e. all nationwide active suppliers offering contracts to household customers throughout the country and having at least one customer. CR4 is used for electricity assessment in Germany.

92 In 2015, on the demand side of the market, switching rates increased in both electricity and gas markets for household consumers. With an average external[90] switching rate of 6.4% and 6.7% (Figure 39 in the Annex) in electricity and gas markets, respectively, switching rates could still be seen as moderate.

89 The median in 2015 is higher than the average, i.e. 85% in electricity markets and 90% for gas markets.

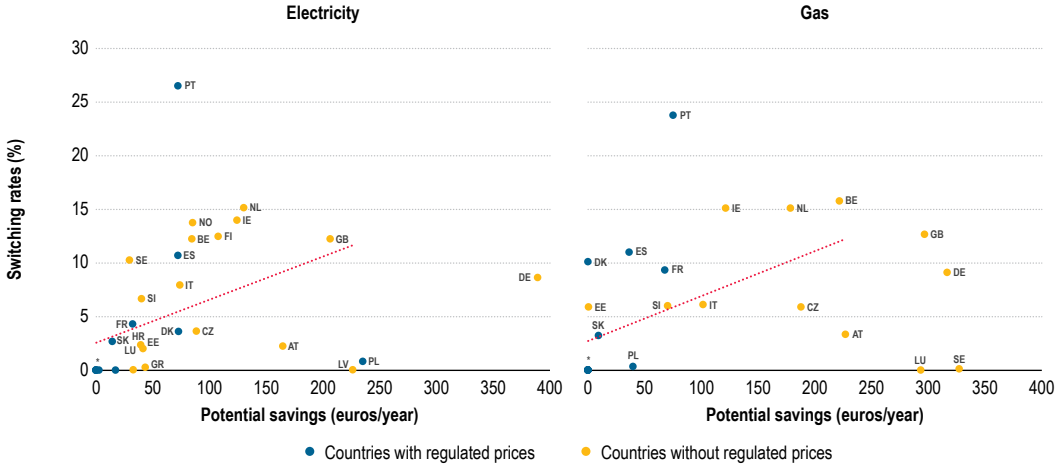
90 Switching supplier is considered as 'external' switching rate. Switching tariff (contract) with the existing supplier is considered as 'internal' switching rate.

93 Properly functioning retail energy markets rely on consumers being aware of their right to choose their energy supplier. Indicators measuring the annual switching rate between suppliers (external switching rate) or tariffs with the existing supplier (internal switching rate) in the household segment provide insights[91] into consumer participation in the retail energy market.

94 Figure 19 illustrates the relationship between switching rates and annual savings available to household consumers in capital cities[92] in 2015. In some capitals, such as Amsterdam, Brussels and Dublin for both electricity and gas, and Oslo and London for electricity, high switching rates seem to be positively correlated with significant price differentials between the standard incumbent offer and the cheapest offer available on the market. However, despite the continuous increase in switching rates over the past four years, electricity and gas consumers in Berlin[93] continue to be less price sensitive than elsewhere. Therefore, in spite of the high saving potential, switching rates were relatively low. This is also the case, but to a lesser extent, for electricity consumers in Vienna, Riga and Warsaw and for gas consumers in Vienna, Luxembourg City and Stockholm.

95 Such consumer behaviour indicates that price competition and potential savings are not the only determinants of consumer switching. In a study[94] conducted by the Agency and BEUC in 2015, beyond the perceived insufficient monetary gain from switching, the lack of trust in new suppliers and the perceived complexity of the switching process were also identified as important factors discouraging retail energy consumer from switching. Data suggest that electricity and gas consumers in Lisbon 'over-switched', i.e. switching rates were relatively high in 2015 compared to available savings. As illustrated in Case study 3 on switching rates in Portugal, this might be explained by the ongoing liberalisation process of retail energy markets in which, during the defined transition period, the NRA regulates a so-called 'transitory tariff', which may include an optional surcharge, with the objective of promoting switching to a non-regulated tariff.

Figure 19: Relationship between 'external' switching rates and annual savings available in capital cities of EU MSs and Norway – 2015 (%, euros)



Source: ACER Retail Database (2016) and CEER National Indicators Database (2016).

*Note: Observations deviating from the mean by more than two and a half times the standard deviation were excluded from the calculation of the trend line, i.e. the outliers are Germany, Latvia, Poland and Portugal for electricity and Germany, Luxembourg, Great Britain, Portugal and Sweden for gas. In this figure, only 'external' switching rates are considered. *Countries for which the data points overlap are Bulgaria, Cyprus, Hungary, Malta and Romania for electricity and Bulgaria, Croatia, Greece, Hungary, Latvia, Lithuania and Romania for gas.*

91 Other aspects of consumer switching behaviour, such as: (i) reasons for switching or not switching; (ii) consumer views on the choice of products available to them and (iii) consumer perception of the switching process, could provide a deeper understanding of what is driving the development of retail competition.

92 This analysis is based on the ACER Database on retail offers, which is available only for capital cities.

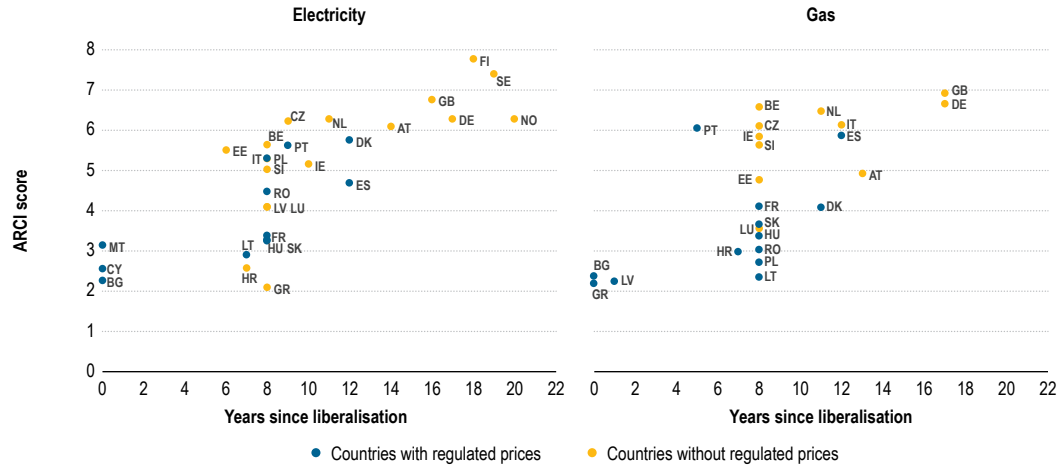
93 See also the case study on 'Switching behaviour in Germany – electricity household market' in the MMR 2014 (page 69), which shows that the number of household customers that switched electricity suppliers increased significantly in the past nine years, including a continuous increase in switching rates due to customers changing residence (relocation reasons). Moreover, the offers that can be found in PCTs and switching tools on the internet in Germany suggest that much higher savings are possible, as some suppliers sell their products exclusively through these online tools.

94 For more details, see section '2.4.2.1 Key drivers and factors preventing consumers from switching' in the MMR 2014 (page 96).

96 Moreover, the Agency and BEUC identified consumer switching behaviour[95] as one of the key barriers to the efficient functioning of retail energy markets. Despite increasing switching rates in both electricity and gas markets the percentage of consumers that have a different supplier than the incumbent is very low – less than 30% – in most MSs (Figure 40 in the Annex). The few exceptions of MSs that have a higher proportion of consumers with a different supplier than their incumbent supplier are Portugal (66%), the Netherlands (66%), Great Britain (64%), Belgium (57%) and Ireland (40%) for electricity and Portugal (77%), the Netherlands (66%), Great Britain (63%), Belgium (48%), Ireland (45%) and Spain (36%) for gas. On the one hand, a high percentage of consumers supplied by the incumbent could reflect sound market performance, if the consumer actively chose to remain with the incumbent. On the other hand, in the absence of an active consumer choice, a high percentage of consumers supplied by the incumbent could be an indication of the immaturity of the retail market, because switching away from the incumbent is the necessary first step of exercising market choice.

97 The level of competition in retail energy markets may be further explained by the time that has elapsed since market liberalisation was implemented. Figure 20 illustrates the positive relationship between the ARCI score and the years since market liberalisation and shows that the overall score tend to be higher for markets that liberalised earlier. In addition, Figure 20 suggests that competition in markets which were fully liberalised later (i.e. after 2007) developed at different speeds. Some of these markets are relatively competitive (e.g. electricity markets in the Czech Republic and gas markets in Belgium[96]). As may be expected, consumers in markets that liberalised earlier have more choice than in those that liberalised later, as presented in Section 4.1. Therefore, the maturity of markets – expressed in the number of years since liberalisation – remains one of the main factors determining the level of competition at the national level in retail electricity and gas markets for household consumers.

Figure 20: Relationship between the level of competition in retail energy markets and time since market liberalisation in EU MSs and Norway – 2015 (ARCI score, years)



Source: ACER Retail Database (2016), CEER National Indicators Database (2016), DG Justice and Consumers (2014 and 2016) and ACER calculations.

Note: The year of market liberalisation considered in the MMR is the final market opening date in the household segment. The question in the CEER/ERGEG (2010) questionnaire was: "Date of market opening: for each market segment, even if there is no clear definition of the segment, give the effective or expected market opening date".

95 See the three previous MMRs for detailed analysis on this topic. Section 2.4.2 'Consumer switching behaviour' in the MMR 2014 (page 96) contains the results of a survey of energy experts and NRAs in Europe on the topic of consumer switching behaviour, conducted jointly by the Agency and BEUC.

96 The liberalisation process of the Belgian gas retail market for household consumers started in 2003 with Flanders, while Wallonia and Brussels followed in 2007.

6.3 Key developments between 2014 and 2015

98 When comparing the ARCI scores for the retail markets from 2015 with those from 2014, significant improvements were observed in Latvia (+2.0 points), Malta (+1.0 points), Denmark (+0.7 points), the Czech Republic (+0.7 points) and Portugal (+0.6 points) for electricity, and in Germany (+1.4 points), Portugal (+1.1 points), Belgium (+0.8 points), Ireland (+0.8 points) and Italy (+0.6 points) for gas. In contrast, the ARCI scores decreased in the retail markets for household customers in Greece (-0.9 points), Slovakia (-0.8 points) and Hungary (-0.6 points) for electricity, and in Slovenia (-0.7 points), Denmark (-0.7 points), Spain (-0.3 points) and the Czech Republic (-0.2 points) for gas. The following paragraphs provide the main reasons underlying these changes for those MSs for which the Agency received sufficient detailed data and/or insights from NRAs[97], in the same order as presented in this paragraph.

6.3.1 Explaining developments in retail electricity markets

99 In most countries, the changes in the ARCI score between 2014 and 2015 for retail electricity markets were driven by dynamics in four sub-indicators: (i) number of suppliers with market share above 5% measured by metering points, (ii) average net entry, (iii) numbers of offers per supplier and (iv) average annual mark-ups. However, developments at national level vary significantly.

100 The increase in the relative level of competition in Latvia was driven by the recent liberalisation of the household segment, which was reflected in an improvement in the score for two sub-indicators, i.e. positive mark-ups in 2015 after two years of negative values[98] and an increase in the number of offers per supplier from one to four between 2014 and 2015.

101 The ARCI score increased in Malta due to the increase in two market conduct and competition performance sub-indicators, i.e. Malta scored better in 2015 for the indicator measuring the ability of consumers to compare prices easily and for the indicator measuring if the market meets consumer expectations.

102 The ARCI score increased in Denmark due to the entry into the market of four additional electricity suppliers active nationwide and due to an additional indicator, for which data were lacking in 2014, i.e. the ARCI score for 2015 includes six suppliers with market shares above 5%[99].

103 An increase in two sub-indicators led to the improvement of the score in the Czech Republic, i.e. an additional supplier with market shares above 5% measured by metering points and higher average net entries for the period of 2013–2015 than the period of 2012–2014.

104 The ARCI score for electricity increased in Portugal mainly due to higher average net entries of electricity suppliers in the market for the period of 2013–2015 than in the period of 2012–2014, due to a higher number of consumers who switched to non-incumbent suppliers in 2015 (Figure 40 in the Annex) and due to lower average mark-ups (Figure 45 in the Annex).

105 In other MSs, the ARCI score decreased. For instance, in Greece, the decrease in the relative level of competition is partially explained by higher average annual mark-ups, i.e. while the retail energy component increased, the wholesale price decreased in 2015 (Figure 44 in the Annex). This can be explained by the fact that capacity remuneration mechanism in place until the end of 2014 was not replaced by a new mechanism in 2015, as initially announced by the NRA through a public announcement (it was delayed until May 2016). As a result of these expectations, suppliers did not proceed with reductions in retail prices charged to consumers in 2015.

97 The Agency conducted a dedicated survey in 2016 among NRAs to obtain their insights into recent market changes underpinning key ARCI developments for 2015 (9 out of 28 NRAs submitted replies).

98 According to the ARCI methodology, countries that have negative average mark-ups score zero for this sub-indicator. Moreover, because low mark-ups could be the result of the application of price regulation, the ARCI corrects this by multiplying the inverse mark-up by the percentage of household consumers supplied under regulated tariffs. Therefore, Latvia improved its score for the mark-up for two reasons: 1) occurrence of positive mark-ups in 2015 that lead to a positive average mark-up for the 2013–2015 period, and 2) absence of household consumers supplied under regulated tariffs in 2015, whereas in 2014 this was 100%.

99 Consistent, adequate and complete data are vital for calculating ARCI results. The lack of reliable data in 2014 affected the ARCI result in 2015 in two MSs, i.e. Denmark for electricity and gas and the Czech Republic for gas.

106 In Slovakia, although one nationwide active supplier entered the retail market for household consumers in 2015, the average net entry was lower in the 2013–2015 period than in the 2012–2014 period, i.e. it decreased from three net entries to none (Figure 38 in the Annex).

107 The relative level of competition in the electricity market in Hungary was lower mainly due to lower average net entries in the market during the period of 2013–2015 than the period of 2012–2014 and because of the decrease in the market share below 5% of two suppliers in 2015.

108 It is worth mentioning that the overall ARCI score remained unchanged between 2014 and 2015 for some MSs, because of movements in different directions of some of the ARCI sub-indicators. For example, Austria's overall ARCI score for electricity in 2015 was relatively close to the score in 2014, but while sub-indicators elated to average net entry and ability to compare prices easily pushed the overall score up, the decline of the market share below 5% of one supplier pushed the overall score down. Similarly, Romania's overall ARCI score for electricity remained relatively unchanged between 2014 and 2015, but while two indicators pushed the overall ARCI score for electricity down, two other sub-indicators pushed the overall score for Romania up. Concretely, a higher average net entry in the 2013–2015 period than the 2012–2014 period and an increase in the average number of offers per supplier available in Bucharest had an upward effect on the overall ARCI score for electricity in Romania. At the same time, the decline of the market share below 5% of one suppliers and a higher concentration ratio CR3 had a downward effect on the overall score.

6.3.2 Explaining developments in gas retail markets

109 The changes in the ARCI score for retail gas markets between 2014 and 2015 were mainly affected by dynamics in two sub-indicators: (i) average net entry and (ii) average annual mark-ups.

110 The ARCI score for gas increased in Germany due to the amelioration in six sub-indicators. More precisely, its score increased due to higher average net entries, higher average annual switching rates, lower percentages of consumer supplied by incumbent suppliers, better scores for the indicator measuring the ability of consumers to compare prices easily and for the indicator measuring if the market meets consumer expectations, as well as due to lower average annual mark-ups.

111 In Portugal, the main sub-indicator that led to the amelioration of the level of competition in the retail gas market is the persistent high switching rate of household consumers (Case study 3 on switching rates in Portugal).

112 The improvement in the relative level of competition in the gas market in Belgium in 2015 is partially explained by the entry into the market of 12 new nationwide active suppliers. Moreover, the score for Belgium improved due to lower average mark-ups for the 2013–2015 period than for the 2012–2014 period, driven by a higher decrease in the retail energy component than in wholesale sourcing costs (Figure 46 in the Annex).

113 In Ireland, a fourth and a fifth supplier acquired market shares above 5% measured by metering points (Figure 37 in the Annex). Moreover, wider and more diverse choice was available in the market, as reflected by the average number of offers per supplier available to consumers in Dublin, which increased to three offers in 2015 (Figure 41 in the Annex).

114 The improvement in the relative level of competition in the gas market in Italy in 2015 is partially explained by the entry into the market of six new nationwide active suppliers. Moreover, a fourth supplier acquired a market share exceeding 5% measured by metering points, which increased Italy's overall ARCI score.

115 Regarding the decreased of the relative level of competition in gas markets, Slovenia's, Spain's and the Czech Republic's ARCI scores worsened between 2014 and 2015. In Slovenia, this was due to the decrease in the number of suppliers with a market share exceeding 5% (Figure 37 in the Annex) and higher annual average mark-ups in the 2013–2015 period compared to the 2012–2014 period (Figure 46 in the Annex), despite lower wholesale gas prices. Spain decreased its overall gas score mainly due to a lower average net entry in the market during the period of 2013–2015 than the period of 2012–2014.

116 For two countries, Denmark and the Czech Republic, the ARCI scores changed due to the lack of data in the analysis for the previous MMR. The ARCI indicator for Denmark would have been lower in 2014, if the information about the number of household consumers supplied under regulated prices had been available in 2014. This number is 74% for 2015 and was included in the analysis, leading to a decrease in the ARCI result[100].

117 In the Czech Republic, the decrease in the ARCI score was due to higher average mark-ups during the 2013–2015 period than in 2012–2014 (Section 7.1 and Figure 46 in the Annex). It also decreased due to an increase in the concentration ratio of the three main suppliers (Figure 36 in the Annex) between 2014 and 2015. Similar to Denmark, data for the concentration ratio was not available for the household segment in 2014. Instead, proxy data were used for the whole retail market in 2014, i.e. including industrial and household consumers, which might have led to an overestimation of the score for this sub-indicator in the previous report.

118 Similar to electricity, it is worth mentioning that the overall ARCI score for gas remained unchanged between 2014 and 2015 for some MSs, because of movements in different direction of some of the ARCI sub-indicators. For example, Great Britain's overall ARCI score for gas remained unchanged between 2014 and 2015, but higher annual average mark-ups during the 2013–2015 period than in the 2012–2014 period pushed the ARCI score down, while higher net entry in the retail market during the same period pushed the overall score up. Similarly, Slovakia's overall ARCI score for gas remained unchanged between 2014 and 2015, but the overall score decreased in 2015 mainly due to lower average net entries in the 2013–2015 period than in the 2012–2014, while it increased due to higher average switching rates in the 2011–2015 period than in the 2010–2014 period.

Case study 2: Switching, composition of product portfolios of energy suppliers and potential savings for households, SME's and self-employed workers in Belgium

As part of its market research, CREG produced an overview of the positioning of the various products of suppliers on the energy markets and of the savings potential for households, small and medium-sized enterprises (SMEs) and self-employed entrepreneurs, based on the product portfolios of suppliers on the Belgian electricity and natural gas markets on the one hand, and prices of individual products on the other.

Main observations resulting from CREG's market research

Despite the high number of active suppliers in the electricity and natural gas markets, the wide range of differentiated products, and switching rates which are at a high level in Belgium, all of which are elements which may indicate that energy markets are functioning well, CREG research found the following:

- Market shares of the 10 most expensive and the 10 cheapest electricity products
  - Household consumers:
  - 10 most expensive products: 63%;
  - 10 cheapest products: 3%;
  - SME's and self-employed entrepreneurs:
  - 10 most expensive products: 69%;
  - 10 cheapest products: 9%;

- Market shares of the 10 most expensive and the 10 cheapest gas products
  - Household consumers:
  - 10 most expensive products: 44%;
  - 10 cheapest products: 5%;
  - SME's and self-employed entrepreneurs:
  - 10 most expensive products: 55%;
  - 10 cheapest products: 17%.

100 See footnote 99.

- There are important savings to be made for a large majority of both households (up to 174 euros for electricity and 393 euros for natural gas) and SMEs, as well as self-employed entrepreneurs (up to 1,614 euros for electricity and 1,234 euros for natural gas), either by changing to another product with their own supplier or switching to another supplier[101].

- The range of online or web products is increasing, but their market share is still limited (Figure i).

Figure (i): Market shares of online electricity and gas products for household customers

Source: CREG.

Figure (ii): Market shares of online electricity and gas products for SME's and self-employed entrepreneurs

Source: CREG.

Conclusion

In its report published in December 2015[102], one of CREG's main findings was that consumers in the Belgian energy market are quite active, but often do not switch to a cheaper, let alone the cheapest, offer available on the market. The report concludes that, notwithstanding high switching rates in Belgium, important saving potentials still exist for the large majority of household consumers, SMEs as well as self-employed entrepreneurs.

101 This case study includes household consumers with an annual electricity consumption of 3.5 MWh and gas of 23.3 MWh, and SME's and self-employed workers with an annual electricity consumption of 50 MWh and gas of 100 MWh.

102 CREG Study (F)151217-CDC-1496: http://www.creg.info/pdf/Etudes/F1496FR.pdf

7 Relationship between the wholesale price and the energy component of the retail price

Chapter summary

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

This Chapter assesses the responsiveness of the energy component of retail prices to changes in the wholesale market and the evolution of mark-ups over the period in question, i.e. 2008–2015 for electricity and 2012–2015 for gas. The analysis is performed for both the household (Section 7.1) and industrial (Section 7.2) segments in the retail electricity market, but only for the gas household segment (Section 7.1), due to incomplete data sets for the industrial gas segment.

The highest positive mark-ups in 2015, expressed in euros, were observed in the household segment of the electricity markets in Great Britain, Ireland and Greece and of the gas markets in Great Britain, Greece and the Czech Republic, while the lowest positive mark-ups were observed in electricity markets in the Czech Republic, Romania, Denmark and Hungary and in gas markets in Estonia, Croatia and Romania.

Positive mark-ups in 2015 were observed for the first time in electricity markets for household consumers in the Czech Republic, Latvia, Lithuania and Romania, while Spain recorded a negative mark-up. In line with the results from previous years, negative mark-ups were also observed in 2015 in gas markets in Bulgaria, Hungary, Lithuania, Latvia and Denmark. 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 costs and a mark-up. In addition, a good correlation is observed in certain countries with regulated retail electricity prices, where retail household prices are set closely to follow changes in wholesale prices.

The link between wholesale and retail energy markets is weak in several liberalised countries. On average, over the observed period, the energy component of retail prices and the wholesale price for the industrial electricity segment correlate better than for the household electricity segment, strongly suggesting that in the EU industrial consumers benefit more from competition than household consumers.

7.1 Household segment

119 The European Commission's vision for the new electricity market design is intended to deliver a "new deal for energy consumers"[103] as set out in the Energy Union Strategy, including a better link between retail and wholesale markets. Effective competition performance is a reflection of market structure and the behaviour of suppliers and consumers. This can be assessed through various competition performance indicators, including mark-ups, which are defined as the difference between wholesale energy costs and the energy component of retail prices[104].

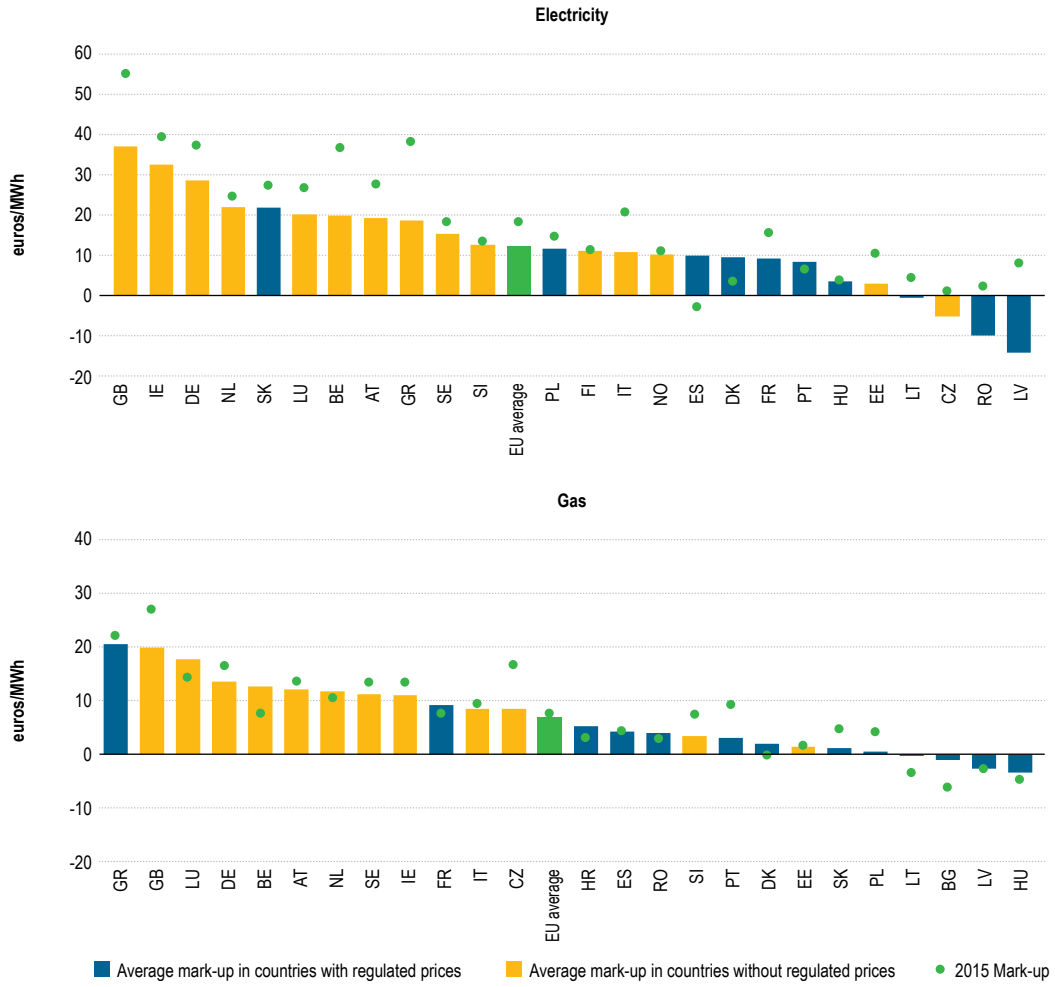
120 Average retail mark-ups in the electricity household segment across the EU trended upwards in 2015 compared to 2014, while remaining relatively unchanged in the retail gas market for household consumers.

103 New Deal for Energy Consumers COM (2015) 339 final.

104 Mark-ups are indicators of the theoretical gross 'profitability' of retailers, as well as an indicator of the level of responsiveness of retail energy prices to changes in wholesale markets. Mark-ups are not the same as profits, because suppliers have additional operating costs (e.g. marketing, sales, consumer services, overheads, 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 actual profits, but would indicate low levels of competition. 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 detailed methodology and data underlying mark-ups in retail markets are presented on page 288 of the MMR 2014.

121 Figure 21 shows that estimated average mark-ups in the retail electricity and gas markets for the household segment vary widely across countries. At the national level, electricity and gas mark-ups for the household segment, as well as the degree of correlation between the energy component of retail prices and the wholesale prices for each EU MS and Norway are presented in Figure 44 to Figure 47 in the Annex.

Figure 21: Average annual mark-ups in retail electricity (2008–2015) and gas (2012–2015) markets for household consumers in EU MSs and Norway and annual mark-ups – 2015 (euros/MWh)



Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Note: Due to data unavailability, this figure includes average annual mark-ups in the retail electricity markets for household consumers for the 2008–2015 period, but only for the 2012–2015 period for gas. Bulgaria (no electricity wholesale market) and Croatia (the 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 do not have wholesale electricity markets or retail gas markets. Norway has no significant gas market, and so is not included in the gas figure. Note that the scales of the figures for electricity and gas are different, which might be explained – among others – by the fact that the averages are calculated based on different consumption profiles, i.e. 3.500 kWh for electricity and 11.000 kWh for gas. If the POTP is lower in terms of euros/MWh and the size of the typical consumption profile is higher in terms of kWh/year for gas than in electricity, the mark-up for gas could be expected to be lower than the mark-ups for electricity. The increase in the mark-ups between 2014 and 2015 in Great Britain is partially explained by the effect of the exchange rate (pound sterling/euro). For example, if expressed in pounds, by using the reference exchange rate of the European Central Bank, the electricity and gas mark-ups for Great Britain would be 27% lower in 2015, i.e. 40.4 pounds and 19.76 pounds, respectively.

122 The highest positive mark-ups in 2015, expressed in euros/MWh, were observed in the household segment of the electricity retail markets of Great Britain, Ireland and Greece, and of the gas markets of Great Britain, Greece and the Czech Republic, while the lowest positive mark-ups were observed in the household segment of the electricity markets of the Czech Republic, Romania, Denmark and Hungary, and of the gas markets of Estonia[105], Croatia and Romania.

123 In some countries with regulated prices, average mark-ups for the monitored period were negative because the energy component of the retail prices was set at a level that seems to be below wholesale energy costs. This is the case in Latvia, Romania[106] and Lithuania for electricity and in Hungary, Latvia, Bulgaria and Lithuania for gas. Negative average mark-ups for electricity were also observed in the Czech Republic[107], where positive mark-ups would be expected due to the liberalisation of the household segment ten years ago, i.e. in 2006.

124 However, positive mark-ups were observed in 2015 in some markets that displayed negative mark-ups the year before, such as the electricity markets for household consumers in the Czech Republic, Latvia, Lithuania and Romania, while Spain[108] recorded negative mark-ups. Negative mark-ups were observed in 2015 in the gas markets of Bulgaria, Hungary, Lithuania[109], Latvia and Denmark.

125 Regulating end-user price 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. For a more detailed presentation of the evolution and occurrence of negative mark-ups in a selection of countries with regulated end-user prices (Figure 50 in the Annex).

126 Retail prices that are linked to the wholesale price, for instance by reflecting hourly price variations at wholesale level, could promote the development of demand-response (see also Chapter 5 on Dynamic pricing in the European household segment).

127 The energy component of retail electricity 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 spot price, i.e. the offers available to consumers contain a direct reference to wholesale costs and a mark-up, for e.g. electricity markets in Norway, Sweden and Finland (Figure 44). In addition, a good correlation is observed in certain countries with regulated retail electricity prices, for e.g. in Denmark, Hungary and Poland (Figure 45). In these countries, retail household prices are set closely to follow changes in wholesale prices.

105 The Estonian gas wholesale price is entirely based on Russian origin import prices declared yearly on Eurostat Comext. Volumes purchased from Lithuania are estimated to be lower priced. Therefore, in the absence of more detailed data, the mark-up for Estonia might be overestimated.

106 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 – which are no longer representative of this market – have been replaced in this year's MMR by gas wholesale prices (regulated by ANRE) from indigenous Romanian gas production. Therefore, the gas mark-ups in Romania appear to be positive, which has a downward impact on this sub-indicator used for ARCI.

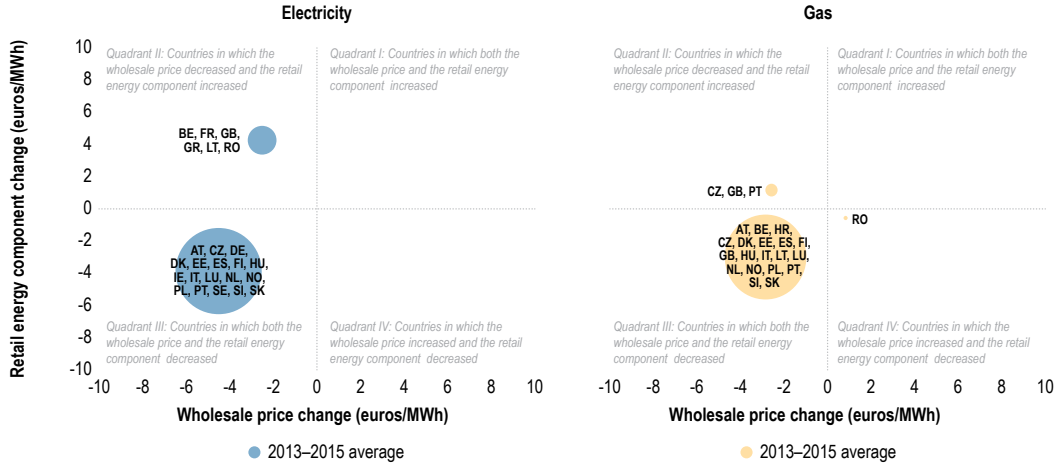
107 The Agency has been informed by the Czech NRA that there may be irregularities in the data for household electricity prices. These results should therefore be interpreted with caution. The Czech NRA will, in cooperation with the Agency, investigate this issue further for the next year's MMR.

108 According to the Spanish NRA (CNMC), the electricity mark-ups for household consumers were positive in 2014 and 2015 (see for example page 24 of the CNMC report covering retail markets in 2014, available at: http://www.cnmc.es/LinkClick.aspx?fileticket=bcnVjmXkE1k%3d&tabid=792&portalid=0&mid=2371&language=es-ES). For industrial electricity consumers, CNMC evaluates a margin close to zero or negative (see page 31 in the previously mentioned CNMC report). These differences could be explained by the use of different methodologies and data for the energy component of retail prices, which vary significantly between CNMC and Eurostat.

109 Gazprom offers a retroactive price discount (estimated at 20%) to the main Lithuanian supplier, which is not reflected in this analysis. Taking this into account, the gas mark-up would appear to be positive for Lithuania.

128 Figure 22 illustrates the relationship between the average absolute change (euros/MWh) 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 between 2013 and 2015[110]. If these two variables correlate well, it indicates sound competition, which should be reflected in Quadrant I and Quadrant III. Figure 22 shows that, on average (2013–2015), there was a better link between sourcing cost and the energy component in the gas markets than in the electricity markets, i.e. more countries in Quadrant III for gas than for electricity. For example, in Belgium, France, Great Britain, Greece, Lithuania and Romania, the three-year average decrease in the wholesale electricity price was followed by an increase in mark-ups, which is reflected in Quadrant II for electricity. This was also the case for gas in the Czech Republic, Great Britain and Portugal.

Figure 22: Three-year (2013–2015) average change between wholesale prices and the retail energy component for household consumers in electricity and gas markets in EU MSs and Norway (euros/MWh)



Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Note: The size of the circle represents the number of countries included in the average calculation. The countries included in each of the quadrants are enumerated next to each circle.

7.2 Industrial segment

129 The findings presented in Figure 48 and Figure 49 in the Annex show a strong link, i.e. better price responsiveness between wholesale prices and the energy component of retail prices in the retail electricity[111] markets for the industrial consumers, compared to the household consumers. This strongly suggests that industrial consumers are benefiting from competition to a greater extent than household consumers. The data analysed suggests that in all MSs with non-regulated prices, industrial consumers benefit more from liberalisation than household consumers are, i.e. the retail energy component paid by non-household consumers is more closely linked to the wholesale sourcing costs than the price paid by the households. This could imply that demand is more inelastic to prices in the household segment, and, therefore, reduces competitive pressure on suppliers in this segment.

110 Figure 22 is based on the individual charts presented in Figure 44 to Figure 47 in the Annex.

111 Due to the lack of data on gas, i.e. the data on the energy component for industrial gas consumers over time are not available from Eurostat's energy price breakdown data, this analysis was performed only for electricity.

8 Interventions in retail price-setting mechanisms

Chapter summary

Price regulation for household consumers was widely applied across the EU in 2015, and the process of moving away from regulated retail prices is very slow. After eight years of full market opening, regulated electricity and gas household prices still exist in 12 and 13 countries, respectively, while regulated electricity and gas prices for industrial consumers exist in 9 and 8 countries, respectively (Section 8.1). Most countries have a dual market-structure in which regulated and non-regulated prices coexist. In most cases where this duality exists, regulated prices are available to all household consumers.

Artificially low regulated end-user prices, although set above energy costs, discourage market entry and innovation, increase suppliers' uncertainty regarding their return on investment in the long term and consequently hinders competition in retail energy markets. Section 8.2 shows that countries with regulated end-user prices for household consumers score lower in terms of relative competition performance as measured by the ARCI than countries with a fully liberalised retail energy market for both electricity and gas.

8.1 Application of regulated end-user prices

130 On 25 February 2015, the European Commission adopted "A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy"[112] through which it sets out a strategy to bring about a transition to a low-carbon, secure and competitive economy. In the 'Energy Union' communication, the European Commission identified regulated retail prices as an obstacle to demand-side participation and retail competition. Regulated retail prices can constitute a strong barrier[113] to competition if they are not limited in time or applied to exceptional cases based on socio-economic criteria.

131 While the 3rd Package calls for end-user prices that are solely determined by supply and demand and do not include any regulated component other than network, levies and taxes, Figure 23 shows that end-user price regulation[114] was applied in 2015 to household electricity markets[115] in 12 EU MSs and to household gas markets[116] in 13 MSs. In addition, several countries have regulated prices in the industrial segment (9 in electricity and 8 in gas markets).

132 In Latvia, as of 1 January 2015, electricity price regulation has been completely removed pursuant to the Electricity Market Law. While Croatia removed price regulation in electricity in 2015, it still applies a so-called 'universal service' tariff regulated by the DSO for the large share of household consumers that did not choose a non-incumbent supplier. Therefore, 92.16% of household consumers are supplied under the 'universal service' arrangements, while 1.19% and 6.65% have contracts with the incumbent and non-incumbent suppliers, respectively. In gas retail markets, the number of MSs that apply price regulation for households remained unchanged in 2015.

112 See http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2015%3A80%3AFIN.

113 The other barriers to market entry identified in previous work done by the Agency and CEER are consumer switching behaviour, wholesale market issues and demand-side flexibility. Moreover, the strongest factors impeding cross-border market entry identified were the lack of harmonisation, retail price regulation, high uncertainty concerning future regulatory developments and the low liquidity of wholesale markets in less advanced markets. For more details, see Section 2.4 of the MMR 2014 (page 87) and Section 2.4 of the MMR 2013 (page 81).

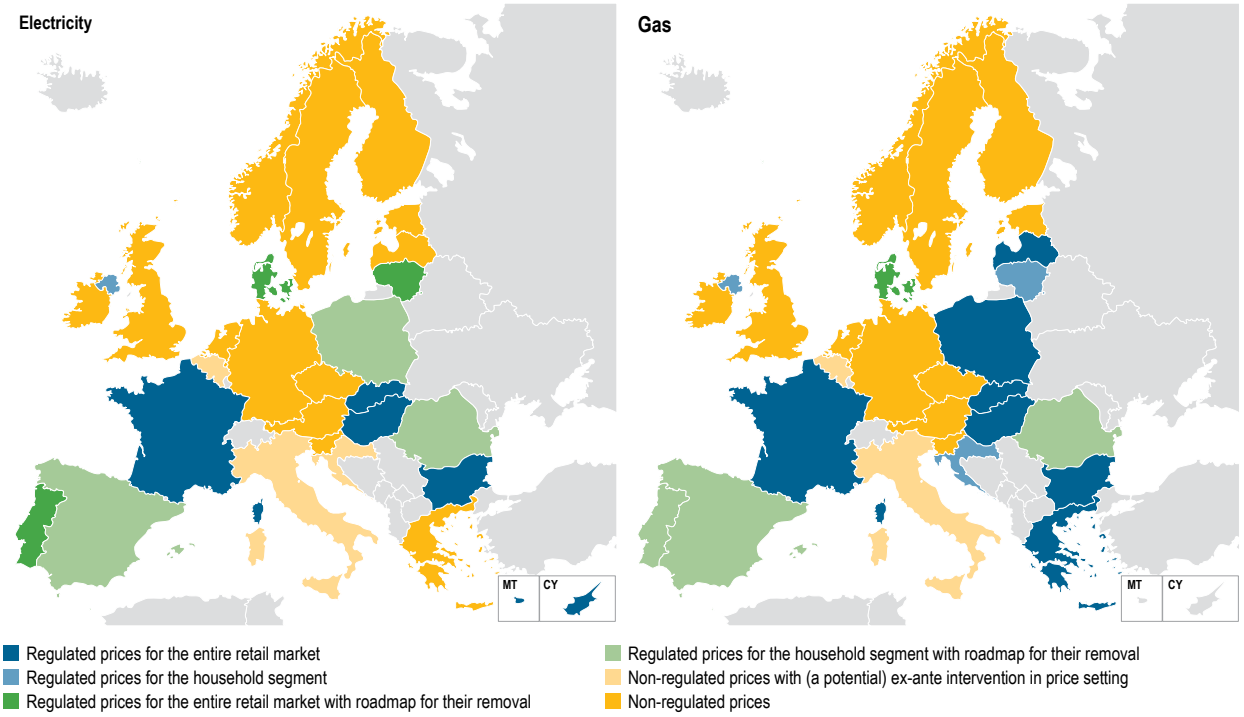
114 In this report, a regulated end-user price is considered as a price subject to regulation or control by public authorities (e.g. governments, NRAs), as opposed to being determined exclusively by supply and demand. This definition includes many different forms of price regulation, such as setting or approving prices, standardisation of prices or combinations of these. All MSs which regulate end-user prices to consumers that are not defined as 'vulnerable' consumers, are classified as countries with regulated prices, and the differentiation between them is based on whether or not they have a clear roadmap for phasing out regulated prices. Moreover, the analysis in this chapter focuses solely on the regulation of the energy component of retail prices and excludes any discussion on the regulation of network prices. For more details on 'vulnerable' consumer, see Chapter 2 in the volume on Consumer Protection and Empowerment of the MMR 2015.

115 Countries applying end-user price regulation in electricity are Bulgaria, Cyprus, Denmark, France, Hungary, Lithuania, Malta, Poland, Portugal, Romania, Slovakia and Spain.

116 Countries applying end-user price regulation in gas are Bulgaria, Croatia, Denmark, France, Greece, Hungary, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia and Spain.

133 In 2015, three countries removed energy price regulation (completely or partially) for industrial consumers. As of 1 January 2015 Romania no longer regulates gas prices for industrial consumers. Moreover, in Portugal, according to ordinance no. 97/2015, the suppliers of last resort will continue until 31 December 2017 to supply electricity and gas to consumers who have not switched[117] to liberalised tariffs. Pending this, the NRA approves the so-called regulated 'transitory tariff'. Further, as of 31 December 2015, France has removed regulated electricity prices for large and medium industrial consumers, i.e. with an electric power connection of more than 36 kVA. Industrial consumers with an electric power connection lower than 36 kVA and household consumers are not affected by the removal of regulated electricity tariffs within the current legal framework[118]. Regulated prices for non-household consumers in the French gas market will be removed gradually[119]. Industrial consumers whose gas consumption level is below 30 MWh per year and household consumers are not affected by the removal of regulated gas tariffs, so they can choose between regulated tariffs with the incumbent and non-regulated tariffs with a non-incumbent supplier.

Figure 23: Application of regulated end-user prices in retail electricity and gas markets in EU MSs and Norway – 2015



Source: CEER National Indicators Database (2016).

Note: The entire retail market refers to the household and industrial segment. Cyprus and Malta do not have retail gas markets, while the Nordic countries (Finland, Norway and Sweden) have relatively small retail gas markets. In France, as of 31 December 2015, prices are no longer regulated for large and medium industrial consumers in electricity and for gas industrial consumers consuming more than 30 MWh annually.

117 In Portugal, at the end of 2015, 24.3% of households and 1.5% of industrial electricity consumers were supplied under regulated tariffs by suppliers of last resort, which accounted for 10.6% of the total electricity demand. Conversely, 37.6% of households and 1% of industrial gas consumers were supplied under regulated tariffs by suppliers of last resort, which accounted for 4.6% of total gas demand.

118 In France, article 14 of the law N° 2010-1488 of 7 December 2010 on the new organisation of the electricity market, called 'Nome' (Nouvelle Organisation du Marché de l'Electricité), transposed into article L.337-9 of the French Energy code, foresees the removal of regulated electricity tariffs only for industrial consumers with electric power over 36 kVA by 31 December 2015.

119 In France, article 25 of the law N° 2014-344 of 17 March 2014 on consumption, transposed into article L.445-4 of the French Energy code, foresaw the removal of regulated tariffs in three steps according to different gas consumer categories, as follows: a) 19 June 2014 for consumers connected to the transmission grid; b) 31 December 2014 for consumers whose annual consumption exceeds 200 MWh, including residential buildings with central heating and c) 31 December 2015 for consumers whose annual consumption exceeds 30 MWh, i.e. small non-household consumers (for residential buildings with central heating, the threshold is 150 MWh).

134 Although all MSs applying price regulation use a link to the wholesale market in their methodologies, the application, criteria and details of these methodologies differ widely across MSs. Price regulation may take different forms, such as rate-of-return, price-cap, discretionary regulation, or other caps. Figure 51 in the Annex shows an overview of current methods of price regulation in EU MSs and Norway. Furthermore, some methods may not qualify as price regulation, but might have an effect on prices in retail markets, and this is also presented in Figure 23. This figure presents information about all kinds of intervention in the price-setting mechanism which are not explicitly considered price regulation (as defined in footnote 113).

135 Regulated prices for household consumers are sometimes justified by NRAs on the basis of the need to protect vulnerable consumers and/or to fulfil PSO under Articles 3 of Directives 2009/72/EC and 2009/73/EC. In the case of PSOs, the price regulation must satisfy the legal requirements of these Articles and should be in place only for a certain transitional period, with a clear roadmap for phasing it out. Other forms of price-setting intervention, such as the 'single buyer' (Acquirente Unico) and standard offer prices in Italy, 'Safety net regulation' in Belgium and 'Tariff Surveillance' in the Netherlands, may also have an impact on market competition.

136 Compared to 2008, the overall number of household consumers supplied under regulated end- user prices across the EU in 2015 decreased from 54% to 35% and from 49% to 25% in the electricity and gas markets, respectively. This was mainly due to progressive liberalisation of this market segment for electricity in Spain (-48%), Portugal (-65%) and Italy (-100%) and for gas in France (-37%), Spain (-55%), Portugal (-71%) and Italy (-100%). Table 1 provides an overview of the years of final market opening in countries with regulated prices and the percentage of household consumers supplied under this regime in 2015. This table also shows that most countries with regulated prices have a dual market structure in which regulated and non-regulated markets exist in parallel.

137 In some MSs, although household consumers have a choice between regulated and non-regulated tariffs, this does not increase switching rates out of regulated prices. For example, in most countries where switching to non-regulated price is possible, most household consumers are supplied under regulated prices, i.e. for electricity 100% of household consumers in Bulgaria, Lithuania, Romania and Slovakia, and for gas 100% of household consumers in Croatia, Hungary, Lithuania, Poland and Slovakia. It is also notable that, after almost nine years of formal EU retail energy market liberalisation, the option to switch to market prices still does not exist for households electricity consumers in Malta and Cyprus and for households gas consumers in Bulgaria, Greece[120], Latvia and Romania, i.e. there are no alternatives to regulated prices.

120 According to the Greek NRA, the market opening for gas household consumers in Greece is foreseen in 2018.

Table 1: Year of full market opening and percentage of household and non-household consumers supplied under regulated prices – 2015 (%)

	Household consumers							
	Year of final market opening		% with regulated prices		Switching into regulated prices allowed		Switching out of regulated prices allowed	
	E	G	E	G	E	G	E	G
Bulgaria	-	-	100% →	100% →	Yes	No	Yes	No
Croatia	2008	2008	92% ↓	100% →	Yes	Yes	Yes	Yes
Cyprus	-	-	100% →	-	No	-	No	-
Denmark	2003	2004	83% ↓	74% →	Yes	Yes	Yes	Yes
France	2007	2007	88% ↓	59% ↓	Yes	Yes	Yes	Yes
Greece	2007	-	99% →	100% →	Yes	No	Yes	No
Hungary	2007	2007	98% ↓	100% ↑	Yes	Yes	Yes	Yes
Latvia	2007	2014	0% ↓	100% →	Yes	No	Yes	No
Lithuania	2008	2007	100% →	100% →	Yes	Yes	Yes	Yes
Malta	-	-	100% →	-	No	-	No	-
Poland	2007	2007	98% ↓	100% ↑	Yes	Yes	Yes	Yes
Portugal	2006	2010	34% ↓	23% ↓	No	No	Yes	Yes
Romania	2007	2007	100% →	100% →	Yes	No	Yes	No
Slovakia	2007	2007	100% →	100% →	Yes	Yes	Yes	Yes
Spain	2003	2003	45% ↓	23% ↓	Yes	Yes	Yes	Yes

Source: CEER National Indicators Database (2016).

Note: The year of final market opening considered in this report is the first year in which the proportion of the household retail market open to competition reached 100% measured by the eligible consumption divided by the annual consumption in each country. Cyprus and Malta do not have retail gas markets. The arrows indicate whether there was an increase (↑), a decrease (↓) or if the percentage of household consumers supplied under regulated prices remained the same (→) compared to 2014. In Portugal, returning to the so-called 'transitional' tariff (regulated) is only possible for consumers as a last resort (supplier bankruptcy or no offers available) and for those consumers requiring the social tariff from the supplier of last resort. 'Switching into regulated prices' refers to the legal ability to switch from non-regulated to regulated prices and 'switching out of regulated prices' refers to the legal ability to switch from regulated to non-regulated prices. "-" = not available.

8.2 Impact of regulated end-user prices on competition

138 Regulated end-user prices compromise competition particularly in markets where retail end-user prices are set below costs by regulatory measures, i.e. without taking into consideration wholesale market prices and other supply costs. Artificially low regulated end-user prices, although set above energy costs, discourage market entry and innovation, increase suppliers' uncertainty about their return on investment in the long term, disengage consumers from the switching process and, consequently, hinder competition in retail energy markets.

139 This Section assesses the effect of regulated end-user prices on the relative competition performance in electricity and gas markets for the household segment across the EU. For the purpose of this analysis, several market structure, market conduct and competition performance indicators used to calculate ARCI were analysed across EU MSs and Norway by comparing three categories of countries according to the percentage of household consumers supplied under regulated end-user prices, as presented in Table 1:

i) MSs with fully liberalised retail energy markets[121];

ii) MSs applying end-user price regulation for less than 95% of household consumers in retail energy markets[122]; and

iii) MSs applying end-user price regulation for more than 95% of household consumers in retail energy markets[123].

121 This category includes the electricity markets of Austria, Belgium, Croatia, the Czech Republic, Estonia, Finland, Germany, Great Britain, Greece, Ireland, Italy, Latvia, Luxembourg, the Netherlands, Norway, Slovenia and Sweden and the gas markets of Austria, Belgium, the Czech Republic, Estonia, Germany, Great Britain, Ireland, Italy, Luxembourg, the Netherlands and Slovenia.

122 This category includes both the electricity and gas markets of Denmark, France, Portugal and Spain.

123 This category includes the electricity markets of Bulgaria, Cyprus, Hungary, Lithuania, Malta, Poland, Romania and Slovakia, and the gas markets of Bulgaria, Croatia, Greece, Hungary, Latvia, Lithuania, Poland, Romania and Slovakia.

140 Figure 24 presents the average ARCI score for 2015, as well as the contribution of each indicator to the overall ARCI result, for the three categories of countries defined above. First, this figure shows that there is room for improvement in the relative level of competition even in MSs that have fully liberalised retail energy markets for both electricity and gas. Second, the discrepancies between the three categories of MSs are more important in the gas retail markers than in electricity retail markets.

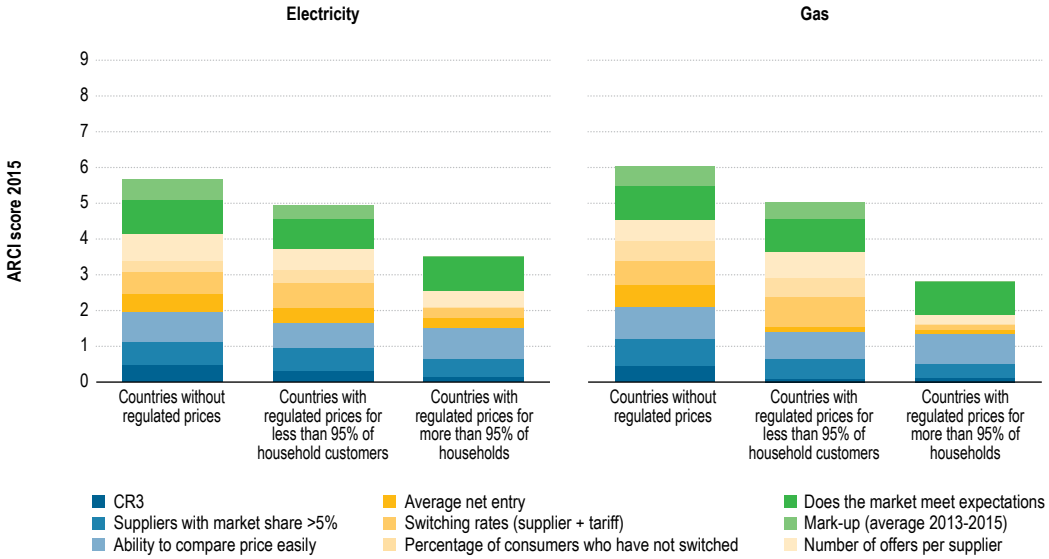
141 It is obvious that, on average, MSs that intervene in the retail price-setting mechanism for almost all household consumers, i.e. more than 95%, score lower in all nine ARCI sub-indicators for both electricity and gas than countries with a liberalised retail energy market, because there is no space for competition in these markets.

142 Moreover, Figure 24 illustrates that the relative level of competition is lower in countries with regulated prices for less than 95% of the household consumers than in countries with fully liberalised markets. Therefore, price regulation is a cause of the relatively low level of competition in retail energy markets. The analysis for 2015 was also performed for 2014, but no significant changes between the two categories were observed, so the robustness of these results is confirmed.

143 The data presented in Figure 24 show that the main differences between countries that apply regulated prices in the liberalisation process and MSs with fully liberalised markets are mainly reflected in four indicators for electricity. Countries with regulated prices for less than 95% of household consumers have (i) higher concentration ratios, (ii) fewer average net entries, (iii) fewer offers per supplier available in capital cities and (iv) higher average annual mark-ups.

144 Conversely, these differences are reflected in four indicators in the gas market. Countries with regulated prices for less than 95% of household consumers have (i) higher concentration ratios, (ii) significantly fewer average net entries, (iii) a higher percentage of consumers still supplied by the incumbent and (iv) higher average annual mark-ups.

Figure 24: Average ARCI score for retail electricity and gas markets for household consumers in countries with and without end-user price regulation in EU MSs and Norway – 2015



Source: ACER Retail Database (2016), CEER National Indicators Database (2016), DG Justice and Consumers (2014 and 2016) and ACER calculations.

145

Case study 3: Electricity and gas household switching rates in Portugal

Background

This case study provides insights into the high levels of supplier switching which have been observed in the Portugal's electricity and gas household markets in recent years.

Since 2006 and 2010, respectively, the Portuguese electricity and gas sectors have been fully liberalised, i.e. all consumers can opt for a supplier of their choice. Under the financial assistance programme agreed with the International Monetary Fund, the European Commission and the European Central Bank in 2011, the Portuguese Government gave new momentum to the ongoing process to remove end-user price regulation. The first phase-out deadlines applied to non-household consumers[124] (1 July 2010 for gas and 1 January 2011 for electricity). Following this, regulated end-user tariffs for all electricity and gas consumers (including households) were abolished as of 1 January 2013.

As part of the phasing-out process, a transitional period was defined by the government in order to enable consumers supplied under regulated end-user tariffs to choose a new market supplier and make the transition to the liberalised market. During this period, the Portuguese NRA, ERSE, fixes a tariff (called the 'transitional tariff'), which may include an optional surcharge[125], with the objective of encouraging consumers to switch to a market tariff[126]. The transitional regime was initially set for three years. However, the government extended this until 31 December 2017 for all remaining household consumers[127] supplied under transitional tariffs, i.e. 28% of electricity and 29% of gas household consumers, as of December 2015. This extension is expected to facilitate the emergence of new entrants in the market, and therefore to lead to greater competition (since, during a shorter phasing-out period, consumers would probably move from the transitional tariff to the market tariff offered by the incumbent).

The results on household switching behaviour presented in this case study[128] use data collected from both electricity and gas switching platforms, which are required to send monthly data on switching (number of new contracts, number of switches and consumption per supplier) to the NRA. Under the Portuguese switching model, ERSE approves the switching rules, i.e. timings and procedures, and the new supplier is the consumer's single point of contact managing the contract switching process.

Electricity switching

In 2015, 92% of non-household consumers contracted with a liberalised market supplier, representing an effective termination of transitional tariffs for industrial consumers[129]. Starting in 2006, household consumers could participate in the liberalised market, but switching reached high numbers only following the dissemination of information regarding the plan for removing regulated tariffs[130]. In 2015, two thirds of household consumers were in the liberalised electricity market and the switching rate was 26.6%.

124 These deadlines were set for gas consumers with an annual consumption over 10,000 m3 and for electricity consumers supplied at low voltage with a contracted power over 41.4 kVA and at medium, high and extra high voltage levels.

125 This optional additional cost can be used to prevent situations in which the transitional tariff is more competitive than market offers. So far, there has been no need to use this additional value, and transitional tariffs have been driven by cost-reflective principles.

126 Returning to the transitional tariff is only possible for consumers as a last resort (supplier bankruptcy or no offers available) and for those consumers requiring the social tariff from the supplier of last resort.

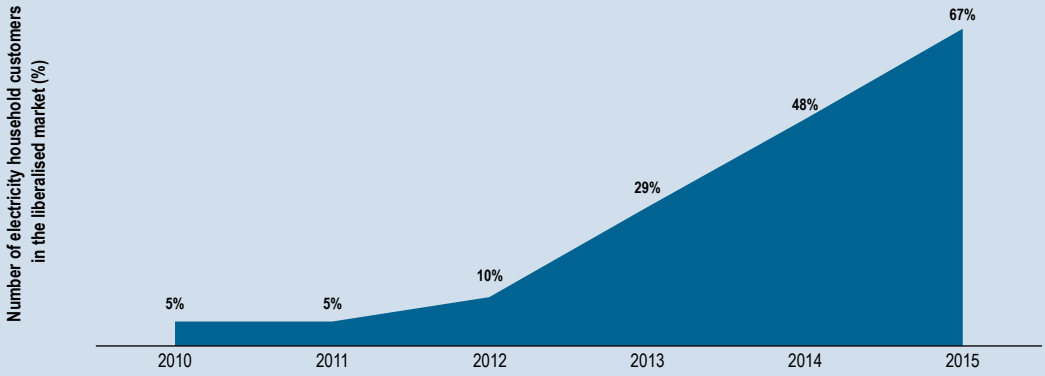
127 The number of consumers supplied under regulated tariffs mentioned in this case study refers to the number of customers in the last day of the year, which is provided by the switching operator in Portugal. These can differ from the numbers provided by regulated companies.

128 In this case study, the switching of contracts with the same supplier ('internal switching rate') is not considered a switching movement, so the data presented focus only on 'external switching rates'.

129 Since 2013, transitory tariffs are not available for extra-high-voltage consumers. In December 2015, two consumers at high voltage and 1,279 consumers at medium voltage were supplied under transitory tariffs, which is less than 0.01% and 1.4% of the respective voltage levels.

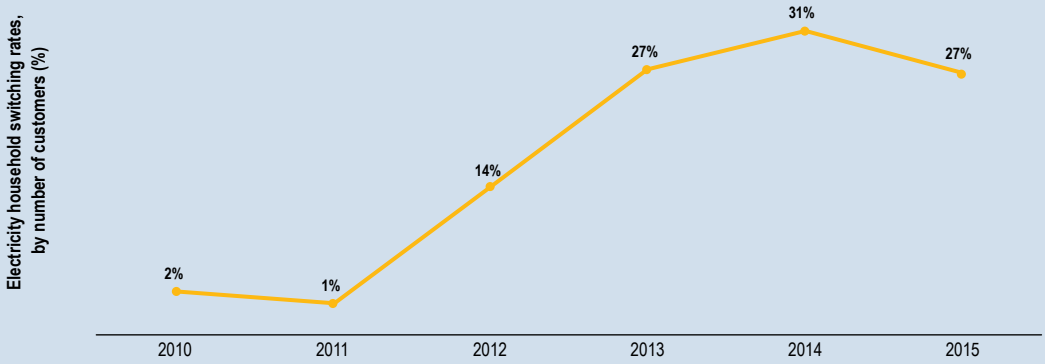
130 With the phasing out of regulated transitory tariffs, several information campaigns about the switching process for consumers were initiated by ERSE, suppliers (including the supplier of last resort), the Directorate General for Energy and Geology and by consumer organisations. Additionally, price comparison tools by the regulator and major consumer associations were made available or improved. In addition, the government created a dedicated call centre to inform consumers about social tariffs and switching to the liberalised markets. These actions may have had an effect on switching behaviour.

Figure (i): Electricity household consumers in the liberalised market, Portugal, 2010–2015 (%)



Source: ERSE.

Figure (ii): Electricity household switching rates, Portugal, 2010–2015 (%)

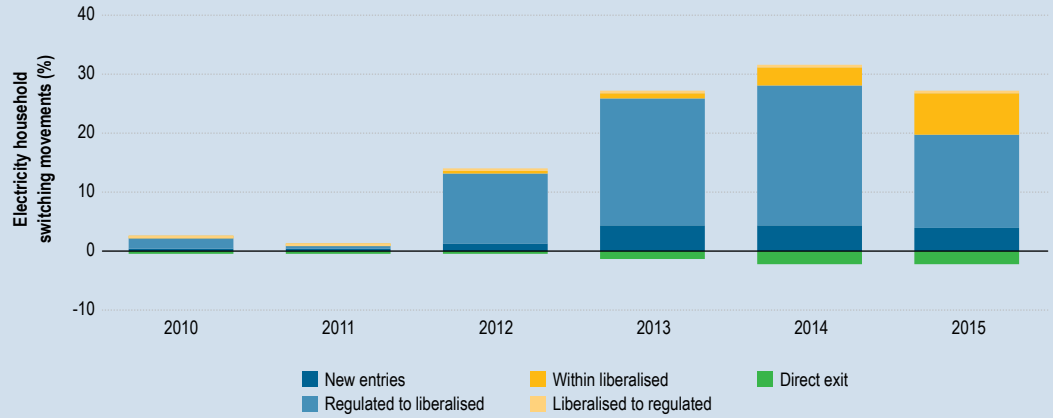


Source: ERSE.

Switching movements[131] within the liberalised market have been gaining increasing importance. In 2015, household consumer switching rates within the liberalised electricity market accounted for 26% of the number of switches. Meanwhile, almost 60% of movements were due to consumers who switched from the regulated to the liberalised market. In Portugal, the previous limit of a maximum four switches per consumer per year was removed and the number of switches is no longer limited.

131 See definition in the note under Figure 3.

Figure (iii): Electricity household switching movements, Portugal, 2010–2015 (%)



Source: ERSE.

Note: "Switching movements" include all external switching rates (switching rates between suppliers in the liberalised market, switching rates from regulated prices to the liberalised market and vice-versa), as well as new entries and direct exits from the market. "New entries" are new contracts for a consumption point with no previous contract. "Direct exits" are terminated contracts for a consumption point with no additional contract.

Increased competition between suppliers is the main reason for consumer switches in Portugal. Indeed, the number of registered and active suppliers is increasing, leading to a growing number of offers being available on the market. This can be explained by the fact that ERSE improved the market conditions for new entrants by reducing wholesale market entry costs, especially for new market entrants, as well as by establishing simple and effective switching rules to the benefit of consumers. For instance, ERSE designed a market unit[132] responsible for the balancing of small suppliers, which permits suppliers to reduce their balancing costs. Inclusion in this unit is voluntary. Additionally, ERSE implemented auctions on 'Special Regime Generation' (feed-in-tariff) for energy sourcing. As seen in Figure (iii), switches from regulated to non-regulated tariffs account for the main share of the high switching rates for household consumers, while switches within the liberalised market are increasing. Moreover, the switches that can occur in a few exceptions (footnote iii) comprise a negligible share (maximum 0.4% in 2011).

In Portugal, contracts with loyalty clauses (less than 5%) or penalties are almost absent. For such contracts, the loyalty period is equal to (or less than) the contract's duration, which is usually 12 months, and loyalty clauses are non renewable even if the contract is automatically renewed. In 2013, ERSE recommended that if these clauses are included in contracts, they should be clearly justified to consumers, containing an explicit trade-off.

Furthermore, in early 2015, ERSE defined a standard contractual form with several information requirements that suppliers must provide to consumers, enabling a better comparison between different contracts, making, inter alia, explicit reference to all costs born with the contract, and clearly identifying the existence of loyalty clauses, as well as their associated benefits.

Gas switching rates

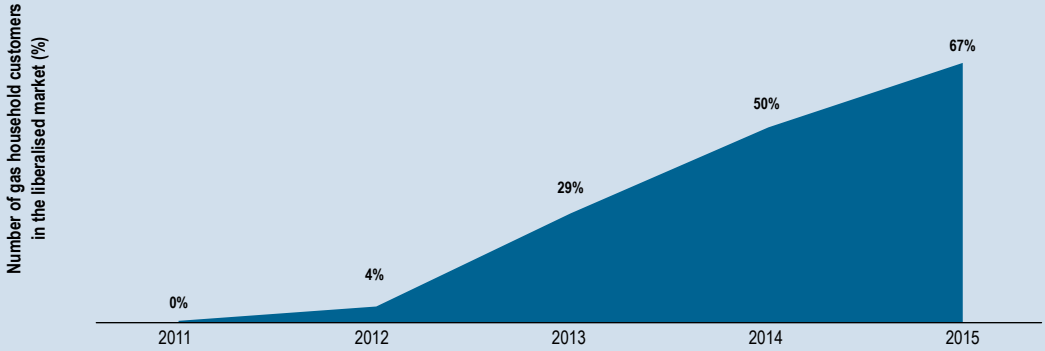
Market opening in the retail gas sector, a new emerging sector in Portugal[133], occurred faster than in the electricity sector. Since 2010, all gas consumers have been able to switch supplier. In 2015, the liberalised gas market reached a similar percentage of consumers compared to the electricity market, although there are fewer gas consumers than electricity consumers (less than half). The experience gained by consumers in the electricity sector, especially by non-households, may have helped establish confidence in the liberalised gas market.

132 For the purposes of calculating costs, small suppliers are treated as if they were a single balancing unit, but in practice, they act as individual balancing units.

133 Gas was introduced in Portugal in 1997.

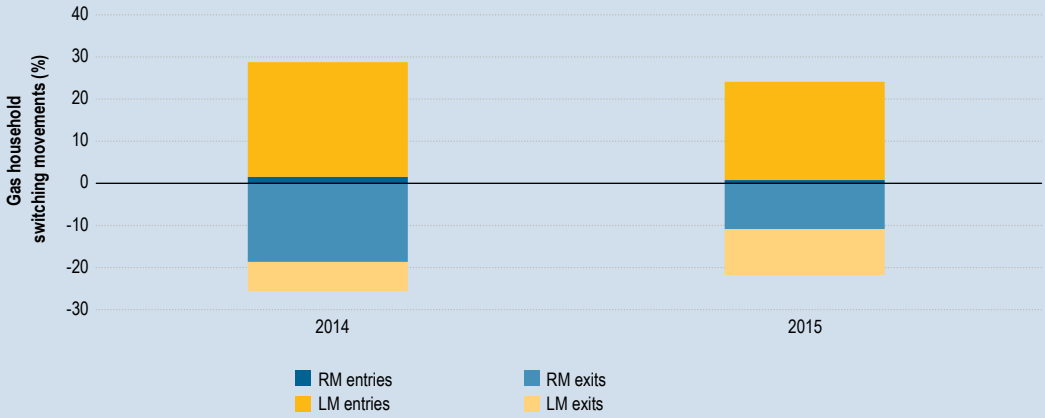
In December 2015[134], more than 62% of gas household consumers had already contracted with a supplier in the liberalised market. Gas consumers are very active in switching suppliers in the liberalised market[135]. Switching rates for gas in 2015 reached 24% of household consumers.

Figure (iv): Gas household consumers in the liberalised market, Portugal, 2011–2015 (%)



Source: ERSE.

Figure (v): Gas household switching rates, Portugal, 2014–2015 (%)



Source: ERSE.

Note: "RM" means regulated market and "LM" means liberalised market. "Entries" are switches to a supplier, including new entries; "Exits" are switches from a supplier and include direct exists.

Conclusion

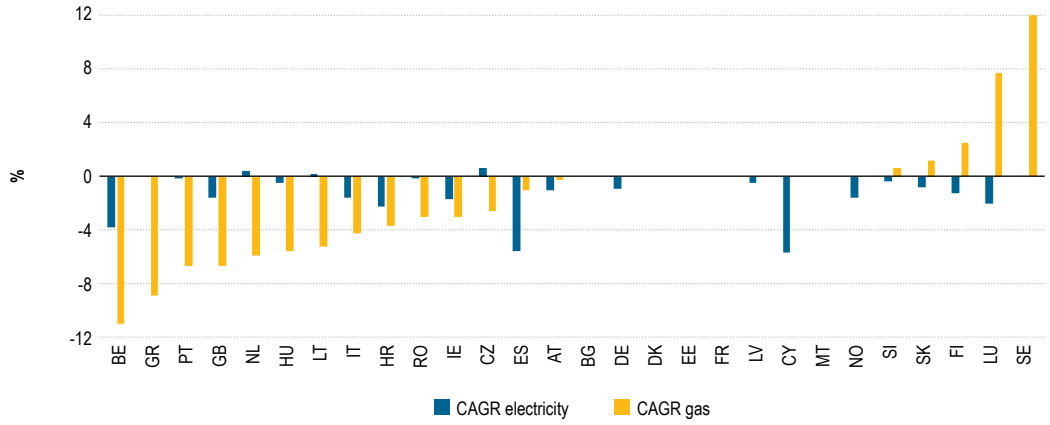
The Portuguese retail electricity and gas markets exhibit high levels of switching. Household consumer switching was fostered by the introduction of a roadmap for removing end-user regulated tariffs. Although the application of regulated transitory tariffs was extended until 2017, switching away from these tariffs is occurring at high rates. Also, switching within the liberalised market is gaining importance. ERSE contributed to this dynamic market activity (which includes new entrants and offers) through measures aimed at removing barriers to market entry, improving the competition environment, simplifying switching procedures and increasing transparency for consumers by obliging suppliers to convey, among other things, standardised contractual information to consumers.

134 Data for gas reports mainly on 2014 and 2015, since previous data on switching were scarce. Although ERSE reinforced the information requirements to gas suppliers, data to perform a complete switching analysis are still lacking.

135 The available data do not allow differentiation between the switching rates that occurred within the liberalised market and switches from regulated transitory tariffs to the liberalised market, as presented in the analysis for electricity.

9 Annex

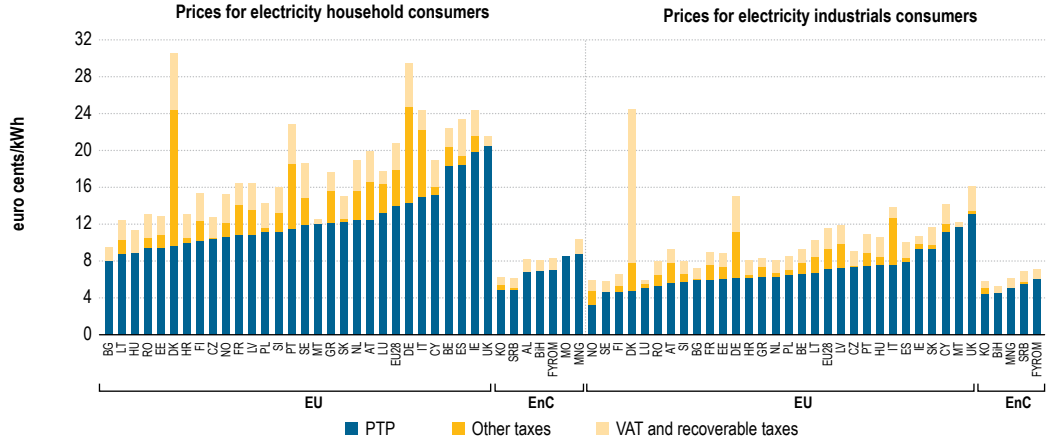
Figure 25: Average annual change in typical household energy consumption per EU MSs – 2011–2015 (%)



Source: CEER National Indicators Database (2016).

Notes: The 2011–2015 change is shown as data is available for most countries only for this period. For better visibility, Poland is not shown on the map. Typical electricity and gas household consumption in Poland increased by 12% and decreased by 28%, respectively, in the period from 2011 to 2015.

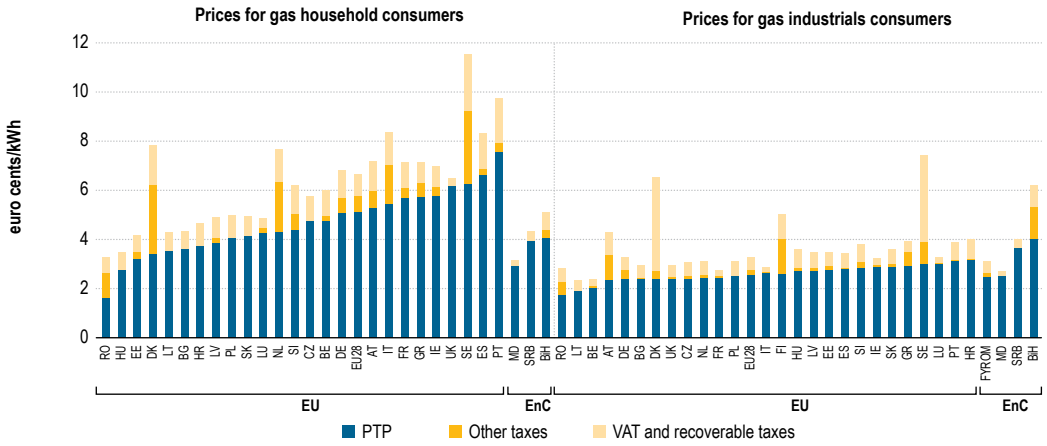
Figure 26: Electricity POTP and PTP for household and industrial consumers – Europe and EnC countries – 2015 (euro cents/kWh)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands DC: 2,500–5,000 kWh (electricity households) and IE: 20,000–70,000 MWh (electricity industrial consumers). Within each group, MSs are ranked according to PTP.

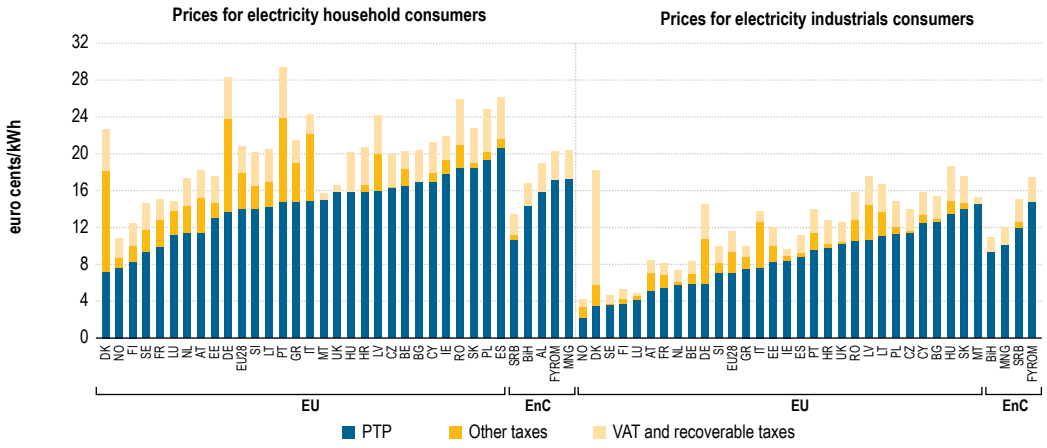
Figure 27: Gas POTP and PTP for household and industrial consumers – Europe and EnC countries – 2015 (euro cents/kWh)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands D2: 20–200 GJ (gas – households), and I5: 1,000,000–4,000,000 GJ (gas – industrial consumers). Bi-annual data for consumption band I4 (100,000–1,000,000 GJ is shown for Croatia, Lithuania, Luxembourg, Ireland and Slovenia. Within each group, MSs are ranked according to PTP.

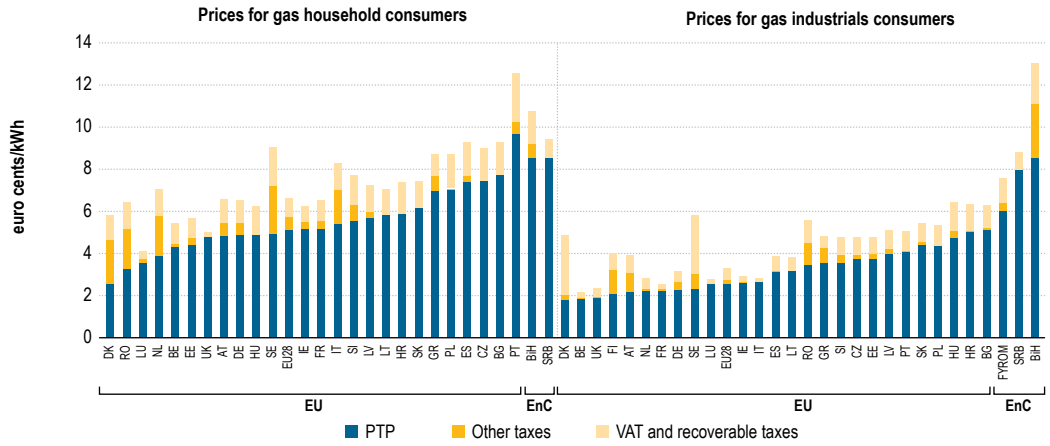
Figure 28: Electricity POTP and PTP for household and industrial consumers considering purchasing power – Europe and EnC countries – 2015 (euro cents/kWh)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands DC: 2,500-5,000 kWh (electricity – households) and IE: 20,000–70,000 MWh (electricity – industrial consumers). Within each group, MSs are ranked according to PTP.

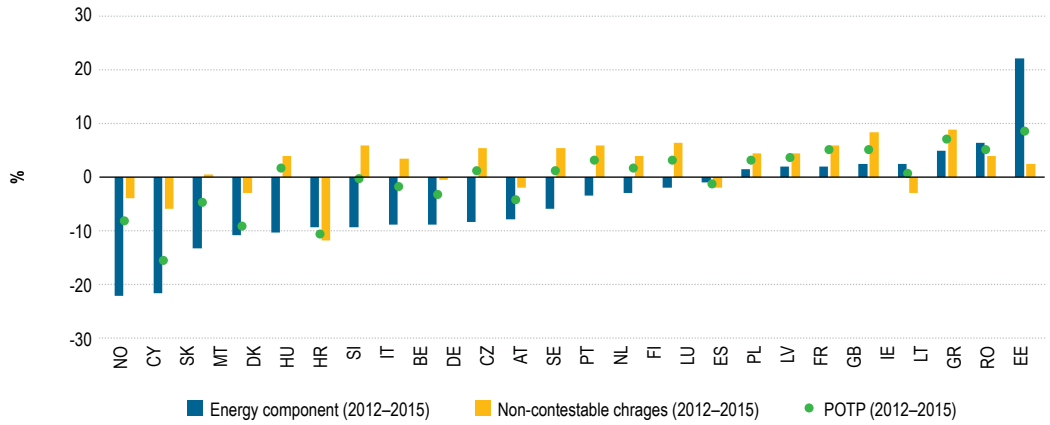
Figure 29: Gas POTP and PTP for household and industrial consumers considering purchasing power – Europe and EnC countries – 2015 (euro cents/kWh)



Source: Eurostat (26 April 2016) and ACER calculations.

Note: The figure is based on bi-annual data provided by Eurostat for consumption bands D2: 20–200 GJ (gas – households) and I5: 1,000,000–4,000,000 GJ (gas – industrial consumers). Bi-annual data for consumption band I4 (100,000–1,000,000GJ is shown for Croatia, Lithuania, Luxembourg, Ireland and Slovenia. Within each group, MSs are ranked according to PTP.

Figure 30: The compounded annual growth rate (CAGR)[136] of the electricity energy component and non-contestable charges – selection of countries in Europe – 2012–2015 (%)

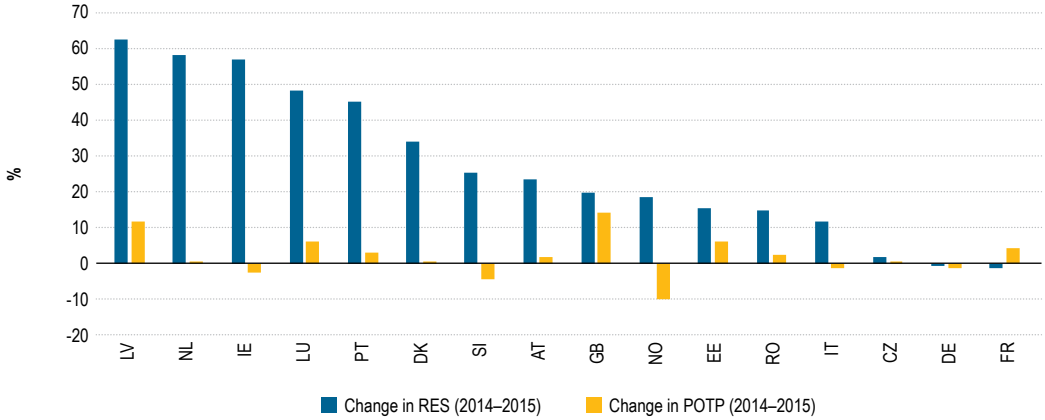


Source: ACER Retail Database (2016) and NRAs.

Notes: Based on consumption profile of 4,000 kWh electricity annually.

136 Compound Average Growth Rate (CAGR). CAGR is calculated by taking the nth root of the percentage of the year-on-year demand growth rate for the period analysed, where n is the number of years in the period being considered (in this case, the third root).

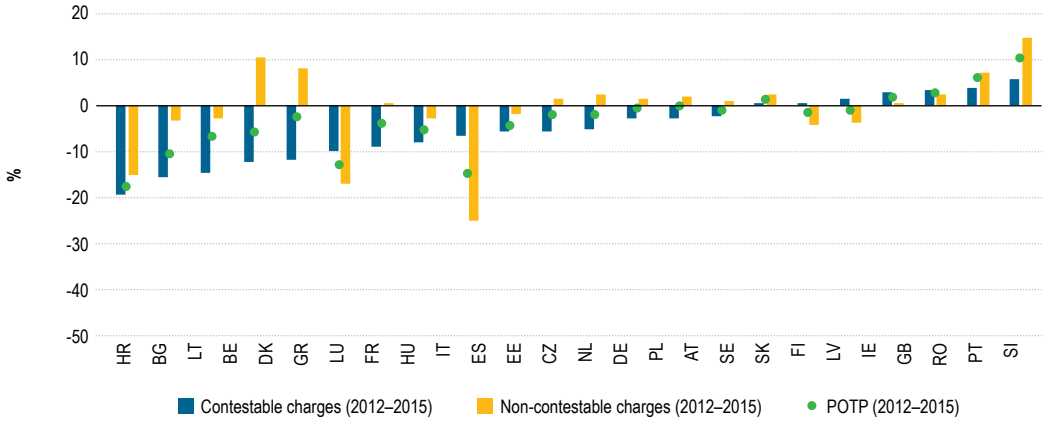
Figure 31: The year-on-year change in RES charges and POTPs for electricity households – selection of countries in Europe – 2014–2015 (%)



Source: ACER Retail Database (2016) and NRAs.

Note: Based on annual consumption profile of 4,000 kWh. Large increases in charges year-on-year, for example in Amsterdam, are due to the low level of RES charges per kWh in 2014.

Figure 32: The compounded annual growth rate (CAGR) of the gas energy component and non-contestable charges – Europe – 2012–2015 (%)



Source: ACER Retail Database (2016) and NRAs.

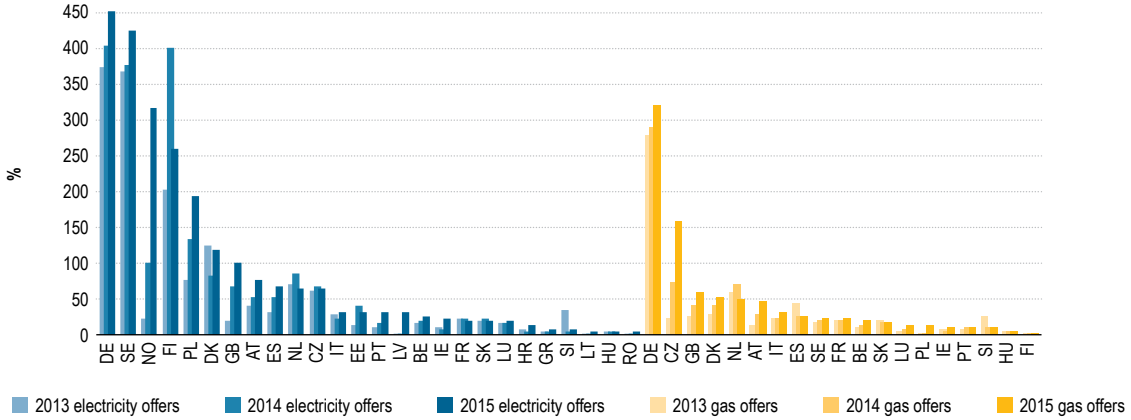
Notes: Based on annual consumption profile of 15,000 kWh of gas.

Table 2: Price comparison websites for the offer data analysis in capital cities

Capital city of	Electricity	Gas
AUSTRIA	http://www.e-control.at/haushalts-tarifkalkulator	http://www.e-control.at/haushalts-tarifkalkulator
BELGIUM	http://www.brusim.be/	http://www.brusim.be/
BULGARIA	Information from NRA	Information from NRA
CROATIA	https://kompare.hr/	Supplier's site: http://www.gpz-opskrba.hr/
CZECH REPUBLIC	http://kalkulator.eru.cz/ and http://www.cenyenergie.cz	http://kalkulator.tzb-info.cz/cz/dodavka-zemniho-plynu-vyber-kraje
CYPRUS	Information from NRA	n.a.
DENMARK	http://www.elpristavlen.dk/	http://gasprisguiden.dk
ESTONIA	https://www.eesti.ee/	Supplier's site: http://www.gaas.ee
FINLAND	http://www.sahkonhinta.fi/	http://www.gasum.fi/Yksityisille/Kodin-lammitys/hinnastot/
FRANCE	www.energie-info.fr	www.energie-info.fr
GERMANY	www.verivox.de	www.verivox.de
GREECE	NRA	http://www.aerioattikis.gr/default.aspx?pid=34&la=1&artid=135
HUNGARY	Information from NRA and other offers from 3 suppliers	http://www.vasarlocsapat.hu
IRELAND	http://www.bonkers.ie/compare-gas-electricity-prices/electricity/	http://www.bonkers.ie/compare-gas-electricity-prices/gas
ITALY	http://www.autorita.energia.it/it/trovaofferte.htm	http://www.autorita.energia.it/it/trovaofferte.htm
LATVIA	PCT	Information from NRA
LITHUANIA	https://skaiciuokle.regula.lt/	Information from NRA
LUXEMBOURG	www.calculix.lu	www.calculix.lu
MALTA	Information from NRA	n.a.
NETHERLANDS	http://www.energieleveranciers.nl/energie-vergelijken	http://www.easyswitch.nl/energie
NORTHERN IRELAND	http://www.consumercouncil.org.uk/energy/price-comparison-/	n.a.
NORWAY	http://www.konkurransetilsynet.no/en/Electricity-prices/Check-power-prices/	n.a.
POLAND	http://ure.gov.pl/ftp/ure-kalkulator/ure/formularz_kalkulator_html.php	Information from NRA
PORTUGAL	http://www.erse.pt / Simulador de Preços de Energia Elétrica	http://www.erse.pt / Simulador de Preços des Gas Natural
ROMANIA	Information from NRA	Information from NRA
SLOVAKIA	http://www.urso.gov.sk:8088/CISRES/Agenda.nsf/KalkulackaElektrinaNewWeb	http://www.urso.gov.sk:8088/CISRES/Agenda.nsf/KalkulackaPlynNewWeb
SLOVENIA	https://www.agen-rs.si/primerjalnik	https://www.agen-rs.si/primerjalnik
SPAIN	http://comparadorofertasenergia.cnmc.es/comparador/	http://comparadorofertasenergia.cnmc.es/comparador/
SWEDEN	http://www.ei.se/elpriskollen/	http://www.energimarknadsbyran.se/Gas/Dina-avtal-och-kostnader/Gaspriskollen/
UNITED KINGDOM	http://www.ukpower.co.uk/	http://www.ukpower.co.uk/

Source: ACER Retail Database (2016).

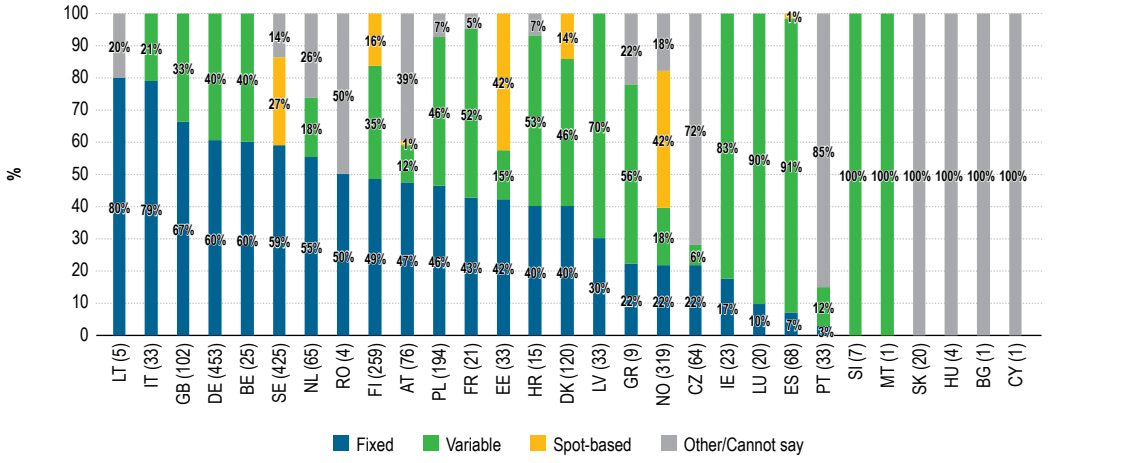
Figure 33: Number of electricity and gas offers from price comparison tools in ACER database, capital cities, November-December 2013, 2014 and 2015 (%)



Source: ACER Retail Database (2014, 2015, 2016).

Note: For the capitals of Cyprus, Malta and Norway, information on gas offers was not collected. The data refer to capital cities, except for the Swedish natural gas offers, where the data refer to a very limited area of Sweden with an existing natural gas network – the Gothenburg area. Only one electricity and gas offer was obtained from the regulators of Bulgaria, Cyprus, Latvia and Malta. Only one gas offer was available for Athens, Lithuania, Romania and Warsaw. In the case of Sweden, the number of electricity offers included in the analysis reflect the offers of the most representative types in the price comparison tool offered by the Swedish suppliers, although the number of all offers is estimated to be higher than 600. In the case of electricity offers in Copenhagen (end of 2014), the regulator estimates the number of offers is estimated to be higher (i.e. at the level of 2013). Dual-fuel offers are not included in the Figure.

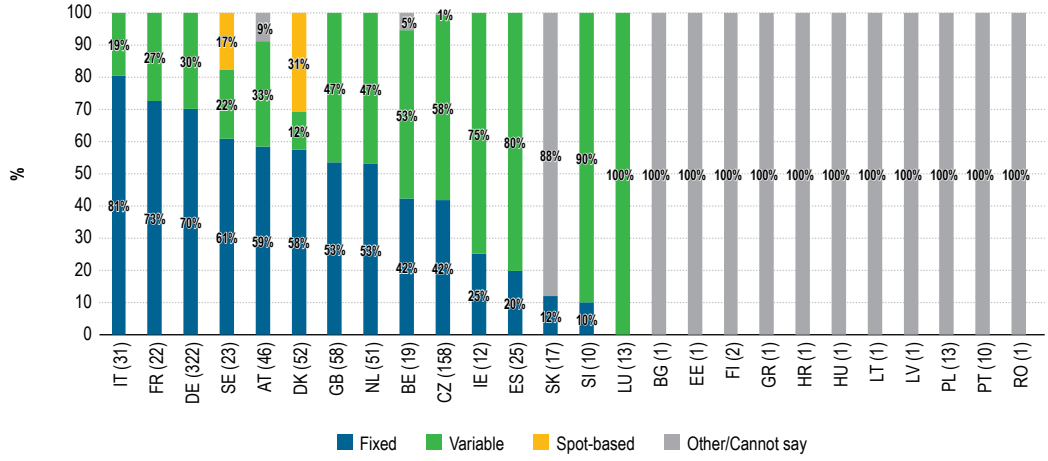
Figure 34: Type of energy pricing of electricity-only offers in capital cities as a percentage of all offers – November–December 2015 (%)



Source: ACER Retail Database (2016).

Note: The number next to the country code refers to the number of offers in the database. The above chart includes offers in which the type of energy pricing could not be determined due to the lack of information in the price comparison tools (Amsterdam, Athens, Bratislava, Bucharest, Budapest, Oslo, Prague, Stockholm, Vilnius and Warsaw). In Stockholm, these types of offer relate to offers of suppliers of last resort, which are estimated to be mostly variable, while in Oslo, they relate to offers displaying a range of fixed and variable elements. In Bucharest, Budapest, Nicosia, Sofia, Valletta and Vilnius, the type of energy pricing could not be determined for regulated prices. In Lisbon, the number of offers on the price comparison tool is considerably higher, as there are many ToU offers available to electricity consumers. In 2015, for example, in addition to the 33 single unit rate electricity offers shown in the figure, there were 28 ToU offers and 24 offers with additional services. In Madrid, the reference price follows hourly real-time pricing on the wholesale market.

Figure 35: Type of energy pricing of gas-only offers in capital cities as a percentage of all offers – November–December 2015 (%)



Source: ACER Retail Database (2016).

Note: The number next to the country code refers to the number of offers in the database. One gas offer of an unknown type was obtained from the regulator or supplier in Bucharest, Warsaw, Riga, Vilnius, Zagreb, Athens, Helsinki, Tallinn and Sofia. In the case of Belgium, all offers obtained are gas dual-fuel offers.

Methodology for assessing the level of competition in retail energy markets

The proposed methodology for developing and disseminating a composite index comprises three main steps[137]:

- selecting the indicators;
- combining the indicators; and
- presenting the results.

The individual indicators included in the composite index, as shown in Table 3, are a reflection of this and previous MMRs, and the structure, conduct and performance framework used to assess the relative level of competition.

The choice of indicators balances the potential indicators against the various aspects of competition that are relevant[138]. These potential indicators have been assessed by means of a correlation matrix in order to see if they might measure the same. For some indicators, and especially for the 'number of suppliers active in the market', the decision to use the 'number of suppliers with a market share >5%' was due to data reliability. For example, some observations received by the Agency of the 'number of nationwide active suppliers' reported the number of licences issued to supply gas or electricity in a MS. Introducing this indicator in the ARCI would render an overestimate for some MSs. For future editions of the ARCI, the Agency will attempt for the second consecutive year, data permitting, to transform this indicator into a ratio of 'number of nationwide active suppliers' per one million household customers, so as to fully reflect its value. All in all, the Agency is committed, and will strive, to further improve the data collection process, comparability and integrity. The latter remains the responsibility of providers of data.

Moreover, future editions could include some additional indicators, such as the correlation between the energy component of retail price and wholesale prices. As in the previous edition also in this year's edition, this indicator was not included due to an insufficient number of observations. In addition, the idea of compiling the ARCI over time has been considered to make it more dynamic over time i.e. less static. This will be further explored in the future. Furthermore, following the sensitivity assessment, which has shown that the use of weighted and equally weighted indicators did not show a significant change in the scoring of MSs, the final methodology is based on equal weights given to each indicator. In most cases, the scope of individual indicators is based on nationwide information, with the exception of the indicator which covers the figures on capital city levels (Table 3).

137 For the purposes of this project, the focus is on the household segment, as data are more readily available. However, the same framework and indicators are also applicable to industrial segment and the entire retail market.

138 In practice, some indicators capture more closely than others the aspects of competition of interest. Moreover, while data series for indicators were selected, in part, based on their availability, data within these series were sometimes incomplete. The method involves identifying these gaps and filling them either with current proxy data or historical data, where available.

Table 3: Competition indicators included and the assessment framework for the composite index (ARCI)

Indicator	Scope	Low score = 0	High score =10	Weight	MMR reference
Concentration ratio, CR3	National	Market share of three largest suppliers 100%	Market share of three largest suppliers 30% or less	10	Chapter 6 (Figure 18, Figure 36)
Number of suppliers with market share > 5%	National	Low number of suppliers	High number of suppliers	10	Chapter 6 (Figure 18, Figure 37)
Ability to compare prices easily	National	Difficult to compare prices	Easy to compare prices	10	Chapter 6 (Figure 42)
Average net entry (2013–2015)	National	Net entry zero	Net entry of five or more nationwide suppliers	10	Chapter 6 (Figure 38)
Switching rates (supplier + tariff switching) over 2011–2015	National	Annual switching rate zero	Annual switching rate 20% or more	10	Chapter 6, Chapter 8 (Figure 19, Figure 39)
Percentage of consumer who have not switched supplier	National	No consumer has switched from the incumbent supplier	More than 1/3 of consumers have switched to a non-incumbent supplier	10	Chapter 6 (Figure 40)
Number of offers per supplier	Capital city	One offer per supplier	Five or more offers per supplier	10	Chapter 6 (Figure 41)
Does the market meet expectations	National	Market does not meet expectations	Market fully meets expectations	10	Chapter 6 (Figure 43)
Average mark-up (2013–2015) adjusted for proportion of consumers supplied under regulated prices	National	High mark-up	Low mark-up	10	Chapter 6, Chapter 7 (Figure 21, Figure 22, Figure 44 to Figure 47, Figure 50)

Source: IPA Advisory (2015) and ACER (2016).

ARCI does not have a regulated prices component indicator, but incorporates regulated prices in the average mark-up. The difference between the wholesale price and the energy component of the retail price are used as a proxy for the mark-up. Hence, a low mark-up, other things being equal, indicates more competition. However, low mark-up could also be the result of the application of price regulation. To correct this, the ARCI multiplies the inverse mark-up by the percentage of household consumers served under regulated tariffs.

To combine individual indicators into a composite index, choices had to be made as to how data (which are in different units of measurement) should be normalised and weighted before being aggregated. To some extent, these choices are subjective. The data for each indicator are normalised into a range of zero to 10, depending on the values they take. This largely removes the effect of outliers, allows for some measure of comparative performance between countries, and allows scores to more closely reflect the expected implications for competition. Where data are missing (to avoid biasing the composite index downwards), weights for other indicators for that country are increased.

The gaps in the data underlying the individual indicators are filled with previous years' values or proxies (e.g. data that relates to the whole retail market). Where data on an indicator for a particular country were still missing, the weights of the other indicators in the same category are increased (i.e. structure, conduct or performance) for that country so that they sum to the proposed category weights (i.e. 33.3% for structure, 44.4% conduct, and 22.2% for performance). For this year's edition, the number of data gaps is very small (less than 4%), hence the impact this may have on confidence in the final ARCI results is limited.

The extent of data imputation and missing data is converted into confidence ranking per country which is based solely on data completeness, as shown in Table 4.

Table 4: Imputed and missing data by the EU MSs, 2015 data (nine indicators)

	Electricity				Gas			
MSs	Imputed	Missing	Confidence score		Imputed	Missing	Confidence score	
AT	0	1	2	H	1	1	3	M
BE	0	0	0	H	0	0	0	H
BG	2	1	4	M	1	0	1	H
HR	0	1	2	H	0	0	0	H
CY	0	2	4	M	NAP	NAP	NAP	NAP
CZ	1	0	1	H	0	0	0	H
DK	1	1	3	M	0	0	0	H
EE	0	1	2	H	1	1	3	M
FI	1	1	3	M	NAP	NAP	NAP	NAP
FR	0	0	0	H	0	0	0	H
DE	0	0	0	H	0	0	0	H
GB	0	0	0	H	0	0	0	H
GR	0	0	0	H	2	0	2	H
HU	0	1	2	H	0	1	2	H
IE	0	1	2	H	0	0	0	H
IT	0	1	2	H	0	1	2	H
LV	0	0	0	H	0	0	0	H
LT	1	0	1	H	0	0	0	H
LU	0	1	2	H	0	0	0	H
MT	1	3	7	L	NAP	NAP	NAP	NAP
NL	0	1	2	H	0	1	2	H
NO	0	0	0	H	NAP	NAP	NAP	NAP
PL	1	0	1	H	0	0	0	H
PT	0	0	0	H	0	0	0	H
RO	0	0	0	H	0	1	2	H
SK	0	0	0	H	0	0	0	H
SI	0	0	0	H	0	1	2	H
ES	0	0	0	H	0	0	0	H
SE	0	2	4	M	NAP	NAP	NAP	NAP

Source: ACER (2016).

Note: Confidence score: H = High; M = Medium; L = Low; NAP = not applicable.

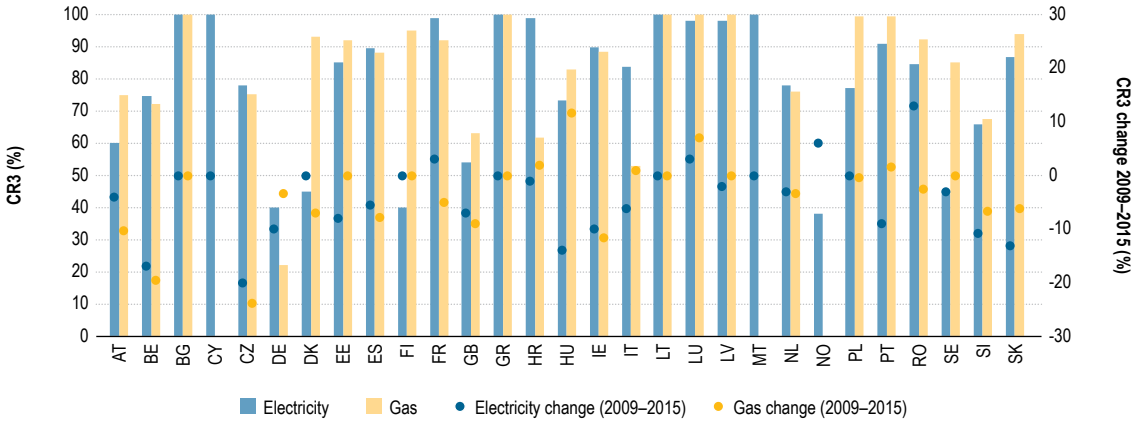
The ranking attributes one point for each indicator which is imputed and two points for each indicator that is missing. Ranking of high, medium, or low are then attributed based on the following points:

- High (H): 2 points or less (equivalent to one missing or two imputed indicators);
- Medium (M): 2-4 points; and
- Low (L): 5 points or more.

Market structure indicators

Market concentration

Figure 36: CR3 in the retail electricity and gas markets for household consumers in the EU MSs and Norway by metering points and absolute six-year change – 2015 and 2009–2015 (%)

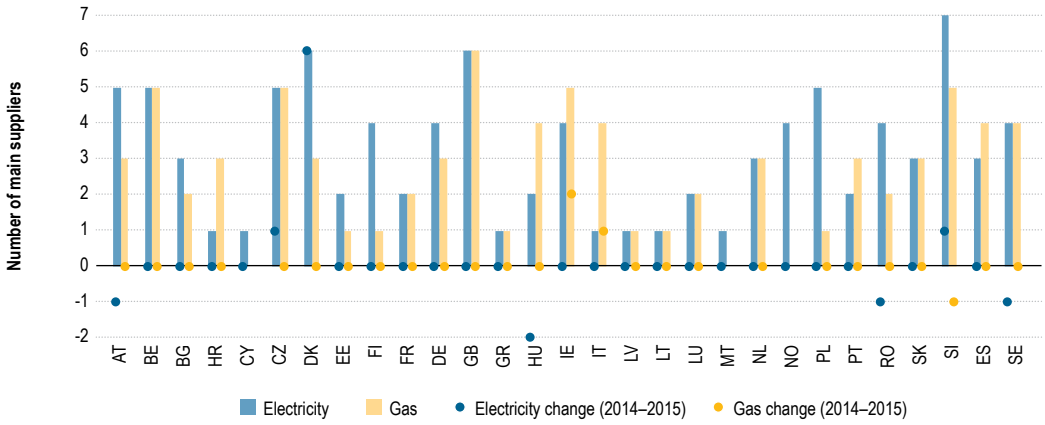


Source: CEER National Indicators Database (2016) and ACER calculations.

Note: Cyprus and Malta do not have retail gas markets, while the Nordic countries (Finland, Norway and Sweden) have relatively small retail gas market. For the assessment of the German retail market, CR3 was replaced with CR4 (market share of the four largest suppliers), because CR3 is not available.

Number of suppliers

Figure 37: Absolute number of suppliers with market shares above 5% measured by metering points in retail electricity and gas markets for household consumers and absolute one-year change – 2015 and 2014–2015 (number of suppliers)

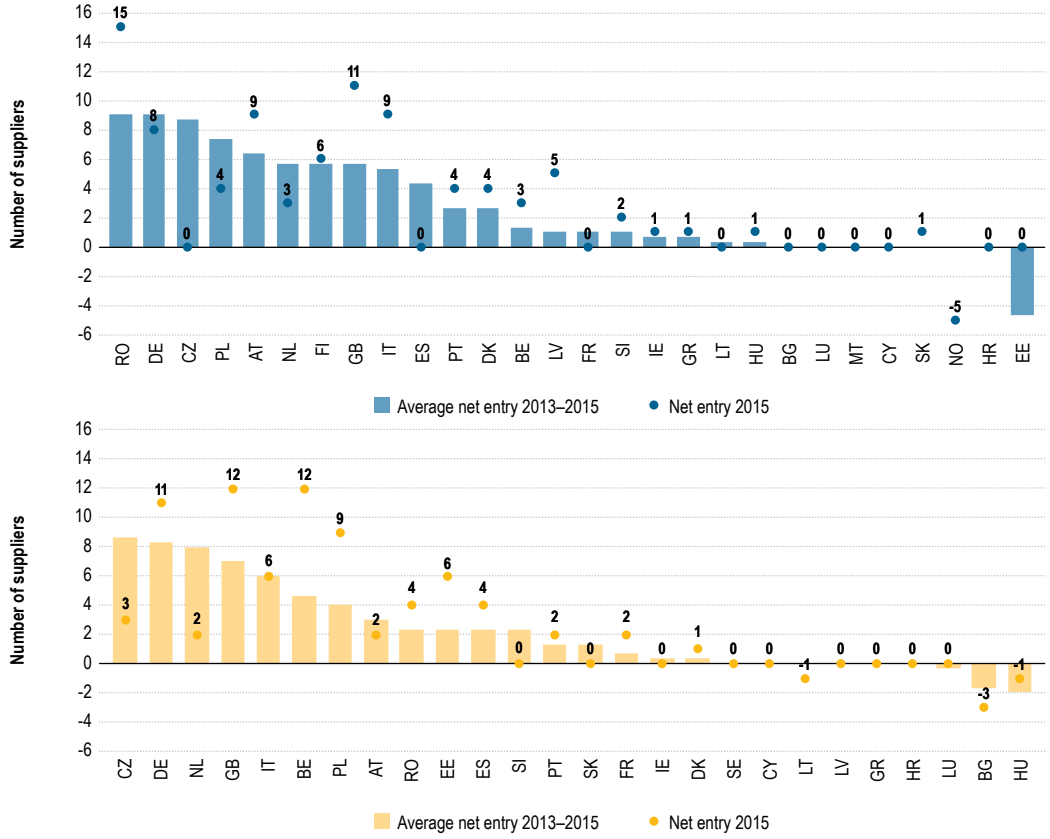


Source: CEER National Indicators Database (2016) and ACER calculations.

Note: Cyprus and Malta do not have retail gas markets, while the Nordic countries (Finland, Norway and Sweden) have relatively small retail gas market.

Average net entry into the market

Figure 38: Net entry of nationwide active suppliers into the retail electricity and gas markets for household consumers and three-year net entry average – 2015 and 2013–2015 (number of suppliers)



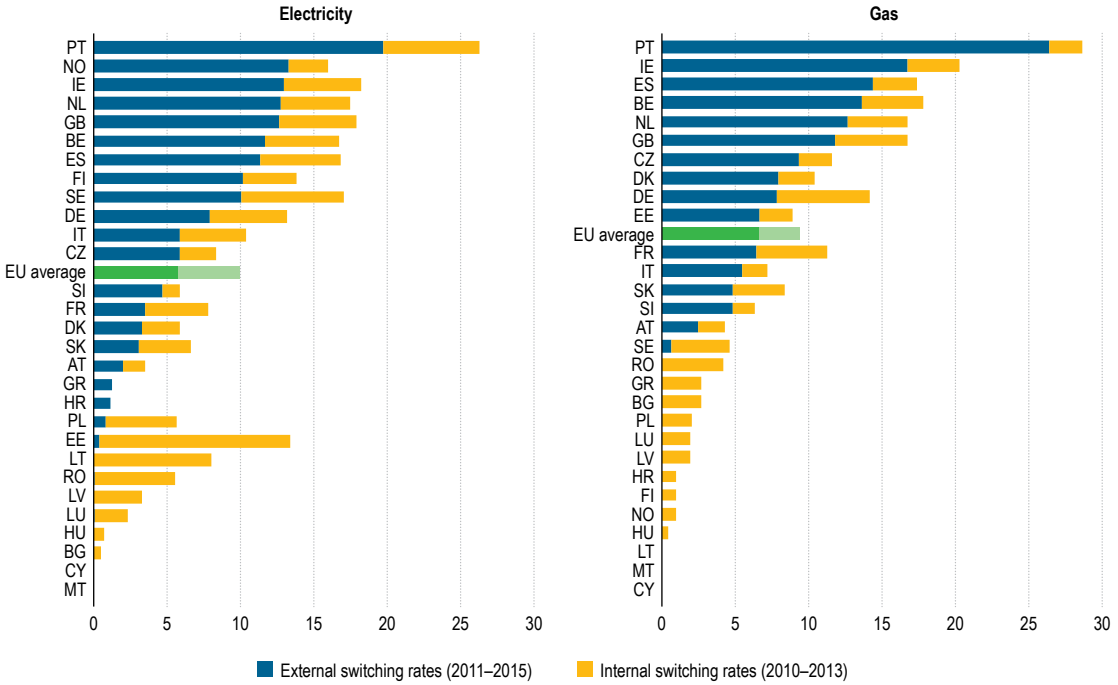
Source: CEER National Indicators Database (2015) and ACER calculations.

Note: For Germany, the number of nationwide active suppliers is replaced by the average number of suppliers for household customers in DSO networks, due to the complexity of the German network structure that contains 880 DSO networks for electricity and 714 DSO networks for gas.

Market conduct indicators

Consumer switching activity

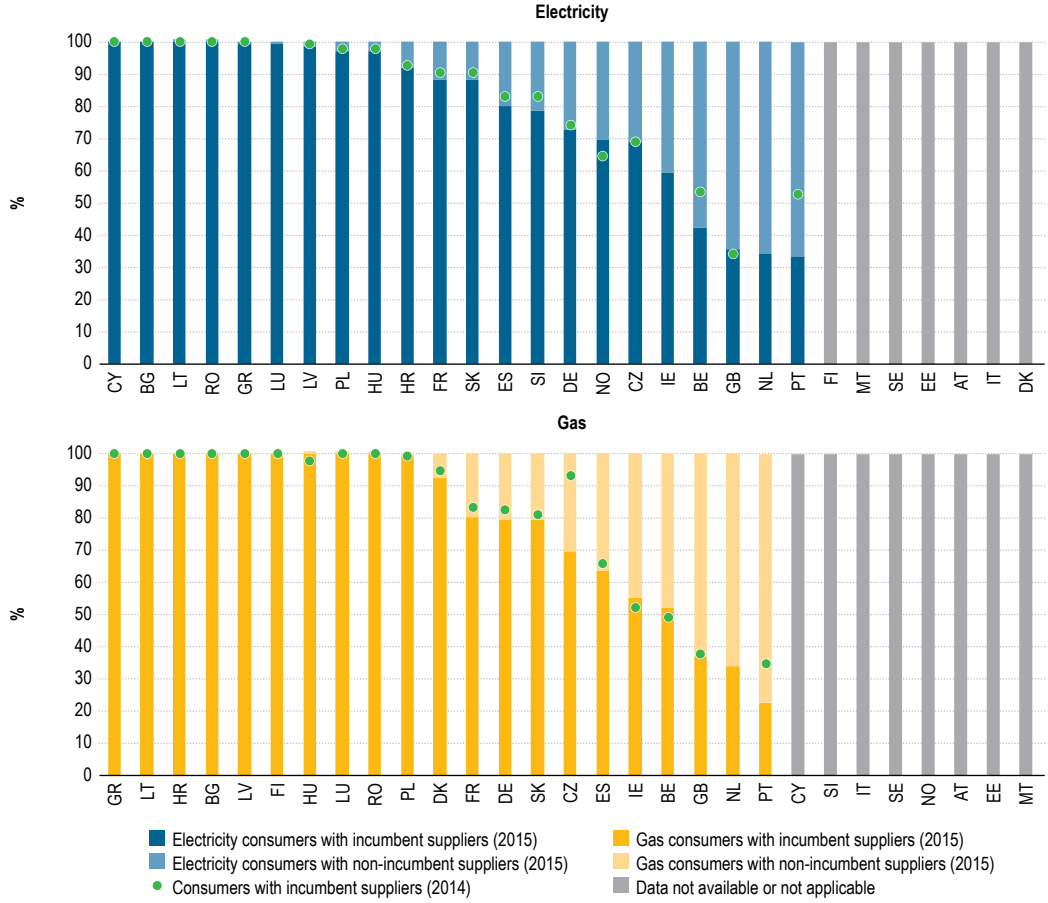
Figure 39: Five-year average of external switching rates and three-year average of internal switching rates of electricity and gas household consumers – 2011–2015 and 2010–2013 (%)



Source: CEER National Indicators Database (2016) and ACER calculations.

Consumer inactivity

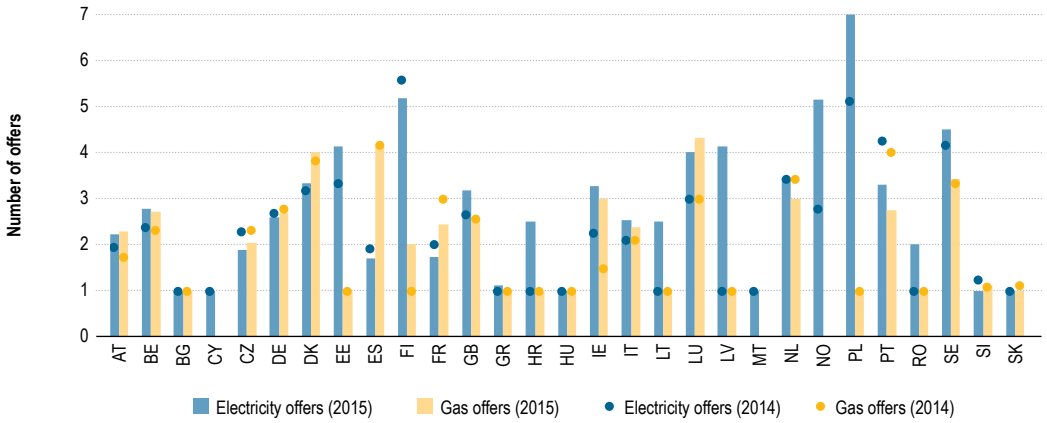
Figure 40: Proportion of electricity and gas consumers who have not switched and consumers who are supplied by a different supplier than their incumbent supplier – 2014 and 2015 (%)



Source: CEER National Indicators Database (2016) and ACER calculations.

Number of offers per supplier

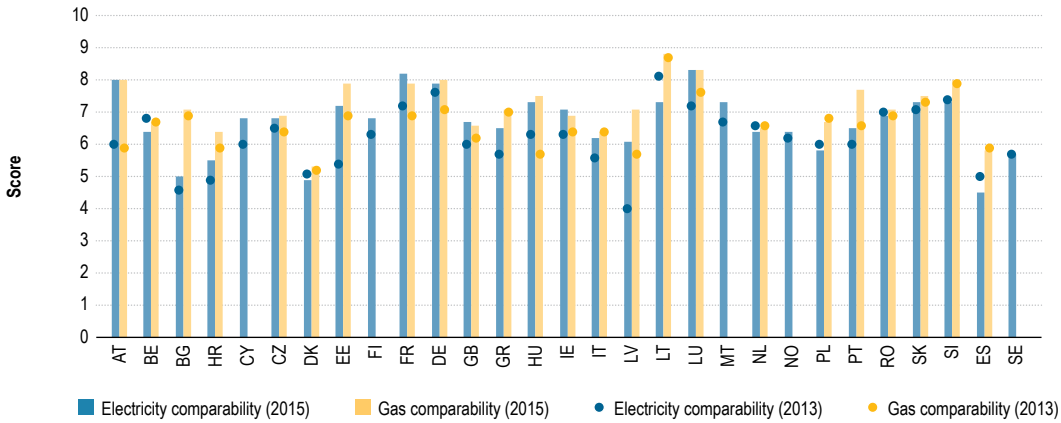
Figure 41: Number of offers per supplier available in capital cities – 2014 and 2015



Source: ACER Retail Database (2016).

Ability to compare prices easily

Figure 42: Ability of consumers to compare prices easily in retail electricity and gas markets for household consumers – 2015 (score)



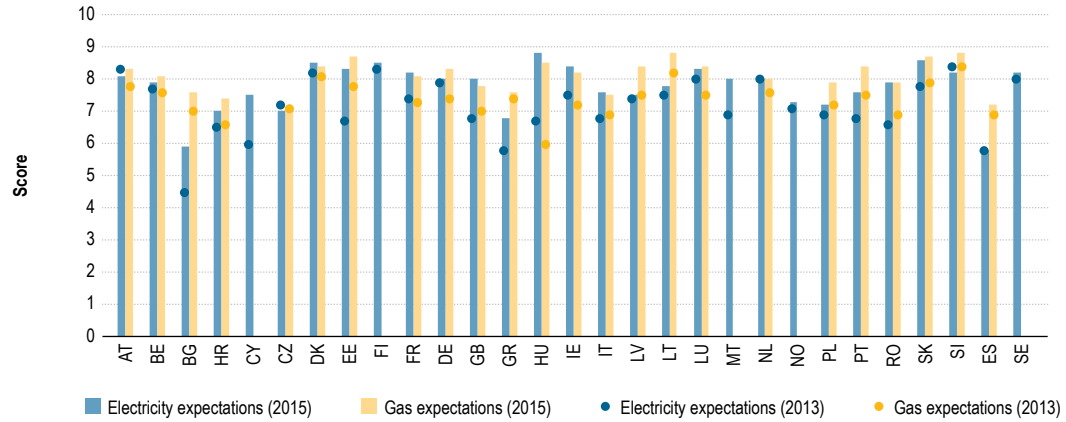
Source: DG Justice and Consumers (2014 and 2016).

Note: It was not possible to conduct interviews for both electricity and gas markets in every country as: (i) gas markets do not exist in some countries; and (ii) in some countries, these markets are monopoly markets. The Commission's survey was done for the UK (instead of GB). 'Comparability' reflects the ability of consumers to compare between products or services as they are offered by different suppliers or providers in the market, and implicitly includes a price and quality comparison. This topic was assessed with one question: "On a scale from 0 to 10, how difficult or easy was it to compare the products/services sold by different retailers/offered by different service providers?", which is a measure of how easy it is for consumers to participate in the market.

Competition performance indicators

Consumer satisfaction

Figure 43: Consumer expectations perceived in retail electricity and gas markets for household consumers – 2015 (score)

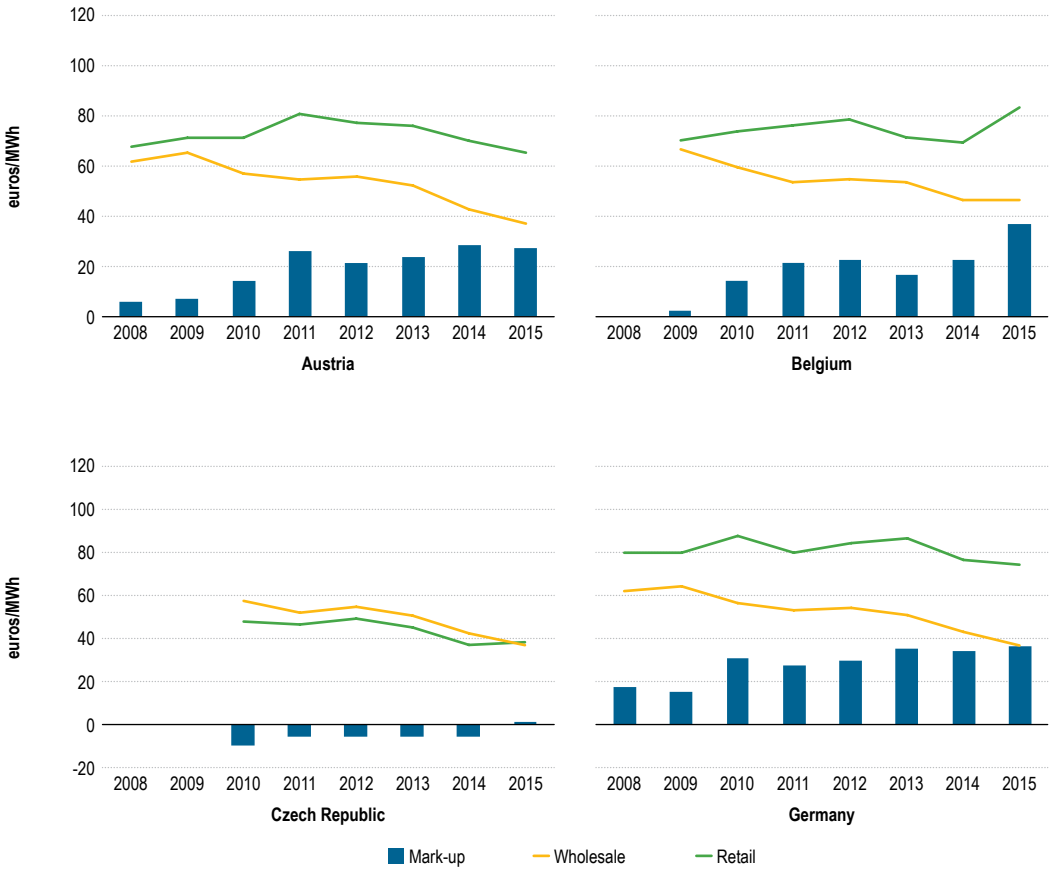


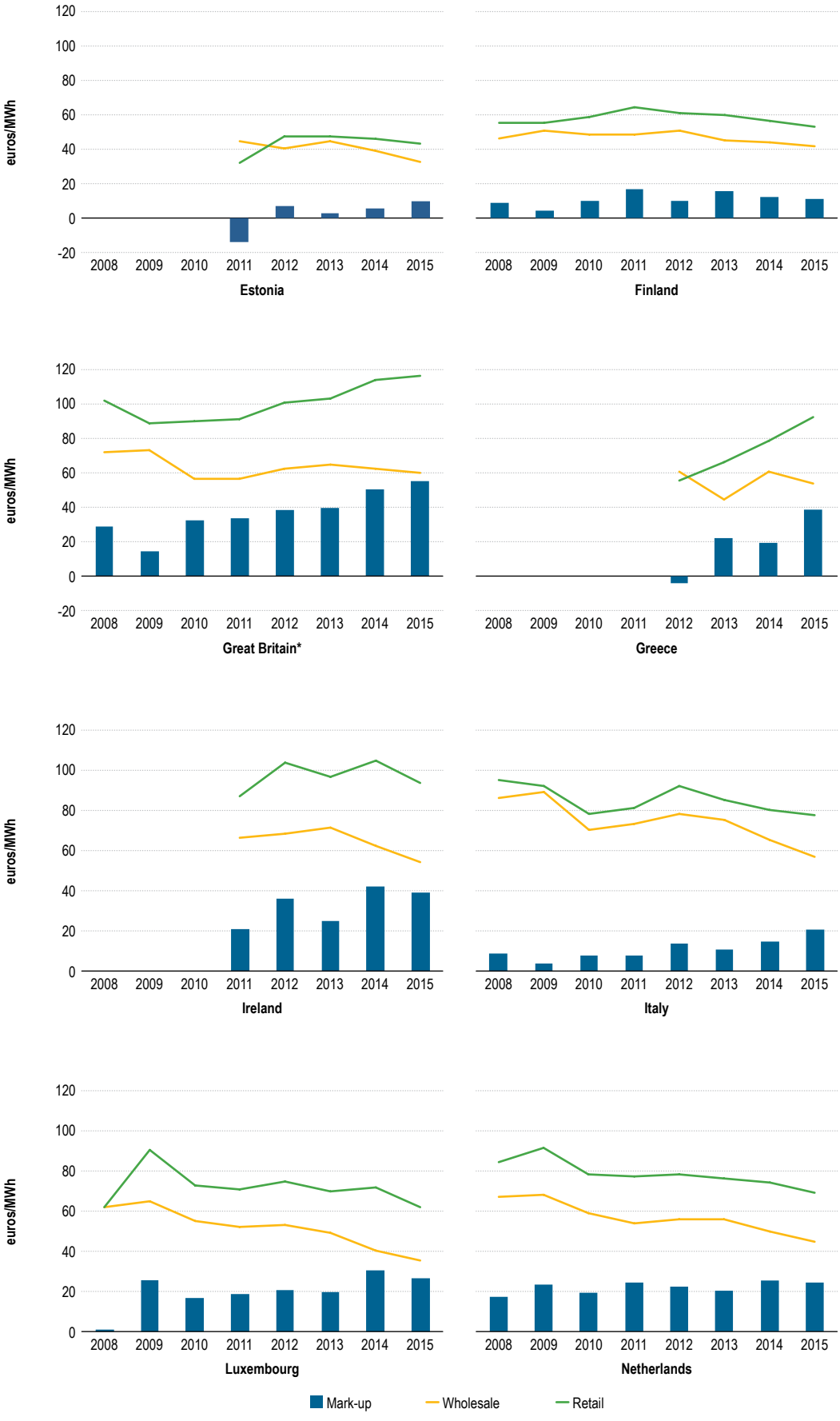
Source: DG Justice and Consumers (2014 and 2016).

Note: It was not possible to conduct interviews for both electricity and gas markets in every country as: (i) gas markets do not exist in some countries; and (ii) in some countries, these markets are monopoly markets. The Commission's survey was done for the UK rather than GB. 'Expectations' is a dimension that measures the extent to which the market generally lives up to what consumers want, assessed with the question: "On a scale from 0 to 10, to what extent did the products/services on offer from different retailers/providers live up to what you wanted within the past year?"

Mark-ups

Figure 44: Mark-up and relationship between wholesale prices and the energy component of the retail electricity price in the household segment for a selection of countries with non-regulated retail prices – 2008–2015 (euros/MWh)

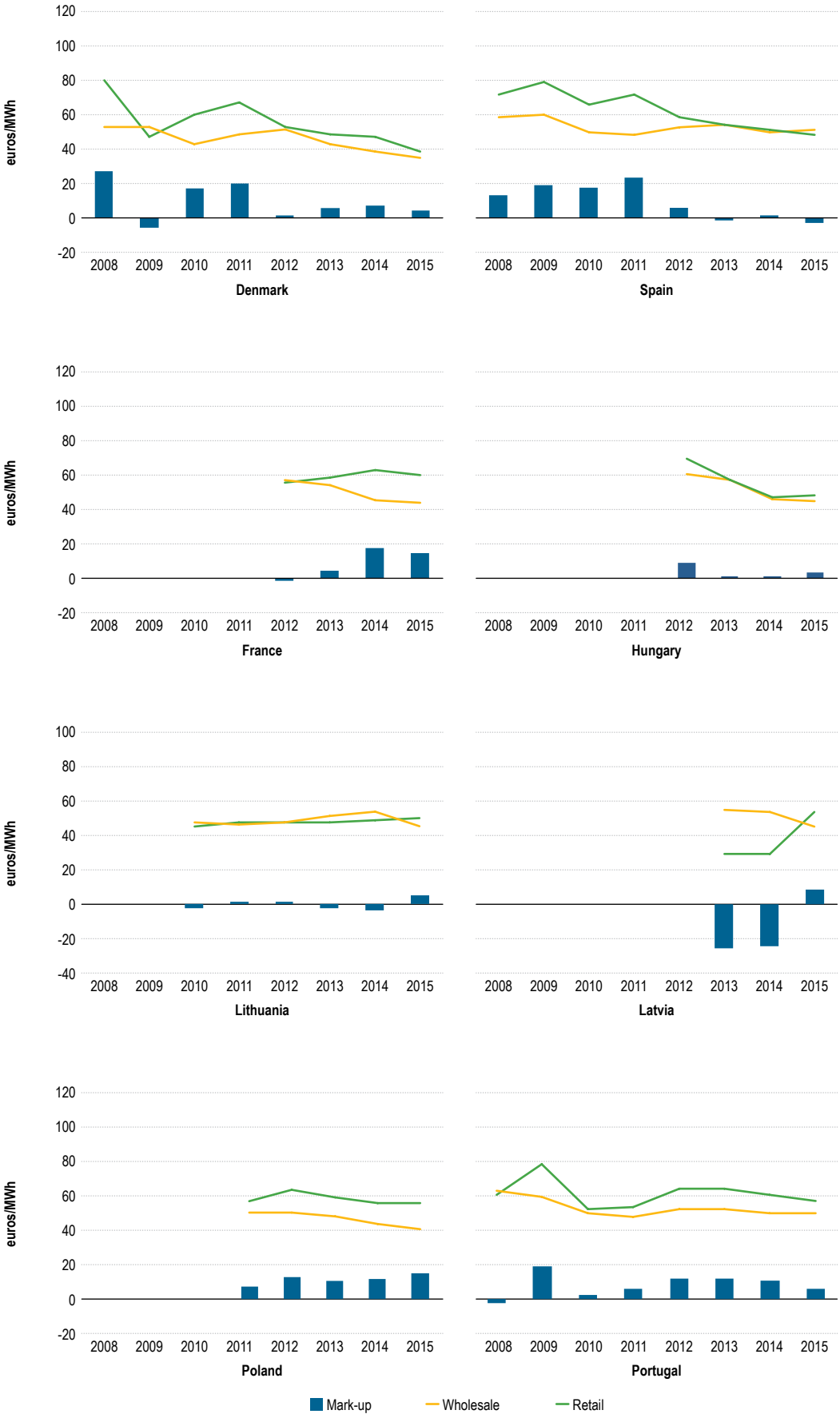


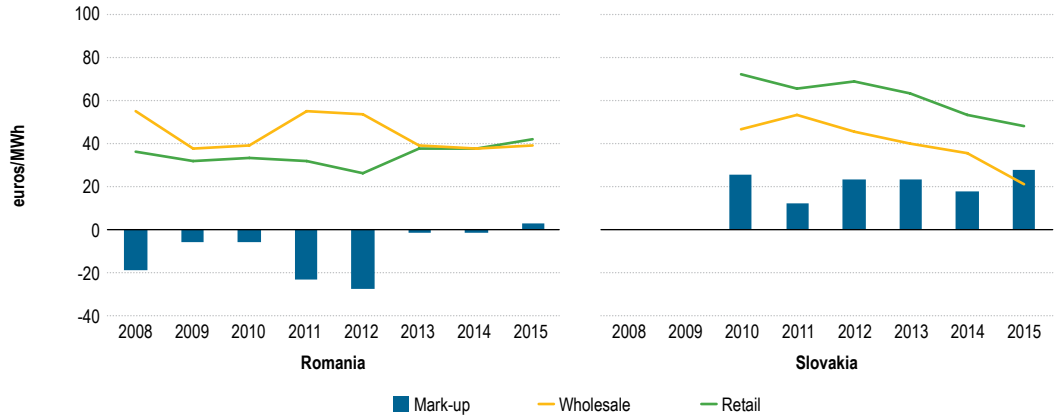

euros/MWh
120
100
80
60
40
20
0
-20
2008
2009
2010
2011
2012
2013
2014
2015
Estonia
Finland
Great Britain*
Greece
Ireland
Italy
Luxembourg
Netherlands
Mark-up
Wholesale
Retail

Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

*Note: *The increase in the electricity mark-up between 2014 and 2015 in Great Britain is partially explained by the effect of the exchange rate (pound sterling/euro). For example, if expressed in pounds, by using the annual reference exchange rate of the European Central Bank, the mark-ups for Great Britain would be 18%, 17%, 22% and 27% lower in 2012, 2013, 2014 and 2015, respectively, i.e. the electricity mark-up would be 31.8 pounds, 32.6 pounds, 39.3 pounds and 40.4 pounds, respectively.*

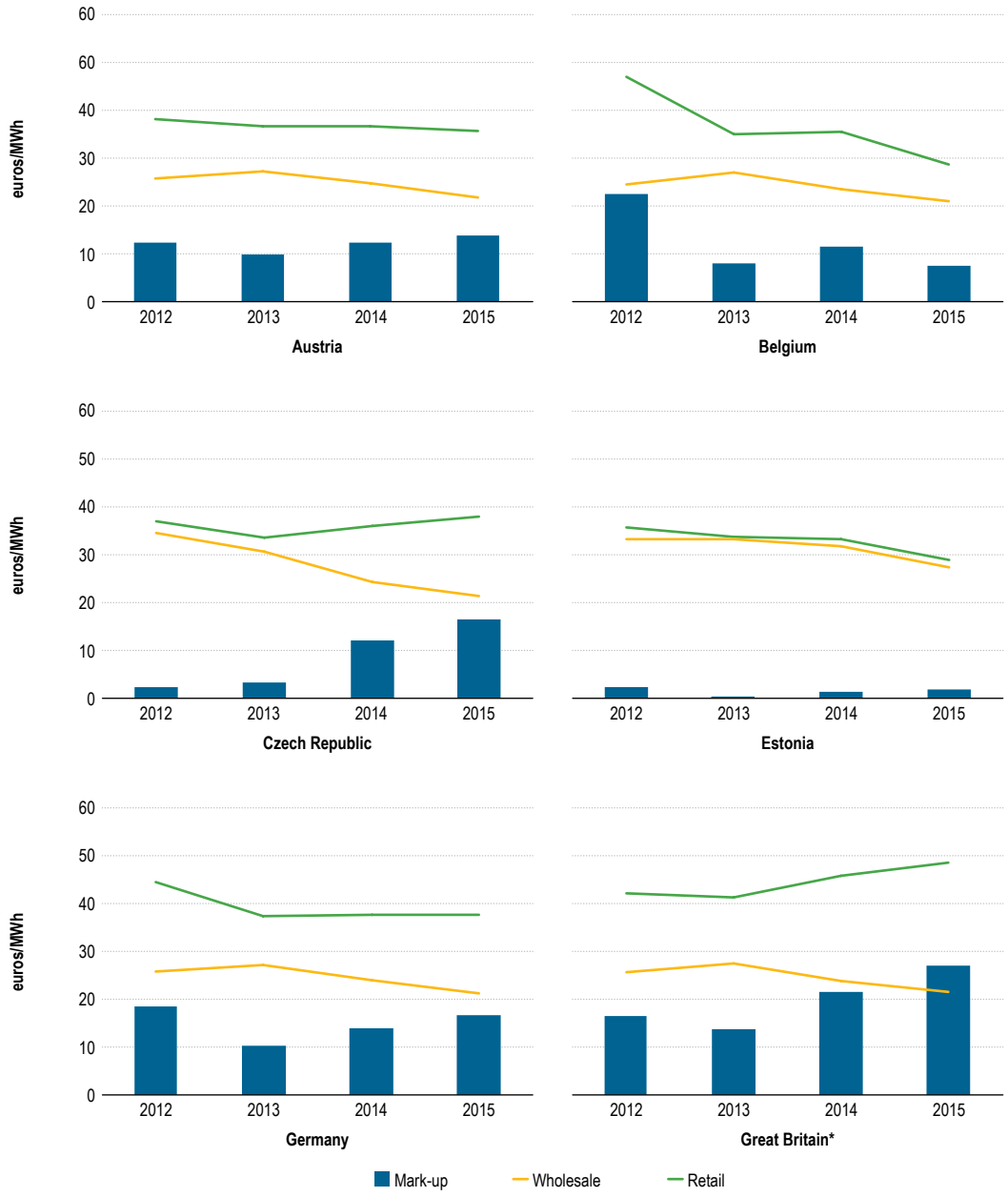
Figure 45: Mark-up and relationship between wholesale prices and the energy component of the retail electricity price in the household segment for a selection of countries with regulated retail prices – 2008–2015 (euros/MWh)

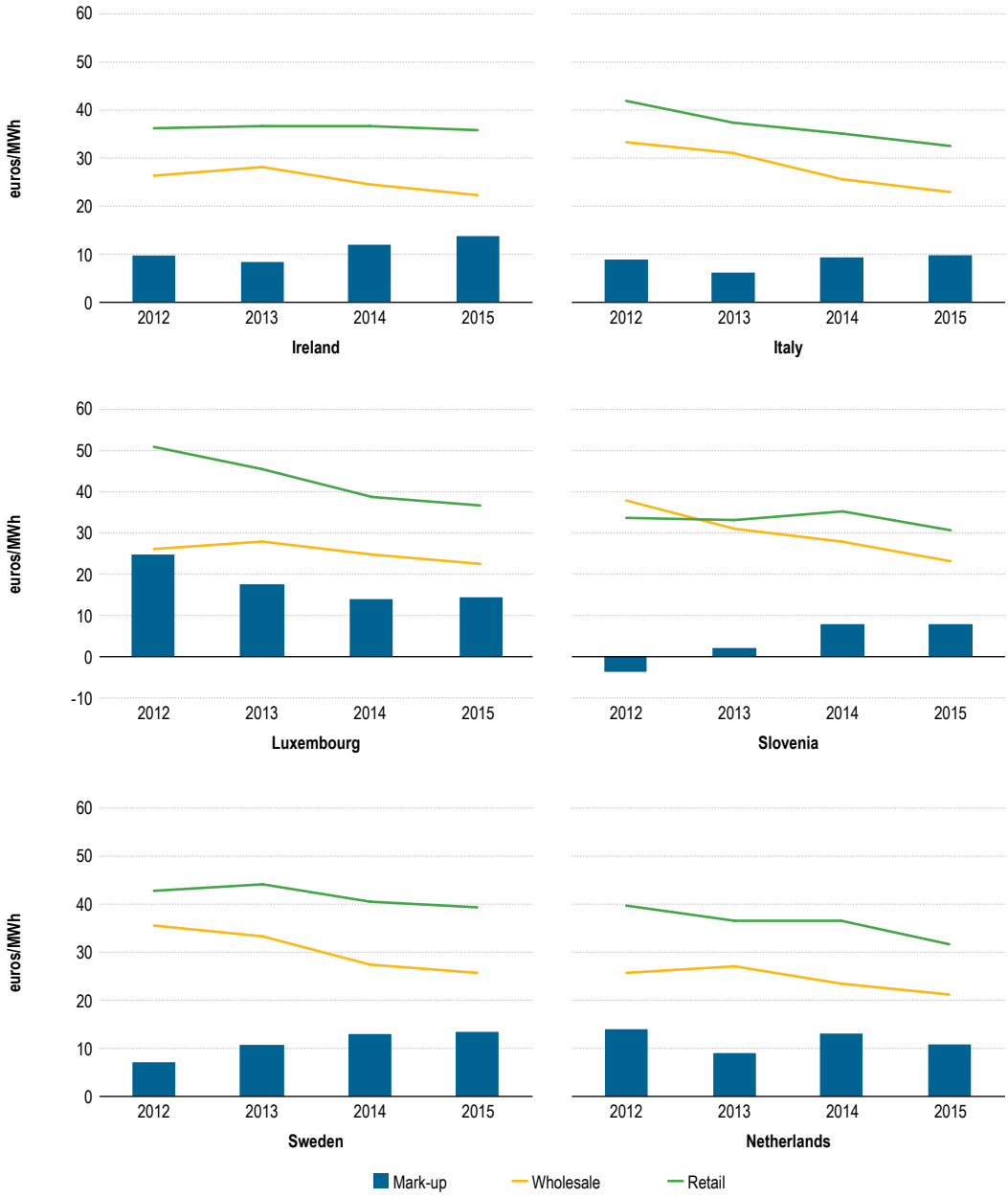




Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Figure 46: Mark-up and relationship between wholesale prices and the energy component of the retail gas price in the household segment in a selection of countries with non-regulated retail prices – 2012–2015 (euros/MWh)

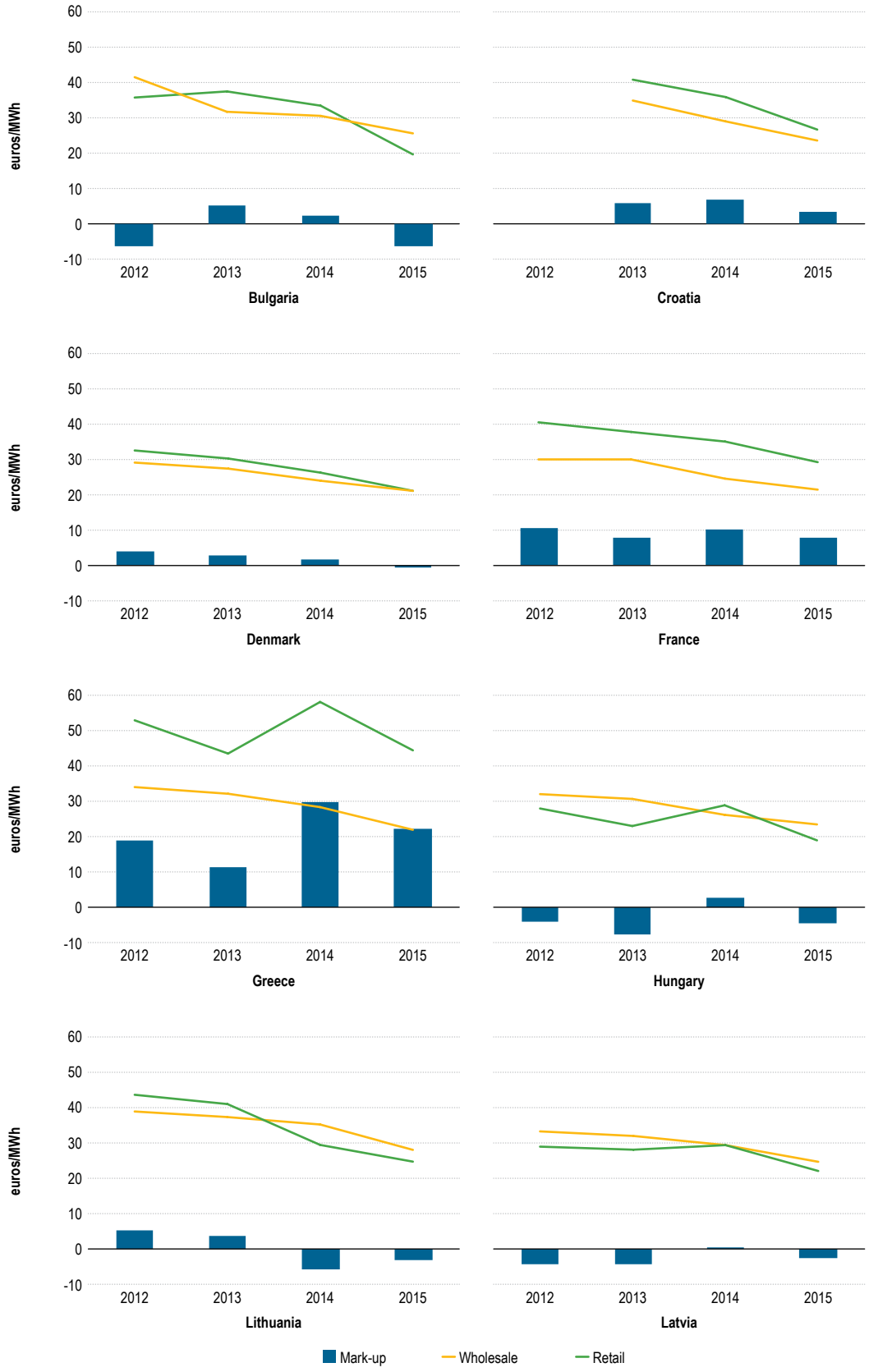


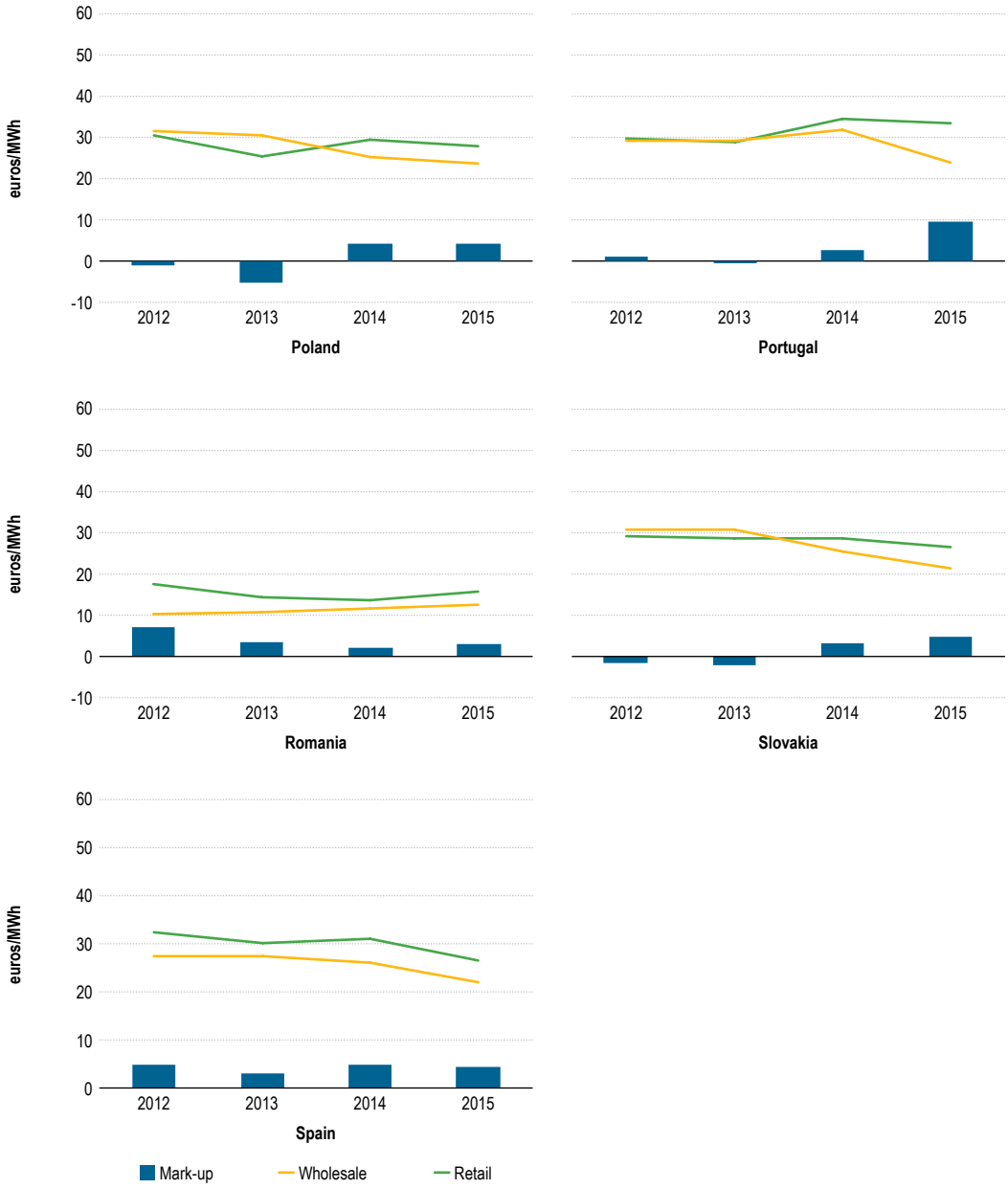


Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

*Note: All prices are estimates of the average suppliers' sourcing price level in each MS, based on available public data and based on the ACER methodology (footnote 104). For the gas wholesale price, this analysis includes the hub hedging gas prices for Belgium, Great Britain, Italy, Luxembourg and the Netherlands and the gas import prices declared at the border from the Eurostat Comext database for the Czech Republic, Estonia, Ireland, Slovenia and Sweden. The International Gas Union price survey estimate (2015) was used for Austria. The German wholesale import price corresponds to the BAFA imports (Federal Office of Economics and Export Control), while Luxembourg matches the Belgian price plus transmission charges (Chapter 3 in the Gas Wholesale volume). Finland has no significant retail gas household market and therefore is not included in this figure. The energy component for 2015 is based on the consumption profile of 11,000 kWh/year of the ACER Retail Database. *The increase in the gas mark-up between 2014 and 2015 in Great Britain is partially explained by the effect of the exchange rate (pound sterling/euro). If expressed in pounds, by using the reference exchange rate of the European Central Bank for December 2015, the gas mark-ups for Great Britain would be 19%, 16%, 21% and 27% lower in 2012, 2013, 2014 and 2015, respectively, i.e. the gas mark-ups would be 13.54 pounds, 11.58 pounds, 17.20 pounds and 19.76 pounds, respectively.*

Figure 47: Mark-up and relationship between wholesale prices and the energy component of the retail gas price in the household segment for a selection of countries with regulated retail prices – 2012–2015 (euros/MWh)

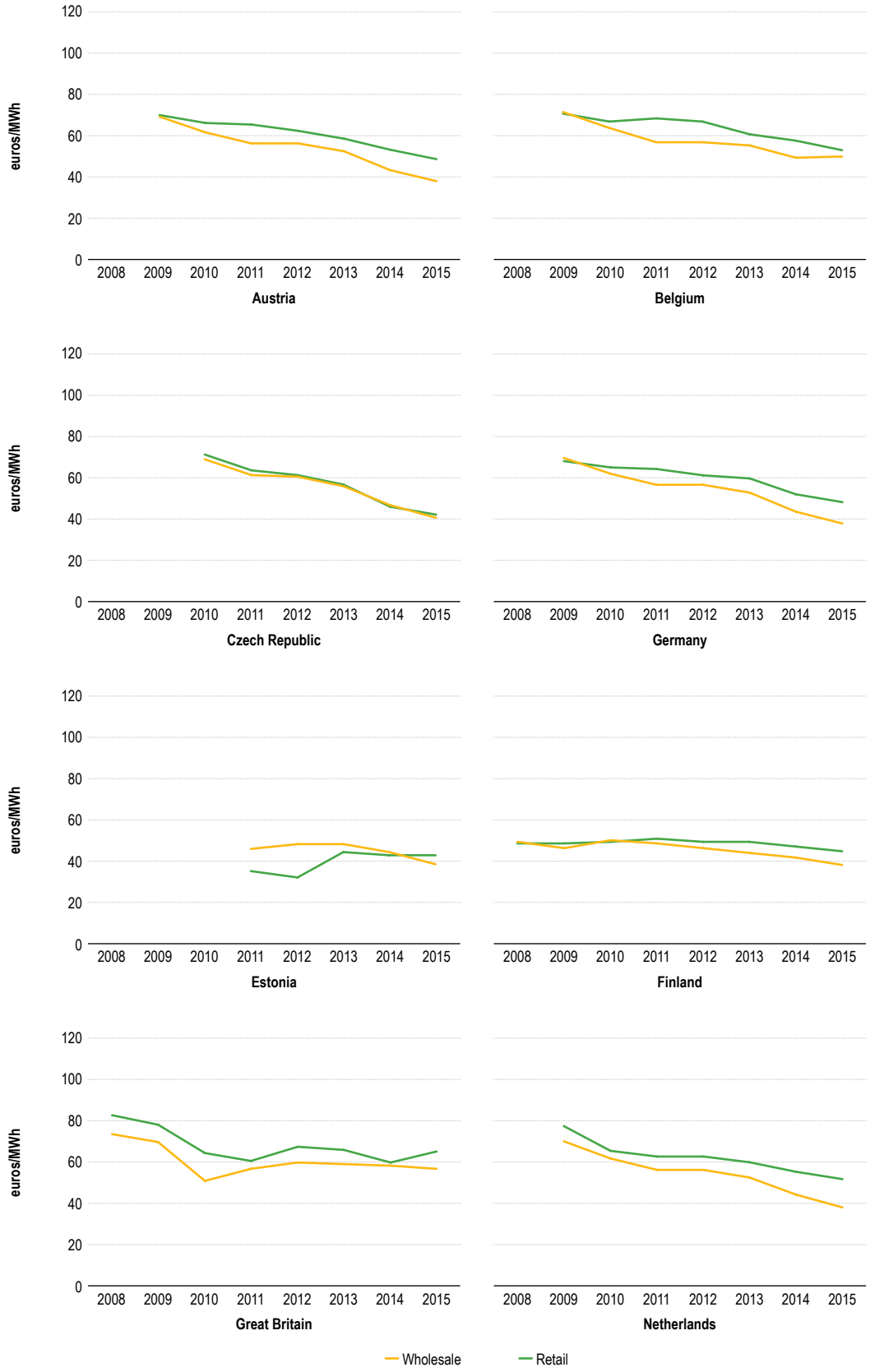


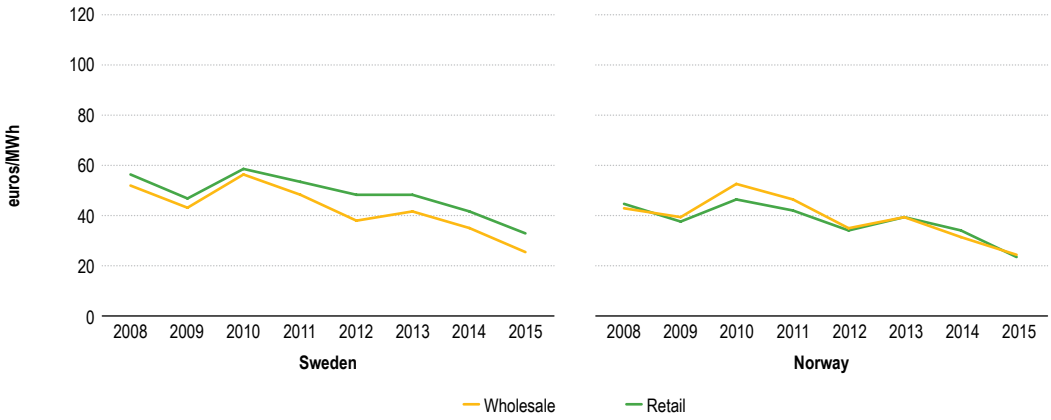


Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Note: All prices are estimates of the average suppliers' sourcing price level in each MS, based on available public data and based on the ACER methodology (footnote 85). For the gas wholesale price, this analysis includes the International Gas Union price survey estimate (2015) for France and the gas import prices declared at the border from the Eurostat Comext database for Bulgaria, Greece, Hungary, Latvia, Lithuania, Portugal, Slovakia and Spain (Chapter 4 in Annual Report on the Results of Monitoring the Internal Natural Gas Markets in 2015). The Polish price corresponds to the average price results of gas auctions that took place in the POLPX exchange during the year. The figures for Romania and Croatia are based on wholesale gas prices from indigenous production, communicated by the NRAs. The Danish price is similar to BAFA (Germany). Gazprom offers a retroactive price discount (estimated at 20%) to the main Lithuanian supplier, which is not reflected in this analysis (otherwise, the gas mark-up would appear to be positive for Lithuania). The energy component for 2015 is based on the consumption profile of 11,000 kWh/year of the ACER Retail Database.

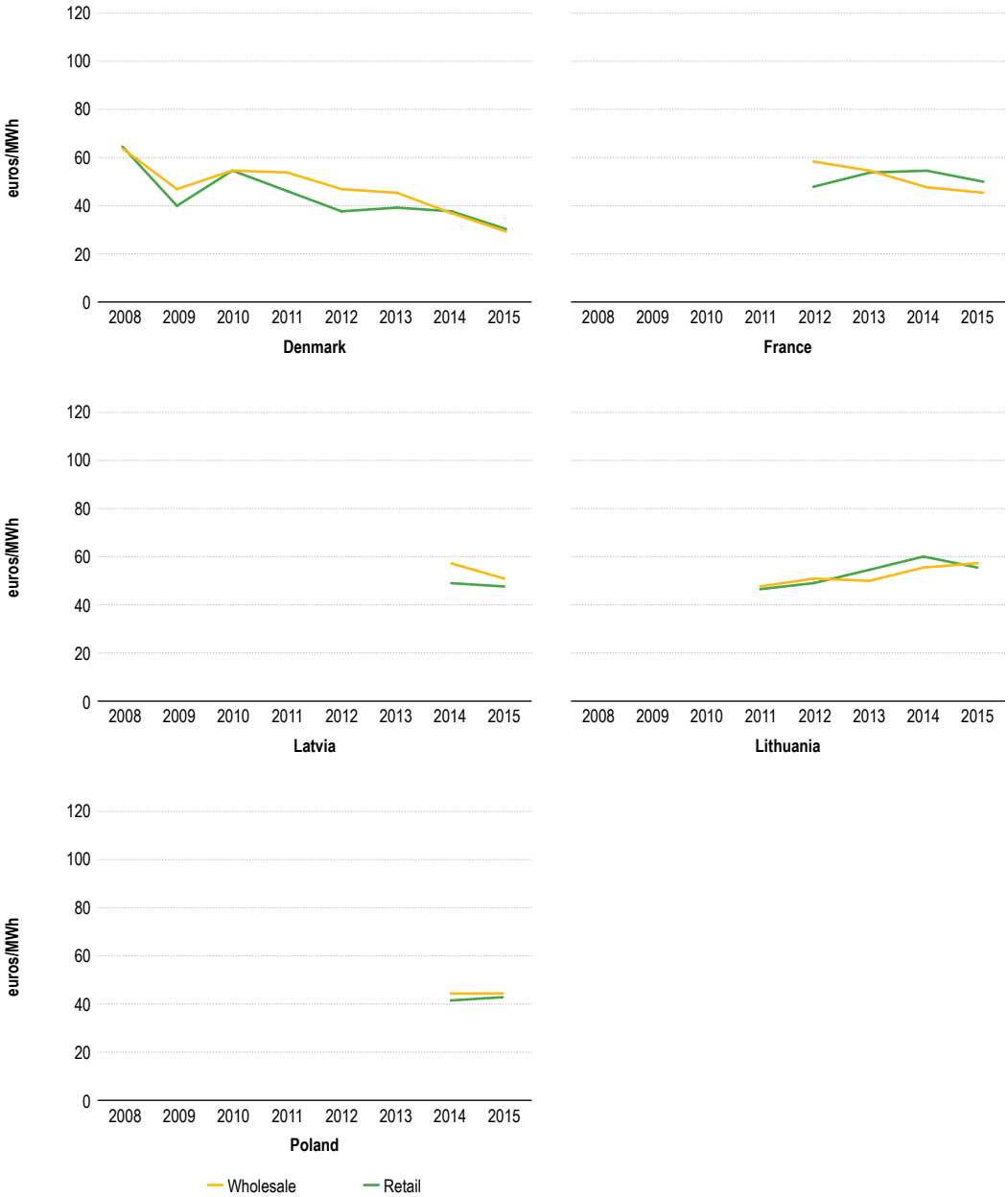
Figure 48: Relationship between wholesale prices and the energy component of the retail electricity price in the industrial segment for a selection of countries with non-regulated retail prices – 2008–2015 (euros/MWh)





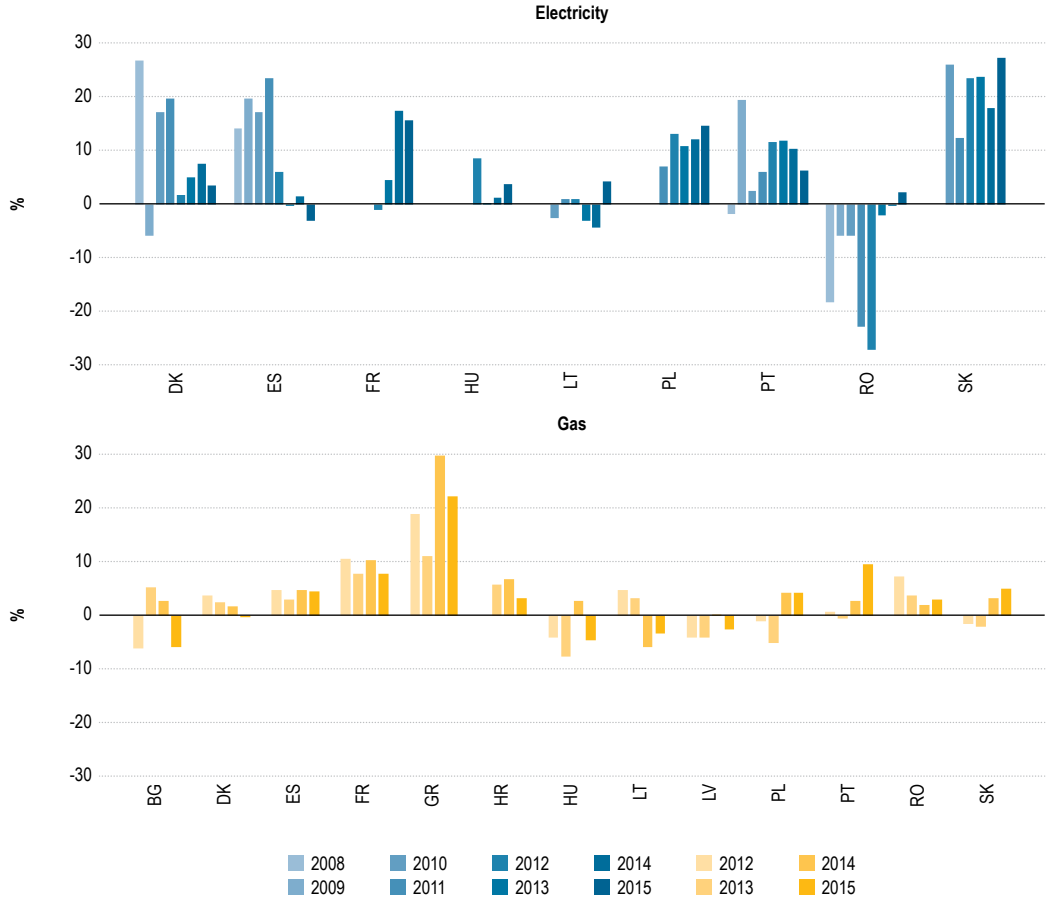
Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Figure 49: Relationship between wholesale prices and the energy component of the retail electricity price in the industrial segment for a selection of countries with regulated retail prices – 2008–2015 (euros/MWh)



Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

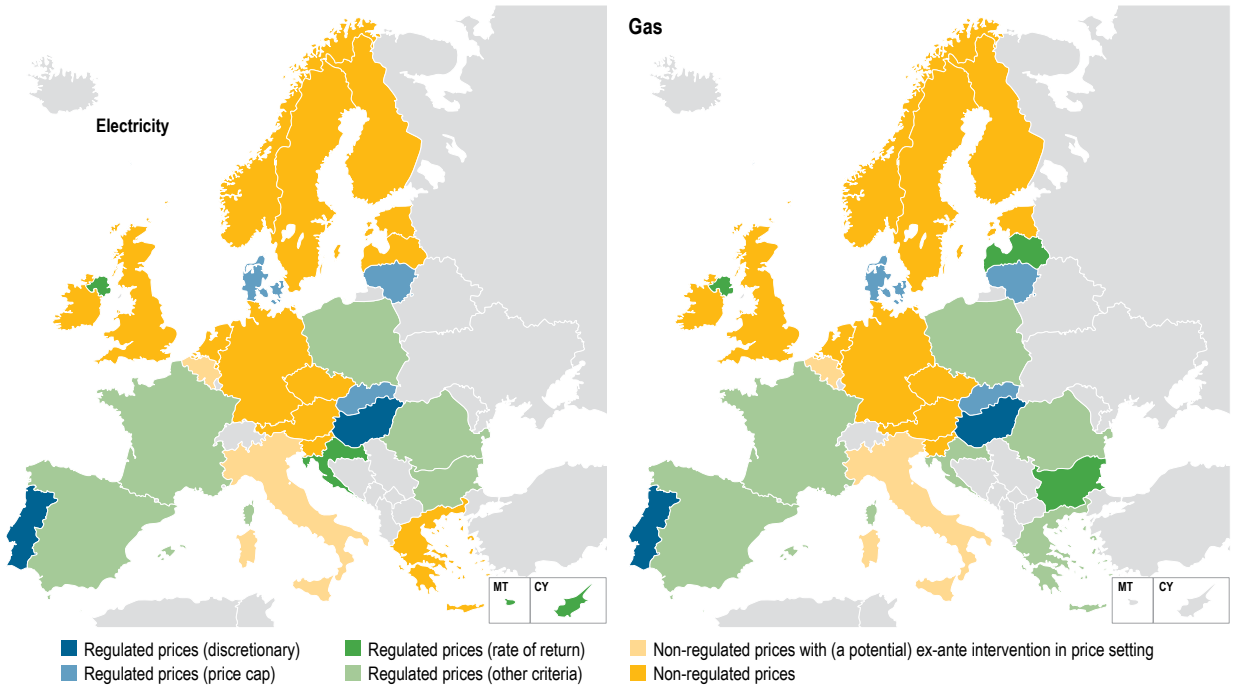
Figure 50: Average mark-up in retail electricity (2008–2015) and gas (2012–2015) markets for the household segment in a selection of countries with regulated prices (euros/MWh)



Source: ACER Retail Database (2016), Eurostat (26 August 2016), NRAs, European power exchanges data (2016) and ACER calculations.

Note: The figure for electricity does not include Bulgaria, Croatia, Cyprus and Malta, because these countries do not have a wholesale market.

Figure 51: End-user price regulation method for the household segment in retail electricity and gas markets in the EU MSs and Norway – 2015



Source: CEER National Indicators Database (2016).

Note: The different price-setting methods across countries affect retail market conditions in different ways. Therefore, these differences have to be taken into consideration when drawing conclusions about the impact of price regulation on retail energy market developments.

List of figures

List of tables