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Annual Report on the Results of Monitoring the Internal Electricity and Natural Gas Markets in 2020

Energy Retail Markets and Consumer Protection Volume

November 2021

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ACER
European Union Agency for the Cooperation of Energy Regulators

CEER
Council of European Energy Regulators

Energy Community

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Contents

List of figures

Recent Developments & Executive Summary

1 This Volume looks back at the developments in Europe's energy retail markets and customer protection measures during 2020. Notwithstanding this, the unprecedented increase in electricity and gas wholesale prices that have taken place in the second half of 2021 merit a few moments of reflection. It is important to note that while energy prices decreased in 2020 in response to the COVID-19 pandemic, during 2021 wholesale energy prices have increased significantly as a result of various supply and demand-related factors in Q3 2021[1]. These wholesale price increases will, result in energy consumers paying higher prices for energy needs and will disproportionately impact the vulnerable and energy poor.

2 While both electricity and gas wholesale prices have increased to unprecedented levels across the EU during the second half of 2021, the price increases have been notably higher for gas than for electricity. Gas prices in early October 2021 were 400% more expensive than in April 2021. Electricity prices have increased by 200%.

3 ACER's October 2021 note on energy prices[2] provides a factual analysis of aforementioned market events and explains the drivers of the unprecedented highs, including:

a) A "tight" global LNG market, leading to an increase in European gas wholesale prices. The EU competes in particular with North East Asia and South America for LNG supplies, while global demand has picked up due to the rapid economic recovery. Furthermore, other factors have played secondary roles in the high energy prices, such as coal prices, carbon prices and weather patterns.

b) Europe's high electricity wholesale price increase has been largely driven by the (global) gas price increase, since in many countries, gas-fired power plants set the electricity price.

4 In response to these energy price rises, the European Commission published in October 2021 a "toolbox"[3] of measures that could be provided by Member States to mitigate the impact of the wholesale price hikes on household bills, in particular on vulnerable consumers, while protecting the well-functioning EU energy markets. Some of the European Commission's toolbox measures include:

a) Provide time limited compensation measures and direct support to energy-poor end-users including groups at risk, e.g. through vouchers or by covering parts of the energy bill, financed inter alia from the emission trading scheme revenues;

b) Put in place and/or maintain safeguards to avoid disconnections from the energy grid or defer payments temporarily;

c) Reduce taxation rates for vulnerable populations, in a time limited and targeted way;

d) Consider shifting the financing of renewable support schemes away from levies to sources outside the electricity bill;

e) Support consumer empowerment, providing consumers with information and offering options on how they can participate in the energy market, be better protected and in a stronger position in the energy supply chain;

f) Appoint a supplier of last resort (if one is not appointed), in the event of market exit or failure of a supplier;

g) Further boost the role of consumers in the energy market, by contributing to improving demand response, as well as by developing self-supply via individual renewable energy and energy community arrangements.

1 Forward curves for gas wholesale contracts delivered for November and December 2021 and the first quarter of 2022 show high-record prices (values surpassing 85 euros/MWh for TTF).

2 Further information regarding the price developments in 2021 has been published separately in a note on ACER's website.: https://www.acer.europa.eu/events-and-engagement/news/europes-high-energy-prices-acer-looks-drivers-outlook-and-policy.

3 See: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52021DC0660&from=EN.

5 ACER and CEER will continue to monitor the evolution of energy prices and to contribute to mitigating the impact on consumers, in line with their responsibilities to oversee well-functioning and competitive markets which deliver benefits and value-for-money for consumers.

6 The key findings of the present 2020 Retail and Consumer Protection MMR are provided below, outlining the performance of energy retail markets and customer protection measures in the last year. A detailed summary of the report is outlined following the conclusions and recommendations below. This Volume also looks at the actions taken by energy National Regulatory Authorities (NRAs) to ease the impact of the COVID-19 pandemic on energy consumers (see Section 1.2 below).

Conclusions & recommendations

7 The 2020 Retail and Consumer Protection Market Monitoring Report (MMR) provides information on the status of retail energy markets and the protection measures available to energy consumers in 2020. This MMR covers the European Union (EU), Norway, the United Kingdom[4] and the Energy Community Contracting Parties (EnC CPs).

8 On average, energy retail prices decreased in 2020. The decrease was largely driven by wholesale electricity and gas price decreases caused by the significant reduction in both electricity and gas demand during the COVID-19 pandemic. This resulted in lower retail prices for consumers. The reduction in demand was also a function of the economic challenges experienced by many households during the pandemic. Section 1.2 outlines the types of extraordinary measures taken across MSs to protect consumers facing income losses during the crisis, such as protection from disconnection and payment deferrals.

9 However, with the economic recovery that has taken place following the COVID-19 pandemic there has been a significant rebound in energy demand, which is resulting in significantly higher prices for energy consumers in 2021. The past two years offered valuable insights into 'the extremes' of retail energy markets in Europe, from which policymakers, regulators and indeed also energy suppliers and consumers should draw lessons for the years ahead.

10 The timing and impact of wholesale price increases on consumers' bills depends on their contract for energy services (e.g. whether it is a flexible, dynamic or fixed price contract). Eventually, however, suppliers are likely to pass on cost increases to consumers (be it immediately or later on). So what can consumers themselves do? By exercising their right to choose a supplier, consumers could unlock potential savings between €200 and €300 per annum.[5] **Comparison tool websites can help consumers find alternative suppliers** (see Section 3.2). NRAs should ensure that all consumers have access to and are aware of national comparison tools to unlock the savings available from switching supplier. While switching alone may not eradicate the recent energy price increases, it can mitigate the impact of the increase.

11 The benefits of comparison tools have yet to be fully utilised. Only the Belgian web comparison tool for electricity fulfils all the criteria set in Directive (EU) 2019/944. Only nine NRAs track the number of users of public CTs for electricity (eight NRAs for gas). Greater effort should be made by NRAs to **monitor the use of these tools to identify the type of consumer not utilising such services.**

12 **Energy efficiency** will be key to protect consumers from energy price increases during the transition to clean energy. Retrofitting consumer homes will increase energy efficiency and reduce energy consumption. The Member States must ensure that all consumers are in a position to reduce their energy consumption by investing in energy uses that are more efficient.

13 **Renewables** have become a larger part of the generation mix, accounting for more than 50% of total electricity generation in some markets[6]. The growth of renewables reduces the EU's dependence on imported fossil fuels and has a positive environmental impact. See Section 2.5.2 for more information on the CO_2 intensity of energy consumption.

4 In this report, the when there is a reference to Member States, this report includes the UK. This is because the UK was still a part of the European Union until the end of 2020.

5 European Commission's Quarterly Report on European Electricity Markets – Quarter 4 2020.

6 Denmark, Norway, Austria, Denmark, Iceland and Norway.

14 **European energy consumers on average had a broader supplier choice in 2020 than in 2019.** However, energy consumers may have less supplier choice in 2021-2022 as some suppliers have already left markets due to financial difficulties faced during the unprecedented price increases. To protect consumers, MSs and NRAs should ensure that a supplier of last resort is in place to ensure that consumers always have access to an energy supplier.

15 **Market concentration levels in 16 out of 25 electricity markets remained high (above 2.000), indicating that consumer choice**, in fact, **was limited in many markets.** Non-household markets were less concentrated, but the concentration levels still show room for improvement.

16 Major electrification is foreseen in sectors such as transport, space and water heating, among others. This impacts both the demand and supply sides of the economy. Such changes require collaboration and shared knowledge of market fundamentals across government, businesses and the population, to align cross-sectoral demand and supply.

17 The uptake of electric vehicles will increase as the transportation sector decarbonises. NRAs should be cognisant of the interaction electric vehicles will have with distribution systems and consider measures which enable consumers to receive appropriate price signals. Such signals could incentivise recharging outside of peak demand periods.

18 Dynamic electricity price offers, real-time pricing and other more advanced services are still limited across the EU. Dynamic contracts/offers can bring benefits to both the consumers and wider network from an operational point of view. For some consumers that are interested, dynamic contracts may offer price savings if they adjust their consumption pattern as prices vary. It is important to note that consumers on such contracts are impacted immediately by changes in wholesale market prices, such as the price increases observed in the second half of 2021. Conversely, they benefit from wholesale energy price reductions when these occur. Consumers should be fully informed of the potential benefits and potential downsides to such contracts and be fully aware of what is required to unlock the benefits that such offers can provide.

19 In eleven MSs, electricity consumers can choose real-time or hourly energy pricing. The availability of dynamic contracts, while clearly implying more exposure to wholesale price volatility, can enable consumers to participate in the energy markets. The roll-out of smart meters is key to ensuring the availability of dynamic contracts to all consumers.

20 At present, sixteen NRAs report on household take up of PV (solar) panels, which can be used as an indication of the percentage of consumers participating actively in the energy transition. Most of these MSs[7] report PV shares under 3%, which indicates a limited uptake of PV panels among households at this stage.

21 Other engagement factors such as the possibility of selling excess energy (21 out of 28 MSs) and the existence of aggregators (19 out of 28 MSs) are more extensive and complex, as well as being relatively new. Their impact can only be monitored in the coming years.

22 A clear **bill** enables consumer understanding of their energy use. Importantly, it should not be overloaded with information.

23 European energy consumers file millions of complaints to their suppliers and distribution system operators (DSOs) across the European Union each year. Invoicing, billing and debt collection are the most common reasons to complain about both electricity and gas suppliers. Complaint data should be better categorised, analysed and interpreted to understand where retail markets can be improved, which today takes place in only three MSs.

24 The new European-wide legislation mandates that MSs increasingly engage with the concept of energy poverty. Data from the Energy Poverty Advisory Hub shows that energy poverty is closely linked to overall income poverty, highlighting the multi-dimensional nature of energy poverty. MSs should thus finish their preparatory work and share best practices among themselves to enable meaningful comparisons of energy poverty concepts and measurements. Subsequently, MSs need to take this work to the next level, implement adequate safeguards for energy poor households and monitor progress with the reduction of energy poverty.

7 Malta, Belgium and Cyprus report higher levels of solar panel take up by households.

25 The two extreme price years, 2020 and 2021, which to some extent interlinked, may teach three important lessons:

a) One lesson might be that in extreme situations, extraordinary measures are needed to shield vulnerable parts of the population from unexpected economic impacts. These can include severe income losses or acute energy price increases, both of which can result in great hardship and challenges for consumers to pay for their energy needs.

b) A second lesson might be that there is a careful balance to be struck between protecting vulnerable groups against dramatic price rises, whilst enabling price signals to encourage efficient consumption choices and decisions. Price signals can help drive consumption behaviours in a desired direction, like incentivising efficiency improvements (such as insulating one's home) or making new investments viable (such as RES generation to compete via more attractive price offerings).

c) A third lesson revolves around dynamic price contracts. Such contracts can offer significant benefits for the individual customer and for the wider energy system. On the other hand, they increase consumers' exposure to wholesale price volatility, which needs to be recognised. The balance of risk placed on consumers versus suppliers should be examined.

Report Summary

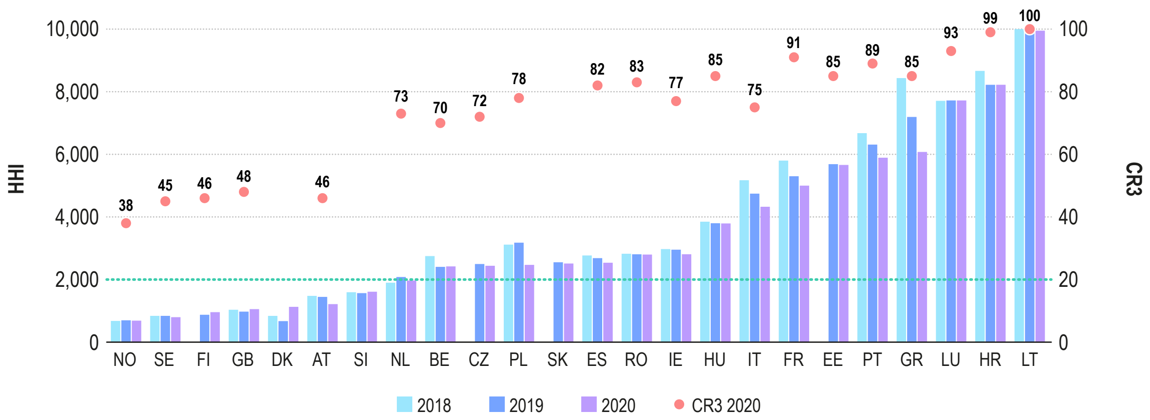
Suppliers and retail markets

26 Retail energy markets are continuing to improve across the EU, as examined in Section 2. However, there is scope for further improvement in some markets so that consumers are in a position to benefit from the energy transition.

a) **The EU average number of nationwide suppliers for electricity and gas increased in 2020.** The average EU number of suppliers is now 60 for electricity and 40 for gas per household consumer.

b) **Electricity retail markets are performing better than gas retail markets. This is likely due to electricity markets being liberalized prior to gas markets. In addition, the non-household/industrial segment is less concentrated than the household segment.** Figure i shows that market concentration and Herfindahl-Hirschman Index (HHI)[8] levels remain high (above 2000) in 16 out of 25 electricity markets. While improvements are observed, the pace of improvement is slow compared to previous years. Low concentration levels would restrict the ability market players to exploit market power to the detriment of energy consumers and provide consumers the opportunity to benefit from competition, innovation and consumer services, but this is not a common reality in the EU.

Figure i: HHI and CR3 for the household market based on metering points in electricity for selected countries – 2018-2020

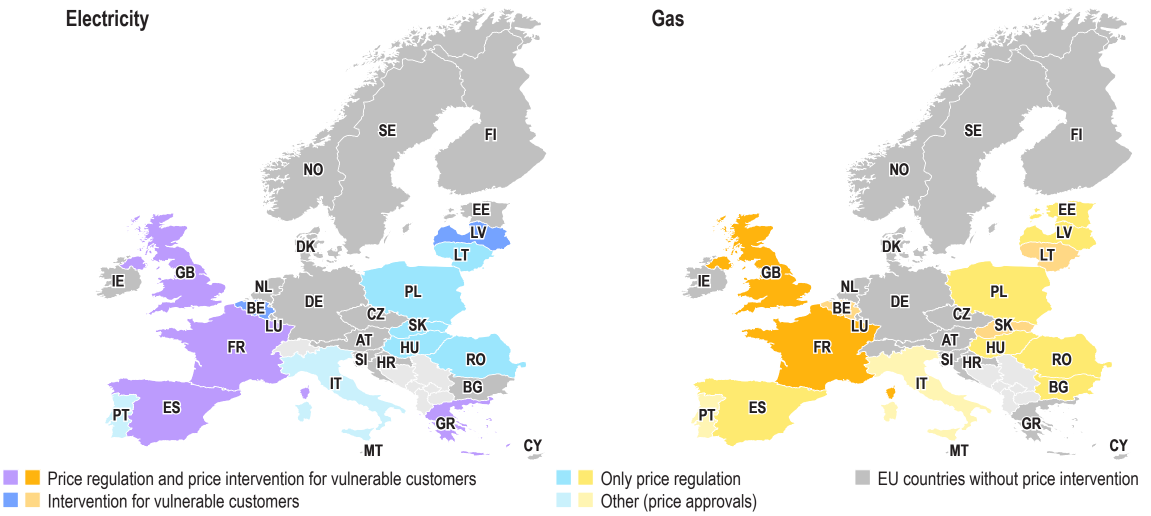


8 The Herfindahl-Hirschman Index is a commonly used indicator to measure the degree of market concentration.

c) **More than half of the Member States continue to intervene in retail energy markets across the EU.** Figure ii shows that 15 countries in electricity (out of 28 answering) and 14 countries in gas (out of 25 answering)[9] have some form of public price intervention for household consumers. In contrast, in the non-household markets, such interventions exists in nine and four markets for electricity and gas respectively. In response to price increases observed in the last 6 months, some MSs have called for interventions to protect energy consumers. Suitable measures to assist energy consumers outlined in the recent "toolbox" of measures published by the European Commission appear to have merit. In ACER's view, protective measures that aim to provide short-term relief should seek to refrain from interfering with the operation of energy markets where these markets are designed to make the best use of existing resources and appropriately signal supply scarcity. Such markets incentivise other providers to come in and meet demand.

d) While intervention can keep energy prices low for consumers, intervention can limit consumer benefit in the medium term. Intervention can limit competition in markets and restrict new market players from entering the market. Such new players could be providers of renewable forms of electricity generation, which can reduce dependence on imported fossil fuels. Lower switching rates are observed in some markets with price intervention, suggesting that intervening in the price can also limit the interest of consumers in becoming active in their energy consumption.

Figure ii: Current status of price intervention in the EU



Consumer Engagement

27 Consumer engagement and participation will be a key component of the energy transition. Traditionally, the energy consumer had a passive role in their energy consumption as they had limited (if any) alternative options. What engagement means will vary from consumer to consumer. For some consumers, it will mean that they switch energy supplier more regularly or even for the first time. Engagement could also mean simply using a comparison tool, adjusting consumption based on real time information provided by a smart meter, and in some cases generating and/or selling their own electricity. Consumers may also engage by submitting a complaint to their supplier if in their view service has been substandard.

28 The switching rate of consumers is one of the key indicators of well-functioning energy retail markets. **Switching rates vary across MSs. The highest switching rates (21%) were observed in Belgium and Norway in 2020 for both electricity and gas. Lower switching rates were observed in Poland and Hungary for electricity and in Romania and Slovakia for gas (1%).**

9 Gas markets are currently less developed than electricity markets as liberalisation of electricity markets took place in 2008 and 2012 for gas markets.

29 Many consumers do not switch their energy supplier citing a variety of reasons, ranging from regulatory barriers to behavioural aspects. Regulatory barriers can refer to regulated prices in the first place. This is especially the case if regulated prices are set below cost levels, thus hampering the development of competitive retail markets.[10] Enhancing switching rates among energy consumers increases competition amongst suppliers and can deliver lower energy costs and better services for consumers. When energy consumers fail to switch supplier (or switch irregularly)[11] they pay more for their energy than they need to.

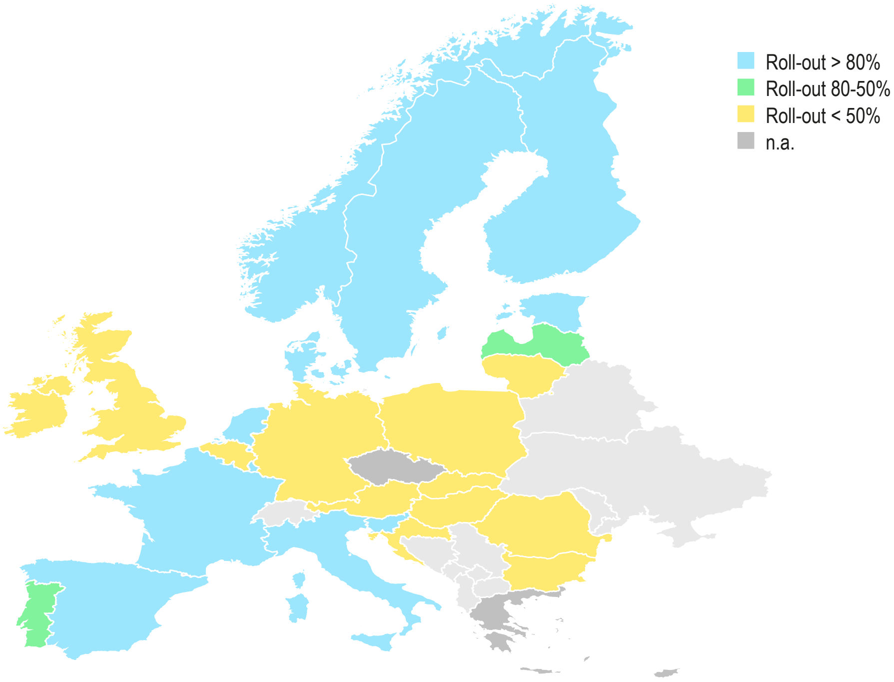
30 Comparison tools support switching and exist in 25 Member States for electricity and 19 for gas. The comparison tools are operated either by public bodies (e.g. National Reulatory Authoritties) or commercial companies (sometimes certified by public bodies). However, in some MSs, no independent body currently operates a comparison tool for electricity for households and microenterprises.[12]

Smart meter roll-out

31 The smart meter roll out is continuing across the EU but varies across Member States. Smart meters are essential to enable the active participation on the part of energy consumers. A smart meter will provide the energy consumer with real time information and will enable them to play a more active role in the energy market. The energy consumer in the future will need to be both more active and flexible in the consumption of energy. A significant barrier for energy consumers to participate actively is the lack of information. Such participation could lead to increased switching rates, which would ultimately drive competition between suppliers, and place downward pressure on the retail prices.

32 Smart-meter roll-out plans and actual roll-out rates diverge widely, suggesting that a delay in smart-meter roll-out is likely. Consequently, some consumers will not have access to smart meters by 2024. Section 3.3 provides further information regarding the smart meter roll-out across the EU in 2020.

Figure iii: The status of the roll-out of electricity smart meters at the end of 2020



10 This is the case in the electricity markets of Hungary and Poland during 2020.

11 On an annual basis.

12 Bulgaria, Cyprus, Hungary, and Malta where only one supplier operates).

Energy Prices

33 Electricity prices for EU consumers decreased in 2020 for household consumers and increased slightly for industrial consumers. However, since 2010, prices have increased on average by 30% in nominal terms. These increases are also delivering benefits such as a more decarbonised energy system and a reduced dependence on imported fossil fuels.

a) Average household electricity prices decreased in 2020 by -1.8% to 21.3 euro cents/kWh in comparison to 2019.

b) Average industrial consumers' electricity prices increased in 2020 by 2.8% to 11 euro cents/kWh in comparison to 2019.

c) In the Energy Community Contracting Partners (EnC CPs), average household prices increased slightly in 2020 by 0.9% when compared to 2019. Average industry electricity prices increased by 15.6% to 7.5 euro cents/kWh in 2020 in comparison to 2019.

34 **Electricity price changes varied across the EU with some of the Member States observing price increases while others observing price decreases, showing the variation in price paid by energy consumers across the EU.**

a) Household consumers observed the largest price decreases in the Netherlands (-32.4%)[13] and Sweden (-14.3%). Luxembourg and Poland recorded the largest electricity prices increases of 10.6% and 9.9%, respectively.

b) Industrial electricity prices increased again in 2020 (the second year of consecutive price increases). Industrial electricity prices decreased the most in Cyprus (-17.8%) and Spain (-14.4%).

35 **Large differences in electricity prices continue across the EU, Norway and the EnC CPs.**

a) German household consumers paid 30.3 euro cents/kWh (the highest in the EU). This is more than three times the price paid by Bulgarian household consumers (9.9 euro cents/kWh).

b) Greater variations were recorded in the industrial market, with industrial electricity consumers in Denmark paid 22.1 euro cents/kWh in 2020 (the highest in the EU), more than four times higher than the electricity price paid by industrial consumers in Luxembourg in 2020 (the cheapest at a price of 5.2 euro cents/kWh).

c) In the EnC CPs, the average electricity price for household consumers in EnC CPs excluding Ukraine was 7.7 euro cents/kWh. This is 2.8 times less than the average EU electricity price for households in 2020. Household consumers in Ukraine paid around 1.8 times less than in other EnC CPs, at only 4.3 euro cents/kWh.

36 **From 2010 to 2020, electricity prices for consumers increased in most EU countries and EnC CPs.**

a) For household consumers, electricity prices have increased by 30% in nominal terms, while industrial prices increased by 10% over the same period.

b) In the EnC CPs, from 2013 to 2020, electricity prices for households in the EnC CPs excluding Ukraine increased on average by 16.8%, while industrial prices increased on average by 15.6%. In Ukraine, electricity prices for households increased by 48% and industry prices decreased by 39% over the same period.

13 Tax reduction in the fourth quarter of 2020 is driving the cost decrease in the Netherlands.

37 **In gas, prices decreased in 2020 in comparison to 2019 for both household and industrial consumers.**

a) In 2020, average household gas prices across the EU **decreased by -2.9%** with an average price of **6.8 euro cents/kWh**.

b) Industrial gas prices decreased by -18.5% with some consumers paying 2.2 euro cents/kWh in 2020. These decreases are attributed to the significant impact of the COVID-19 pandemic on gas demand.[14]

c) In the EnC CPs, the final price paid by household gas consumers in 2020 in North Macedonia (4.9 euro cents/kWh) was almost four times higher than the 1.3 euro cents/kWh paid by Georgian households. In the industrial segment, the price paid by consumers in Ukraine (1.6 euro cents/kWh) was only 37% of the price paid by consumers in Bosnia and Herzegovina (4.5 euro cents/kWh)

38 As with the electricity market, there were **variations in the gas markets across the EU in 2020**.

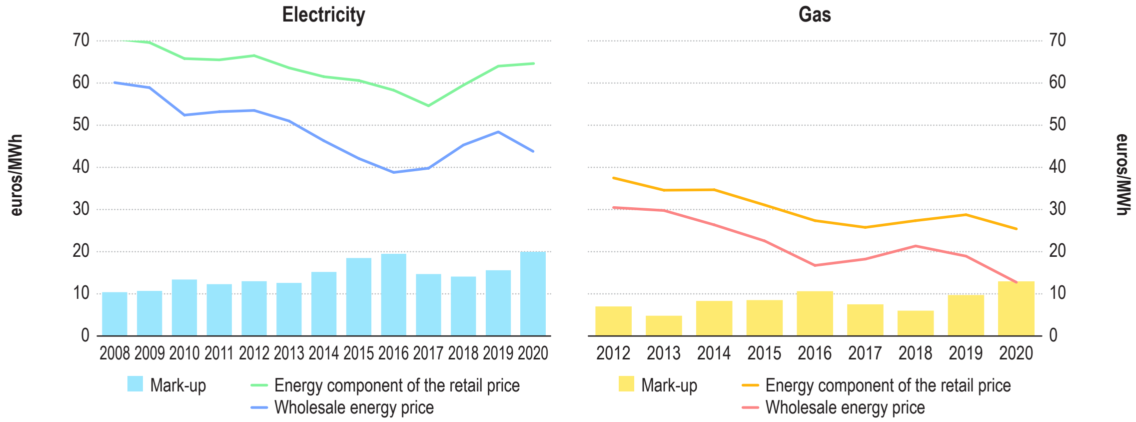
a) Household gas consumers in Sweden paid three times more (10.3 euro cents/kWh) than the 3.0 euro cents/kWh paid by Latvian household gas consumers.

b) In the industrial market, consumers in Denmark paid more than three times (5.6 euro cents/kWh) the price paid by consumers in France (1.6 euro cents/kWh).

c) Compared to 2019, gas prices for households decreased by -2.9% on average. At the same time, industrial gas prices decreased by -20.4% on average, with the highest decreases recorded in Sweden (-34.5%) and Bulgaria (-30.8%). No MSs recorded an increase in the industrial gas prices, year on year. In the industrial market, gas consumers in Denmark paid almost three times (6.0 euro cents/kWh) the price paid by gas consumers in France (2.1 euro cents/kWh).

39 The difference between wholesale energy prices and retail energy prices (mark-up) widened in 2020 as shown in Figure iv.

Figure iv: Difference between wholesale and retail prices for electricity (left) and gas (right)



40 A strong correlation between retail and wholesale energy prices is observed when wholesale energy prices increase. However, this correlation is weaker following a fall in wholesale energy prices (a phenomenon known as downward sticky prices). While it is not expected that retail costs will fall immediately in line with wholesale price reductions[15], enhanced participation on the part of the energy consumers could exert pressure on suppliers to decrease retail prices more rapidly. To achieve this, energy consumers need to be informed of wholesale price reductions, have access to a variety of suppliers, and be capable of switching supplier.

14 For more information on gas demand trends in 2020, please see ACER Gas Wholesale Market Monitoring Report 2020.

15 Unless the consumer is on a dynamic contract.

a) In electricity, a relatively strong **correlation between the wholesale and retail prices** was observed from 2008 to 2013 and from 2017 to 2019. However, a divergence from this trend was observed between 2013 and 2016 and again in 2020. During this time the decrease in wholesale prices were not followed by a similar decrease in the energy component of the retail energy prices.

b) From 2012 to 2020, in the household gas market, the a**verage retail energy component** and the average wholesale price decreased by -31.2% and -57.8% respectively, while the average difference between the wholesale and retail energy component increased by 84.8%. Divergence is observed between the two energy components in 2015, 2016 and noticeably in 2020, when the average retail energy component price did not follow to the same extent the average decreases in wholesale gas prices.

Bill breakdown

41 The **bill breakdown** varies significantly across the EU. Key insights regarding the bill breakdown are as follows:

a) On average, 31% of the final price consisted of the energy component (contestable charges), while the remaining 69% of the electricity bill consisted of non-contestable charges, i.e. the sum of network costs, taxes, levies and other charges.

b) In gas, on average, less than half of the final price paid in 2020 by end consumers covered the energy component of their annual gas bill, while the rest covered the sum of the network costs, taxes, levies and other charges.

c) The energy component of gas decreased in 2020 when compared to 2019. This decrease was driven by a reduction in the price of wholesale gas caused by both a reduction in demand and also large volumes of liquefied natural gas (LNG). In turn, this led to non-contestable components to relatively rise in comparison to 2019.

42 The composition of final household electricity price varies widely across EnC CPs.

a) The share of the energy component in the final bill was the highest in Georgia (74%) and the lowest in Serbia (34%).

b) In the EnC CPs, the share of network costs in the total household electricity price ranged between 11% in Georgia and 51% in Kosovo. In the EnC CPs, the breakdown also varied across members. The share of the energy component in the final bill was the highest in Albania (63%) and the lowest in Serbia (34%), while the share of network costs in the total household electricity price ranged between 20% in Albania and 49% in Kosovo.

43 Further information regarding the price breakdown of energy bills is available in Section 4.1.3.

Energy poverty

44 **Energy poverty has been defined only in eight MSs.** Following energy price increases in the third quarter of 2021, more energy consumers will likely be at risk of energy poverty in 2021. Efforts are under way to provide comparative measures of energy poverty across the European Union, enabling first insights about the key features and the common elements of energy poverty. To ensure a full understanding of the prevalence of energy poverty, MSs must in the first instance define what energy poverty is. This will put each MS in a position to tackle the issue. Section 4.2 contains further information on the status on consumer protection and vulnerable consumers across the EU in 2020.

Complaints

45 **European energy consumers file millions of complaints to their suppliers and distribution system operators across the European Union.** Complaints registries show that consumers complain most often about invoicing by suppliers and about metering by DSOs. Section 4.3 contains further information on complaints and dispute resolution.

1. Introduction

46 This report focuses on the role of energy consumers in the energy markets. It deals with consumer energy expenditures and the engagement options available to energy consumers within the European Union (EU) and the Energy Community Contracting Parties (EnC CPs).

47 This market monitoring report (MMR) covering 2020 is being published at a key juncture in the energy transition. The energy transition is not solely focused on wholesale energy markets, the generation of energy, or how system operators manage the balance between supply and demand. The Clean Energy Package (CEP) places an additional focus on the role of the consumer in the transition and will open up opportunities for the energy consumer which have not been previously available.

48 This report is structured in the following format:

a) Section 2 outlines the status of Retail Market Structure market structures across the EU in 2020. In this section, readers can find information regarding supplier numbers, market concentration, price intervention, energy consumption, and CO_2 emissions.

b) Section 3 examines the conduct of consumers and suppliers with regard to their participation in energy markets across the EU and EnC. Given the focus of the Clean Energy Package regarding the role of the consumer during the energy transition, this section places additional focus on consumer conduct.

c) Section 4 shows the results of analysis of the performance of retail energy markets in 2020. Information regarding energy prices in 2020, the treatment of energy poor and vulnerable consumers can be found here. In addition, an overview of consumer complaints and vulnerable consumers can be found in this section.

1.1 Clean Energy for all Europeans Package

49 The CEP, adopted in May 2019, introduced a new set of electricity market design rules. The CEP puts the consumer first in liberalised markets, whereas the 2nd and 3rd packages had focused on price issues.

50 The package consists of eight new laws. These new rules aim to bring considerable benefits for consumers, the environment, and the economy. By coordinating these changes at EU level, the legislation also underlines EU leadership in tackling climate change and makes an important contribution to the EU's long-term strategy of achieving carbon neutrality by 2050.provides detail on the four regulations and four directives that make up the eight laws as part of the CEP.

Figure 1: Clean Energy Package for all Europeans (CEP)

4 Directives	**EU 2018/844 Energy Performance of Buildings Directive** Outlines specific energy efficiency provisions for the building sector, Europe's largest energy consumer **EU 2018/2001 Renewable Energy Directive** Incentivises and accelerates the uptake of renewables to reach Europe's target of at least 32% in the energy mix by 2030 **EU 2018/2002 Energy Efficiency Directive** Encourages innovation and investement towards energy efficiency and energy savings **EU 2019/944 Common rules for the internal market for electricity** Enhanced rules for the geeneration, transmission, distribution & supply of electricity, including consumer empowerment & protection
4 Regulations	**EU 2018/1999 Governance of the Energy Union and Climate Action** Establishes a unique framework for cooperation between Member States and the EU to reach climate goals **EU 2019/941 Risk-preparedness in the electricity sector** Establishes common methods to identify and address potential future electricity crisis **EU 2019/942 ACER Regulation** Outlines a stronger role and increased competencies for ACER, the EU Agency for the Cooperation of Energy Regulators **EU 2019/943 Regulation on the internal market for electricity** Sets the guidelines for the internal EU wholesale electricity market as well as network operation

51 Regarding retail markets and consumer protection, Directive (EU) 2019/944[16] (the Directive) is one of the key pieces of legislation introduced as part of the CEP. Given its importance with regard to retail and consumer protection, it is referenced throughout this report. However, it is important to note that the transposition and implementation of the Directive is not considered as part of this report. This is due to the fact that this report is a lookback report, focusing on performance in 2020 and that transposition was not required until 31 December 2020. Such a review will form part of the 2021 Retail Markets and Consumer Protection MMR.

52 Notwithstanding the above, it is important to reference some key sections included in this report which link with the provisions included in Directive (EU) 2019/944.

53 Regarding public price intervention, the Directive stipulates that under certain circumstances MSs may apply public intervention in price setting for the supply of electricity to household customers. By way of derogation, MSs may also apply public intervention in price setting for the supply of electricity to energy poor or vulnerable household customers under certain conditions. Articles 28 and 29 outline that MSs should define the concept of vulnerable customers, but also define what "significant number of households in energy poverty" means in the context of Article 5. See Section 2.4 for more information regarding public price intervention.

54 The ability of the energy consumer to switch supplier is one of the key measures included in the Directive with the duration taken to complete a switch a key area highlighted for improvement. Article 12 stipulates that by no later than 2026, the technical process of switching supplier shall take no longer than 24 hours and shall be possible on any working day. Information on the duration for technical switching and switching rates are available in Section 3.1.

55 Article 14 outlines the requirements regarding comparison tools. A comparison tool is a potential driver of enhancing consumer participation in energy markets. They enable consumers to assess options available to them within their market to assist them in making an informed decision regarding their energy supply. Section 3.2 contains analysis of the availability of comparison tools across Member States.

16 DIRECTIVE (EU) 2019/944 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 5 June 2019 on common rules for the internal market for electricity and amending Directive 2012/27/EU (recast).

56 The roll-out of smart meters to energy consumers will deliver a fundamental change to how consumers receive information regarding their energy consumption. A smart metering system is an electronic system that is capable of measuring electricity fed into the grid or electricity consumed from the grid, providing more information than a conventional meter, and that is capable of transmitting and receiving data for information, monitoring and control purposes, using a form of electronic communication. As outlined in Article 20 of the Directive, consumers will have the opportunity to access their detailed consumption data. This information will enable consumers make an informed decision regarding their energy consumption. This is because they will be easily able to access not only their annual energy consumption, but also be able to see when they consume energy the most in a given day. Such information is essential to consumers when deciding what type of energy contract is most suitable for their needs. For example, they could potentially unlock saving opportunities by altering their consumption behaviour and entering a dynamic energy contract and offering system services through demand side participation.

57 Article 17 of Directive 2019/944 outlines that MSs shall allow and foster participation of demand response through aggregation in a non-discriminatory manner in all electricity markets. All consumers should be able to benefit from directly participating in the market, in particular by adjusting their consumption according to market signals and, in return, benefiting from lower electricity prices or other incentive payments. The benefits of such active participation are likely to increase over time, as the awareness of otherwise passive consumers is raised with regards to additional possibilities as active consumers and as the information on the possibilities of active participation becomes more accessible and better known.

58 Articles 19 to 21 reinforce and clarify the provisions regarding the roll-out of smart meters, seeking to encourage their widespread deployment across the EU. Directive 2019/944 also entitles consumers to request a smart meter to be installed in MSs where the cost-benefit assessment is negative, as long as the consumer bears the associated costs.

59 Annex II of Directive 2019/944 states that where the deployment of smart metering systems is assessed positively, at least 80% of final consumers shall be equipped with smart meters either within seven years from the date of the positive assessment or by 2024 for these MSs that have initiated the systematic deployment of smart metering systems earlier. Sections 3.3 and 3.4.2 contain information regarding the smart meter rollout and demand side response participation of energy consumers.

60 Directive 2018/2002 on energy efficiency amends Directive 2012/27, which states that energy bills shall contain information about actual energy consumption. Annex VII requires bills to include at least information on current prices and actual consumption of energy, historical consumption comparisons and contact information for consumer organisations, energy agencies or similar bodies. Meanwhile, Directive 2019/944 has added several detailed requirements regarding the provision of information on the price to be paid, the breakdown of this price, payment due date, consumption, product details, supplier information, complaint services, switching information and comparisons with past consumption levels and with average users, among other things (see Figure 40 for detailed information requirements). MSs were required to transpose these provisions into national law by 1 January 2021. Monitoring of the situation in 2020 reveals that while some of these requirements were already practiced in some MSs, not all of them are applied in all MSs.

61 According to Article 28 of Directive 2019/944 and Article 3 of Directive 2009/73, MSs shall take appropriate measures to protect consumers and shall ensure that there are adequate safeguards to protect vulnerable consumers. In this context, each MS shall define the concept of vulnerable consumers, which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such consumers in critical times. Earlier Volumes have already shown that MSs predominantly use explicit rather than implicit definitions[17] of the concept of vulnerable consumers in both electricity and gas.

62 Article 28 of Directive 2019/944 further specifies that from 2021 onwards, the concept of vulnerable consumers may include income levels, the share of energy expenditure in disposable income, the energy efficiency of homes, critical dependence on electrical equipment for health reasons, age or other criteria. In 2020, income levels were already included in the defining criteria for vulnerability in sixteen MSs and Great Britain in electricity and gas respectively, followed by critical dependence for health reasons in ten MSs and Great Britain, and age in eight MSs and Great Britain. Many NRAs highlighted a combination of

17 Explicit definitions refer to the case when the concepts of vulnerable consumers are stated in legislation, e.g. social protection laws or energy laws which mention the characteristics of such consumers. Implicit definitions refer to the case when the concepts of vulnerable consumers are an integral part of the national legislations without being put into specific wording.

the listed determinants as well as specific ones such as mental and/or physical disabilities, larger family size, unemployment or remote locality.

63 While Directive 2009/73 does not further specify safeguards, Directive 2019/944 states that MSs shall take appropriate measures, such as providing benefits by means of their social security systems to ensure the necessary supply to vulnerable consumers, providing for support for energy efficiency improvements, or to address energy poverty. Such measures shall not impede the effective opening of the market.

64 While not analysed as part of this report, Directive (EU) 2018/844 (energy performance in buildings) will be key in combating the difficulties faced by consumers at risk of energy poverty while also reducing dependence on imported fossil fuels. Energy efficiency measures will in the first instance reduce the consumption of energy and thus the price paid by consumers. However, as outlined in Directive (EU) 2018/844, MSs should promote equal access to financing while also taking into consideration the affordability of retrofitting.

65 This volume is structured following the Structure – Conduct – Performance framework. Before presenting the detailed analysis of retail markets and consumer protection measures, a special section has been added below showing the impact of the COVID-19 pandemic on energy consumers during 2020.

1.2 Impact of the COVID-19 pandemic on energy consumers

66 This section provides an overview of the range of measures that were deployed to protect supply in response to the impact of the COVID-19 pandemic in 2020, based on available data from NRAs as well as information from international fora.[18]

1.2.1 Measures aimed at protecting consumers

67 Responses to protect the energy supply to consumers facing income losses broadly fall into three groups:

a) those where precise measures were mandated by regulators or through legislation,

b) those where non-mandatory recommendations or principles were issued by regulators or governments and

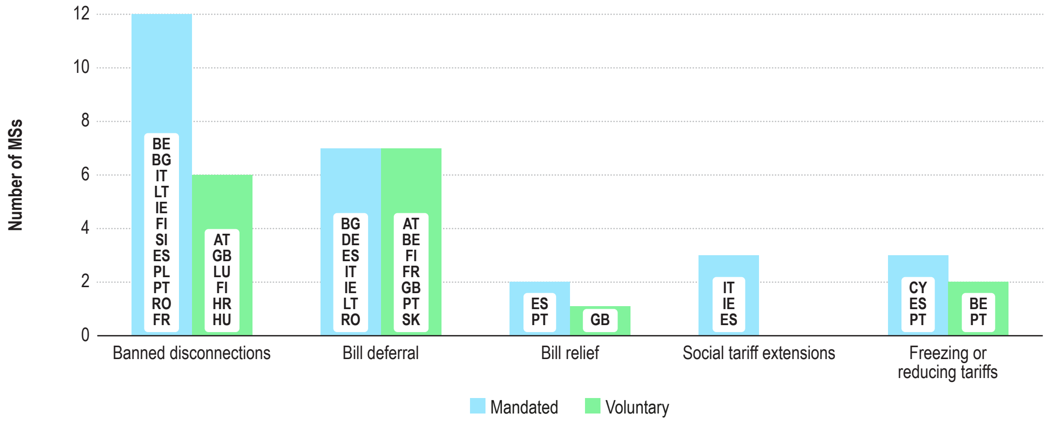
c) those where efforts were almost fully industry-led.

68 Figure 2 below provides an overview of the range of measures implemented to protect domestic energy consumers in 2020. In some cases, these measures also included microbusinesses. Several countries adopted more than one measure.[19] The most popular intervention was the suspension of disconnections by suppliers or network operators.

18 BEUC: http://www.beuc.eu/press-media/news-events/coronavirus-covid-19-outbreak-advice-consumer-groups; CEER: https://www.ceer.eu/documents/104400/-/-/9ab3bcce-b191-4414-4e1b-97e6545c24fd; Eurelectric: https://www.eurelectric.org/covid-19/; EUROGAS: https://eurogas.org/knowledge_centre/helping-consumers-in-covid-19-crisis-gas-industry-measures/.

19 Austria, Belgium, Germany, Finland, Great Britain, Greece, Ireland, Italy, Latvia and Spain.

Figure 2: Measures to protect energy consumers due to the COVID-19 pandemic



Source: CEER's survey of NRAs.

69 In Greece, more extensive relief was targeted at consumers in vulnerable situations. The NRA recommended measures to government ensuring that vulnerable consumers were not disconnected for the entirety of the lockdown, while impacted non-vulnerable consumers were only allowed an extended payment deadline.

70 In some cases, deferrals were supported by allowing suppliers not to pay certain network charges or taxes. In almost all cases where consumer bills could be deferred, NRAs mandated that no interest or penalties be charged. A number of specific national interventions stand out, as highlighted below.

71 The Italian NRA adopted specific measures aimed at the continuation of energy supply to all consumers was guaranteed. The Italian government provided financial support to both domestic and SME.

72 In Spain, the Spanish government approved a set of measures including:[20]

a) the prohibition of disconnection of electricity, gas and water supply was extended to all households (not applicable for second/summer homes);

b) the social electricity tariff was extended to professionals (freelancers) whose economic activity had decreased by 75% by the COVID-19 pandemic but only covered the main household;

c) professionals, small business and industries (small and big industries) could request a temporary pause from their supply contract of gas and electricity, and,

d) payment deferrals for professionals and small business/small industries.

73 There were also measures aimed specifically at consumers with prepayment meters. In Great Britain, certain consumers[21] with prepayment meters had measures introduced to enable the automatic addition of credit. In addition, companies pledged to send staff out to top up prepayment meters for some vulnerable customers.

74 In Ireland, in addition to the moratorium on disconnections, emergency credit levels for all gas prepayment consumers was increased from €10 to €100.[22] As gas credit cannot be purchased online, this measure was applied to allow consumers to remain connected for a period even if they could not continue to purchase credit regularly as usual in a retail outlet.

75 In Slovenia, the NRA and the government adopted measures that suspended certain charges in relation to consumers. This included network charges and charges for the support of high-efficiency cogeneration and renewable energy. The measures directly benefited vulnerable consumers.[23]

20 According to Royal Decree 11/2020 of 31 March. For energy, the main measures are (see articles 28, 29, 42, 43 and 44).

21 Those that were advised not to leave their homes.

22 Emergency credit is a facility available to energy customers where they may "over consume".

23 On these and other measures taken in favour of consumers, see also CEER's "First Analysis of the COVID-19 Pandemic's Effects on the Energy Sector", see: https://www.ceer.eu/documents/104400/-/-/31d2aad0-f7b3-46cf-b7e9-1ef382ad2e87.

1.2.2 Measures aimed at providing support to suppliers

76 Sector-specific support was also available to the suppliers providing relief to consumers. Specific support examples include deferring or suspending certain charges[24]. In some cases, regulatory obligations, enforcement and penalties were also been relaxed.

77 In several countries[25], charges paid by suppliers (but passed on through consumer bills) were temporarily reduced or suspended. A number of specific national interventions stand out, as highlighted below.

78 In France, the NRA requested network operators to defer gas and electricity transmission bills for suppliers and shippers that allowed consumers to defer bill payments.

79 In Great Britain, the NRA's focus was on mitigation of short-term cash flow challenges and ensuring that energy consumers continue to be offered the support and service they need, The NRA asked energy network operators to develop a targeted and proportionate support scheme in which network companies will consider requests from energy suppliers and shippers that may require more flexibility on their network charges.

80 In Portugal, the NRA directed that suppliers facing a reduction in payments equal to or above 40% be relieved of network charges for as long as nine months. Other suppliers were only expected to pay network charges to the extent they were covered by consumer payments. Network operators were expected to create payment plans for suppliers to pay outstanding charges. Such plans were for a maximum of nine months.

81 In Spain, suppliers were allowed to delay the payments for both access tariffs and taxes until consumers pay their bills [in equal quantity each month]. In this case, consumers could not switch supplier until the re-payment of their bills in the 6 months after the end of the State of Alarm (21 December 2020). Suppliers did not have to pay indirect taxes until they receive the total debt from the consumer's bill or 6 months following the end of the State of Alarm.

82 Energy suppliers in Spain could have delayed their payment of certain taxes and network costs where consumers were in receipt of support. Amounts due were to be added to the invoices of deferring consumers for six months following the crisis. As a result, consumers that took advantage of the deferral were not allowed to change suppliers until repayment was completed. Interest was not charged to benefitting consumers or suppliers. Distribution companies that experience temporarily reduced incomes were able to access government guarantee schemes.

83 To assist businesses that had to close premises due to the COVID-19 pandemic, the Irish NRA put in place a temporary "supply suspension scheme," which spared these businesses from bills, including from network charges such as capacity charges.

24 Such as for network access or support of renewables, or allowing access to government funds to provide speedy financial support where necessary.

25 France, Great Britain, Ireland, Italy, Portugal, Slovenia, and Spain.

2 Retail Market Structure

2.1 Introduction

84 Retail electricity and gas markets play a significant role as the key link between end consumers and the wider energy system. How healthy the competition is and the ability of consumers to benefit from markets depend on various economic, structural, technical and legal factors.

85 This section examines the supply and demand side of the retail markets and provides an overview of overall functioning in retail energy markets.

a) Section 2.2 outlines energy supplier numbers and their activity in the household and non-household segments.

b) Section 2.3 outlines the market share of the suppliers and provides information on the concentration levels in the national electricity and gas markets.

c) Section 2.4 outlines different forms of price intervention and steps taken by some MSs regarding such intervention removal.

d) Sections 2.5 and 2.6 outline current energy consumption, CO_2 emissions of MSs and development of e-vehicles as a driver of structural change which will be followed by conclusions and recommendations.

2.2 Suppliers

86 This section focuses on the analysis of active nationwide suppliers. These are defined as suppliers that offer contracts to either household and/or non-household customers throughout the country and have at least one customer. This is in contrast with the total number of active suppliers in the country, whose only condition is to offer contracts to customers in at least one part of the country (e.g. one region) and have at least one customer[26]. Therefore, MSs record an equal or higher number of country suppliers than nationwide suppliers. And nationwide suppliers should have a stronger impact in the switching dynamics offering nationwide and thus in potential market shares variation.

87 Supplier activity in a market can provide an indication of the level of competition within a specific market. A high number of suppliers within a MS's electricity or gas market may indicate the existence of low entry barriers or favourable market conditions.

88 It is important to note that a low number of suppliers does not necessarily indicate high entry barriers or unfavourable market conditions. Nevertheless, in order to correctly assess it, other relevant indicators should be considered together, for example concentration indexes, mark-ups, switching rates, etc. A low number of suppliers may be due to the relative size of a particular market.

89 In order to achieve a well-functioning retail energy market, new suppliers must be able to enter a market and compete with existing suppliers. Therefore, the total number and entry-exit activity of suppliers provides an indication of consumer choice and of the available options in each national market. In addition, the presence/non-presence of incumbent suppliers owned by local distribution system operators (DSOs) provides an indication of the existence/non-existence of entry barriers. This is due to the competitive advantage that such suppliers have over new market entrants. Incumbent suppliers often hold a high percentage of market share and may also have consumers who are less likely to switch to alternative suppliers.

90 Figure 3 and Figure 4 present the number of nationwide[27] suppliers and the total number of consumers in each MS and Norway.

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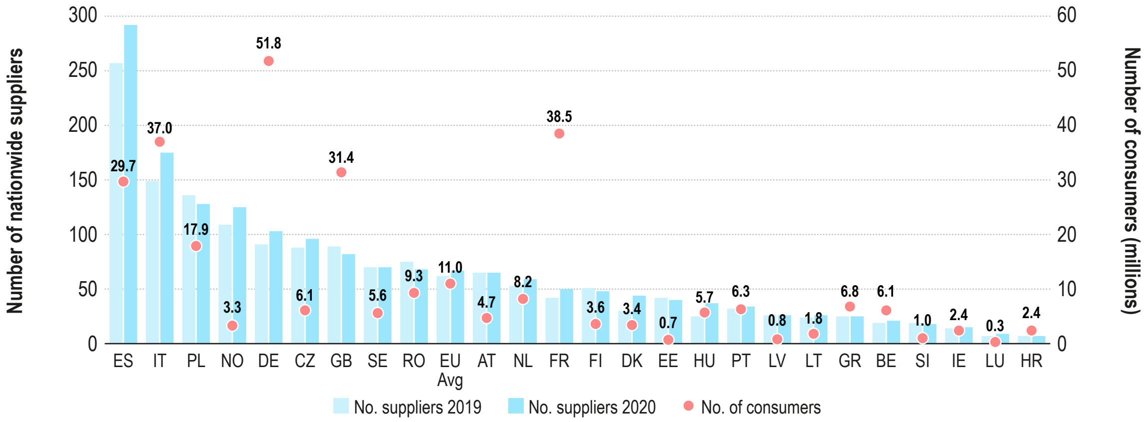
26 However, some countries have stricter conditions to consider a supplier activity as nationwide. For instance, in France, a nationwide supplier is defined as one that is active (has at least one customer) and covering 90% of the national territory.

27 Active nationwide suppliers offer contracts to either household and/or non-household customers throughout the country and have at least one customer. This is in contrast with the total number of active suppliers in the country, whose only condition is to offer contracts to customers in at least one part of the country (e.g. one region) and have at least one customer.

91 Figure 3 shows that in electricity, Spain and Italy recorded the most nationwide suppliers in 2020[28]. Spain had 292 active nationwide suppliers, 35 more than in 2019. Italy had 175 active nationwide suppliers, 26 more than in 2019. Active suppliers nationwide in Hungary[29] increased by almost 50% in 2020.

92 A correlation between the market size and number of suppliers is observed. Estonia, Norway, and Latvia[30] recorded the most nationwide electricity suppliers per consumer in 2020. In contrast, Germany and France recorded the lowest number of nationwide electricity suppliers per consumer.

Figure 3: Total number of active nationwide electricity suppliers and total number of metering points in the entire retail market 2019-2020



Source: CEER 2021.

Note: EU average refers to the average of all reporting MSs in the figure.

93 In gas, Czech Republic had the most active nationwide suppliers (133), followed by Italy (113) and Spain (112)[31].

94 Estonia, Bulgaria, and Slovenia[32] recorded the most nationwide suppliers per consumer in the gas market. Germany recorded one of the lowest number of gas nationwide suppliers per consumer. However, when regional active suppliers are counted, Germany has more than 1000 active suppliers.

95 Great Britain and France[33] recorded the lowest number of active nationwide gas suppliers per consumer. However, unlike Germany, these values do not change significantly when considering only active regional suppliers.

28 Spain records a relatively low HHI (under 1500) in the non-household segment, and a higher one in the household segment (2500), with a decrease trend in the latter (-232 in last three years). On the other hand, Italy recorded a low concentration HHI in the non-household market (under 1000), and a high concentration HHI in the household market (over 4000), that shows a significant decrease in concentration (-847 in the last three years) which is consistent with the high entry reported by both MSs in the last years and retailers that gradually gain market shares. See Section 2.3 for further details.

29 Hungary reported an increase of suppliers in the non-household market under 1% market share (15 in 2019 to 28 in 2020), and between 5% and 1% market shares (7 to 8), which implied a concentration reduction in the segment (HHI 1708 in 2019 to HHI 1585 in 2020).

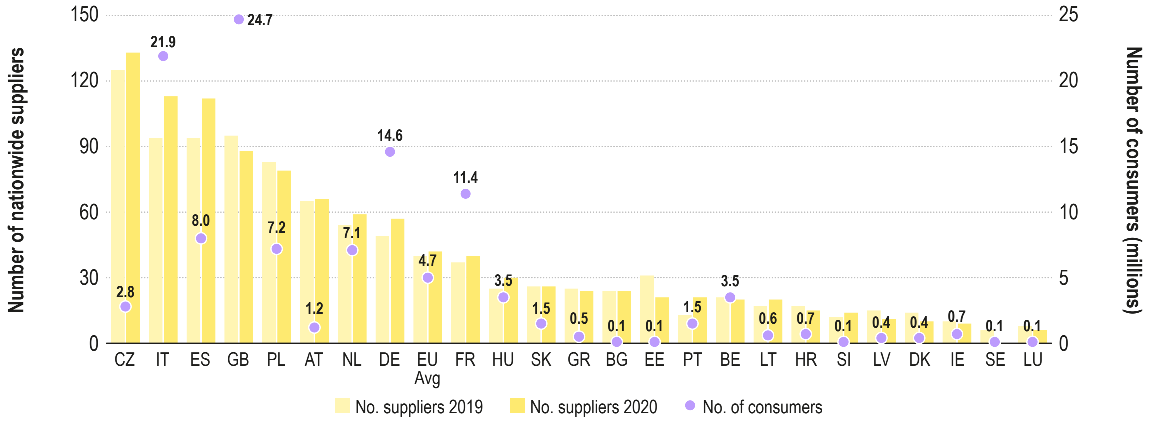
30 Norway presents the lowest concentration level (HHI under 1000) in household and second lowest in non-household segments. However, Estonia is among countries with higher concentration levels in both segments, and Latvia in the non-household segment (not data for household segment), which implies this entry is not that significant yet, holding low market shares.

31 Czech Republic recorded a relatively low HHI in the gas household market (roughly 2000) with a decrease trend (-128 in the last three years). Italy has the lowest HHI in the gas household market (around 1200) and the third lowest in the non-household. Spain has the second lowest HHI in the non-household gas market (under 1000) with a very strong downward trend (-771 in the last three years), and moderately high HHI in the household market (under 3000) with a downward trend (-266 in the last three years).

32 Slovenia presents the third lowest HHI in the gas household market (under 2000), and moderately high in the non-household (around 3000). Bulgaria and Estonia recorded high or moderately high concentration indexes in both market segments. Therefore, the entry in these MSs is not that significant yet, holding low market shares.

33 Despite the reduction of nationwide suppliers, Great Britain presents a relatively stable and low concentrated gas household (HHI around 1200) and non-household market (HHI around 1000) segments with no significant concentration variations. On the other hand, France records a high concentrated gas household market (HHI 4000) but with a strong downward trend (-800 in the last three years), and a low concentrated gas non-household market (around 1200), but with an upward trend (+290 in the last three years). Thus, in France entry would have been relevant in the household market.

Figure 4: Total number of active nationwide natural gas suppliers and the total number of metering points in the entire retail market 2019-2020



Source: CEER 2021.

Note: "EU Avg" refers to the average of all reporting MSs in the figure.

2.2.1 Household market

96 In 15 out of 24 (gas) and 17 out of 28 (electricity), all suppliers operating in the household market segment are active at a nationwide level. However, there are significant differences in some MSs regarding the total number of active suppliers and the number of suppliers that are active nationwide. In some MSs, the majority of suppliers are only active in a specific geographical area.

97 In the electricity household market for example:

a) France had 151 active suppliers in 2020. However, of these 151 active suppliers, only 35 (23.2%) were active at a nationwide level, with the remaining 116 focusing on local markets to offer their services.

b) In Austria, there were 156 active suppliers in 2020, however, only 58 (37%) were active nationwide.

98 The EU average number of active nationwide suppliers in the electricity and gas household market was 47 in 2020 (41 in 2019) and 33 (26 in 2019), respectively. Smaller MSs with smaller markets fall below this average for example Lithuania (eight in electricity and four in gas). Only 6[34] out of 26 MSs in electricity and in 6[35] out of 23 MSs in gas report a reduction in nationwide suppliers.

99 In electricity, Italy recorded the largest activity with 73 new entrants and 35 active suppliers exiting the market. Spain, recorded 42 new entrants and 12 active suppliers exiting the market. In gas, Italy and Spain recorded the largest increase in the number of new suppliers entering their respective markets with 90 (26 exiting) and 12 (3 exiting) respectively.

100 In electricity, Finland recorded one supplier entering versus eleven exiting their market. In the gas household market, Poland recorded eleven suppliers leaving the market and just one entering the market.

101 Regarding the country of origin of entrants in the household markets, only 8 out of 25 countries in electricity and 6 out of 20 countries in gas recorded foreign entry. Italy was the MS that received the most new suppliers coming from a different country[36] in both electricity and gas.

34 Germany, Finland, Great Britain, Romania, Estonia, and Croatia.

35 Great Britain, Poland, Estonia, Greece, Denmark and Ireland.

36 The number of new suppliers coming from a different country in Italy were counted as the number of new entrants with at least one Non-Italian shareholder, regardless of the share of capital owned by that shareholder.

2.2.2 Non-household market

102 The total number of electricity suppliers in the non-household market that are active nationwide varies across MSs, from 7 in Croatia to 252 in Spain.

103 In gas, the number of suppliers in the non-household market ranged from 9 in Ireland to 117 in Czech Republic. As has been observed in the household market, there is a significant variation between the total number of suppliers and the number of suppliers that are active nationwide across MSs.

104 In 15 out of 20 countries[37] (80%), all suppliers are active nationwide in the gas sector. In electricity, 14 out of 25 (56%) MSs record electricity suppliers are active nationwide. Despite of the COVID-19 pandemic, only 7[38] out of 23 MSs in electricity and 7[39] out of 19 MSs in gas report a reduction in nationwide suppliers.

105 Regarding entry-exit activity in the non-household market, Italy had the biggest net balance in the gas and electricity markets, with net balance of 33 in electricity (ten entrants from a different country) and 15 in gas (four entrants from a different country). Finland experienced the largest negative balance, with 11 suppliers leaving the electricity market and one entering in 2020.

2.2.2.1 Energy Community

106 In the EnC CPs, the number of active nationwide electricity suppliers varies from one in both Montenegro and Kosovo*[40], two in Georgia, to 464 in Ukraine. In recent years, substantial market reforms in Ukraine have resulted in large increases in the number of electricity suppliers- with 227 new entries were registered in 2020. The electricity markets of Albania, Bosnia and Herzegovina, Moldova, North Macedonia and Serbia recorded between 7 and 25 nationwide suppliers.

107 In the majority of EnC CPs all electricity suppliers are active at a nationwide level. The exceptions are Bosnia and Herzegovina, where 5 out of 13 suppliers are active only in a specific geographical area and North Macedonia where only one supplier out of 26 supplies locally.

108 Similar findings are observed in gas markets. Nationwide gas suppliers range from only one in Moldova to 286 in Ukraine (with 37 new entrants in 2020 compared to 2019), while in Bosnia and Herzegovina, Georgia and Ukraine all gas suppliers are nationwide suppliers. However, in Moldova, one out of fourteen is active at a nationwide level, while in North Macedonia 50% are active nationwide and in Serbia 70%.

2.3 Market concentration

109 The Herfindahl-Hirschman Index (HHI) is a commonly used indicator to measure the degree of market concentration. A HHI above 2,000 signifies a highly concentrated market. In general, a high number of suppliers and a low market concentration are indicative of a competitive market structure.

110 A high number of nationwide suppliers may indicate the existence of low entry barriers. This may result in lower market concentration levels i.e. a lower HHI score. Conversely, a higher HHI indicates that further competition could be obtained in the market. However, as mentioned in the previous section, concentration levels should be considered alongside other indicators such as entry and exit barriers, mark-ups, the definition of relevant market, etc. to comprehensively assess competition dynamics.

111 With low market concentration, the ability of any market player to exploit market power to the detriment of energy consumers is reduced and consumers have the opportunity to benefit from competition, innovation and consumer services.

37 Bulgaria, Czech Republic, Denmark, Estonia, Spain, Great Britain, Greece, Hungary, Ireland, Lithuania, Latvia, The Netherlands, Poland, Portugal, Romania and Slovakia.

38 Poland, Romania, Great Britain, Finland, Estonia, Croatia and Luxembourg.

39 Poland, Great Britain, Greece, Estonia, Latvia, Denmark and Ireland.

40 Throughout this document, this designation is without prejudice to positions on status, and is in line with UNSCR 1244 and the ICJ Advisory Opinion on the Kosovo* declaration of independence.

112 Sections 2.3.1 and 2.3.2 examine the market concentration situation in each country distinguishing between household and non-household markets, going through HHI and CR3[41] indicators.

113 Concentration Ratio 3 (CR3) is a traditional structural measure of market concentration based on market shares. In this report, we measure the CR3 of the total market share of the three largest suppliers in a single market (by metering points in the household market and by volume in the non-household market). The benchmark used in this report is 70%, since markets with a CR3 score between 70-100% are considered highly concentrated, ranging from oligopolies to monopolies. Smaller MSs may have a relatively small market, with limited suppliers and hence high CR3 levels.

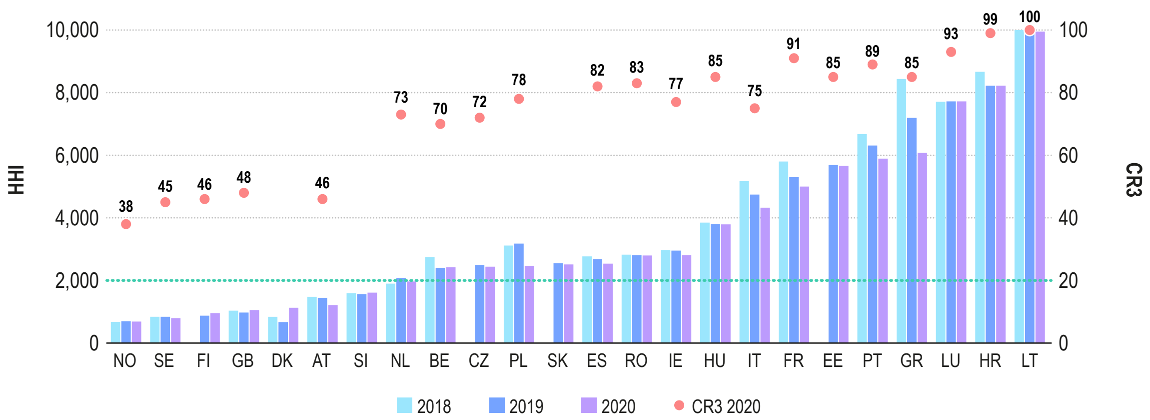
2.3.1 Household market

114 In general, a high number of suppliers and a low market concentration are indicators of a competitive market structure. Figure 5 and Figure 6 present the HHI for electricity and for gas in the household market. In the electricity market, eight out of 24 MSs recorded low concentration levels (HHI<2000) in 2020 and 16 showing high concentration levels.

115 In 2020, in electricity, (17[42] out of 24) MSs recorded a reduction in HHI levels. Greece[43] reported the best performance in terms of reducing HHI, going from a HHI of 8436 in 2018 to a HHI of 6076 in 2020. This is indicative of improvement in competition in Greece[44], with the retail market entering a more mature phase. Furthermore, Poland, Italy, Portugal, and France[45] show significant reductions in concentration levels.

116 Regarding CR3, Lithuania, Croatia and Luxembourg recorded the highest values (between 93- 100% concentration rate) closely followed by France (91%) in 2020. Generally, this suggests a poorer performance in comparison to other countries with low CR3. The countries that recorded the best performance were Norway (38 CR3), Sweden (45 CR3) and Finland[46] (46 CR3).

Figure 5: HHI for the household market based on metering points in electricity for selected countries – 2018-2020



Source: CEER 2021.

Note: Latvia and Germany do not monitor this indicator.

41 CR3 is a traditional structural measure of market concentration based on market shares. In this report, the concentration ratio 3 is used. It measures the total market shares of the three largest suppliers in one market (by metering points in the household market and by volume in the non-household market).

42 Norway, Sweden, Austria, The Netherlands, Czech Republic, Poland, Slovakia, Spain, Romania, Ireland, Hungary, Italy, France, Estonia, Portugal, Greece, Lithuania.

43 There is a significant mark-up reduction between 2016-2019, with a strong increase in 2020 according to Annex 1 yearly household electricity data. In Greece CR3 is 85 and there is only one supplier with shares above 5%, and eight suppliers between 5% and 1%.

44 This is mainly a result of the incumbent company PPC, which holds the majority of the market share (90,99% of the total LV+MV metering points in 2018 and 77.8% in 2020) changing its pricing policy back in July 2019. The increase of the tariffs resulted in many consumers switching to other “alternative” suppliers whose offers are more competitive.

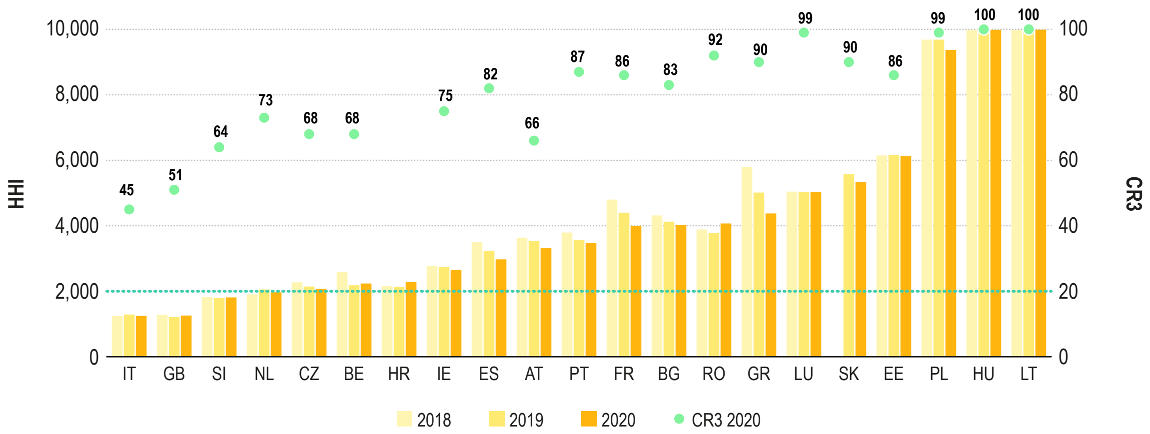
45 However, for these three countries, no reduction impact in the estimated mark-up of the Section 4.1.4 is recorded. In fact, in these countries, household electricity mark-up increased from 2018 to 2020, with Poland´s exception that recorded decreasing and negative mark-ups. See Annex 1 for yearly data.

46 Austria also recorded a CR3 of 46, however the relevant market for households is still the DSO network area where CR3-ratios are still high.

117 HHI for household gas consumers decreased for most countries across MSs (14 out of twenty)[47]. In 2020, Greece and France reduced their HHI levels the most (-638, and -400 points respectively)[48]. For the three-year period the strongest reductions are found in Greece, France and Spain (-1424, -800, -528 points respectively)[49]. Only Italy, Great Britain, Slovenia, and the Netherlands record HHI below 2000.

118 Regarding CR3, Great Britain and Italy[50] performed the best in 2020, with values of 45% and 51% respectively. Poland (CR3 99), Hungary (CR3 100), and Lithuania (CR3 100) have the highest values. As their HHI reflects, there is one dominant firm with market shares close to or above 90%.

Figure 6: HHI for the household market based on metering points in natural gas for selected countries – 2018-2020



Source: CEER 2021.

Note: Denmark, Finland, Sweden, Latvia and Germany do not monitor this indicator.

2.3.2 Non-household market

119 HHI values are less concentrated in non-household markets than in household markets. This may be due to non-household consumers being more engaged regarding their energy consumption and potentially more open to new suppliers. Regarding electricity and gas markets, the non-household electricity markets are on average less concentrated than gas markets. Figure 7 and Figure 8 present the HHI for electricity and for gas in the non-household market.

120 In the electricity market, 13[51] out of 22 MSs recorded low concentration levels in 2020. During the three-year period, Greece and France recorded a reduction of -1986 and -600 respectively. On the other hand, in 2020 increases were observed in Denmark (from 268 to 1510) and Lithuania (from 1742 to 2558).

121 Romania (CR3 36.5%), Great Britain (CR3 38%) and Italy (CR3 40%) recorded the best results for CR3. On the other side, Luxembourg and Croatia recorded I CR3 higher than 90%[52].

47 Italy, the Netherlands, Czech Republic, Ireland, Spain, Austria, Portugal, France, Bulgaria, Greece, Slovakia, Estonia, Poland and Lithuania.

48 Poland HHI reduction in 2020 was due to change in the monitoring methodology. In 2020 for the first time the survey covered all gas suppliers in Poland (79). Previously, only was available data from the largest gas suppliers (about 60). No significant change in market shares was observed in real terms.

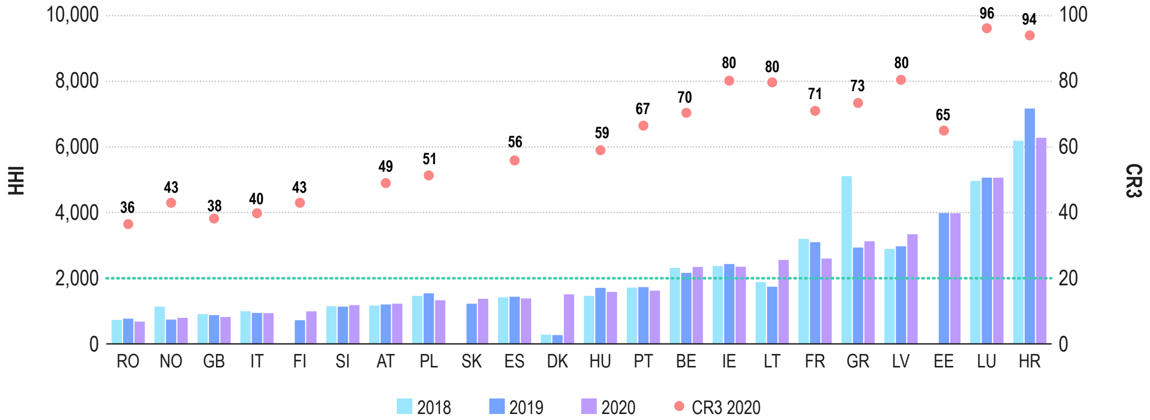
49 However, for these three countries no impact reduction in the estimated mark-up of the Section 4.1.4 is recorded. See Annex 1 for yearly data.

50 In Italy, there are many companies operating at a distribution level, which partially explains this result.

51 Romania, Norway, Great Britain, Italy, Finland, Slovenia, Austria, Poland, Slovakia, Spain, Denmark, Hungary, and Portugal.

52 Higher figures can be expected in smaller countries.

Figure 7: HHI for the non-household market in electricity – 2018-2020



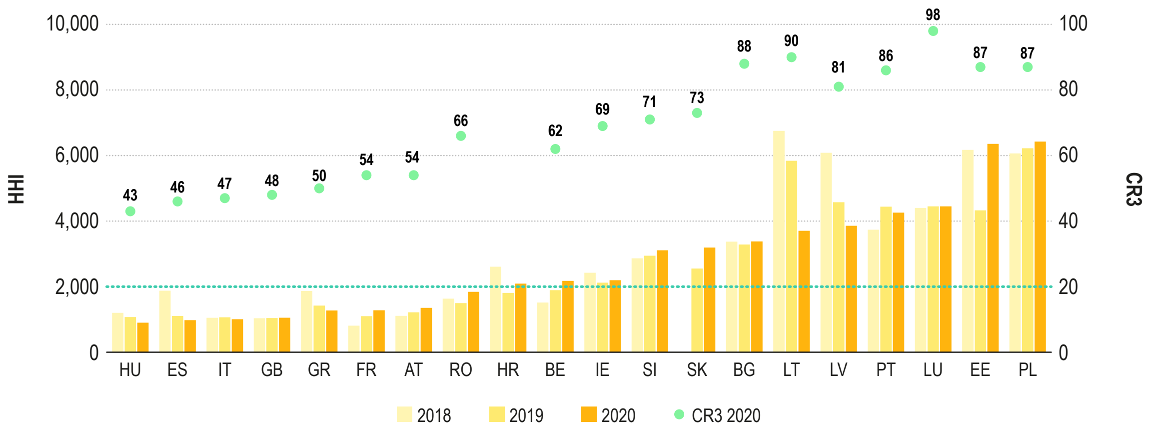
Source CEER 2021.

Note: Sweden, The Netherlands, Czech Republic and Germany do not monitor this indicator.

122 In the non-household gas market, Lithuania[53] and Latvia[54] recorded significant reductions in HHI from 2018 to 2020 (with improvements of 3048 and 2227 HHI points respectively). The 2017 liberalisation was the main driver in Latvia. The reduction of entry barriers in Lithuania and the creation of a common tariff area between Finland, Estonia and Latvia (FINESTLAT) may have driven the improvements in Lithuania. In contrast, Estonia and Slovakia recorded sharp increases (2028 and 641 respectively).

123 In gas, Luxembourg and Lithuania recorded CR3 levels over 90% followed by Estonia and Poland, with CR3 of 87%. Best performers in CR3 levels in 2020 were Hungary (43%), Spain (46.4%) and Italy (46.7%).

Figure 8: HHI for the non-household market in natural gas – 2018-2020



Source: CEER 2021.

Note: Czech Republic, Denmark, Finland, The Netherlands, Sweden and Germany do not monitor this indicator.

2.3.2.1 Energy Community

124 The electricity retail markets in the EnC CPs are still highly concentrated. The market shares of the three largest suppliers are decreasing slowly from year to year, but are still above 90% in the majority of countries[55]. In the household segment this indicator is 100% for almost all EnC CPs. The main exception is Ukraine, where the increase in the number of active suppliers shows CR3 is 30% for the whole market, and 28% for the household segment[56].

53 In Lithuania, the changes have been driven by market liberalization, the simplification of the natural gas supply authorization procedure, and the fact that, natural gas supply activities to non-household customers are unregulated, which makes it relatively easy for new suppliers to enter the market. Also, the natural gas market increased in 2020 due to the creation of a common tariff area between Finland, Estonia and Latvia (FINESTLAT), which attracted more market participants from these countries.

54 Since its non-household market opening in 2017 the concentration index has decreased sharply from 10000 in 2016 to 3857.

55 In North Macedonia, CR3 decreased to 88% in 2020.

56 The Ukrainian NRA provided the calculation of HHI: 1,432 for household segment and 1,612 for the whole market.

125 In gas, Bosnia and Herzegovina, Moldova and North Macedonia recorded the highest values of CR3 (above 90%). In Georgia and Serbia, CR3 levels stabilised at around 86-87% in 2020, while in Ukraine, the CR3 trends for non-household and household segments went in different directions: decreasing for the former and slightly increasing for the latter. Although the opening of the Ukrainian retail gas markets for households in August 2020 should have led to decreasing concentration, the parallel gradual abandoning of public service obligations of incumbent Naftogaz enabled the company to offer gas to households at lower prices[57].

2.4 Public price intervention

126 This section sets out the status of public price intervention in 2020. It provides information on the different forms of price intervention and when data permits, the steps taken by the relevant MS to its removal. The analyses will focus on the household market and on the non-household market, with three aspects from each segment; existence and types of price intervention which could take the form of price regulation, price cap, price approval or social tariffs, (ii) the number of household or non-household customers under end-users' prices with price intervention; finally (iii) roadmaps for the removal of retail prices with price intervention.

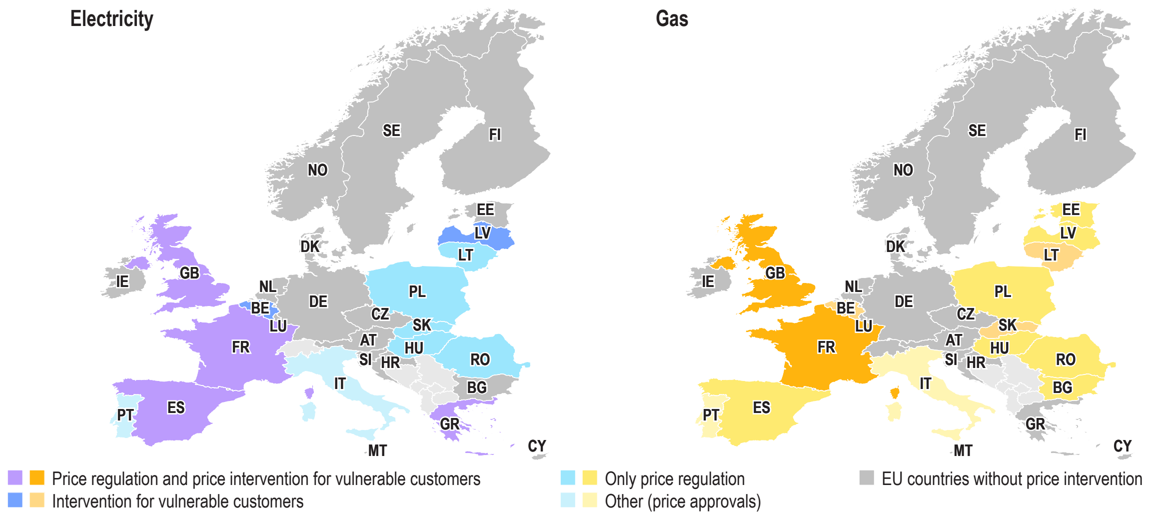
127 In this section, price intervention refers to the energy component of the energy customer's bill only, which is a price subject to regulation or controlled/intervened by a public authority like a government, an NRA, etc. The term 'public intervention in price setting', as referred to in the Directive, has a wider meaning than the term 'price regulation', as it includes not only the price regulation, but also some other measures that are seen as interventions in market prices, such as ex post price check, price caps, price approval, etc.

128 The Directive does not provide a definition of the term 'public intervention in price setting' but sets out that vulnerable consumers must be protected. As outlined in Article 5, MSs shall ensure the protection of energy poor and vulnerable household customers pursuant to Articles 28 and 29 by social policy or by other means than public interventions in the price setting for the supply of electricity.

2.4.1 Household market

129 Figure 9 shows, fifteen countries in electricity (out of 28 answering) and fourteen countries in gas (out of 25 answering) have some form of public price intervention.

Figure 9: Existence of price intervention in electricity (left) and in natural gas (right) within the household market in 2020



Source: CEER database 2021.

57 The share of Ukrgasvydobuvannya, a subsidiary company of Naftogaz, in total gas production of Ukraine was around 70% (13,4 of 19,3 bcm). Since August 2020, Naftogaz is no longer obligated to sell gas at regulated prices to retail companies for the purpose of supplying households.

130 In general, the NRA intervenes in the price (ten MSs in electricity[58] and eleven in gas[59]). However, in three MSs in electricity (Belgium, France, Greece) and three in gas (Belgium, France, Romania), it is the NRA and the government that set the energy price.

131 Most MSs intervene ex-ante (twelve MSs in electricity and ten MSs in gas). However, Cyprus applies a combination of ex-ante and ex-post price intervention in electricity and France has this combination in gas. Cyprus uses a mix of ex-ante and ex-post price regulation for all tariffs and all consumers, except from the social tariff for low-income households. Tariffs are set ex-ante, and in some instances, adjustments are made on an ex-post basis based on an incentive-based tariff methodology as explained by the Cyprus NRA.

132 The main reason given by the MSs for public price intervention is the protection of household customers against price increases, generally either for all customers or specifically for vulnerable customers in the countries with price intervention only for vulnerable customers (like Belgium and Latvia).

133 In total, seven[60] MSs provide specific assistance for vulnerable customers in electricity. The assistance for vulnerable customers is in the form of reductions or bonuses which do not refer to an intervention in the energy price as described above. One exception is the social tariffs, but it is still considered as an intervention to help this targeted group of customers. In Spain, there is a social electricity bonus as a discount on the electricity bill for the standard price offer. In France, there are no social tariffs as such, but an annual energy payment[61] according to the household income that helps vulnerable customers pay their bills. In Latvia, there is a price reduction for the part of energy received by vulnerable customers. Regarding the gas market, France, Great Britain and Hungary have public intervention for vulnerable customers.

134 In electricity and in gas, it is mainly the incumbent supplier that offers the regulated contract. However, it could be also a default supplier or all suppliers, most commonly in cases with price intervention for vulnerable customers only.

135 Various methodologies and criteria are used among some MSs in setting the energy prices. The most common methodology in electricity is the application of a rate of return with a price cap, which includes a profit margin for the supplier.

a) In Spain, for instance, the regulated prices are dynamic prices called PVPC that follow the trend of wholesale prices plus a margin. In gas, it is the price cap and the cost-plus methodology that are mainly used.

b) In France, the regulated prices are built to reflect the supply costs of the alternative suppliers. The methodology used guarantees the contestability of the regulated tariffs by the alternative suppliers.

136 Figure 10 and Figure 11 show the number of household consumers with any form of price intervention compared to the total number of households in each country for both electricity and gas. This data ranges between 100%, where all households have contracts with some form of price intervention, and 10% for both sectors.

137 MSs report that the reason for intervening in energy prices is to protect vulnerable energy consumers. However, the data regarding the proportion of vulnerable customers in electricity varies and ranges from 0.4% in Hungary to 15% in Great Britain. This indicates much lower numbers of vulnerable consumers than those falling under price interventions.

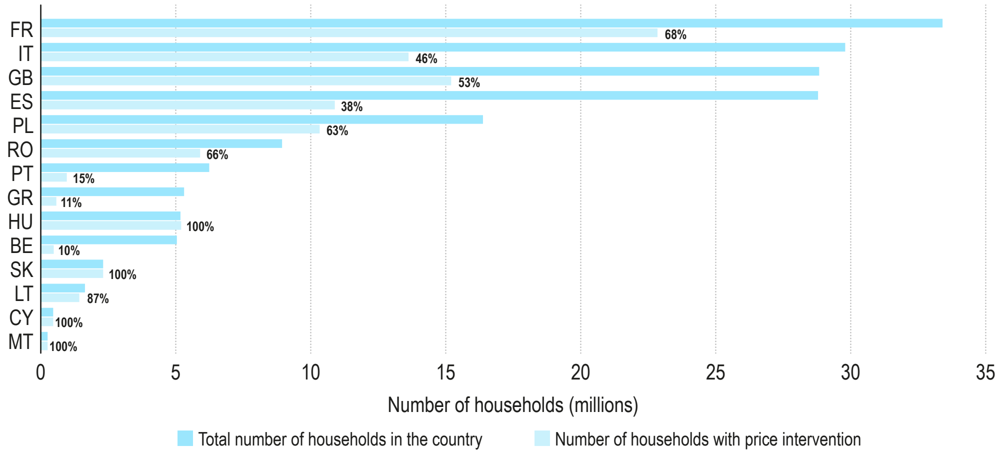
58 Belgium, Cyprus, France, Great Britain, Greece, Italy, Lithuania, Malta, Poland, Slovakia.

59 Belgium, Bulgaria, Estonia, France, Great Britain, Italy, Lithuania, Latvia, Poland, Romania, Slovakia.

60 Belgium, Cyprus, Spain, France, Great Britain, Greece, Latvia.

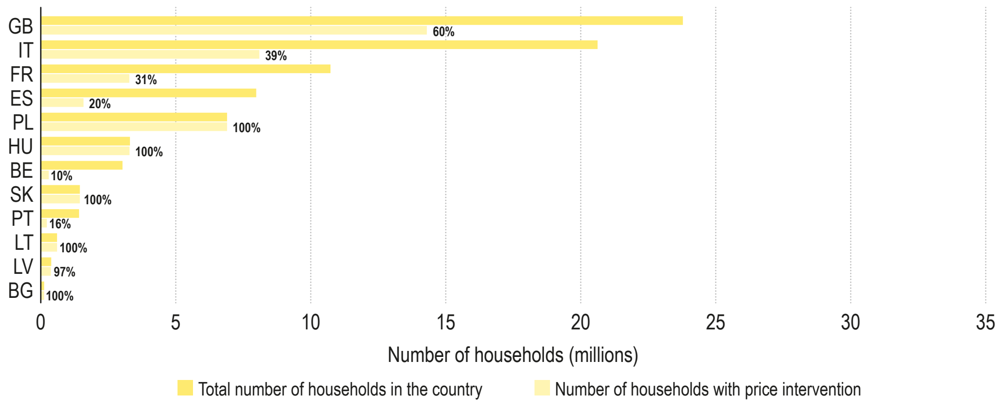
61 The average amount is 150 euros, therefore the amount varies according to the household revenues.

Figure 10: Electricity household consumers with price intervention compared to the total number of households in the country in 2020



Source: CEER database 2021.

Figure 11: Gas household consumers with price intervention compared to the total number of households in the country in 2020



Source: CEER database 2021.

138 In electricity, five[62] NRAs have committed to a roadmap for price intervention removal. However, only three (Italy, Lithuania, Slovakia) provided detail regarding their price intervention removal. Nine MSs do not intend to remove public price intervention and do not commit to a roadmap[63]. In Italy, the standard offer regime is a transitory regime. According to the Law 124/2017 (revised in 2020) it will be removed starting from January 2023 for electricity and gas. In Lithuania, from 2023, the NRA is planning to remove price cap regulation. In Slovakia, price intervention is supposed to be removed during the next regulatory period (2023-2027) for electricity and gas.

139 In gas, seven[64] NRAs replied that they intend to remove price intervention, with four[65] of them further explaining their roadmap. However, six[66] MSs have no commitment to a roadmap for the removal of price intervention. In France, a French law from 8 November 2019 states that regulated tariffs will be removed as of 30 June 2023 for gas household consumers. Therefore, there is no possibility to prescribe regulated tariffs anymore and thus they have not been offered by the incumbent supplier since December 2019. In Poland, the system will be removed on 1 January 2024.

62 Great Britain, Italy, Lithuania, Romania, Slovakia.

63 Belgium, Cyprus, Spain, France, Greece, Hungary, Latvia, Malta, Poland.

64 France, Great Britain, Italy, Latvia, Poland, Romania, Slovakia.

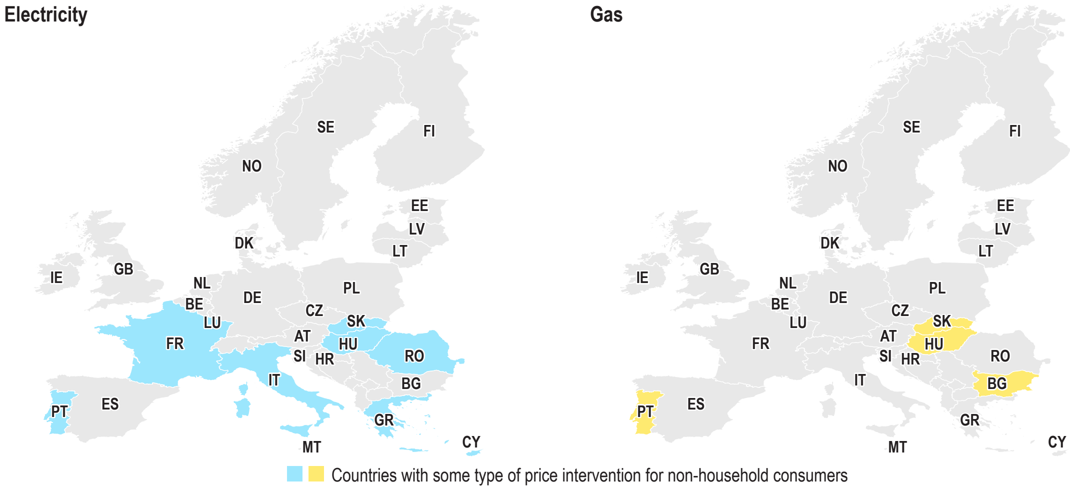
65 France, Italy, Poland, Slovakia.

66 Belgium, Bulgaria, Estonia, Spain, Hungary, Lithuania.

2.4.2 Non-household market

140 Figure 12 shows the level of price intervention in both electricity and gas across the EU. In 2020, public price intervention for non-household consumers is reported to exist in nine countries in electricity out of 26 MSs answering and 4 in gas out of 23 MSs answering.

Figure 12: Existence of price intervention in electricity (left) and in natural gas (right) within the non-household market in 2020



Source: CEER database, 2021.

141 In all of these countries, in electricity and in gas, public price intervention takes the form of price regulation, and it concerns the small business customers[67]. The main reason stated for public intervention in price setting is mainly to provide stable and affordable prices for small enterprises.

142 In electricity, seven[68] MSs, the NRA sets the price, in one MS it is the government, and in two MSs it is both entities. As for gas, in two MSs, the NRA intervenes in price setting, and in one MS it is the government.

143 The type of end-user price regulation can be ex-ante or ex-post. In gas, Bulgaria is the only MS that utilises ex-post intervention. Cyprus uses a mix of ex-ante and ex-post price regulation for all tariffs and all consumers, except for the social tariff for the low-income households. Tariffs are set ex-ante, and some adjustments are made on an ex-post basis based on an incentive-based tariff methodology.

144 The regulated prices are offered by the incumbent supplier in the majority of the aforementioned countries, except for Bulgaria and Slovakia where they can be offered by every supplier.

145 Four MSs[69] in electricity answered that they intend to remove price intervention. In France, regulated tariffs will be removed on 1 January 2021 for small business customers employing more than ten persons and whose annual income statement exceeds 2 million euros. In Italy, the standard offer regime is a transitory regime. According to Law 124/2017 (revised in 2020), intervention has been removed starting from January 2021 for small enterprises and it will be removed from January 2023 for micro-undertakings. In Slovakia, price regulation is intended to be removed during the next regulatory period (2023-2027).

146 As for the gas non-household market, only Slovakia mentioned its intention to remove gas regulated prices during the next regulatory period (2023-2027). France removed regulated tariffs in natural gas as of 1 December 2020 for small non-household customers (microenterprises) with an annual consumption below 30 MWh.

67 Micro enterprises connected to the low voltage distribution network.

68 Cyprus, France, Greece, Italy, Malta, Romania, Slovakia.

69 France, Italy, Romania, Slovakia.

147 The number of countries with price intervention across Europe has remained stable for the past few years. This demonstrates that MSs have not undertaken measures to remove their interventions. Given the requirement to transpose Directive (EU) 2019/944 on 31 December 2020, it is expected that a decrease in the number of countries with price intervention will be observed in the 2021 MMR.

148 Great Britain and Romania even reintroduced price intervention measures. The stated reason being for such measures was to protect some consumers from price increases. However, with the new obligations from the Directive 2019/944, some of the MSs are committing to a roadmap regarding the removal of public price intervention.

149 Regulated prices can limit competition and thus the choice available to consumers. However, an appropriate balance needs to be found between consumers having a choice and protecting vulnerable and energy poor customers who are unable to make an informed choice. Such balance will be required to be undertaken in line with Directive 2019/944. A combination of this analysis with the switching rate section and the vulnerable customers section could help to better understand the effect of price intervention. In some countries with price regulation like Great Britain, the switching rates are showing that customers are moving from one offer to another regardless the price cap in place. In other countries with price regulation, like in Romania or Hungary, the switching rates are low, meaning that the customers are keeping their regulated price offers. Therefore, depending on the definition of "vulnerable customers", the impact of price intervention on switching rates can vary. If the definition is very broad, the motivation for switching might be low, but if the definition is very narrow and targets only this group of customers, the motivation for all other customers should be higher as in countries without price intervention.

150 In the energy poverty and consumer protection section (Section 4.2), more details can be found about the concept of vulnerable customers and how they are protected across EU, whether via price related measures or other social measures. As explained above, some NRAs maintain special energy prices for such groups, but other measures as social benefits have been increasing in some countries, as the examples in the public price intervention show.

151 However, in most MSs, the availability of energy-specific safeguards is limited. While the energy sector-specific safeguards are restricted, the overall social welfare regime of each MS may offer protection in different ways, beyond energy needs. In any case, to apply a price intervention to vulnerable customers, the concept should be in line with the Directive.

2.4.2.1 Price intervention - Energy Community

152 In all the EnC CPs, excluding Montenegro, end-user electricity prices for household consumers were regulated in 2020. In Montenegro, public intervention is applicable to public suppliers.

153 Gas prices for household consumers were regulated in the majority of the EnC CPs except in North Macedonia and Ukraine[70]. All electricity and gas consumers, including households, are eligible to change their suppliers. Household consumers in Ukraine sought new suppliers following the entry of new market players. However, in other EnC CPs, only a very limited number of households chose to do so under prevailing market conditions.

2.5 Energy Consumption

2.5.1 Electricity and gas consumption

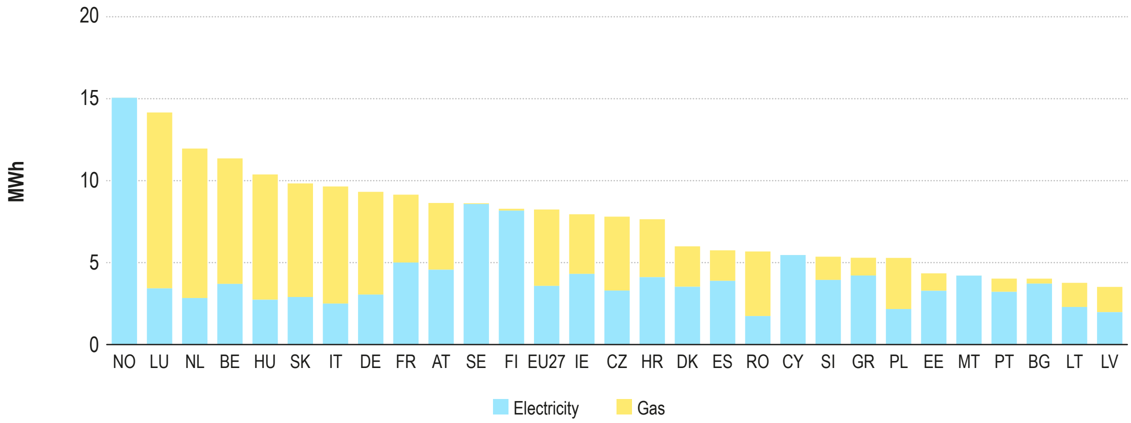
154 The amount that consumers spend on their energy needs is directly linked to their level of consumption of electricity and gas. As can be seen in Section 4.1, the price of energy varies across the EU MSs. However, the consumption rates of energy also vary across EU MSs, which has a direct impact on the level of consumer's energy bills. Consumption rates in this section are based on latest consumption data available from Eurostat.

70 Regulation of gas end-user prices for households in Ukraine was removed in August 2020.

155 Figure 13 shows that the annual electricity and gas consumption rates across MSs vary greatly. In electricity, Norway (15059 kWh), Sweden (8573 kWh) and Finland (8172 kWh) record the highest consumption rates. This contrasts with the lowest annual electricity consumption rates recorded in Poland (2167 kWh), Latvia (1976 kWh), and Romania (1739 kWh).

156 In gas, Luxembourg, (10733 kWh), the Netherlands (9120 kWh) and Belgium (7658 kWh) consumed the most gas per annum per household based on 2019 consumption data. Such variations in consumption are due to different usage of energy: the Nordic countries consume mainly electricity and little or no gas while some consumers utilise biomass for some of their heating needs. Average consumption across the EU MSs in 2019 was 3579 kWh for electricity and 4662 kWh for gas.

Figure 13: Average electricity and gas consumption across EU Member States and Norway[71]



Source: Eurostat Database: Final consumption - other sectors - households - energy use (FC_OTH_HH_E): Natural Gas (G3000) and Electricity (E7000).

157 When electricity and gas consumption are combined, Norway (15065 kWh), Luxembourg (14160 kWh) and the Netherlands (11958 kWh) consumed the most energy (electricity and gas) in 2019. In contrast, households in Bulgaria (4022 kWh), Lithuania (3766 kWh), and Latvia (3518 kWh) consumed the least amount of energy (electricity and gas). Average EU combined energy consumption was 8240 kWh in 2019.

158 The monitoring of consumption rates will become more important as Europe moves towards the implementation of the Clean Energy Package and the range of initiatives for the energy transition outlined in the European Green Deal. The electrification of the private transportation sector will likely result in an increase in electricity consumption by household consumers. Given this, it will become of utmost importance that all energy consumers are fully informed and also in a position to take steps to improve the efficiency of their energy consumption. Improvements in energy efficiency will be key during the energy transition in keeping energy costs fair and reasonable for energy consumers. Other changes to consumer behaviour may also affect consumption rates and patterns of energy consumers in the future. See Section 2.6 for more information regarding potential drivers of change in retail markets.

2.5.1.1 Energy consumption - Energy Community

159 The annual electricity and gas consumption per household varies also in the EnC CPs, as illustrated in Figure 14. The highest consumption rate in electricity is observed in Kosovo* (5167 kWh) and the lowest in Moldova (only 1375 kWh per household). Moldova also registered the lowest gas consumption per household (5029 kWh). In contrast, the highest gas consumption rate was in Serbia (around 12000 kWh). However, the gas consumption per household has to be seen in the context of the overall gasification level of each country, i.e. the non- existence of a gas market or lower level of infrastructure availability contributed to a higher electricity and gas consumption per household.

71 See: https://ec.europa.eu/eurostat/cache/metadata/en/nrg_quant_esms.htm#stat_process1609753992976.

Figure 14: Average electricity and gas consumption across EnC CPs (kWh)

Source: EnC NRAs.

2.5.2 CO_2 intensity of energy

160 The energy sector was responsible for more than 70%[72] of total EU27 greenhouse gas emissions in 2019[73], of which electricity and heat production take up a substantial part (roughly 27% of energy-related emissions and 20% of total emissions) according to the latest data from the European Environment Agency (see Eurostat Database). Thus, to achieve progress toward the Paris Agreement and EU Green Deal targets, reducing the burning of fossil fuels in electricity and heat production is one of the most promising and needed actions to mitigate the climate emergency. This section presents key emission data for European countries for 2019 to highlight the varied situations European countries face in decarbonising their energy sectors. This section also provides an overview of the current emission intensity in both electricity and heat production as well as consumption perspectives.

161 In total, 32 European countries[74] emitted 4.49 Gt CO_2 equivalents (CO_{2e}) across all sectors[75] in 2019[76]. Of this, Germany (18.8%), the United Kingdom (11.1%) and France (10.3%) were the biggest emitters (Figure 15a). Tonnes per-capita emissions of greenhouse gases[77] are highest in Luxemburg (20.3), Iceland (15.8) and Ireland (12.8). Lowest tonnes per-capita emissions are observed in Malta (5.3), Sweden (5.3) and Liechtenstein (2018: 4.8, see Figure 15b).

72 All energy (including all carriers, also oil, etc.) account for 70% of total GHG emissions (2.77Gt of the total of 3.88 Gt). Electricity and heat account for 0.76 Gt, that is 20% of the total (3.88Gt) or 27% of all energy-related GHG emissions (2.76Gt).

73 2019 data is the most recent data available.

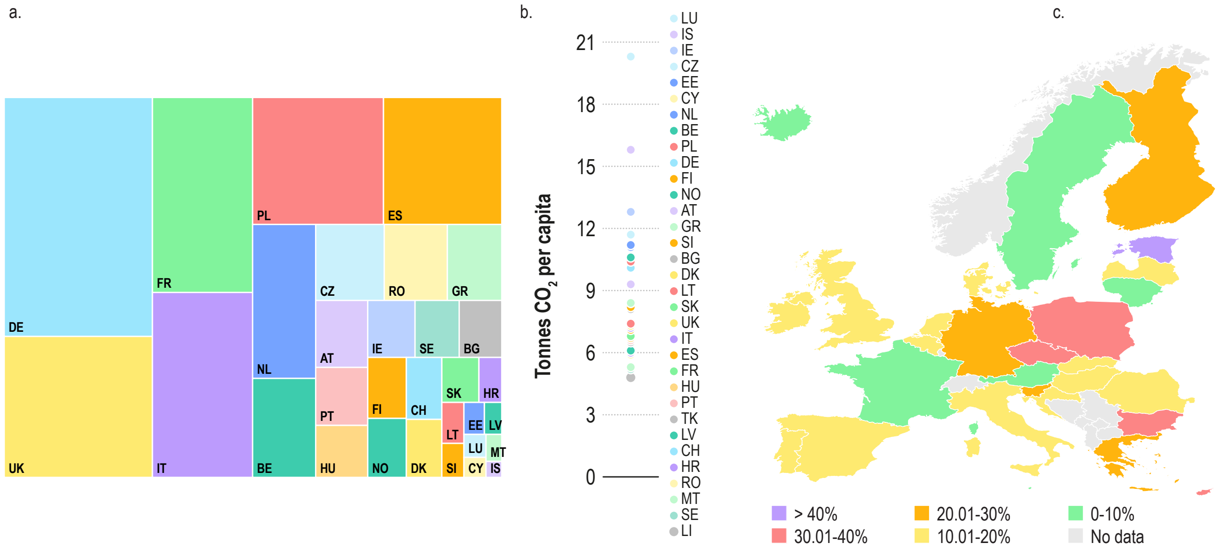
74 EU27 (3.88Gt/a) & United Kingdom. Iceland, Liechtenstein, Norway and Switzerland.

75 Total of all greenhouse gas emissions in 2019, excluding LULUCF (land-use and land-use change, forestry), memo items, including international transport (Source: Eurostat Database, ENV_AIR_GGE, online https://ec.europa.eu/eurostat/databrowser/view/env_air_gge/default/table?lang=en). Data for Liechtenstein, Norway and Switzerland from 2018. (Source: Eurostat Database, ENV_AIR_GGE, online https://ec.europa.eu/eurostat/databrowser/view/env_air_gge/default/table?lang=en, last update of data: 03/06/2021, last accessed 16 June 2021).

76 A significant reduction of greenhouse gas emissions was observed in 2019 (4.49 Gt CO_{2e}) as compared to 2018 (4,65 Gt CO_{2e}, -3.5%). According to the European Environment Agency, the large decline in emissions in 2019 was mainly due to reduced coal use for power generation. For further details and long-term trends see EU greenhouse gas inventory of the European Environment Agency, https://www.eea.europa.eu/themes/climate/eu-greenhouse-gas-inventory).

77 Eurostat Database, SDG_13_10, last update of data: 03/06/2021, online https://ec.europa.eu/eurostat/databrowser/view/sdg_13_10/default/table?lang=en, last accessed 16 June, 2021).

Figure 15: Greenhouse gas emissions 2019 b). In 17 countries, average per capita greenhouse gas emissions per year range between 5.5-10 tonnes, the EU27 average is 8.4t/capita.



Source: Eurostat Database: Greenhouse gas emissions by source sector [ENV_AIR_GGE]; Greenhouse gas emissions [SDG_13_10]. last accessed on 16 June 2021.

Notes:

Figure 15a: National contribution to total European greenhouse gas emissions, 2019.

Figure 15b: GHG emissions per capita, 2019.

Figure 15c: Share of fuel combustion in public electricity and heat production in national greenhouse gas emissions, 2019.

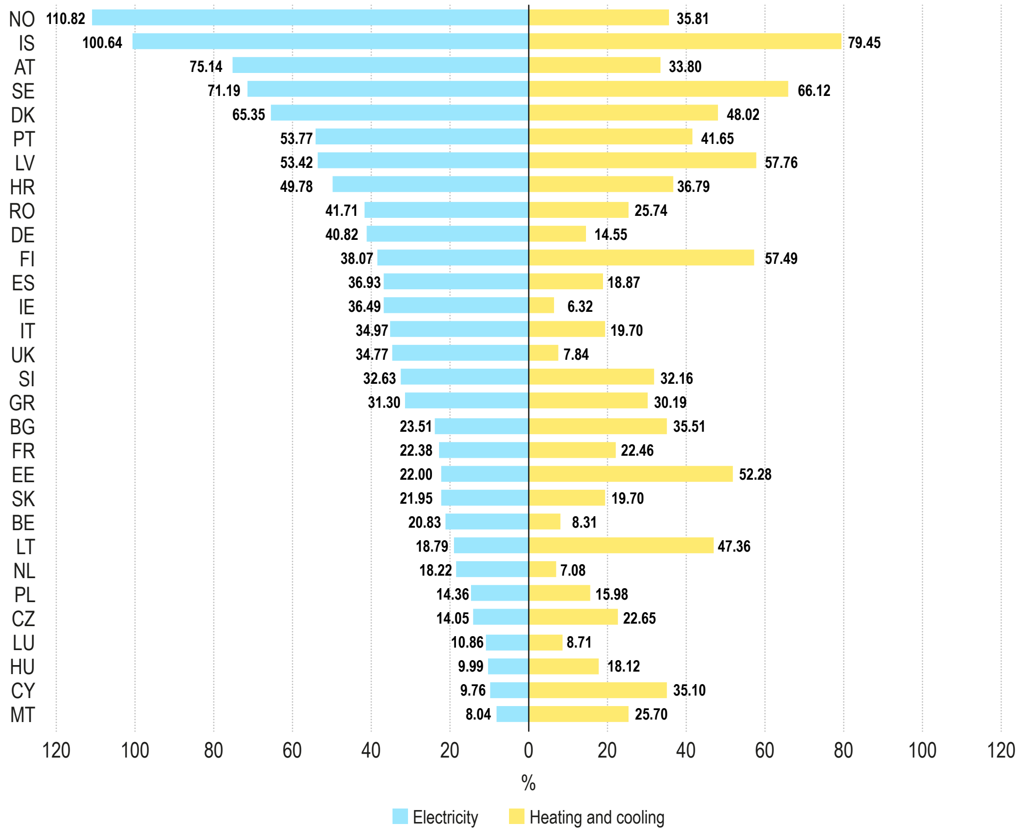
162 Electricity and heat production accounts for approximately 20% of all greenhouse gas emissions in the EU with variable shares of these emissions across the EU MSs. Fuel combustion in public electricity and heat production[78] is responsible for only 0.04% of total greenhouse gas emissions (GHG) in Iceland but represents 42.8% in Estonia (see Figure 15c). Fuel combustion in public electricity and heat production is a major contributor with shares of 30% or more, in Bulgaria (37.8%), Czech Republic (34.7%), Cyprus (30.5%) and Poland (36.2%). In five countries, fuel combustion in public electricity and heat production contributes more than 20% of GHG emissions, including Germany (25.9%), demonstrating the impact of public electricity and heat production on greenhouse gas emissions. Emissions in fuel combustion in public electricity and heat production are highly correlated with total emissions across 32 European countries (r = 0.88).

163 Figure 16 demonstrates the 2019 share of renewable energy in gross final energy consumption[79] in electricity and heating and cooling. Norway and Iceland have successfully managed to source all their gross final electricity consumption from renewable sources on balance. Due to geothermal energy sources, Iceland meets 80% of heating and cooling energy consumption with renewables. High shares of renewables in electricity consumption are also observed in Austria (75%), Sweden (71%) and Denmark (65%). Large shares of renewables in heating and cooling energy consumption are found in Sweden (66%), Latvia (58%) and Finland (57%).

78 Eurostat categorises greenhouse gas emissions in 6 sectors: 1) energy, 2) industrial processes and product use, 3) agriculture, land use, 4) land use, land use change and forestry, 5) waste management and 6) other sectors. The sectors are classified following emission source sectors as established by the Intergovernmental Panel on Climate Change (IPCC 2006, p. 2.7: https://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/2_Volume2/V2_2_Ch2_Stationary_Combustion.pdf). Fuel combustion in public electricity and heat production is a subcategory of GHG in emissions in the energy sector and defined as the "sum of emissions from main activity producers of electricity generation, combined heat and power generation, and heat plants. Main activity producers (formerly known as public utilities) are defined as those undertakings whose primary activity is to supply the public. They may be in public or private ownership [or not]. Emissions from own on-site use of fuel should be included. Emissions from autoproducers (undertakings which generate electricity/heat wholly or partly for their own use, as an activity that supports their primary activity) should be assigned to the sector where they were generated and not under 1 A 1 a. Autoproducers may be in public or private ownership."

79 The indicator measures the share of renewable energy consumption in gross final energy consumption according to the Renewable Energy Directive. The gross final energy consumption is the energy used by end-consumers (final energy consumption) plus grid losses and self-consumption of power plants. (Source: Eurostat database, SDG_07_40, online: https://ec.europa.eu/eurostat/databrowser/view/sdg_07_40/default/table?lang=en).last update of data: 02/04/2021, online: https://ec.europa.eu/eurostat/databrowser/view/sdg_07_40/default/table?lang=en, last accessed 16 June 2021).

Figure 16: Share of Renewable Energy in Gross Final Energy Consumption by Sector: Electricity and Heating and Cooling – 2019 (%)



Source: Eurostat Database, Share of renewable energy in gross final energy consumption by sector [SDG_07_40], 16 June 2021.
Note: The indicator measures the share of renewable energy consumption in gross final energy consumption according to the Renewable Energy Directive. The gross final energy consumption is the energy used by end-consumers (final energy consumption) plus grid losses and self-consumption of power plants.

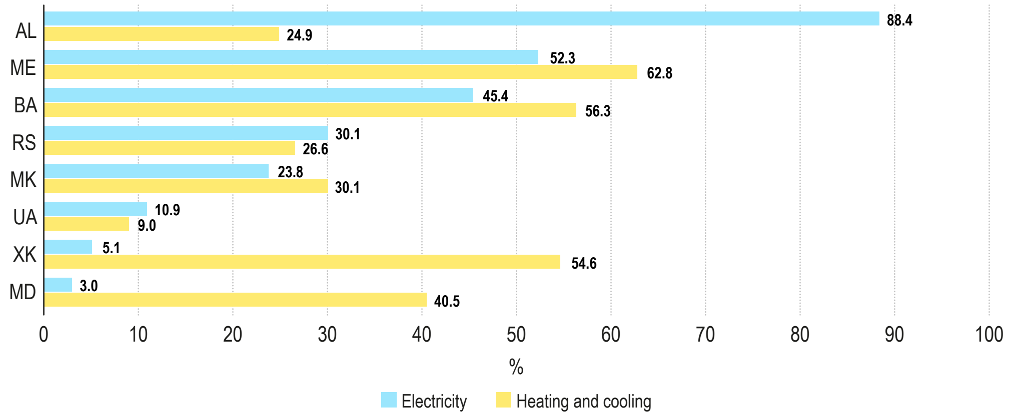
164 In the Energy Community Contracting Parties, as seen in Figure 17, the highest share of renewables in electricity consumption was recorded in Albania (88.5%), while substantial shares of renewables in heating and cooling energy consumption were observed in Montenegro (63%), Bosnia and Herzegovina (56%) and Kosovo* (55%).

165 The shares of renewable energy in electricity and heating and cooling correlate substantially (r = 0.57). Despite this positive association, in certain other cases a high share of renewables in electricity does not automatically go together with having achieved a similarly high share of renewables in heating and cooling and vice versa.

166 Contrasting greenhouse gas emissions from fuel combustion in public electricity and heat production (in tons) with shares of renewables in energy consumption helps to better understand the path to carbon-neutrality in energy consumption. For all countries but Norway and Iceland[80], there is an expected negative correlation of r = -0.35 for the share of renewables in gross final heating and cooling consumption but a rather small r = -0.06 for the share of renewables in gross final electricity consumption. So while lower greenhouse gas emissions are associated with higher shares of renewables, it is also shown that "greening" domestic electricity and heating/cooling may not suffice to reach carbon-neutrality even in the energy sector because of dependencies on energy imports from other regions and/or other (fossil) sources.

80 Despite their high shares of renewables in energy consumption, Norway and Iceland also emit large amounts of greenhouse gases. This outlying position strongly effects the overall associations between emissions and shares of renewables across all countries in Europe. Thus, the presented correlation coefficients exclude data from Norway and Iceland.

Figure 17: Share of Renewable Energy in Gross Final Energy Consumption by Sector in the EnC CPs: Electricity and Heating and Cooling – 2019 (%)

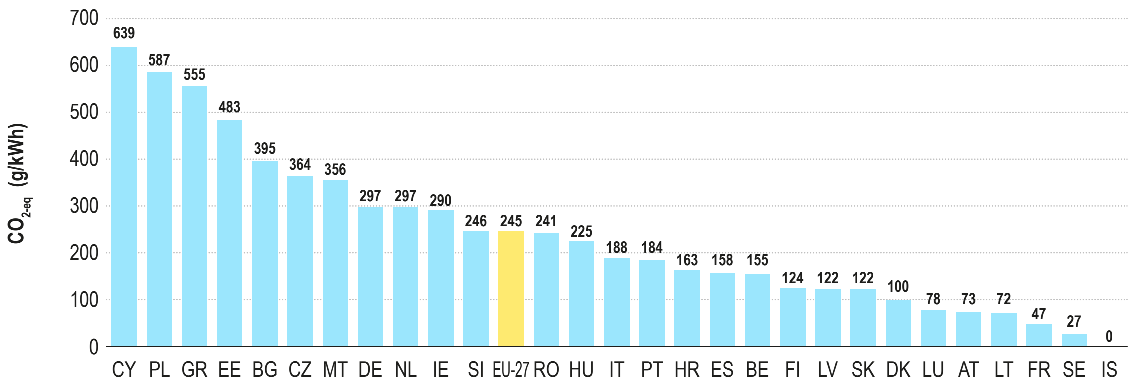


Source: Eurostat Database, for Ukraine: Ukraine Forth Progress Report on promotion and use of energy from renewable sources, available at www.energy-community.org/implementation/Ukraine/reporting.html.

Note: data for Georgia not available.

167 Figure 18 illustrates the carbon intensity in 2019 – the ratio of greenhouse gas emissions due to (fossil) fuel combustion in public electricity and heat production over gross electricity and heat production. On average, the generation of 1 kWh of electricity and heat in Europe emits 245 g CO_{2e}, with broad variation across EU member states. The most carbon intense gross electricity and heat production in 2019 was in Cyprus (639 g CO_{2e}/kWh), Poland (587) and Greece (555) due to the vast use of fossil fuels in domestic production of electricity and heat in these countries. On the other hand, emissions are lowest in Austria (73 g CO_{2e}/kWh), Lithuania (72), France (47) and Sweden (27), among EU member states. Norway and Iceland show even lower carbon intensity for their public electricity and heat production. These latter countries have relied on non-fossil energy sources (geothermal, nuclear and hydro) for decades (e.g. Austria, France, Iceland and Sweden) or are extremely dependent on energy imports (Luxembourg), which explains low carbon intensity to a much greater extent than more recent investments in public electricity and heat from non-fossil sources (i.e. decarbonisation).

Figure 18: Carbon intensity of gross electricity and heat production – 2019 (g CO_{2e} per kWh)



Sources: Eurostat Greenhouse gas emissions by source sector (source: EEA) [ENV_AIR_GGE] and Complete energy balances [NRG_BAL_C]. 16 June 2021.

Note: The indicator shows the ratio of greenhouse gas emissions by fuel combustion in public electricity and heat production (in Mt) by combined gross electricity and heat production (in GWh) in 2019.

2.6 Drivers of structural change

168 The retail energy system (in particular the retail electricity sector) is entering a period of transformational change. Such change will not only result in a change to the type of energy consumed by consumers (moving from fossil to renewable) but also in how the consumer interacts with their supplier and network operator. This section touches upon some of the structural changes that are expected to take place in the coming years.

169 Section 3.3 provides a status on the roll-out of smart meters across EU MSs. The smart meter will be key in providing consumers with real time information, which often has not been widely available. Smart meters will also open up opportunities for the consumer to adjust their consumption behaviour (if they wish to do so) to reduce their energy consumption during periods of high demand and accordingly higher cost.

170 As detailed further in Chapter 3, some energy consumers in the future will not only be energy consumers but also energy producers via domestic electricity production and domestic storage. While not all consumers will be in the position to become prosumers in the short term, other changes are expected to bring significant benefit to electricity consumers.

171 The availability of smart meters is a vital tool in enabling consumers to unlock the full potential of domestic energy production. With the roll out of smart meters, consumer consumption patterns may change in response to real time price signals. Such changes in behaviour can bring benefits to not only the consumer changing their behaviour (through lower prices) but also assist network operators and also other consumers. In addition to smart meters, increasing efficiency of buildings will reduce the energy requirement of buildings while the increased uptake of heat pumps across the MSs will drive energy demand.

2.6.1 Electric Vehicle Penetration

172 The electrification of the private transportation sector is a key tool in the reduction of emissions associated with vehicular transportation. As electric vehicle (EV) penetration rates increase, this will result in an increase in electricity consumption (and hence electricity expenditure) for consumers. However, such consumption and cost increases are expected to be offset by the reduction in costs of conventional fuel for transportation such as petrol and diesel.

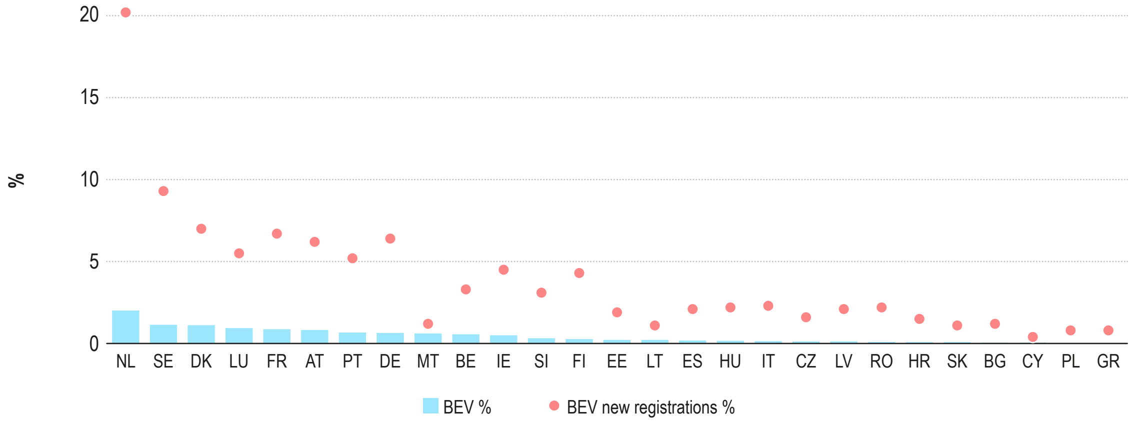
173 Figure 19 shows that EVs currently make up approximately 0.2% of private passenger vehicles on EU roads. In contrast, petrol and diesel remain the dominant fuels used for private transportation, accounting for a respective 52.9% and 42.3% of private passenger vehicles in the EU.[81] However, targets set by individual MSs indicate that the penetration of EVs will continue to increase towards 2030.

174 Should EV penetration increase to the anticipated levels, a change will be required from both consumers and network operators with flexibility required from both parties. Consumers and system operators will need to work together in the future. Networks will need to be capable of supplying the electricity needed to power the EVs. However, the consumer also has a key role in that they must be guided to charge their vehicles at times which are of benefit to both the consumer and the wider network. For example, while it may be convenient for the consumer to charge their EV during a daily electricity demand peak, if all EV consumers charge during peak demand, this could place strain on network operators.

175 Such guidance could be provided via appropriate price signals to ensure that the consumer can benefit from adjustments to their domestic consumption behaviour. However, the roll out of smart meters (See Section 3.3 for more information) will be required to enable this so that consumers are provided with the information required to adjust their behaviour.

81 See: https://www.acea.auto/files/report-vehicles-in-use-europe-january-2021-1.pdf.

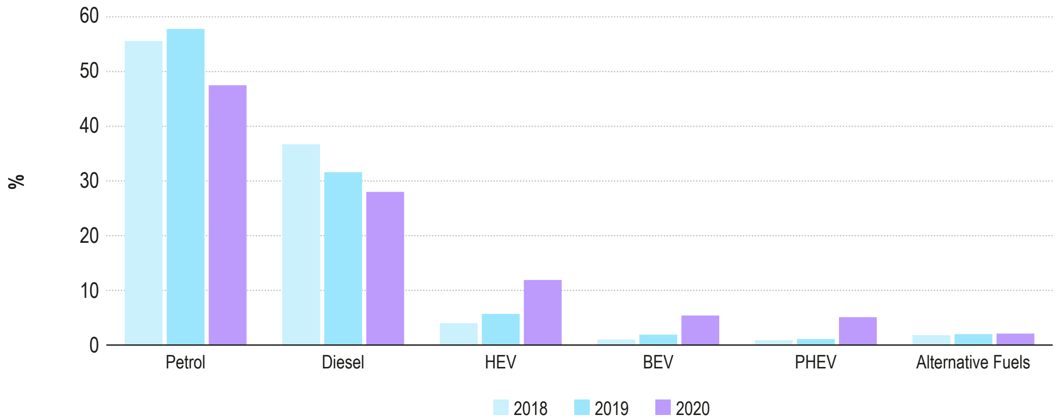
Figure 19: Share of battery energy vehicle (BEV) in total passenger car fleet – 2020 (%)



Sources: European Alternative Fuels Observatory (2020) (EAFO) and NECPs.

176 As can be seen in Figure 20 below, the European Automobile Manufacturers' Association (ACEA) reports that the EU percentage of BEV registrations is increasing across the EU while the proportion of petrol and diesel vehicles is falling. With the increasing uptake of battery electric vehicles (BEV) vehicles, the demand for electricity to power these vehicles will also continue to increase. Plug in electric hybrid vehicle (PHEV) registrations are also increasing, however the electricity consumption requirement of PHEVs is not as clear as BEVs as the owners of such vehicles have the ability to drive using combustion engines.

Figure 20: Vehicle registrations – 2018-2020



Source: ACEA[82].

177 As stated, the transition towards a decarbonised transportation system will result in a new type of electricity consumer interacting more with electricity networks. A higher proportion of EVs will place enhanced demands on electricity networks and appropriate tariffs will be required to ensure that consumers are appropriately incentivised to charge their vehicles at a time that benefits both themselves and the electricity network.

82 See: https://www.acea.auto/figure/fuel-types-of-new-passenger-cars-in-eu/.

3 Conduct of energy consumers and suppliers

178 This section examines the conduct of consumers and suppliers with regard to their participation in energy markets across the EU and EnC. Given the focus of the Clean Energy Package regarding the role of the consumer during the energy transition, this section places additional focus on consumer conduct. The section is structured as follows:

a) Section 3.1 provides an analysis of switching duration and switching rates across EU MSs and the EnC.

b) Section 3.2 examines the status and availability of comparison tools across EU MSs and the EnC.

c) Section 3.3 provides information regarding the roll out of smart meters across the EU and the EnC.

d) Section 3.4 provides an overview of active consumers with specific focus on prosumers, demand side response, energy communities, and barriers observed.

e) Section 3.5 details the information available to energy consumers in their energy bills across the EU and the EnC.

3.1 Switching duration

179 Supplier switching has been the most direct way for energy consumers to take part in the energy markets since liberalisation. Switching suppliers strengthens competition and puts competitive pressure on energy suppliers to offer better prices, products and services to energy consumers. Additionally, and increasingly, switching enables consumers to decide their energy origin (e.g. through green offers, GOs, labels) and what other properties their electricity and gas could have.

180 Figure 21 shows that the legal maximum duration of an electricity or a gas supplier switch meets the respective Directive requirements of three weeks[83] (or 15/18 working days) in most MSs. The only exception is Latvia, where switching takes longer since it is limited to the first day of the next month if the new supplier has informed the DSO before the 15th day of the current month.

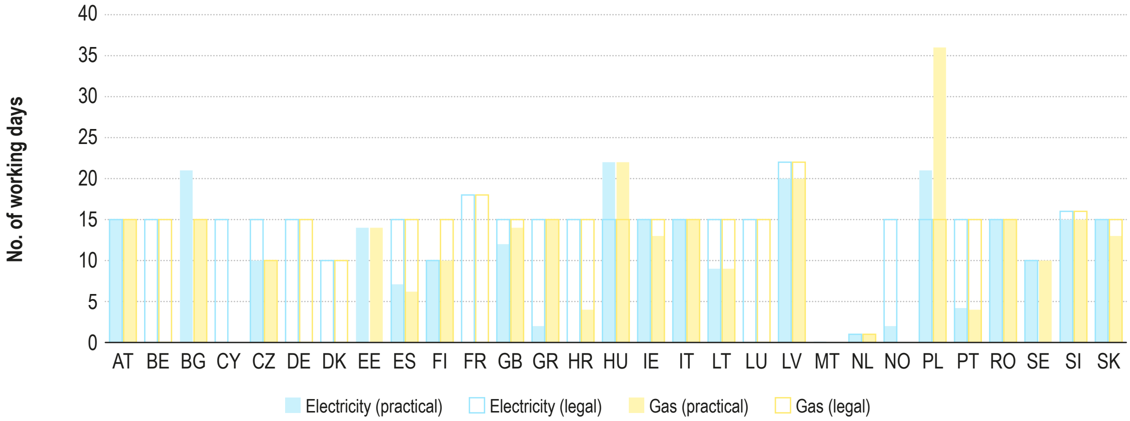
181 In practical terms[84], the duration of a switch meets the legal requirements in most MSs except in Hungary and Poland[85].

83 In Directives 2009/72/EC and 2009/73/EC, art. 3.5 and art. 3.6 respectively: *"where a customer, while respecting the contractual conditions, wishes to change supplier, the change is effected by the operator(s) concerned within three weeks"*.

84 Number of working days on average that the switching process takes.

85 When monitoring the practical duration of the supplier switching process in Poland, the time from submitting the application to the start of sale by the new supplier is taken into account. The date of entry into force of the new contract depends on the consumer's decision and in many cases is associated with the date of expiry of the existing contract. Due to the fact that this date may fall on a distant period, the duration of switching the supplier is in practice longer than provided for in the law, which, however, does not infringe the interests of consumers.

Figure 21: Legal maximum and actual switching duration in EU MSs and Norway – 2020 (No. of working days)



Source: CEER 2021.

Note: The MSs are ranked from highest household switching rates to lowest. However, some MSs in the figure do not have this data available or switching is not possible yet.

In electricity: CY, BG. In gas: BG, LT, DK, FI, HR, HU, RO, SE.

182 Most MSs provide both consumers and suppliers the possibility to choose a precise switching date according to their individual preferences and circumstances (e.g. end of contract). This possibility depends on the switching procedures in place. However, consumers in five MSs[86] do not have such options. The situation is similar for gas in four MSs[87].

183 Article 12 of the Directive explicitly prohibits the use of termination fees for energy contracts except in very specific circumstances. Such fees are only allowed if they are part of a contract that the consumer has voluntarily entered into and if they are clearly communicated to the consumer before signing the contract. The fees themselves shall be proportionate and shall not exceed the direct economic loss to the supplier or the market participant engaged in aggregation resulting from the consumer's termination of the contract, including the costs of any bundled investments or services that have already been provided to the consumer as part of the contract.

184 In 2020, 18 MSs[88], permit such termination fees. In Belgium, Cyprus, France, Italy, and Lithuania, the NRAs[89] report that specific contract termination fees are not allowed. Some countries qualified the scope of their termination fees:

a) In Germany, a law on contractual terms and condition includes a special (not energy-specific) rule, which makes it illegal to include in terms and conditions contractual penalties for the recession of a contract. The German NRA states that setting a termination fee within the terms and conditions of an energy supply contract would fall under this category, thereby being rendered illegal. However, a termination of the contract before the end of the stipulated duration period may legally lead to damages to be paid by the party who unduly terminated the contract

b) Pursuant to the Danish Consumer Contracts Act, a consumer is free to terminate a supply contract with one month's notice, when five months have passed after conclusion of contract, i.e. the supplier cannot charge termination fees. If, on the contrary, a consumer wishes to terminate the contract prior to the six months, the supplier can charge a termination fee provided that the consumer has agreed to this contractual term.

86 Greece, Croatia, Latvia, Slovenia and Slovakia.

87 Same countries than electricity with Croatia exception, in its gas sector the consumer can actually choose the precise switching date.

88 Czech Republic, Germany, Denmark, Spain, Finland, Great Britain, Greece, Croatia, Hungary, Ireland, Latvia, The Netherlands, Poland, Portugal, Romania, Sweden, Slovenia, Slovakia.

89 Although in Greece termination fees are currently permitted, in 2020 the NRA, through Decision 409/2020 provided guidelines to suppliers so that termination fees would only be applied in fixed tariff contracts. Before that Decision, termination fees were common both in fixed tariff contracts and mixed contracts (i.e. contracts with a fixed component and an adjustment clause that permitted the suppliers to charge consumers more if the average monthly day-ahead market clearing price exceeded certain level which was defined in the supply contract). Today, most mixed supply contracts with termination fees have ceased to exist in the market.

c) In Croatia, electricity contract termination fees are not permitted for household customers and other customers who benefit from the public/last resort supply.

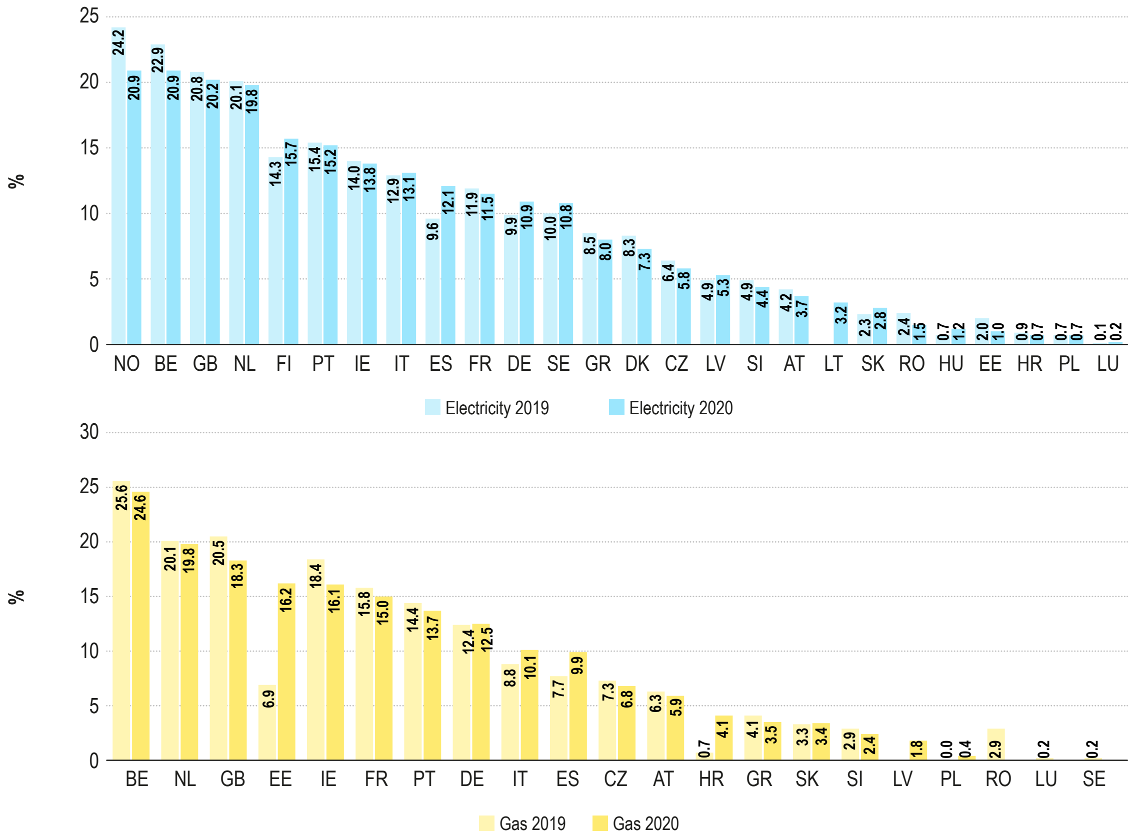
d) Charging penalties, damages, compensation or any other form of payment for reasons of withdrawal from the contract prior to the expiry is prohibited in Slovenia for household consumers if such withdrawals take effect after one year from conclusion of the contract. A similar legal provision is considered in Spain.

3.1.1 Household switching rates

185 The switching rate of consumers is one of the key indicators for well-functioning energy retail markets. While switching has become easier, there is still a high proportion of energy consumers (especially household consumers) who remain with their incumbent supplier. Where MSs consistently report very low switching rates, reasons for this development should be monitored closely, in order to evaluate market functioning. On the other hand, extremely high switching rates should also be looked at closely. Most of the times, high switching rates are indicative of very well functioning markets. However, in some cases, consumers may be switching because they are dissatisfied with the suppliers rather than being willing to participate in the markets. Analysing in combination with complaint data (Section 4.3) can help to better understand the switching data.

186 External switching is when a consumer switches from their existing energy supplier to a new energy supplier. Figure 22 shows switching rates for electricity and gas household consumers by number of metering points in 2019 and 2020. It reveals that among MSs, external switching rates of household consumers differ significantly. It is worth noting that the countries with the highest switching rates are the same for electricity and gas, pointing to underlying, structural factors in those countries favouring switching among energy consumers.

Figure 22: Percentage of external switching rate of household consumers – 2019-2020 (%)

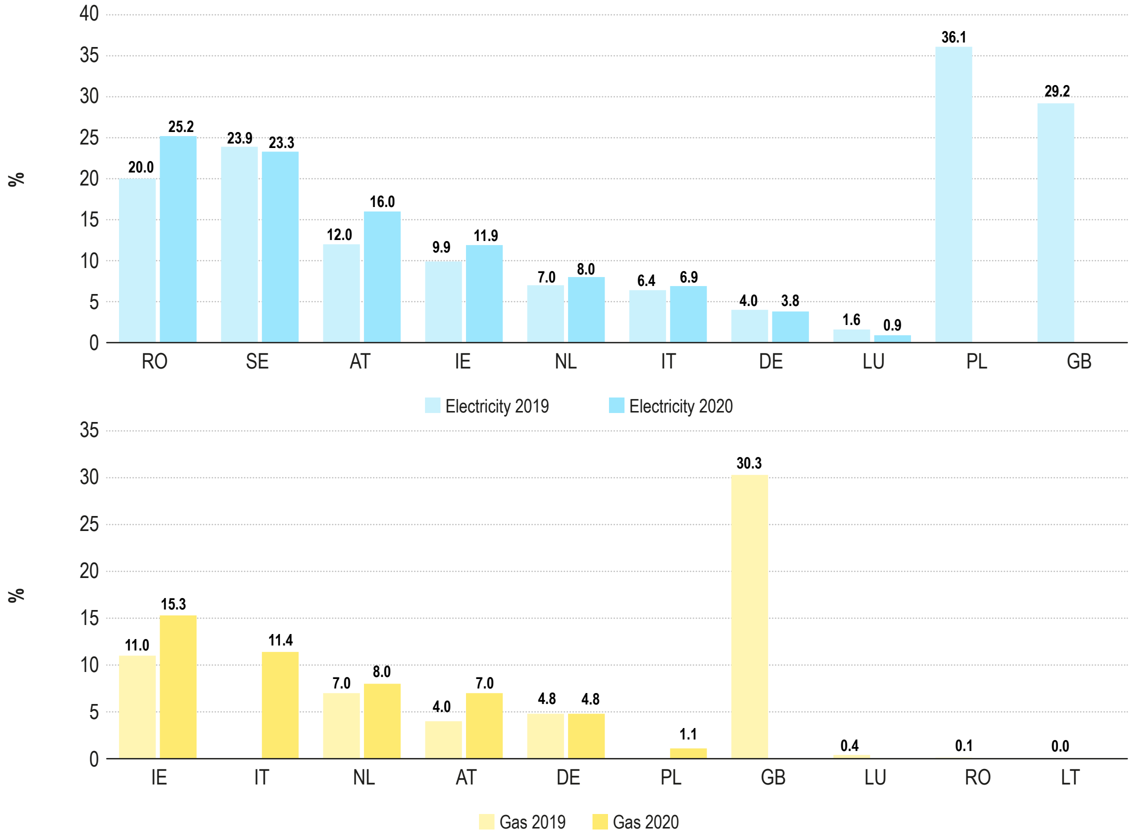


Note: BG did not report data on external switching, for CY and MT, the indicator is not relevant due to the number of suppliers.

187 For this year's report, NRAs reported on volume-based switching rates. Although only a few NRAs reported on this new indicator, the responses indicate that in a majority of countries volume-based switching rates tend to be higher compared to switching rates based on metering points. This could be an indicator that consumers with larger energy consumption, where other factors are at play, tend to switch more often because of higher financial savings. Some examples include Norway, Netherlands and Belgium. Furthermore, the competition for consumer acquisition may be more intense at higher consumption levels. For more information on consumption levels, see Section 2.5.1.

188 Consumers can also engage through so-called internal switching. Internal switching is defined as a change of product or contract with the same supplier following renegotiation and/or choosing a different option. Automatic rollovers and changes of contract that only affect payment are excluded in this definition. Like switching to another supplier, a switch of contract requires an active decision by the consumer. Data for internal switching rates has been collected from CEER on an annual basis; however, the number of countries reporting is limited. Figure 23 shows the developments of internal switching for electricity and gas household consumers in the years 2019 and 2020. A comparison with the external switching rates might give some indications on the respective markets and consumer behaviour. While in some MSs, such as in the Netherlands and Ireland (for electricity), consumers seem to favour external switching, in others internal switching is more favoured, such as in Romania, Sweden and Austria (for electricity).

Figure 23: Percentage of internal switching rate of household consumers – 2019-2020 (%)



189 In markets where both regulated and non-regulated prices exist, consumers can choose to switch out of or in to those contracts. Spain, France, Italy, Lithuania, Poland, Portugal and Romania reported switching activities for regulated prices in 2020, as seen in Figure 24.

Figure 24: Switching rates in markets with regulated prices

	Electricity switching rates		Gas switching rates	
	out of regulated prices (by metering point) for household	inregulated prices (by metering point) for household	out of regulated prices (by metering point) for household	inregulated prices (by metering point) for household
ES	2.0	1.7	0.9	0.9
FR	3.1		13.0	
IT	3.6	0.2		
LT	2.6	0.5		
PL	0.2		0.1	0.2
PT	3.9	0.0	0.9	0.0
RO	3.6	0.3		

Source: CEER.

Information about non-household consumer switching rates can be found in Annex 2.

3.1.1.1 Switching rates -Energy Community

190 For the EnC CPs, only a very small number of households (less than 0.1%) switched electricity supplier in Ukraine and Serbia. Internal switching was reported only in Bosnia and Herzegovina (less than 0.01% metering points); the data was not available for Georgia. In the gas sector, with a notable exception of Ukraine (where supplier switching occurred on 5.35% of metering points), there were no changes of suppliers in 2020 in the household segment or the information was not available (Georgia). The main reason for such limited consumer activity is the prevailing end-user price regulation, usually below costs, which does not provide any incentive to households to change their electricity and gas suppliers.

3.1.2 Consumer perception, engagement and switching

191 One of the important features of well-functioning retail markets is the engagement level of consumers in market activities. A relevant medium through which consumers can exercise this engagement is by comparing the offers available on the market, choosing a supplier and switching accordingly. Thus, markets with higher engagement should show higher switching rates, assuming all other factors remain constant. This section analyses how a series of consumer perception indicators, linked to levels of consumer engagement, relate to the external switching rates in household energy markets across different MSs.

192 These indicators were selected from the EC New Consumer Market Monitoring Survey (MMS)[90]. This survey examines consumers' experiences and perceptions of EU markets using a standard set of indicators to allow consistent and comparable monitoring across markets, countries and survey waves[91]. The survey covers three broad pillars of the consumer experience in the markets concerned (electricity and gas among them): i) trust and confidence in traders; ii) choosing products and services; and iii) the in-market experience (including experience of problems and detriment).

193 The following indicators in the MMS were selected for the purposes of the present analysis:

a) Trust: percentage of consumers that trusted the retailers a great deal or a fair amount. This would also be highly correlated to the previous market experiences of the consumer, including problems and detriments suffered. So, the higher the indicator the lower perceived difficulties/risks to interact with the market and the higher the probability to be more engaged.

b) Comparability: percentage of consumers that declared that comparing products from different retailers was easy or very easy. So, the higher this indicator the lower the searching costs for the consumer and the higher the probability to be more engaged with the market.

c) Importance of price: percentage of consumers considering the price of the product as important or very important. So, the higher this indicator the higher the incentives of the consumer to search and compare suppliers offers, and the higher the probability to be engaged with the market.

90 See: https://ec.europa.eu/info/policies/consumers/consumer-protection/evidence-based-consumer-policy/market-monitoring_en.

91 Around 50,000 people are interviewed for each wave across the 30 countries in scope. The survey assesses the performance of a range of goods and services markets across the 27 Member States of the European Union, as well as Iceland, Norway and the UK. The survey is based on randomly drawn samples set at 500 consumers per market and per country in most of the EU countries and Norway. In Luxembourg, Cyprus, Malta and Iceland, the target is 250 consumers per market.

194 Markets in which a high percentage of consumers trust retailers, consider prices important and offers easy to compare are expected to have a higher percentage of engaged consumers and would probably switch more frequently.

195 Figure 25 and Figure 26 show countries ranked from a high to low average of these three indicators for electricity and gas household markets, respectively. In general, a low correlation with external switching can be found, which could be expected as there are many other factors influencing switching dynamics, such as the number of active suppliers, offers and competition among market participants, potential savings, and other (dis)engagement factors.

196 In electricity, several countries' switching dynamics seems to be explained at least partially by these three consumer perceptions. However, a subset of countries record switching rates higher than expected, if only considering these indicators. The greatest differences are found in Belgium, Great Britain and Norway. The latter two present a combination of a considerably high number of nationwide suppliers in the market (47 and 100 respectively) and very low concentration ratios that could foster switching rates. Additionally, as outlined in Section 4, final electricity household prices are among the highest in Belgium and Great Britain, with an increase[92] in the last ten years of 39.7% and 54.7% respectively, which could also impact switching rates.

197 In contrast, other countries record lower switching rates than expected when only considering these three types of consumer perception. The greatest differences are found in Slovakia, Austria, Estonia, Croatia, Hungary, Poland and Romania. Some factors that could diminish switching incentives could be:

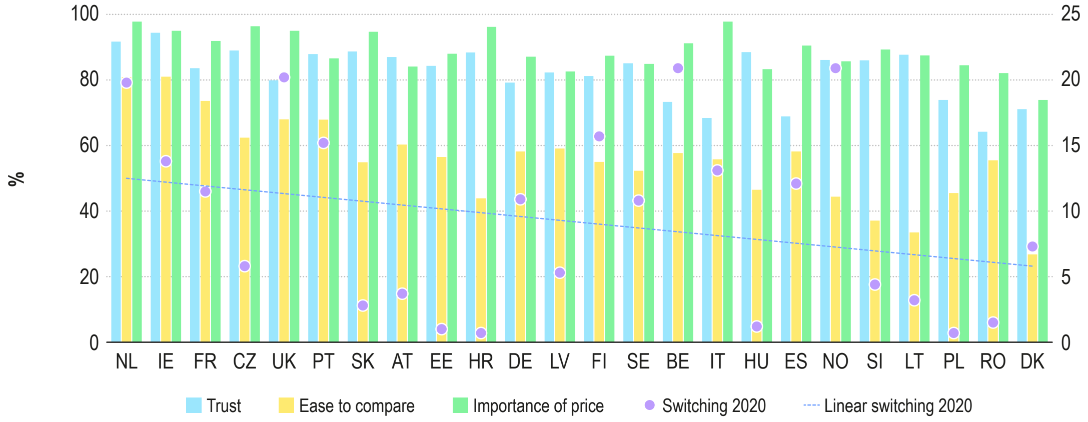
a) Hungary presents a low number of household nationwide suppliers (4), and a low final electricity household price, with a decrease in 2020 and in the last ten years (-37.6%)[93], and price intervention for 100% of electricity household consumers.

b) Slovakia has 100% of household consumers with price intervention.

c) Estonia and Croatia present high concentration rates combined with low final household electricity prices.

198 Meanwhile Poland, Romania and Austria (in electricity) reported significant internal switching rates.

Figure 25: Consumer perceptions and engagement versus electricity household external switching rate (%)



Source: CEER and EC New Consumer Market Monitoring Survey.

Note: UK switching rates are only regarding to GB.

Note: The dotted line shows a hypothetical linear trend between the indicators mean and the switching rates .

92 Not only the relative price level but also the variation across time could spur consumers to switch. For instance, consumers in countries where prices increase for several years would be more unsatisfied and thus switch with more probability than countries in which prices are stable or decrease in the same period.

93 This contrast with 21.4% average increase for consumers in the EU-27 in the last ten years - see the pricing section for more information.

199 In regards to gas switching, dynamics may be explained at least partially by these consumer perceptions. However, some MSs recorded switching rates higher than expected, if only considering these indicators. The greatest difference can be seen in Belgium, which recorded moderately low concentration ratios and a low number of nationwide suppliers (13). In this case, the final gas household price reported in the Section 4.1.2 is moderately low and decreased in the last year, so other factors must be spurring switching rates.

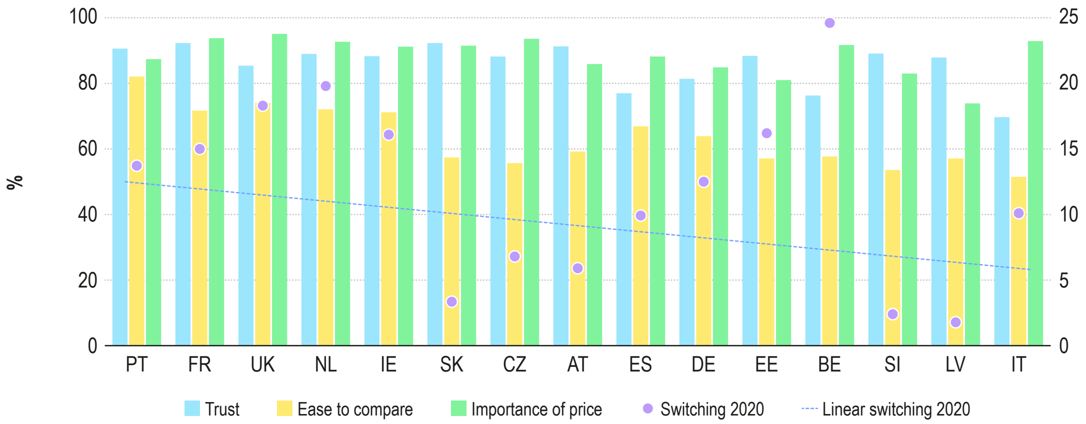
200 On the other hand, Slovakia, Slovenia and Latvia record the highest differences for countries with switching rates lower than expected, considering these indicators as the main explanatory variables. Some factors that could diminish switching incentives could be:

a) Slovakia's household market is rather concentrated (HHI above 5000 and CR3 of 90).

b) In Latvia, no concentration data is available. However, a low number of nationwide suppliers (5) was reported, and 97% of the household market is under price intervention. In addition, as outlined in Section 4.1.2, its final gas household price is the lowest in the EU, and has decreased by 25% in 2020.

c) On the other hand, Slovenia presents low concentration ratios in the segment (HHI around 1800 and CR3 of 64) and a moderate number of nationwide household suppliers (13). However, Slovenia presented a moderate final household price with a slight increase (+0.9%) in the last year but an overall decrease (-8.8%) considering the last 10 years which could also impact switching rates[94].

Figure 26: Consumer perceptions and engagement versus gas household external switching rate (%)



Source: CEER and EC New Consumer Market Monitoring Survey.

Note: UK switching rates are only regarding to GB.

Note: The dotted line shows a hypothetical linear trend between the indicators mean and the switching rates.

94 Not only the relative price level but also the variation across time could spur consumer to switch. For instance, consumers in countries in which price level increase for several years would be more unsatisfied and switch with more probability than countries in which price level is stable or decrease.

3.1.3 Availability of offer types

201 This section assesses the variety of offers across the EU in order to find out which products in the EU are most disseminated and in which countries consumers benefit from a broad variety of offers. To this end, NRAs have been asked to indicate the availability of 16 offer types[95] for electricity and 15 offer types for gas. New in this year's edition is the distinction between "100% Green" products with so-called Guarantees of Origin (acc. EU Dir 2018/2001)[96] and products indicating the location of generation. A further addition to this year's report is the availability of information on the range of offers for non-households.

202 Competition among suppliers can lead to gains in terms of price and service quality and hence to higher switching rates. However, consumer engagement is a key element for the realisation of well-functioning markets. The engagement of consumers leads to more pressure on suppliers, increased competition and innovations on the market. In the absence of consumer engagement, suppliers have a reduced incentive to deliver lower costs and/or better quality services. For this reason, Directive (EU) 2019/944 rec. 32 states that barriers to switching should be minimized to the greatest practical extent without unjustifiably limiting consumer choice.

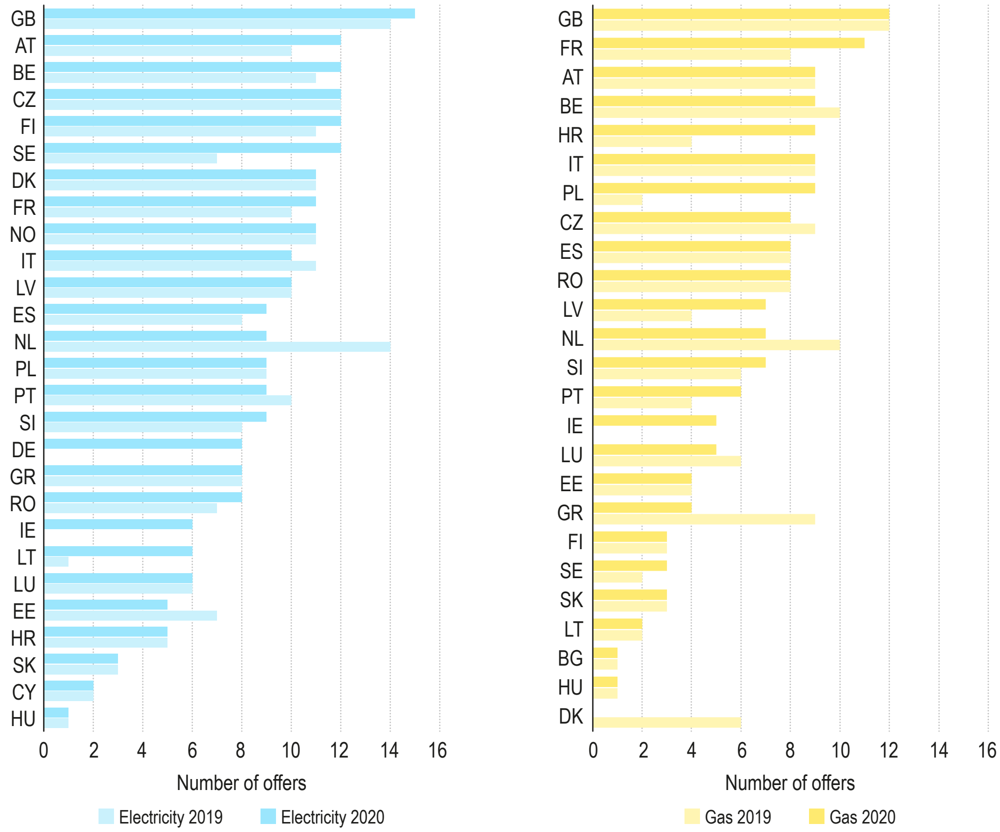
203 Consumers can start engaging in the first instance by simply comparing the different offers available, choosing a supplier and switching accordingly. Many factors can shape their engagement such as the existence of preferred contact type and the ease of switching from one supplier to another. In addition, consumer trust in the market and their awareness of available offers and rights or tools are key to driving enhanced consumer participation. In response to a more informed consumer, suppliers can differentiate themselves from competitors by diversifying their product or service that they offer.

204 Figure 27 shows the availability of offers in MSs in 2020 in both electricity and gas. 22 out of 27 MSs reported more than five different offer types in 2020. A higher degree of regulatory intervention in the market appears to result in a lower variety of offer types for consumers.

95 a. Variable offers: Price paid per unit of gas or electricity used can change at any time
b. Fixed offers: An offer that guarantees that the price paid per unit of gas or electricity used will not change for a given period of time
c. Mixed offers: offers based on both fixed and variable components. Consumers can choose between variable or fixed pricing options during the contract period.
d. Variable spot based offers: Variable price based on the wholesale market spot price
e. Variable wholesale price–based offers: price calculation is based on the monthly, quarterly or weekly average wholesale price
f. Capped offers: guarantee that the price paid per kWh for gas or electricity will not rise beyond a set level for a given period of time, but may go down – usually for this certainty customers pay a small premium
g. Indexed variable offers: similar to spot-based which is linked to wholesale, but linked for example to standard incumbent offer with guaranteed discount of x% or to RPI
h. 100% Green: i.e. offers with guarantees of origin acc. to Art 19 EU Dir 2018/2001 or other tracking mechanism acc. to national law while they are based on 100% renewable generation resources like biomass. The product mix shall provide the precise % of shares of renewable sources, eg. 80% Biomass 20% P2X
i. Online offers: products which let consumers manage their accounts online. In this way, consumers e.g. receive electronic bills, communicate with the provider paperless or use e-signature for contracts. Such offers might be connected to savings or discounts
j. Social offers: for vulnerable consumers and/or consumers in energy poverty
k. Offers with guarantees of origin other than RES: Offers which fully guarantee a conventional energy mix (data collected only for electricity segment)
l. Offers with indication of location of generation: i.e. Gathered in the North Sea; regional generation). Please note that this question does not refer to renewables, the intention here is to see whether there is a sort of consumer preference for the location of generation)
m. Offers with monetary gains, discount, supermarket vouchers, etc.
n. Offers with additional services as energy efficiency, boiler maintenance etc.

96 DIRECTIVE (EU) 2018/2001 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL.

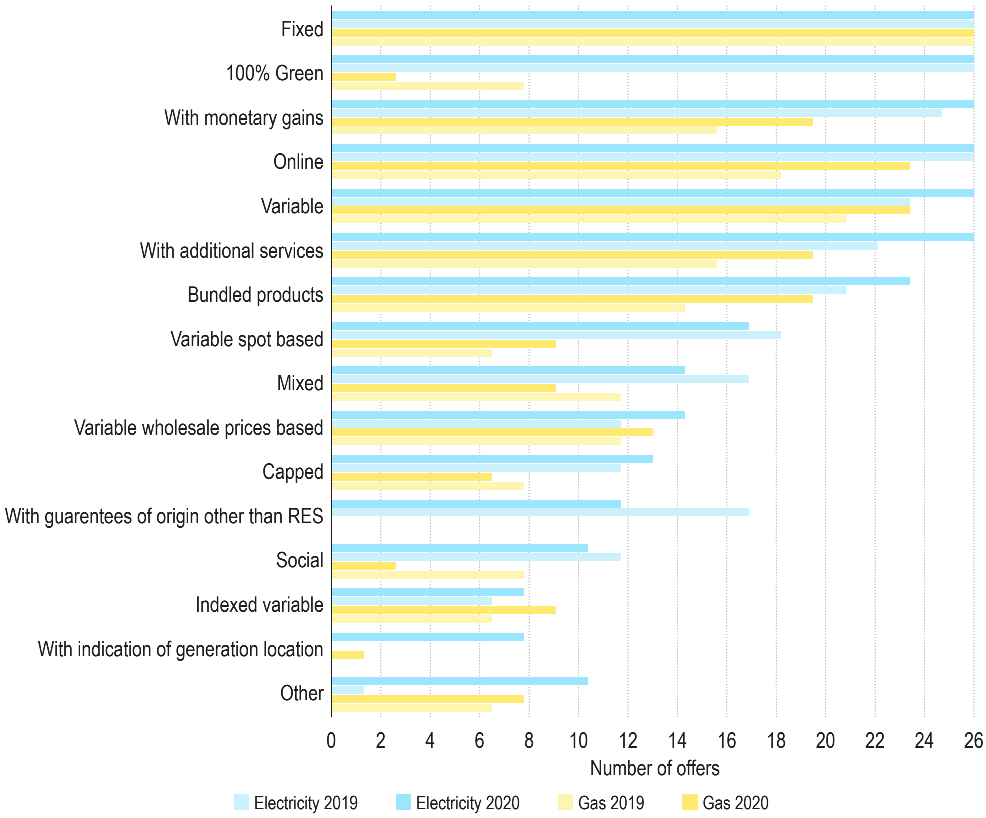
Figure 27: Number of available offer types in MSs – 2020



Source: CEER 2021.

205 In general, fixed, online, 100% green tariffs, and offers with monetary gains are the most common offer types on the European electricity markets. Figure 28 shows that, compared to 2019, more consumers had access to online offers in 2020. In addition, offer types with monetary gains (such as vouchers), additional services and of a bundled nature increased as well. This year's report provides new information on the availability of offers with a guarantee of the energy mix excluding RES in ten MSs. Consumers in seven MSs have access to offers which guarantee generation location. Gas sector developments are similar, showing an increase in online, bundled products, and variable contracts.

Figure 28: Number of MSs where the offer type is available – 2020

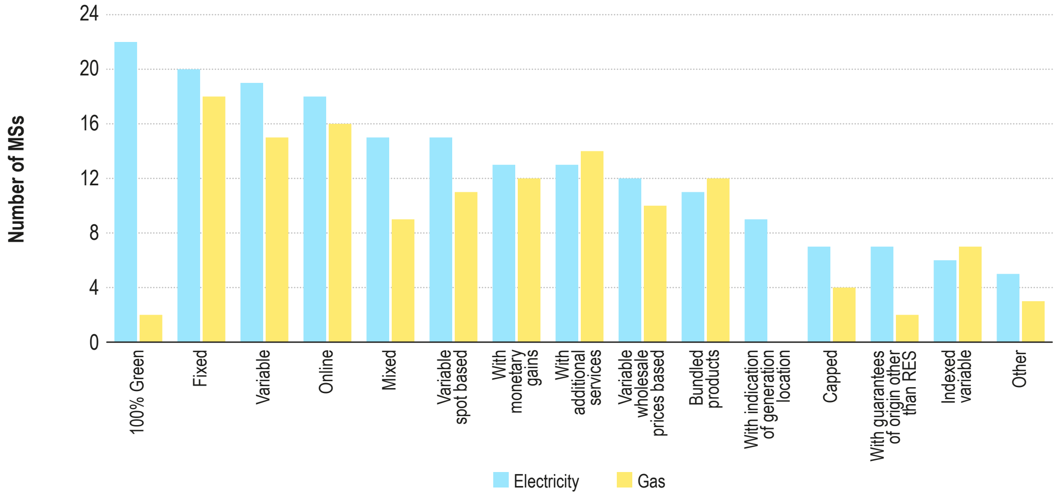


Source: CEER 2021.

Note: Offer types refer to different features and can cover in parallel different categories.

206 Figure 29 shows the number of MSs where the listed offer types are available for non-household consumers. In both the electricity and gas segments, the variety of offers is lower for households than for non-households. Well-disseminated offer types are fixed tariffs for both the electricity and gas segments. Online tariffs hold second place in the gas segment and green tariffs hold first place in the electricity segment. Interesting is that offer types with variable pricing options in electricity are more disseminated than in the household segments.

Figure 29: Number of MSs where the offer types are available for non-households – 2020



Source: CEER 2021.

Note: the data is available for 27 MS for electricity and 25 MS for gas.

3.2 Comparison Tools

207 Comparison tools (CTs) can empower consumers by enabling them to easily compare retail electricity and gas prices in their market. This facilitates the consumer in making an informed and trusted decision with regards to which energy supplier can provide the best service regarding their energy consumption[97].

208 The availability of CTs is also important to enable consumer participation in the energy transition. However, some consumers are of the view that comparing energy offers is difficult. Across the EU, 11% of all consumers believe that it is fairly or very difficult to compare offers from different retailers, ranging from 2% in the Netherlands and Luxemburg to 24% in Norway[98]. In addition, 21% of all European consumers do not trust energy retailers, ranging from 5% in Ireland to 34% in Romania[99].

209 Figure 30 shows that CTs for electricity[100] exist in 25 MSs for electricity and 19 for gas. Some MSs have more than 10 CTs, while other have only one. The CTs are operated by NRAs, other public bodies or commercial companies (sometimes certified by public bodies). However, in some MSs, no independent body currently operates a CT for households and microenterprises (e.g. in Bulgaria, Cyprus and Malta where only one supplier operates). In Hungary, the CT only includes offers for non-household customers.

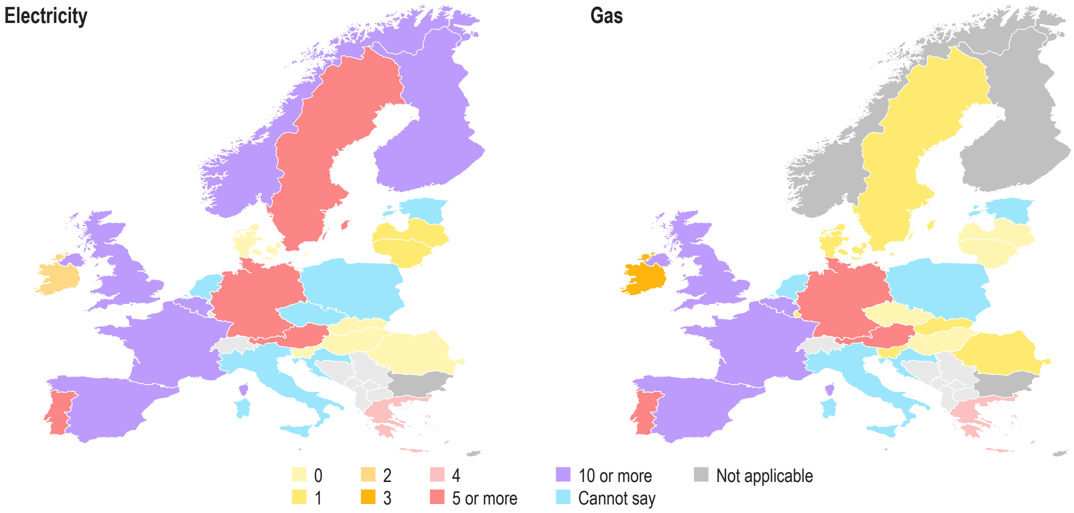
97 Comparison tools are one instrument available to consumers. Please see Section 3.3.2 regarding electricity products and services enabled by smart meters.

98 European Commission´s Consumer Market Monitoring Survey, EU27 (Norway, Iceland and Great Britain not included), https://public.tableau.com/views/ConsumerMarketMonitoringSurvey/7?%3AshowVizHome=no.

99 European Commission's Consumer Market Monitoring Survey 2021.

100 Public and/or private.

Figure 30: Number of Comparison Tools in EU MSs and Norway – 2020



Source: CEER 2021.

210 There is no strong correlation between the number of CTs, or existence of a public CT, and how difficult consumers (who engage) believe it is to compare contracts from different electricity suppliers. In Norway (where consumers switch the most), 24% of consumers believe it is difficult to compare. In France, only 6% believe comparing is difficult. In Slovenia and Luxembourg, only 7% and 2%, respectively, find it difficult to compare. Norway, France, Slovenia and Luxembourg all have public CTs for household consumers.

211 As outlined in the Directive, from January 2021, MSs must ensure that household consumers and micro-enterprises with an expected yearly consumption of up to 100,000 kWh have access to at least one tool comparing the offers of suppliers, free of charge[101]. This must also include offers for dynamic electricity price contracts. The CT must meet the standards presented in Figure 31 below and may be operated by any entity, including private companies and public authorities or bodies.

212 Overall, twenty MSs report the existence of public CTs for electricity that fulfil at least one of the criteria. Fourteen MSs state that they have a public CT for gas fulfilling at least one criteria. Different public bodies operate these public CTs. In twelve MSs[102] for electricity and nine for gas[103], the NRA provides one or more CTs. In Belgium, Great Britain and Ireland the NRA provides a trust mark or certifies commercial CTs. In the Netherlands, the NRA supervises commercial CTs in line with consumer protection law[104].

213 In eight MSs, a public body other than the NRA is responsible for the operation of a CT for electricity[105]. In six MSs, a public body other than the NRA is responsible for the operation of a CT for gas[106].

214 Figure 31 shows how many MSs have at least one public CT that meets each of the minimum standards set out in Directive 2019/944. 20 MSs have a public CT that is independent from market participants. Only Belgium, Denmark, Finland, Hungary, Latvia, Sweden and Norway compare offers for dynamic electricity contracts. It is important to note that the reason why only a few CTs include dynamic contracts is because dynamic contracts are not yet widely available. Notably, fewer MS report that gas CTs meet the standards shown in Figure 31 (the criterion to include dynamic contracts is not relevant for gas).

101 According to Article 14 (Directive 2019/944) which enters into force on 1 January 2021.

102 Austria, Belgium, the Czech Republic, Denmark, Spain, Finland, Hungary, Portugal, Romania, Sweden, Slovenia and Slovakia.

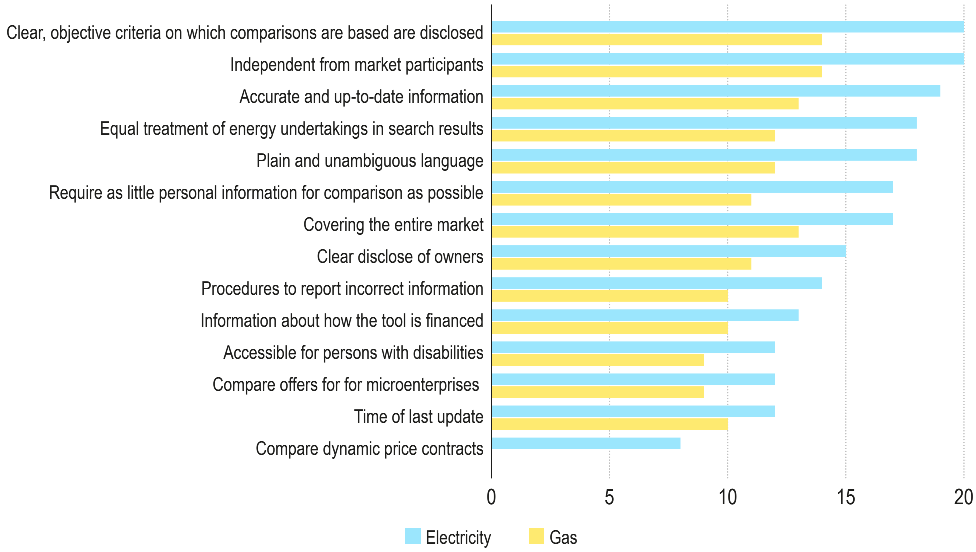
103 Austria, Belgium, the Czech Republic, Spain, Portugal, Romania, Slovenia and Slovakia.

104 The Dutch NRA is also the competent authority on consumer rights.

105 France, Great Britain, Greece, Ireland, Italy, Luxemburg, Latvia and Norway.

106 France, Great Britain, Greece, Ireland, Italy and Luxemburg.

Figure 31: MSs with CTs that meet the legal minimum standard in EU MSs including Norway – 2020



Source: CEER 2021.

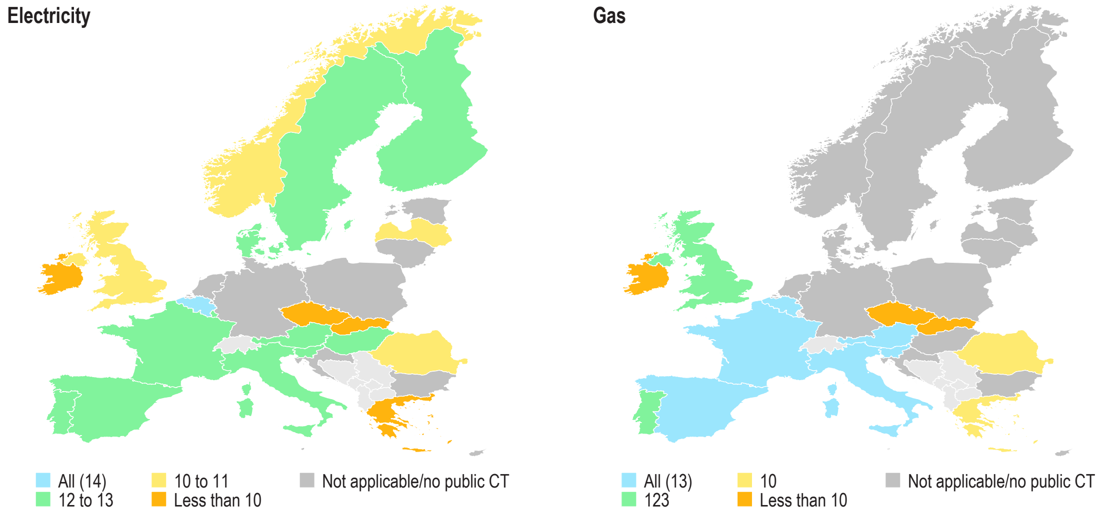
215 The above listed criteria provide consumers access to neutral and objective information that enables them to take a more active role in the liberalised energy markets. Only in Belgium did the public CTs for electricity fulfil all 14 criteria. In France, Italy, Spain, Slovenia, Austria and Denmark, the public CTs met 13 of the listed criteria. The French, Spanish, Italian, Slovenian and Austrian CTs did not compare dynamic contracts in 2020.[107]

216 Figure 32 below shows how many criteria the public CTs in each MS fulfilled in 2020 (if such a CT existed). The map shows that there are some households and microenterprises which did not have access to an independent CT. The public CT in the Czech Republic fulfils only one criterion, while the public CTs in Ireland and Slovakia fulfils six criteria.

217 The most complete CTs (in line with Directive (EU) 2019/944) comparing gas contracts are found in Belgium, France, Spain, Italy, Austria and Slovenia, all fulfilling thirteen of the criteria listed, even though these rules are not legally binding for the gas market. The criteria regarding comparison of dynamic contracts are not applicable for gas.

107 Defined in Directive 2019/944 as an electricity supply contract that reflects the price variation in the spot markets, including in the day-ahead and intraday markets, at intervals at least equal to the market settlement frequency.

Figure 32: Number of criteria fulfilled by public CT in EU MSs and Norway - 2020



Source: CEER 2021.

218 According to Directive 2019/944, CTs should aim to include the broadest possible range of available offers. They should cover the market as completely as is feasible to give the consumer a representative overview of the offers available in their market. In seventeen of the 20 MSs with a public CT for electricity, the CT covers the entire market. In gas, thirteen out of fourteen MSs with a public CT cover the entire market. In eleven of these MSs (gas), the complete coverage of the market is ensured by legal obligations for suppliers to report all contracts to the public or certified CT.

219 Directive 2019/944 does not define what “covering the entire market” means. As such, this may need to be balanced against the criteria for comparability and the criteria for accurate information. This is especially the case in markets with a high number of suppliers that each offer many, and sometimes unique, contract types. If every contract type on the market is presented in the CT, there will likely be contract types that only one or a few suppliers offer. Displaying these contract types in the CT, alongside contract types that most suppliers offer, risks creating complexity for the consumer. For NRAs, or other public bodies that operate CTs, including all available contract types also means more resources allocated to the monitoring and ensuring that the information at the CT is accurate and up-to date.

220 In order to empower and benefit consumers, the consumer must be aware of the existence of, and how to fully utilise a CT. Only nine NRAs (eight for gas) were able to provide the number of unique users[108] of their public CT. Following and analysing the number of users is essential for NRAs (or public bodies) to be able to evaluate to what extent the information provided in the CTs reaches customers.

221 The number of unique users must be seen in relation to both total number of customers and switching rates, where the total number of customers sets the maximum number of users that is possible to attract to the CT, while switching rates indicate a more realistic maximum number of users in a given year.

222 By assuming that one unique user represents one unique household, as many as 16% of all households in Norway used the public CT for electricity in 2020, which can be compared to 12% in Austria, 5% in Romania and Sweden, 3% in France, 2% in Italy and Slovenia, 1% in Portugal and only 0.4% in Spain[109]. Regarding gas, 15% of all Danish household customers for gas used the public CT in 2020, which can be compared to 8% in Romania, 7% in France and 6% in Slovenia.

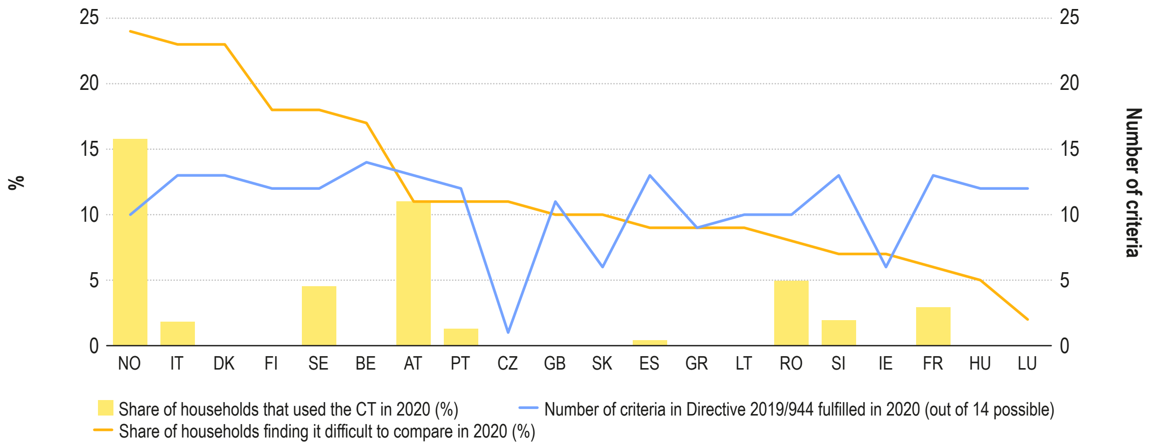
223 Figure 33 below shows the relation between customers’ access to high quality CTs and how difficult customers find it to compare electricity contracts. The yellow bars show the share of households that used the public CT in 2020 (in MSs where it was measured).

108 A unique user is a unique device that has accepted cookies. This device is counted only once in the measured timeframe, even though it may have visited the CT many times.

109 Austria, Italy, Portugal and Spain have public CTs that include both electricity and gas contracts, but were not able to differentiate unique users between the two markets. The calculation is based on the number of household customers for electricity.

224 One conclusion is that there is no strong correlation between the different indicators. Even though households in many MSs have access to high quality CTs (fulfilling 10 or more criteria), some of these households are apparently finding it difficult to compare electricity offers. In the MSs where many households have this perception, policy makers may need to explore why: is it due to factors in the market, can the public CT be developed in any way beyond just fulfilling the criteria or is the CT sufficiently known and used by consumers?

Figure 33: Access to high-quality CTs, usage CTs and customer's perception of how difficult it is to compare electricity contracts in EU MSs, Great Britain and Norway – 2020



Source: CEER 2020.

3.2.1.1 Comparison tools - Energy Community Contracting Parties

225 In the EnC CPs, price comparison tools were developed in Bosnia and Herzegovina and North Macedonia for electricity and only in Ukraine for both electricity and gas. In all other EnC CPs, in 2020, regulatory authorities continued working on creating relevant comparison tools.[110]

3.3 Smart Meter Rollout

226 In 2014, the European Commission published a report entitled "Benchmarking smart metering deployment in the EU-27 with a focus on electricity.[111] The report outlines that, as of 2018, it expected that 72% of European elec¬tricity consumers would have a smart meter by 2020. However, progress has been slower than expected and is now estimated to be 43% for 2020 (corresponding to 123 million smart meters).

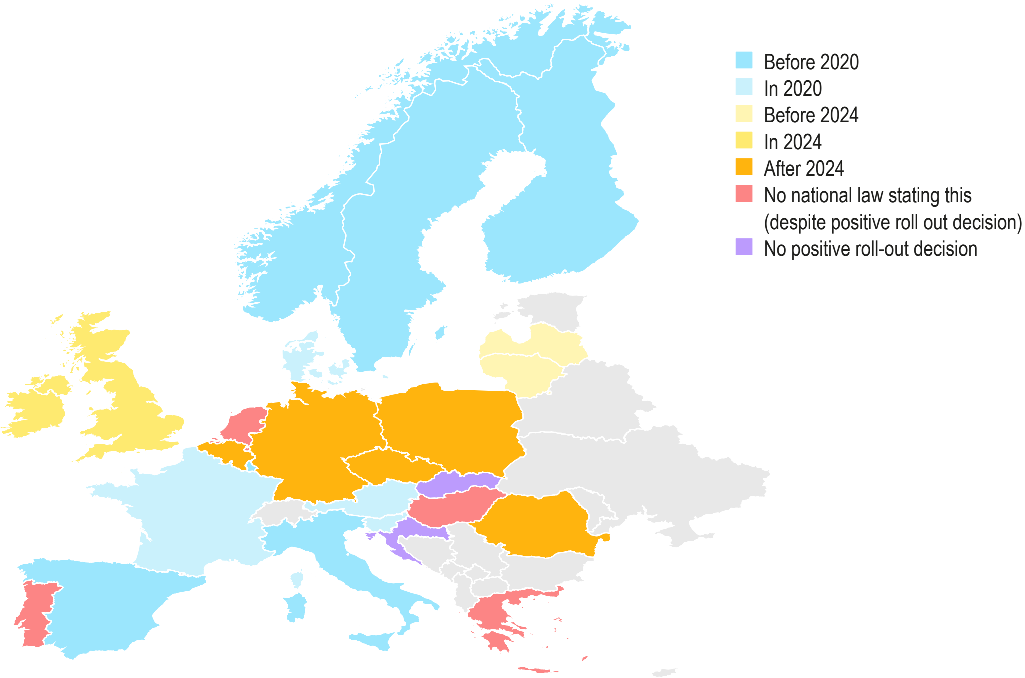
227 Figure 34 shows when the electricity smart meter roll-out is planned to reach 80% or more of electricity household consumers according to national laws. In 2020, Austria, Denmark, France and Slovenia were expected to achieve this target. Greece, Hungary, Malta, and Portugal have no national law stating the target despite a positive roll out decision. It should be noted that the Netherlands and Slovenia, despite not having a national law stating the target, achieved an 80% smart meter roll-out 2020 as seen in Figure 34. Meanwhile, Croatia and Slovakia[112] have a decision pending on this matter.

110 Adoption of Directive 2019/944 for the EnC CPs is expected end 2021, therefore the improvement of price comparison tools' offer and functionalities is envisaged in the next period.

111 Benchmarking smart metering deployment in the EU-27 with a focus on electricity.

112 In 2020 at least 80 % of customers with yearly consumption over 4 MWh/year were equipment with smart meters.

Figure 34: Target year by when the 80% rate of electricity smart meters will be reached in EU MSs and Norway



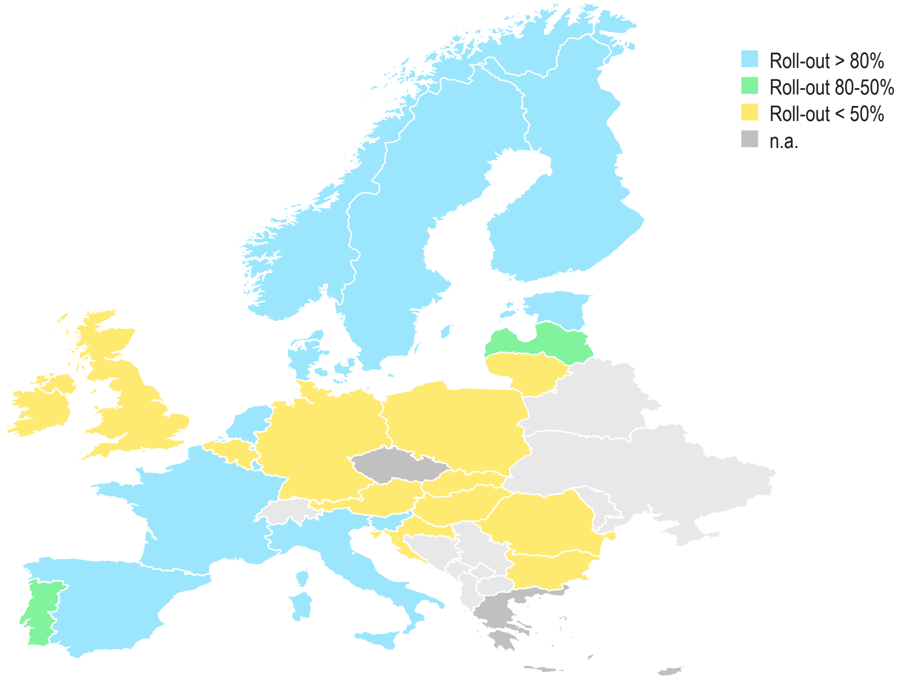
228 Figure 35 shows the status of the roll-out of electricity smart meters at the end of 2020. In twelve countries, the roll out rate of electricity smart meters has reached 80%: Denmark[113], Estonia, Spain, Finland, Italy, Norway recorded a 98% roll-out rate or higher, followed by Luxembourg, Malta, the Netherlands, France and Slovenia, with roll-out rates between 83% and 93%.

229 Taking into account the progress of roll-out based on a contrast of legal plans (>80%) and actual roll-out rates, some delays are arising or expected in the future. For example, Austria had a target of 80% by the end of 2020 (Figure 34) but an actual roll-out of roughly 29% (Figure 35). Other examples where current national plans and roll-out achievements diverged include Great Britain[114], where the target to reach an 80% roll-out rate was originally 2019 but moved to 2024, as roll-out levels still are below 50% due the accumulated backlog caused by the COVID-19 pandemic.

113 In Denmark, 100% roll out of electricity smart meters has to be reached by the end of 2020 according to national law. An 80% target was never defined, however that level was reached in 2018.

114 The smart meter rollout has been affected by COVID-19 which has brought challenges to supplier delivery of the rollout through impacts on customers, staff and the supply chain. From July 2021, suppliers must comply with a new regulatory framework for the roll-out. The framework will set binding annual installation targets for all suppliers in the market and will run until mid-2025.

Figure 35: The status of the roll-out of electricity smart meters – 2020 (%)



Note: Sweden, Luxembourg and Bulgaria data is from 2019.

230 The roll-out of gas smart meters is very limited, with only Estonia having a planned deployment of at least 80% before 2021. Five MSs[115] are planning to achieve this target in the next years, and yet another three MSs[116] are pending on a law stating this despite a positive roll-out decision.

231 Consequently, a few countries present significant rates. Only the Netherlands has surpassed the 80%[117] (85%), followed by Italy (73%), France (63%) and Great Britain (35%). It should be noted that the Netherlands and France[118] do not have a target stated by law.

3.3.1.1 Smart meter roll out - Energy Community Contracting Parties

232 The roll-out of electricity smart meters in the EnC CPs started with implementation of Directive 2009/72, however with very different dynamics. The largest penetration of smart meters in the household segment was recorded in Montenegro (83%), followed by Bosnia and Herzegovina (21%), Kosovo* (11%), Ukraine (10%) and Serbia (only 0.9%). For the other EnC CPs, the information was not available. It should be noted that legal requirements for smart meters' functionalities were established only in half of the countries.

3.3.2 Functionalities and consumption information.

233 In order to ensure benefits to household consumers, minimal technical and other requirements for smart meters are defined in legislation in twenty MSs for electricity and in ten MSs for gas. Most of these MSs require that smart meters provide consumers with information on their actual consumption, make billing based on actual consumption possible and ensure easy access to information for household consumers. The most common functionalities required for smart meters in the EU include: secure data communication, mandatory interface, mandatory in-home display, bills based on actual consumption, historical consumption, and information on real-time consumption among others.

115 Italy, Luxembourg, Great Britain, Czech Republic and Ireland.

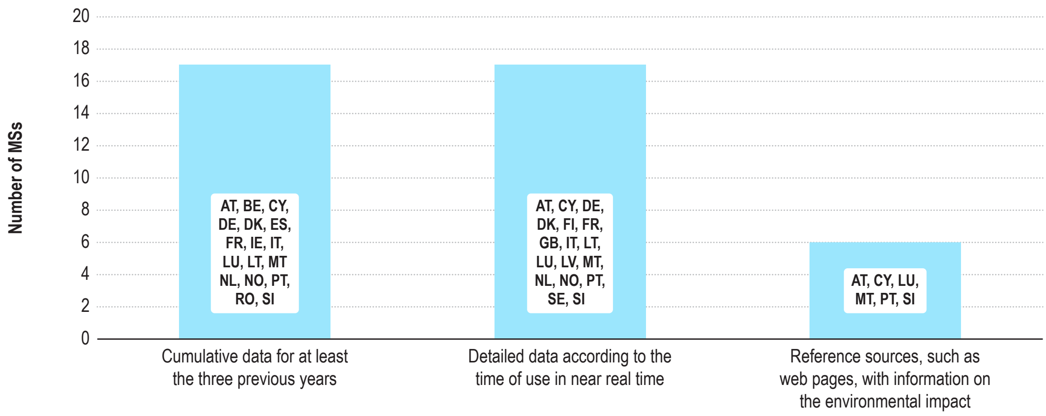
116 Austria, France and the Netherlands.

117 Estonia planned to achieve the 80% target in 2020 but no data is available.

118 In the French case, the target is set by a financial incentive through bonuses and penalties rather than a defined target to reach at a defined date. It is set by the NRA for some DSOs, but not set by national law.

234 Figure 36 shows MSs where consumers with smart meters have access to complimentary information on historical consumption[119]. In seventeen MSs, consumers have access to additional detailed data according to the time of their use of electricity for any day, week, month and year via internet or the meter interface. In seventeen MSs, consumers have access to cumulative data for at least three years or the period since the start of the supply contract, if this is shorter. In six other MSs, consumers also receive information on the environmental impact of their consumption.

Figure 36: Complimentary information on historical consumption that final household consumers with smart meters must have access to – 2020 (Number of MSs)



3.3.3 Electricity products and services enabled by smart meter

235 All consumers should be able to benefit from direct participation in the market by adjusting their consumption according to market signals and in return benefit from lower electricity prices. Dynamic price contracts create price-driven incentives for consumers to react flexibly to wholesale market conditions providing greater transparency regarding the price of electricity and incentivise consumers to actively adapt their electricity consumption. For this type of price contract, smart meters play a crucial role. While there are benefits to dynamic contracts, these benefits can only be unlocked if a consumer is responsive to a price signal. Less responsive consumers may be more suited to a fixed price contract where they pay a higher unit rate for their electricity. Suppliers must formally inform their final household consumers about the opportunities, costs and risks of these type of contracts.

236 MSs must ensure that final consumers with smart meters can request a dynamic electricity price contract from at least one supplier and/or from every supplier that has more than 200,000 final consumers[120]. Listed below are the benefits available to energy consumers via smart meters:

a) Provision of accurate billing and consumption information to inform consumers (even the non-active consumers) of their energy use and costs.

b) Smart meters enable a range of new products and services for electricity consumers such as time-of-use products, where the cost of electricity depends on the time of day or the day of the week.

c) Real-time pricing matches consumer energy prices much more closely to wholesale prices.

d) Critical peak prices generally signal peak consumption levels in determining the price of energy.

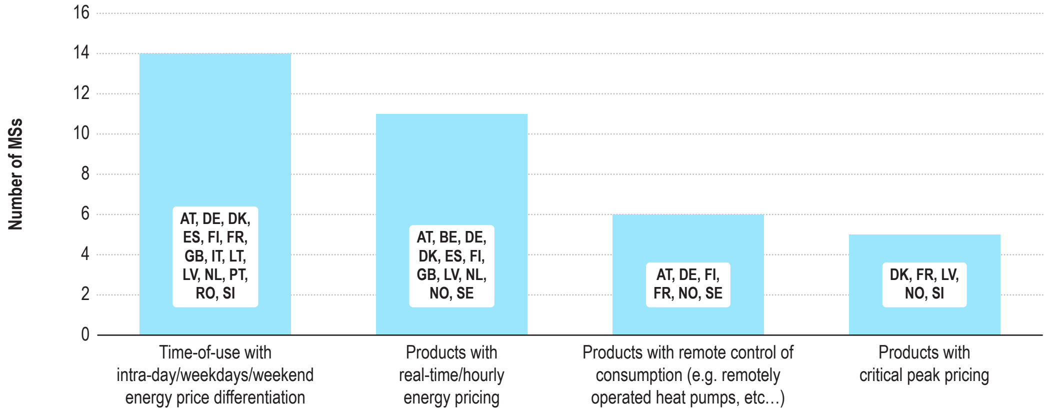
e) Smart appliances with remote consumption control functionality (and/or connected to the web) are, for example, devices that adapt the operation of specific home appliances, such as heat pumps, to hourly electricity prices, in order to benefit from shifting consumption to lower-price periods or periods of high renewable generation.

119 Historical consumption information and, subsequently, smarter products may also be provided to household consumers without smart meters based on frequent actual readings and more sophisticated usage of standard load profiles.

120 These provisions from Directive 2019/944 came into effect in January 2021.

237 Currently, electricity consumers in fourteen MSs can opt for time-of-use contracts with intra-day, weekday or weekend energy price differentiation. Figure 37 shows that electricity consumers can choose real-time or hourly energy pricing in eleven MSs, have access to products with remote control of consumption in six MSs, and have access to products with critical peak pricing in five MSs.

Figure 37: Types of electricity products enabled by smart meters available in EU MSs and Norway – 2020 (Number of MSs)



238 Fourteen MSs[121], with (partial) smart meter roll-out, reported to have dynamic electricity price offers. France implemented the framework regarding such offers, with provisions regarding information to provide for dynamic electricity price contracts to be issued during 2021. In Germany, it is the duty of suppliers with more than 200,000 customers to offer dynamic price contracts and to give information about the cost, benefits and disadvantages. In the Netherlands, the NRA is in contact with suppliers to create a standardized approach to offering these products and to provide clarity for the consumer.

239 Regarding the content of the information provided by suppliers about this type of contract to household consumers:

a) In Austria, suppliers include references about spot prices, and links to websites where customers can check them.

b) In Belgium, suppliers explain that these offers allow for better usage of energy and reduce CO_2 emissions.

c) In Spain, suppliers point out both the opportunity to save money by consuming energy at low price hours and the risk of price volatility[122].

d) In Finland, suppliers are required by law to inform consumers about the key conditions and pricing options of electricity supply contracts (e.g. the price formation mechanisms of dynamic electricity price contracts).

e) In Great Britain, while there is no requirement to inform consumers of opportunities, costs and/or risks, suppliers do have obligations to treat their customers fairly, and should provide information about the tariffs and make the conditions clear.

f) In Lithuania, suppliers communicate that the electricity price depends on the period of electricity consumption.

g) In Latvia, suppliers provide information on the main differences between fixed and dynamic contracts, the method for calculating the price of electricity, and the pros and cons of particular types of contracts. Some suppliers have designed calculators for their electricity products, which allow consumers to compare different opportunities based on their consumption.

121 Austria, Belgium, Germany, Estonia, Spain, Finland, Croatia, Hungary, Lithuania, Latvia, The Netherlands, Portugal, Romania, Sweden.

122 However, in the summer 2021 context of high spot prices, suppliers are stressing the benefits of fixed prices offers.

3.4 The active consumer

3.4.1 Prosumers

240 Directive 2019/944 set out the role envisaged for the prosumer during the energy transition. Prosumer energy is seen as an essential element of the energy transition fostering distributed generation, which not only would facilitate achieving the goals of the Paris Agreement but could also be another step towards a higher consumer engagement in the market. To become an active prosumer, consumers will need to capable of generating their own electricity. This will reduce their dependence on existing sources for their energy requirements.

241 Although legal definitions may vary across member states, prosumers can be broadly considered to be individuals, groups of individuals, small businesses or households able to operate in an organised way. They simultaneously produce and consume energy, mostly via smaller installations located in backyards or on residential or commercial buildings. Apart from electricity generation, this term also encompasses heating and cooling.

242 Given the small scale of power generated by individual prosumers, access to the network should be facilitated[123]. Furthermore, Directive 2019/944 underlines the need to organise electricity markets in a more flexible manner and to fully integrate all market players – including producers of renewable energy, new energy service providers, energy storage and flexible demand providers.

243 Factors that incentivise a stronger presence of prosumers are, for example, the existence of incentives and falling costs of renewable energy technologies, especially PV panels, which in some MSs produce electricity at a cost that is competitive with supplier retail prices.

244 In 2020, sixteen NRAs reported on the installations of PV panels among household consumers, which can be used as an indication of the percentage of consumers participating actively in the energy transition. The MS with the highest share of households with PV panels for self-consumption[124] is Malta with 28.7%, followed by Belgium and Cyprus with 13.7% and 4.2%, respectively. In Great Britain, Poland, Italy, Hungary, Slovenia and Estonia shares are between 3 and 1%. In the remaining MSs for which data was reported, Lithuania, Sweden, France, Norway, Slovakia, Croatia, and Romania - the share is below 1%.

245 Profitability depends partly on the share of the electricity produced that prosumers can consume themselves, on regulations and on the availability of funding for installation of renewable energy generation capacity. In addition, as pointed out at the last European Parliament Think Tank on Distributed Energy Resources (DER)[125], home ownership and the ability to afford upfront investment costs are often prerequisites to investing in DERs, which would constitute a barrier for interested prosumers. Accordingly, without careful policy-making, there is a risk that vulnerable, low-income households could be left behind as a 'prosumer divide' emerges between those that can afford DER technology and those left reliant on the main grid, paying higher electricity costs.

246 The possibility to sell excess production is another factor that could improve the profitability of the investment. So far, 21 out of 28 MSs allow this feature. However, only in the Netherlands and Austria[126] (partially) can prosumers compare prices of excess energy that can be expected through comparison tools.

247 Additionally, the presence of aggregators would foster prosumers' presence and participation. So far, aggregators exist in 19 out of 28 MSs, as seen in Figure 38. However, in Spain, further legal developments have to be put in place. Furthermore, eight MSs have aggregators that can operate independently from the supplier, and in ten MSs end-user residential aggregators and customers are enabled to participate in the energy markets.

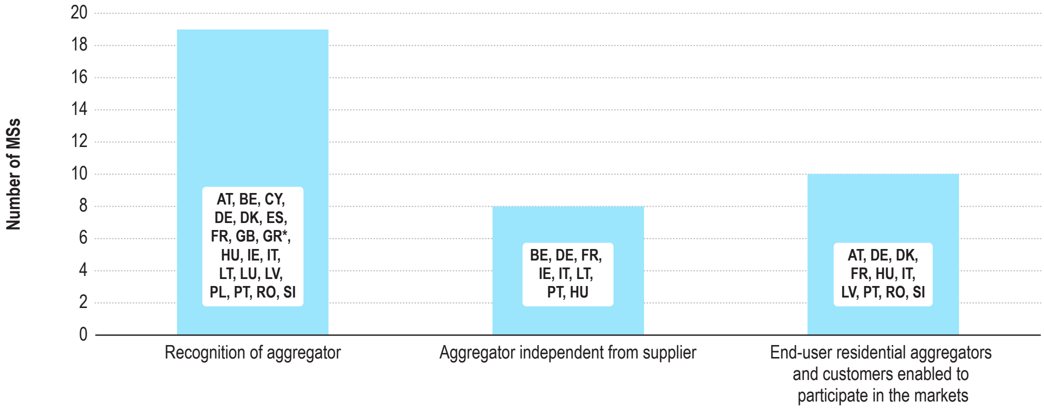
123 Directive 2018/2002 envisages ways to bear and share of costs of technical adaptations, such as grid connections, grid reinforcements and the introduction of new grids, improved operation of the grid and rules on the non-discriminatory implementation of the grid codes, which are necessary in order to integrate new producers feeding electricity produced from high-efficiency cogeneration into the interconnected grid.

124 Number of households with PV panels out of the total number of household metering points.

125 See: https://www.europarl.europa.eu/thinktank/es/document.html?reference=EPRS_ATA(2020)651944.

126 Only a subset of available excess-energy-offers can be compared in the comparison tool (of the NRA). The provision of data in the comparison tool is voluntary.

Figure 38: Recognition of aggregators, independence and access to energy markets in EU MSs and Norway – 2020 (# of MSs)



** GR: figure of aggregator not defined for residential users.*

3.4.1.1 Prosumers - Energy Community Contracting Parties

248 The use of PV panels in the EnC CPs has only started to emerge, and not all NRAs have information on the number of households with PV panels installed. Based on the available information, the highest share of households with PV panels is in Ukraine, at 29914 or 0.1% of all households.

3.4.2 Demand Side Response

249 Demand side response (DSR)[127] is seen as one of the key solutions to accommodating more variable renewable electricity generation, such as wind and solar.

250 MSs have started to support the use of demand side response, but the progress in the development of DSR differs across the MSs.

251 DSR provides an opportunity for consumers to reduce or adjust electricity usage away from peak periods.

252 There are two forms of DSR:

a) implicit demand-side flexibility - which is the consumer’s reaction to price signals[128]

b) explicit demand-side flexibility - which is committed and dispatchable.[129]

253 Examples of explicit demand response in different EU countries as of 2020:

a) In Belgium, it is possible to participate in ancillary services through certain assets, such as home batteries and electric boilers.

b) In Germany, consumers with controllable consumer devices are charged lower network fees, provided that they are controllable by the DSO for congestion management reasons and have the necessary grid usage contract.

c) In Great Britain, the availability of explicit demand response offers is limited to consumers that are half-hourly settled, i.e. to those consumers who have meters that record electricity use on a half-

127 According to Directive 2019/944, ‘demand response’ means the change of electricity load by final consumers from their normal or current consumption patterns in response to market signals, including in response to time-variable electricity prices or incentive payments, or in response to the acceptance of the final consumer’s bid to sell demand reduction or increase at a price in an organised market, whether alone or though aggregation.

128 Some implicit demand response mechanisms are time-based rates, time-of-use pricing, critical peak pricing, variable peak pricing, real time pricing, and critical peak rebates.

129 Flexibility that can be traded (like generation flexibility) on different energy markets (wholesale, balancing, system support and reserves markets). Electricity consumers receive specific rewards or incentives in order to change their consumption patterns upon request (using more or using less).

hourly basis and for whom these half-hourly readings are used to determine the volume of electricity attributed to their supplier in each settlement period.

d) In Norway, a few companies offer remote control of heating and charging of electric vehicle considering price variations.

e) In Slovenia, the TSO auctions balancing and reserve market products, where active customers, including households and small businesses, can participate in the provision of these services through aggregation since direct participation on the market entails balancing responsibility. Meanwhile in Lithuania explicit demand response offers are only available to non-household consumers (legal amendments are currently discussed to enable demand side response also for household consumers).

f) In France, explicit demand response can participate in the wholesale markets and in ancillary services. Most of the available capacity comes from industrial facilities but residential users can also participate with electric heating and electric boilers.

3.4.3 Energy Communities

254 Community-driven energy projects have been part of the European energy landscape since its inception in the early 20th century. Recently, the development of decentralised renewable energy technologies has made direct participation in energy production and management more accessible. The CEP defines "Renewable Energy Communities" and the recast Electricity Market Directive includes a definition for "Citizen Energy Communities".

255 Both types of energy communities are entities that are set up as a legal entity and are defined by their structure. They must be effectively controlled by their shareholders or members, and their primary objective is to provide environmental, economic and social community benefits rather than financial profits. A recent CEER paper, titled "Regulatory Aspects of Self-Consumption and Energy Communities"[130] investigates the legal nature of energy communities in detail and presents case studies of existing ones.

256 Statistical coverage of citizen energy communities is still limited. Only Great Britain and Greece[131] reported data, with 424 and 568 citizen's energy communities (CECs) respectively. Additionally:

a) France reports energy communities but not as established in the Directive (49 self-consumption communities)[132].

b) Ireland explains they are currently adapting their framework to meet the expectations envisaged for citizen energy communities (CECs) in Directive (EU) 2019/944. There is, however, an extensive network of energy communities under the Sustainable Energy Authority of Ireland's previous frameworks. These entities are called Sustainable Energy Communities (SECs), and at the moment, there are currently around 530 SECs, however, not all of them can be considered CECs as they participate in other types of energy saving activities not outlined in Directive 2019/944. The Commission for Regulation of Utilities is currently undertaking an analysis and determining criteria to finalise the enabling regulatory framework that will encourage the developments of CECs as envisaged by the Directive.

257 Regarding the state of transposition of Directive 2019/944 in relation to energy communities, some countries commented:

a) Austria: there are no energy communities (citizens and/or renewable) since the Directives were not transposed until the end of 2020 in line with the requirements of Directive 2019/944.

b) Belgium: the law which transposes EU Directive 2019/944 did not fully enter into force.

c) Latvia: CECs are not implemented in legislation yet, but there is a law draft version.

130 See: https://www.ceer.eu/documents/104400/-/-/8ee38e61-a802-bd6f-db27-4fb61aa6eb6a.

131 Most of these Energy Communities are registered but not operating yet.

132 France transposed the framework of energy communities and further decrees is ongoing to enable the development of such market participants.

d) Slovenia: the term "citizen energy community" was newly defined in the proposal of the Electricity Supply Act, which is transposing Directive (EU) 2019/944 into national legislation. The proposal was adopted by the government at the start of June 2021. According to government estimates, it will be adopted by November 2021 at the latest. In Slovenia, there is a similar term in use i.e. "community self-consumption", which is used for yearly net-metering of customers living e.g. in a multi-apartment building (so far one community of this type in Slovenia), and hence is not applicable as a substitute for the term "citizen energy community".

3.4.4 Barriers to active consumer participation

258 The Directive has only been partially transposed into national legislations or is currently being incorporated in MSs' regulatory framework. While prosumers as defined by the Directive are partially covered by other existing laws, MSs need to accelerate their regulatory reforms to ensure that active consumers ACs, joint active consumers (JAACs) and citizen energy communities (CECs) can participate in energy markets.

3.4.4.1 Barriers related to the licensing process for becoming Citizen Energy Communities / Active Consumers / Jointly Acting Energy Consumers

259 Complicated and time-consuming licensing processes for consumers who wish to become prosumers constitute a severe barrier, which could discourage citizens from participating either individually or collectively in the energy market.

260 In most MSs[133], the registration and licensing process for becoming a prosumer is based on the maximum installed capacity.

261 Simple licencing processes aid potential consumers and can promote enhanced participation. Examples of good practices identified include:

a) In Croatia, prosumers with capacity below 1 MW, or who produce electricity exclusively for their own consumption, are not obliged to obtain a respective energy license.

b) In Slovakia, for any business focused on generating electricity, a license is required. However, a deliberate exception to this rule enables small businesses to produce their own energy: if the installed capacity of a given facility is below 1 MW, the license is not required.

c) In Cyprus, prosumer grid applications are processed in seven working days.

d) In Spain, prosumers with installed capacities below 15 kW located in urban land are exempted from the acquisition of a network access and connection permit.

e) In Spain, prosumers with installations below 100 kW (connected to low voltage) are exempted from registering obligations.

262 In contrast, some licensing processes show less efficient processes, including:

a) In Bulgaria, the entire administrative process might last from three to six months.

b) In Slovakia, a large number of applications for the installation of the so-called local sources are being rejected by the distribution companies. The restriction on connection to the electricity system for new sources for electricity production (called stop-state) as well as for increasing the output of existing facilities was implemented by the Ministry, and ends in 2021.

133 Austria, Belgium, Bulgaria, Croatia, Czechia, Denmark, Estonia, Finland, France, Hungary, Latvia, Lithuania, Malta, Norway, Portugal, Romania, Slovakia, Slovenia and Spain.

3.4.4.2 Barriers related to the electricity market structure

263 The existence of a liberalized electricity market constitutes a key determinant for the development and integration of ACs, JAACs and CECs into the market. In contrast, a non-competitive electricity market may limit the incentive for any active role for prosumers in the energy system as low prices can inhibit competition from alternative sources, in this case, the potential prosumer.

264 All EU27 MSs and Norway allow prosumers to sell their self – generated electricity to the market either directly through their suppliers or aggregators. DSOs must enable such activity. An upper limit on the electricity surplus that a prosumer can sell to the grid is set in certain Member States (i.e. Austria, Croatia, Greece, Latvia, Poland, Slovakia) restraining their active role. This restriction on the outward capacity (i.e. from the prosumer to the grid) combined with limited market access channels for prosumers (i.e. there are no aggregators in Croatia, Poland and Slovakia), can inhibit prosumerism even further. In the Netherlands, while there is no limit to selling electricity back to the grid, net balancing is limited[134].

265 While dynamic tariffing contracts are available in some MSs (France, Spain, Finland, Austria), they are not available throughout the entire EU at present. Dynamic tariffs in combination with demand response can reduce grid management challenges in addition to the compensation benefit for the prosumers.

266 In 11 MSs and Norway[135], prosumers are allowed by the national legislation to provide flexibility services. However, prosumers through aggregators have very limited or no access to the electricity balancing markets. This occurs due to the criteria for entering the market, e.g. high capacity thresholds, resulting in flexibility and demand response services permitted to be mostly offered by industry or large generators.

3.4.4.3 Barriers related to infrastructure limitations

267 Smart metering devices allow prosumers to be aware of the electricity flows importing from and exporting to the grid. Therefore, smart meters enable prosumers to be informed and actively involved in the transaction of electricity in the market, and thus perform activities of higher flexibility. See Section 3.3 for information regarding the roll-out of smart meters. The lack of smart metering devices limit prosumers' activities as following:

a) In cases that consumers are equipped with one meter, prosumers operate under self-consumption and/or a net metering scheme i.e. selling electricity at the price agreed with the supplier or aggregator. While this brings benefits, the action on the part of the prosumer is limited in that they do not receive real time price signals.

b) In cases that they are equipped with two meters (one export and one import meter), prosumers can operate under the net billing scheme, which enables them to act as a generator and consumer continuously i.e. they continuously sell electricity at the price agreed with the supplier or aggregator and they continuously buy electricity from the grid at the price agreed with the supplier.

268 When the net billing scheme is applied to prosumers equipped with smart meters, prosumers can charge or get compensated based on the result of balancing the electricity they consume from and sell to the grid at spot prices.

269 Prosumers equipped with smart meters can also have dynamic electricity pricing. Dynamic or variable electricity pricing has been implemented so far in France, where smart meter roll – out is in progress, and in Norway, Finland, and Spain, where smart meters coverage is completed by over 90%.

134 This limit is set at 5,000 kWh, and any surplus will be remunerated as well. For example, if a consumer uses 6,000 kWh and he produces 7,000 kWh he can balance a max of 5,000 kWh. This will be balanced on the electricity bill directly. The consumer will pay the amount of 1,000 kWh and will be remunerated for the remaining 2,000kWh.

135 Austria, Belgium – Flanders, Denmark, Finland, France, Greece, Hungary, Italy, Spain, Bulgaria and Poland.

3.4.4.4 Barriers related to financing distributed generation

270 The most common financing schemes currently used in EU27 and Norway[136] for supporting RES self-generation are the feed-in-tariff and feed-in-premium schemes. In all MSs, the payment level is differentiated by the type of technology and the size of installed capacity.

271 In France, multi-year contracts between the self-generators and their suppliers/aggregators add to the benefits from the feed-in-premium scheme, assuring a stable policy regime for distributed generation investments. In other countries, i.e. Austria, Bulgaria, Croatia and Greece, feed-in-tariff and feed-in-premium schemes are capped in terms of energy volumes, thus limiting the benefit for the prosumers. Furthermore, feed-in-tariffs were recently phased out in Portugal, where an exemption from paying an element of the network charges is implemented instead.

272 Regarding the tariffs applied to prosumers, it should be noted that as self-consumption increases, Belgium – Flanders and Austria[137] reconsider their tariff system. A grid fee of approximately 70 euros/kW was introduced for solar PV systems for self-consumption with capacity up to 10 kWp in Belgium - Flanders[138]. Such changes reduce the profits for prosumers. Nevertheless, lower energy flows purchased from the grid due to higher self-consumption result in lower revenues for the DSOs, who should recover however their fixed network costs.

273 Other supporting financing schemes used in EU27+Norway include subsidies on the cost of the investment (in Austria, Cyprus, Czech Republic, Estonia, Finland, France, Hungary, Ireland, Netherlands, Norway, Poland, Slovakia, Sweden), exemptions from levies and/or grid fees and/or electricity taxes (in Belgium – Flanders, Bulgaria, Czech Republic, Denmark, Finland, France Germany, Greece, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden), guarantees of origin (in Austria, Belgium – Flanders, Croatia, Finland, Netherlands, Portugal) and CO_2 certificates (in Belgium – Brussels and Sweden). However, these financing policies undergo several changes (in Belgium, Bulgaria, Denmark, Estonia, Germany, Italy, Malta, Poland, Portugal), which may confuse and create uncertainty to the prosumers.

274 Another important aspect of the financing policies used so far, is that very few countries provide remuneration incentives targeted at JAACs and CECs. The Netherlands is one these countries, where the members of an energy community can benefit from a tax reduction when the electricity generation unit is installed in their area (same postcode). Furthermore, Italy has reported financial incentives targeted on collective prosumerism schemes, and Hungary is expected to provide support to energy communities in the near future.

3.4.4.5 Conclusions

275 This MMR focuses on 2020 and as such the transposition of Directive (EU) 2019/944 is not a focus of this MMR. However, while provisions regarding prosumers have been incorporated in accordance with the REDII the majority of MSs have not transposed Directive (EU) 2019/944. National regulatory frameworks need to become fully aligned with the Directive clearly defining active consumers, joint active consumers and citizen energy communities.

276 The process to become a prosumer should be clearly defined and differ from that of a standard generator. Administrative procedures should be simplified for potential prosumers.

277 A stable incentive regime brings confidence to consumers to invest on their own generation unit and become prosumers. When remuneration schemes are in place and remain unchanged, the prosumers can be aware of their investment payback period reducing the risk they will take. Nevertheless, as prosumers will increase and the market will become more mature, supporting financing mechanisms will require amendment. The timing at which countries decide to amend financing incentives is critical for the penetration of prosumers.

136 In 15 out of the EU27+Norway MSs, i.e. Austria, Belgium – Wallonia, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Germany, Greece, Hungary, Luxembourg, Malta and Sweden.

137 Tuerk A., Frieden D., Neumann C., d'Herbemont S., Roberts J. (2020). Collective self-consumption and energy communities: Trends and challenges in the transposition of the EU framework. Compile – Integrating community power in energy islands.

138 IRENA (2019), Innovation landscape brief: Net billing schemes, International Renewable Energy Agency, Abu Dhabi.

278 Aggregators enable the proliferation of prosumers. Prosumers lack expertise and know-how, as well as the electricity generation capacity size to be able to trade their self-generated electricity, flexibility, and demand response services. Thus, aggregators can provide the supporting framework.

279 While it is for businesses to decide how they wish to market their products, clear and upfront information regarding pricing can benefit the consumer. The price of solar PV equipment should be clear and transparent so that all consumers are in a position to make an informed decision whether to engage in prosuming or not.

280 The introduction of prosumers increases self-generation consumption and reduces the electricity required from the grid. This can result in a reduction of revenue for the DSOs, who recover their required revenue through a two-part tariff having a fixed as well as a volumetric part. If the volumes decrease significantly then there is a revenue gap concerning grid charges etc. Thus, other consumers would have to pay for a higher unitary price for the volumetric charge. NRAs should be cognisant so to not penalize the non-prosuming customer base while also recognising the potential wider societal benefits that prosuming may bring e.g. mitigating against additional network build. This may require amendments to the way the network tariffs are collected in the future.

3.4.4.6 Comparison of solar PV payback across MSs

281 In recognition of the importance of prosuming as part of the energy transition, ACER in conjunction with VIS/Grant Thornton has undertaken an analysis of the potential benefits and opportunities available to energy consumers in the EU.

3.4.4.7 Assumptions and observations

282 Assuming a typical consumer who invests in a 3 kWp PV system, Figure 39 depicts the different elements and approach for calculating the payback period (break-even point) for each MS. The specific investment costs (one-off and recurring) as well as the specific monetary benefits (called “Annual Savings”) are examined, the accumulation of which results in the consumer actively benefiting from his investment after the payback-period has passed. More specifically:

a) The pay-back period (PBT) is calculated as the period when the investor has acquired his capital back, through the expected savings and surpluses, after discounting with the applicable rate.

b) Investment lifespan: Where required, it is assumed that the investment has a horizon of 25y, after which it is considered fully amortized and depreciated

c) Payback Period (PBT) has been calculated up to 50y, based on costs and returns

d) Self-consumption is assumed to be the same for all typical residences (see paragraph below, study parameters) throughout the different EU countries, except for specific cases, as mentioned; the only variable is the difference in production capability (e.g. due to different irradiation levels)

e) It is assumed that the consumer is able to fully utilize the monetary incentives provided - e.g. tax benefits (i.e. that there is always enough tax payable to be reduced by the full benefit allocated because of the PV usage)

f) Discount rate: Where needed (e.g. calculation of NPV, cost of capital), the yearly discount rate is assumed to be 2%, unless there is different information available (e.g. PL)

g) PV hardware costs: Except if otherwise noted, cost of PV hardware is assumed to be the same (EUR 4.500 for a 3kW-peak system)

h) PV installation costs: Installation costs are assumed relative to average labour cost for a specialized technician

i) PV maintenance costs: Except if explicitly enforced by the state (e.g. lease of equipment, grid connectivity costs, mandatory service monitoring costs etc.), there are no operational/maintenance costs applicable

j) Applicable subsidies: It is assumed that the prosumer received the maximum subsidy

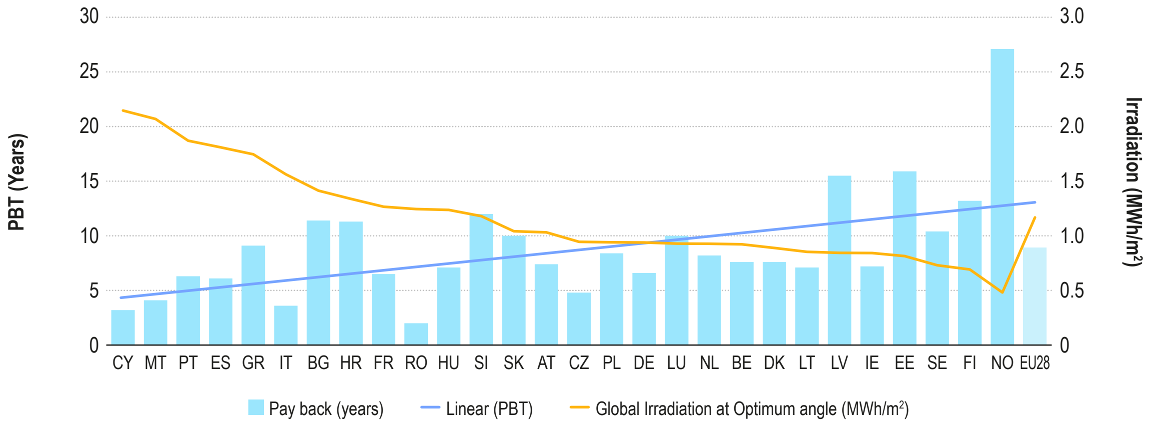
k) Effective regulation: Case study calculations are executed with the status as of Q2 2021 (assuming a prosumer who has the license to install a 3kW-peak PV on Q2/2021).

l) Additional KPIs: A better KPI may be the total net present value of the investment, considering a lifespan of 25y

3.4.4.8 Results

283 Figure 39 below displays the estimated payback period (in years) vs the potential of each member state, in terms of annual irradiation.

Figure 39: Solar PV period vs annual yield for a 3 kWp PV in EU MSs & Norway – 2020



284 Key to a shorter pay-back period is the annual irradiation available in a MS and also the availability of a grant in a MS. This is demonstrated by the differences in payback for Hungary and Romania where both have similar solar irradiation. This is due to a 90% CAPEX subsidy in Romania. High hardware costs coupled with low subsidiaries reduce the attractiveness in Hungary.

285 The duration that support legislation varies across the EU. This in turn results in variations in the penetration of rooftop PV. In Germany, ten years of incentives has resulted in a high penetration of rooftop PVs as consumers have been provided a positive signal regarding solar PV investment.

286 MSs are gradually abandoning Net-Metering and FiT (feed-in tariff) schemes with high premium payments. This will likely result in the consumer producing for their own consumption to offset their own expenses as opposed to relying upon incentive payments. This is to be expected as the uptake increases. The prosumer (similar to the transition that took place with renewables going from FiT to now having to compete head on with conventional) is encouraged to self-consume and find a way to sell their surplus in the market (through aggregators, supplier etc.). New adopters seem to also embrace this pattern, although it may lead to late adoption as there may pass a long time until a critical mass of PVs is installed.

287 Incentives for installing and maintaining a productive PV differs significantly between MSs; some regarding the treatment of excess generation are as follows:

a) Excess generation is not compensated for, although injected to the grid. In this case we label as "Self-Consumption", which means that, unless the producer immediately consumes the energy, there is no value to be extracted by sharing it with the others. Example: Spain[139]

b) Excess is paid with a feed-in-tariff, which is higher than the wholesale price but lags the retail price, still pushing the prosumer towards maximizing his consumption percentage to optimize the benefit. Example: Portugal

139 This is one of the two self-consumption modalities in Spain. In the other the excess generation is compensated, and depending on the generation facility it could opt for a net billing scheme or selling its energy surplus to the market.

c) Excess is assigned a price relative to the spot market price (wholesale), often with a premium (which is even more often declining in value, as time passes). Germany offers such a scheme for some types of installations. Examples: Italy and Sweden.

d) Excess generation is effectively treated as retail by balancing against consumption over a wide period of time (usually spans a year but the trend is to shorten the period span when consumer can effectively balance surplus with consumption – like in the case of DK, where the 1-year period became 1 hr, therefore changing the scheme) – this is net-metering. Examples: Belgium (Wallonia, Flanders), the Netherlands are example states that follow the scheme.

e) In certain cases, the excess production gets a higher price, usually on the inception of the policy to quickly ramp-up a critical installed base – Malta and Estonia seem to employ this tactic.

288 There is a trend of lifting the obligation from the grid to absorb the excess generation and push the responsibility of finding a counter-party to the prosumer, either by joining an aggregator for participating in the market or find a direct consumer of the potential production (see discussion in Belgium).

3.5 Consumer Bills

3.5.1 Billing Information

289 Electricity bills and billing information shall show the contribution of each energy source to the overall energy mix of the supplier. Consumers should receive information on the environmental impact, at least in terms of CO_2 emissions and the radioactive waste resulting from the electricity produced by the overall energy mix of the supplier over the preceding year. The disclosure of electricity produced from renewable sources shall be done by using guarantees of origin (GOs). According to Annex I of the Directive, electricity bills shall further disclose the sources of energy for the product.

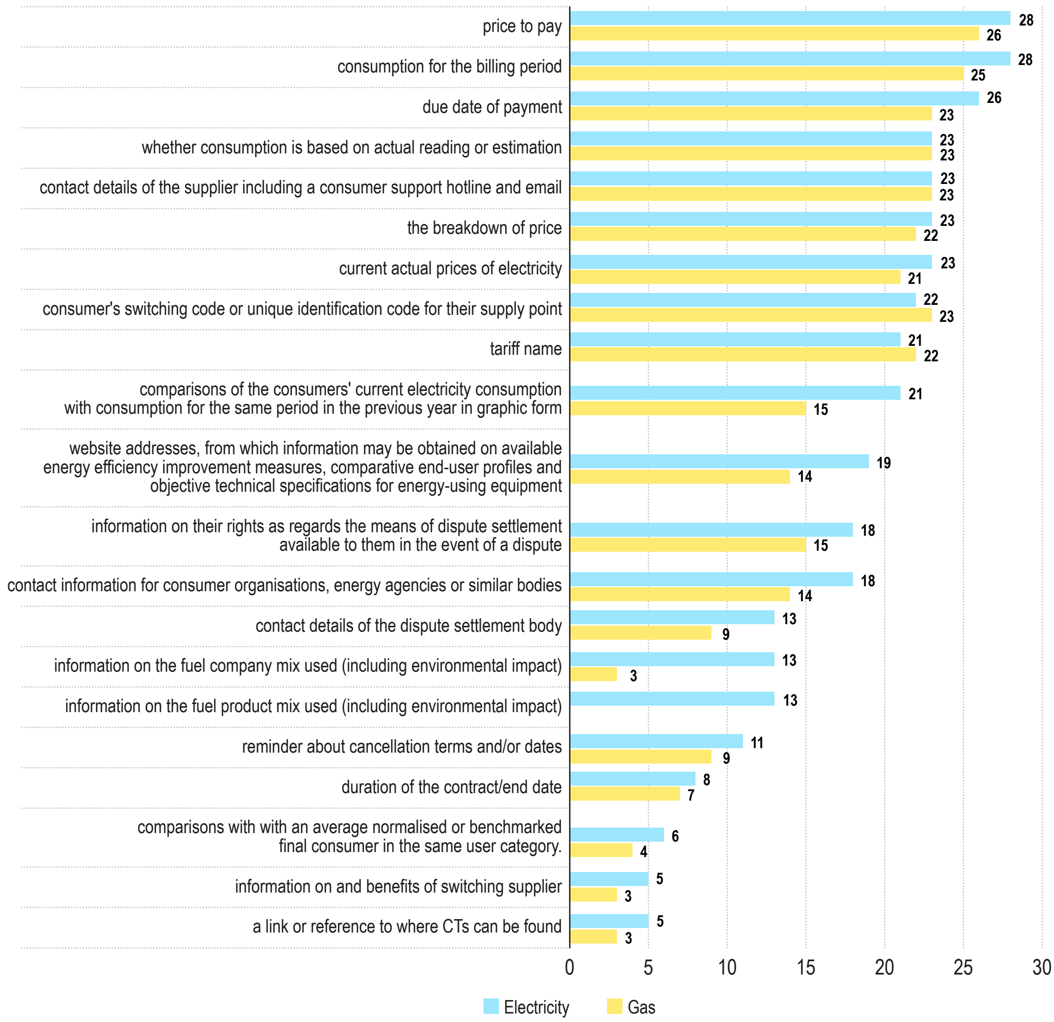
290 With the national transposition of the Directive, it can be expected that some pieces of information will gain prominence over the next years. Though bills will increasingly contain information on switching, this is not yet the case in most MSs. Bills will also contain more comparative information regarding the consumers past and present consumption levels, or in contrast to peer groups of energy consumers. Yet, it remains to be seen whether bills will contain more information about the environmental impacts of energy consumption and how to mitigate them. Eventually, increasing levels of digitalization may offer additional ways to inform consumers about key properties of their energy consumption electronically.

291 Figure 40 illustrates the types of information provided to household consumers and the number of MSs providing such information. Consumers in most MSs receive information on their bills on: the billed amount, the actual consumption, and the price breakdown.

292 Despite explicit requirements regarding billing in Directive 2009/72/EC, there remain shortcomings on informing about the fuel mix, the environmental impact of energy consumption and contact details of alternative dispute resolution (ADR). These findings are largely in line with previous MMR editions indicating that national billing requirements have not been amended to a great extent. It remains to be seen whether bills will contain more information about the environmental impacts of energy consumption and how to mitigate them. Since the additional requirements stipulated in the Directive only apply to electricity, it remains to be seen to what extent the content of gas and other (fossil) fuel bills will mirror those of electricity bills[140].

140 For more information on bill and billing requirements see CEER (2021). CEER Report on Billing Issues in the Clean Energy for All Europeans Package. Available online: https://www.ceer.eu/documents/104400/-/-/5f7bcb34-ae39-086d-58b3-5fd0cecf4039 (last accessed 17 August 2021).

Figure 40: Information elements provided on household consumer bills in EU MSs, Great Britain, and Norway – 2020 (# of MSs)



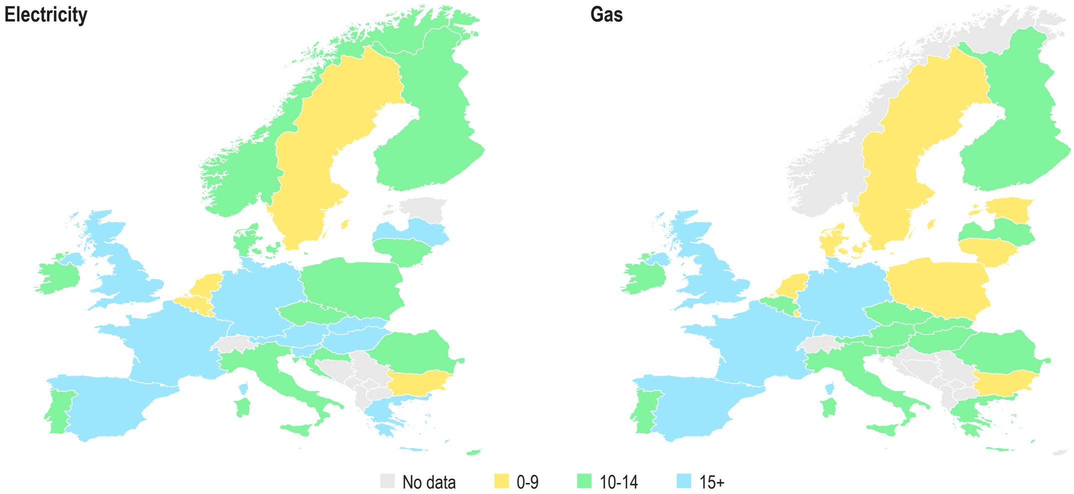
Source: CEER 2021.

293 Information empowers electricity and gas consumers. It provides vital substantial and procedural knowledge about how to navigate energy markets. At the same time, billing information also contributes to bill complexity so the overall effect of putting (all) information on bills can be contested. For example, German electricity bills contain all 21 pieces of information listed in the national transposition of the new legal requirements. The number of information items on bills is displayed in Figure 41.

294 In five MSs[141], electricity bill requirements foresee the inclusion of sixteen or more of the listed 21 items. Arguably, this constitutes a heavy information load on electricity bills (and similarly on gas bills) due to European and national requirements and also makes bills more complex. The "lightest" bills in terms of information load were reported for Luxembourg (nine items in electricity, six in gas), Sweden (eight in electricity and gas), Bulgaria (eight in electricity and nine in gas), the Netherlands (seven in electricity and gas) and Belgium (five in electricity). Yet, here the danger persists that bills are not as empowering as they could be. Finding the right balance and taking account of consumer feedback on how they prefer to see the various pieces of information provided would be beneficial.

141 Austria, Great, Britain, Hungary, Latvia and Slovakia.

Figure 41: Number of information items on electricity and gas bills in EU MSs, Great Britain and Norway – 2020



Source: CEER 2021.

295 Annex I of Directive 2019/944 broadly requires billing based on actual consumption to take place at least once a year. Electricity consumers are billed monthly in 12 MSs, annually in seven and every two months in five MSs. In the remaining MSs, billing frequency is less common since it often not only depends on a single deterministic national framework but also on supplier and consumer preferences for either very frequent (monthly) billing or longer intervals between bills.

296 In gas, annual bills are most common across the EU (12 MSs), followed by monthly gas bills in ten MSs and bimonthly bills in three MSs. As is the case in electricity, in some MSs a clear preference is not self-evident since suppliers and consumers are given some legal leeway in setting up their billing frequency of choice as long as it is guaranteed that a bill is received at least once a year.

3.5.1.1 Billing information- Energy Community Contracting Parties

297 In all the EnC CPs, both electricity and gas bills are based on actual consumption and issued monthly. Information on actual consumption, accounting period and supplier's details are included in all electricity and gas bills. Information regarding the energy/fuel mix is available in electricity bills only in Albania, North Macedonia, Serbia and Ukraine. Finally, an improvement is needed in terms of providing information on breakdown of prices and switching, as this is not the case in all EnC CPs.

4 Performance of retail energy markets

298 This section outlines the results of analysis of the performance of retail energy markets in 2020. The section contains the following information:

a) Section 4.1 provides an analysis of energy prices and energy bill breakdown across EU MSs and the Energy Community Contracting Parties.

b) Section 4.2 examines MS action regarding energy poverty and vulnerable consumers.

c) Section 4.3 reviews complaints and complaint data as submitted by energy consumers across the EU.

4.1 Energy Prices

299 Retail energy prices are an important part of household and industrial consumers' expenditure. This section examines the retail energy prices in 2020 and their trends over the 2008-2020 period at the European Union (EU) and Energy Community (EnC) Contracting Partners (CP) level, as well as for individual countries. For clarity, in this report, retail energy prices are the final prices paid by consumers and consist of the energy commodity price, regulated transmission and distribution charges, levies and taxes (local, national, environmental, as applicable) and the value-added tax (VAT).

300 Retail energy electricity prices are sourced from Eurostat with electricity price data reported by National Statistical Institutes, Ministries, Energy Agencies, or in case of monopolies by single electricity companies.

301 The price includes electricity basic price, transmission, system services, distribution, taxes and levies and also VAT. EU aggregates are calculated by Eurostat by weighting the national prices with the latest available national consumption for either the household sector or the industrial sector[142]. Similarly, in the case of gas, data is also sourced from Eurostat with gas price data being reported by National Statistical Institutes, Ministries, Energy Agencies, or in the case of monopolies, by single gas companies.[143]

4.1.1 Electricity retail prices

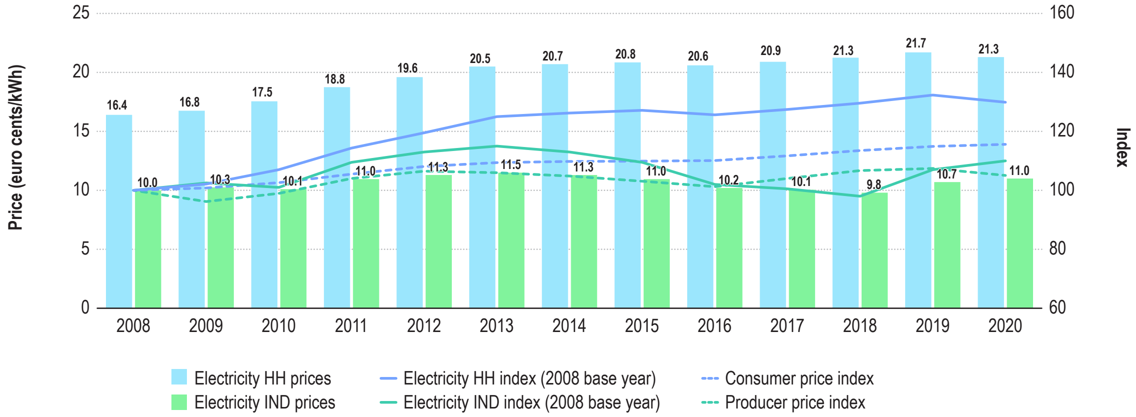
302 As shown in Figure 42, electricity prices for EU households decreased slightly in 2020. On average, household electricity prices decreased by -1.8% to 21.3 euro cents/kWh in comparison to 2019. For industrial consumers electricity prices increased in 2020 for the second consecutive year. On average, industrial electricity prices increased by 2.8% to 11.0 euro cents/kWh in 2020 compared to 2019 prices.

303 Considering pricing trends since 2008, Figure 42 shows that on average, electricity prices for household consumers across the EU increased by 30% in nominal terms. Industrial prices increased by 10% over the same period. It is noteworthy that household prices have increased notably faster than inflation. The price increase for electricity consumers mainly reflects increases in non-contestable charges like network costs, taxes and renewable energy-related (RES) charges.

142 See: https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_204_esms.htm.

143 See: https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_202_esms.htm.

Figure 42: Trends in final electricity prices for household and industrial consumers in the EU – 2008–2020 (euro cents/kWh and index change, 2008 = 100)



Source: ACER calculations based on Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) and Band IE: 20,000–70,000 MWh (industrial electricity consumption) (May 2021).

Note: Prices in nominal terms. The consumer price index is the Harmonised Index of Consumer Prices; the producer price index covers the producer prices in industry. Both indexes are weighted in accordance to the size of the individual MSs.

304 Large differences in retail electricity prices continue across the EU, as shown in Figure 43. In Germany (the MS with the highest household price, at 30.3 euro cents/kWh), household consumers pay more than three times that of Bulgarian household consumers (9.9 euro cents/kWh). These differences are even higher in the industrial market, as industrial electricity prices in Denmark, the most expensive MS (22.1 euro cents/kWh), are more than four times higher than those in Luxembourg, the cheapest (5.2 euro cents/kWh).

305 Despite the highest price faced by German electricity consumers, as outlined in European Commission Quarterly Report on European Electricity Markets Q4, German consumers also have the opportunity to save the most in terms of their energy bill (energy component of the retail price) if they choose the best option available in the market. Other markets show potential savings of between €200 and €300 per annum. This demonstrates the opportunities available to consumers. Comparison tools (see Section 3.2) are key to enabling consumers availing of saving opportunities within their markets.

Figure 43: Final electricity prices for households and industrial consumers in the EU MSs in 2010 (euro cents/kWh) and changes compared to 2019 and 2020 (%)[144]

Source: Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) and Band IE: 20,000–70,000 MWh (industrial electricity consumption) (June 2021).

Note: Prices in nominal terms.

144 See section 3.1 of https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_204_esms.htm.

306 In comparison to 2019 prices, the largest price decreases for household consumers were recorded in the Netherlands (-32.4%)[145] and Sweden (-14.3%), while in Luxembourg and Poland electricity prices increased by 10.6% and 9.9%, respectively. In the industrial market, electricity prices decreased the most in Cyprus (-17.8%) and Spain (-14.4%). In the EU as a whole, electricity prices for industry have decreased slightly year on year until 2018. However, as outlined earlier, 2020 is the second year that has seen price increase (2.8 % compared to 2019).

4.1.1.1 Energy Community (EnC) electricity prices

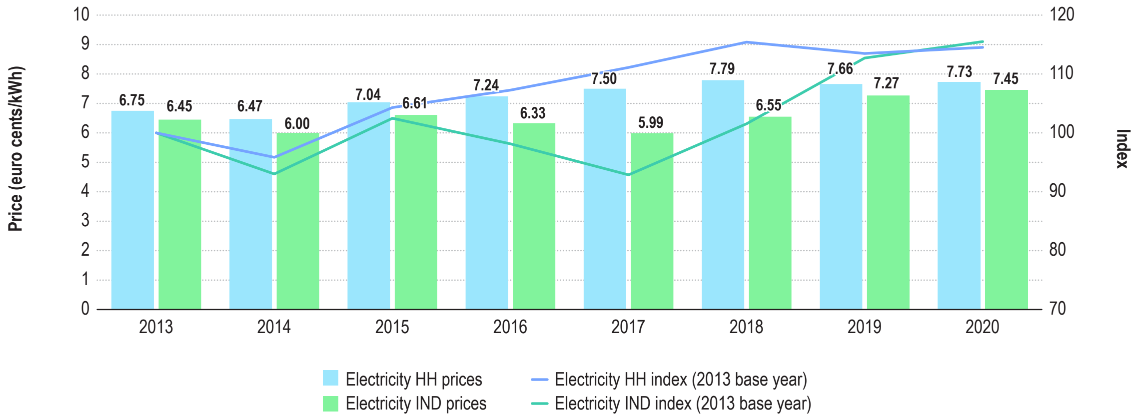
307 In the EnC, final average household prices increased slightly in 2020 by 0.9% when compared to 2019. Industry prices increased by 2.4% to 7.45 euro cents/kWh in 2020 when compared to 2019.

308 From 2013 to 2020, electricity prices for households in the EnC CPs excluding Ukraine increased, on average, by 16.8%, while industrial prices increased on average by 15.6%, as shown in Figure 44. This trend has not been observed in Ukraine, where, over the same period, electricity prices for households increased by 48% and industry prices decreased by 39%. The unwinding of cross- subsidization partially explains the price dynamics in the two segments.

309 In 2020, the average electricity price for household consumers in EnC CPs excluding Ukraine was 7.73 euro cents/kWh. This is 2.8 times less than the average EU electricity price for households in 2020. Household consumers in Ukraine paid in 2020, on average, around 1.8 times less than in other EnC CPs- only 4.3 euro cents/kWh.

310 Figure 44 shows the final electricity prices in nominal terms for household and industrial consumers in the EnC CPs from 2013 to 2020 (euro cents/kWh).

Figure 44: Trends in final electricity prices for household and industrial consumers in the EnC CPs excluding Ukraine – 2013-2020 (euro cents/kWh and index change, 2013 = 100)

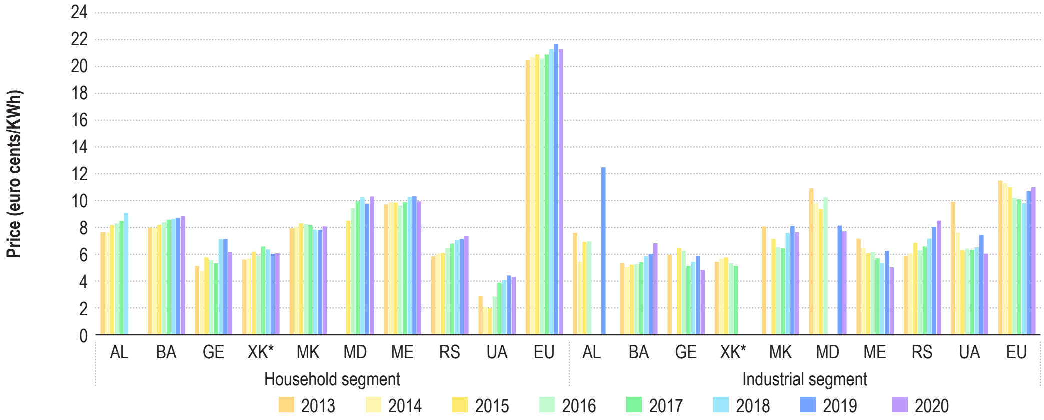


Source: EnC Secretariat calculations based on Eurostat, Band DC: 2,500–5,000 kWh (household electricity consumption) and Band IE: 20,000–70,000 MWh (industrial electricity consumption) (July 2021) and NRA contributions.

Note: Prices in nominal terms.

145 Reduction in energy taxes in 2020 driving the figure in NL.

Figure 45: Final electricity prices in nominal terms for household (left) and industrial (right) consumers in EnC CPs – 2013-2020 (euro cents/kWh)



Source: EnC Secretariat calculations based on Eurostat and NRAs.

311 As in previous years, variations in the electricity price were observed across the EnC CPs. In 2020, household electricity prices were highest in Moldova (10.31 euro cents/kWh), which is more than twice the price paid by household electricity consumers in Ukraine. In comparison to 2019 prices, the slight decreases for household consumers were recorded in the Georgia, Montenegro and Ukraine while in other EnC CPs electricity prices increased (the biggest increase was registered in Moldova- 5.4%). Over the 2013- 2020 period, household electricity prices increased in all EnC CPs. End consumer prices for households were still regulated in all EnC CPs, except Montenegro, sometimes resulting in prices being set below actual costs.

312 From 2013 to 2020, in the majority of the EnC CPs, industrial electricity consumers observed decreasing electricity prices. This was not the case for consumers in Bosnia and Herzegovina and Serbia, where average industrial prices increased by 27% and 44%, respectively[146]. The highest year-to-year increase (13.1%) was observed in Bosnia and Herzegovina, where prices increased from 6.3 euro cents/kWh in 2019 to 6.8 euro cents/kWh in 2020. The lowest electricity prices for industrial electricity consumers were in Georgia with 4.82 euro cents/kWh on average, whereas the highest industrial price was reported in Albania (12.83 euro vents/kWh)[147]. In 2020, average electricity prices for industrial consumers in the EnC CPs were around 68% of the average electricity prices for industry in the EU MSs.

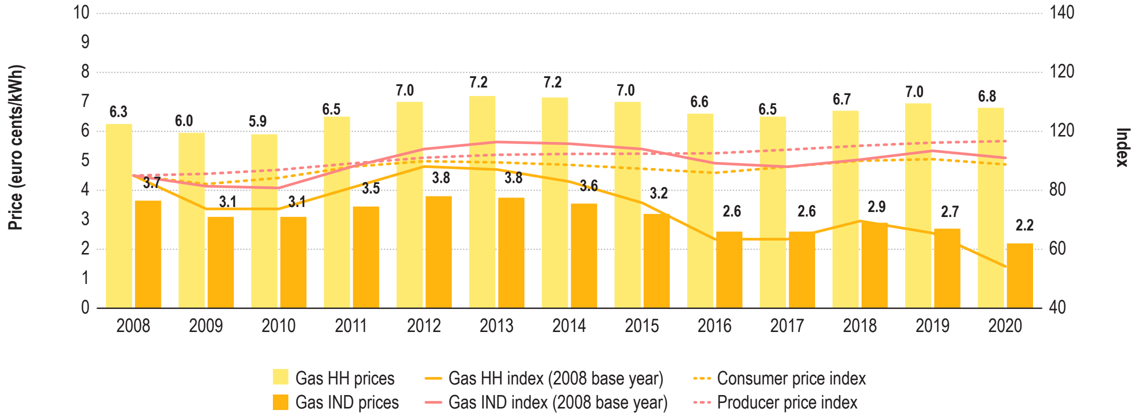
4.1.2 European Union gas prices

313 In 2020, average gas prices across the EU decreased by 2.9% for household consumers and -18.5% for industrial consumers by settling at 6.8 euro cents/kWh and at 2.2 euro cents/kWh respectively. Since 2010, the average final gas price for household consumers increased by 14.41%, but decreased by -30.6% for industrial consumers. As such, for both households and industrial consumers, the price evolution over the same period was lower than the inflation trajectory. Figure 46 shows that in 2020 household gas prices decreased for the second year in a row. Household gas prices in 2020 were in line with 2016 prices. In addition, the industrial gas prices decreased again in 2020, following the price decrease in 2019.

146 In cases of Albania and Kosovo*, the information on electricity prices for industry was not always available for 2018, 2019 and 2020.

147 Submission of the statistical office to Eurostat, not published yet.

Figure 46: Trends in final gas prices for household and industrial consumers in EU MSs – 2008-2020 (euro cents/kWh and index change, 2008 = 100)

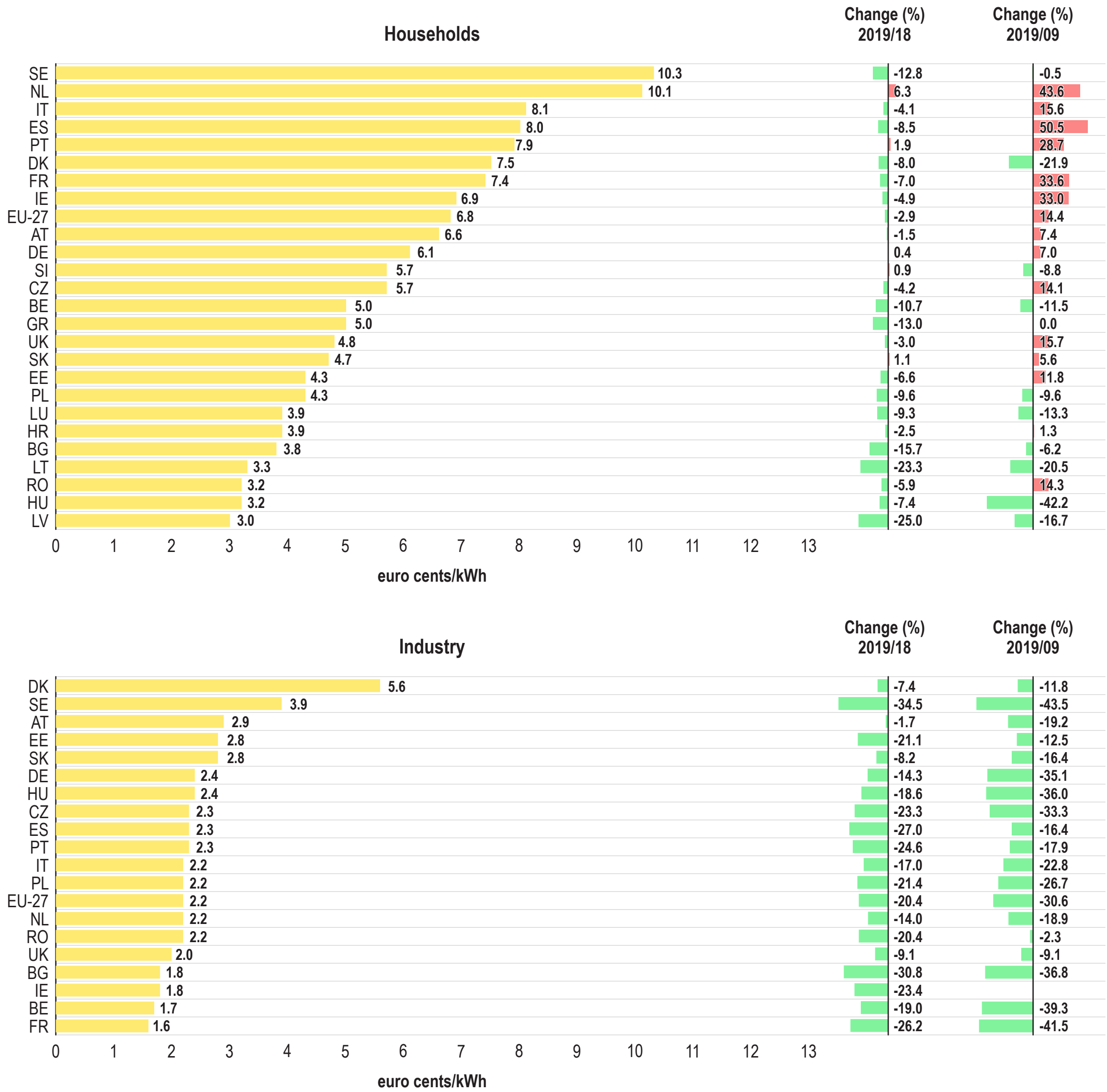


Source: ACER calculations based on Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) - (June 2020).

Note: Prices in nominal terms. The consumer price index is the Harmonised Index of Consumer Prices; The producer price index covers the producer prices in industry. Both indexes are weighted in accordance to the size of the individual MSs.

314 As with the electricity retail market, there are large discrepancies across the EU in the gas retail market. Figure 47 shows that the final price paid by household gas consumers in Sweden (10.3 euro cents/kWh) was three times higher than the 3.0 euro cents/kWh paid by Latvian household gas consumers. In the industrial market, consumers in Denmark paid more than three times (5.6 euro cents/kWh) the price paid by consumers in France (1.6 euro cents/kWh). Figure 46 also shows that compared to 2019, gas prices for households decreased by -2.9% on average, with decreases recorded in the majority of the countries, with notable price decreases in Lithuania (-23.3%) and Latvia (-25.0%). At the same time, industrial gas prices decreased by -20.4% on average, with the highest decreases recorded in Sweden (-34.5%) and Bulgaria (-30.8%). None of the MSs recorded an increase in the industrial gas prices, year on year.

Figure 47: Final gas prices for households and industrial consumers in the EU MSs in 2020 (euro cents/kWh) and changes compared to 2019 and 2010 (%)



Source: ACER calculations based on Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) – (June 2020).

Note: Prices in nominal terms. For Greece (households) and Ireland (industry), the 'change 2019/08' is with respect to 2012. Data on industrial prices in Croatia, Lithuania, Luxembourg and Slovenia are not available. Prices in nominal terms. For GB, Eurostat data available only for the GB as a whole. Prices for Finland are not available. For Greece (households) and Ireland (industry), the 'change 2019/09' is with respect to 2012.

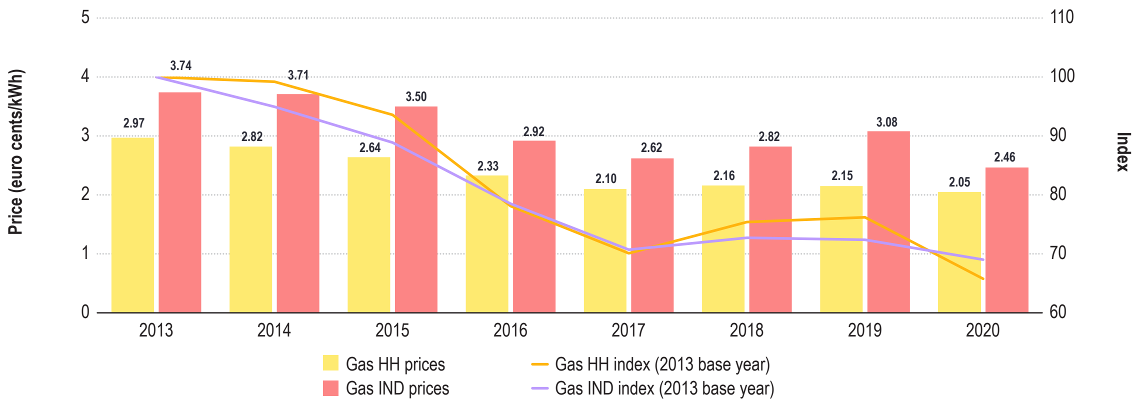
4.1.2.1 Energy Community gas prices

315 In the EnC, contrary to trends observed in the EU, the industrial gas prices were, on average, higher than household prices in 2020.

316 Figure 48 shows the trend in final gas prices for industrial and household consumers in the EnC CPs, excluding Ukraine, between 2013 and 2020. Between 2013 and 2020, average gas household prices in these CPs decreased by 30%. In the same period, households in Ukraine, as shown in Figure 49, recorded an increase of gas prices of around 167%.

317 Between 2013 and 2020, average industrial prices decreased in the EnC CPs excluding Ukraine, by 34%. In Ukraine, industrial prices decreased by 64% over the same period.

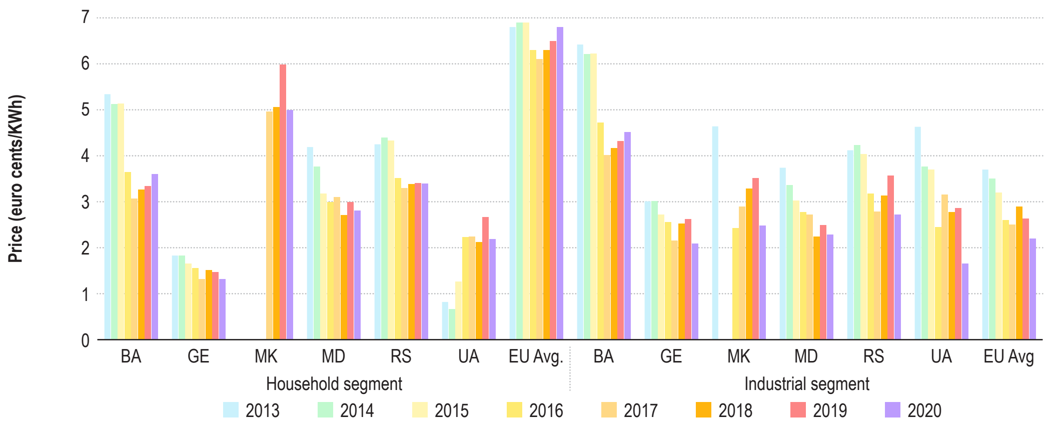
Figure 48: Trends in final gas prices for industrial and household consumers in EnC CPs excluding Ukraine – 2013-2020 (euro cents/kWh and index change, 2013=100)



Source: EnC Secretariat calculations based on Eurostat and NRAs.

Note: The figure is based on bi- annual data for Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ, for Bosnia and Herzegovina, Georgia and Serbia i.e. Band I4: 100 000 GJ -1 000 000 GJ, for Moldova and North Macedonia, (industrial gas consumption) - (July 2021).

Figure 49: Final gas prices in nominal terms for household and industrial consumers in EnC CPs – 2013-2020 (euro cents/kWh)



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

318 As observed for the EU gas prices, substantial national discrepancies in the level of household and industrial gas prices across the EnC CPs exist. The final price paid by household gas consumers in 2020 in North Macedonia (4.99 euro cents/kWh) was almost four times higher than 1.32 euro cents/kWh paid by Georgian households. In the industrial segment, the price paid by consumers in Ukraine (1.66 euro cents/kWh) was only 37% of the price paid by consumers in Bosnia and Herzegovina (4.51 euro cents/kWh).

319 The discrepancies in national prices originate partly from the different regulatory approach and levels of cross- subsidization in gas prices between the household and industrial segments. For example, in 2020, regulated household gas prices existed in majority of the EnC CPs except North Macedonia and partially Georgia[148]. In the industrial sector, gas prices were regulated in Moldova and partially in Bosnia and Herzegovina[149] and Serbia[150]. In Ukraine, the final industry prices were regulated only for district heating companies and religious organizations. The degree of cross-subsidization decreased over the observed period in all CPs.

4.1.3 Bill Breakdown

320 Electricity and gas prices depend on their constituent components, which include energy costs, network charges, charges for renewable energy (RES charges), other taxes and charges and value added tax (VAT). Information in this section is collected from Eurostat. For house electricity, Eurostat Band-DC and Band-D2 for gas are utilised[151]. As outlined by Eurostat, Member states must report national prices that are representative for the whole country. These national prices will represent weighted average prices, using the market shares of gas supply undertakings surveyed as weighting factors.[152]

321 In order to understand what makes up the price consumers pay for their energy consumption, this section presents the results of an analysis of the structure of final energy prices.

4.1.3.1 Electricity price breakdown

European Union

322 Figure 50 shows that the composition of the final electricity bill for household consumers varies greatly across countries and ranks the cost of electricity in each MS. As can be seen, the energy component varies across MSs, with 75% of the final bill in Malta accounting for the energy component. However, in Denmark, only 14% of a consumer's bill relates to the energy component, with the majority composed of network charges and other fees.

323 Based on an average electricity consumption of 3,500kWh per annum[153], the highest share of network charges in the final price would occur in Norway[154]. With average consumption, network charges are estimated to account for 52% of the price paid by consumers. In contrast, the lowest network charge would be in Greece, Cyprus and Malta accounting for 16%, 16% and 21% of the final price, respectively. RES charges account for more than 23% of the total in Germany and Portugal, while retail electricity markets in Hungary (21%), Sweden (20%) and Denmark (20%) had the highest share of VAT in the final electricity price. In addition, other taxes ranges from less than 1% of the final price in Luxemburg to 42% in Denmark. Such differences result from the individual energy policy and taxation decisions applied in each MS. As can be seen in Section 2.5.2 (CO_2 intensity of energy), the higher rate of taxes can influence the environmental impact of energy consumption and penetration of renewable energy sources. As seen in Figure 16, in 2019, higher rates of renewable energy penetration were recorded in Norway, Sweden, Finland, Austria, and Denmark.

148 Customers connected to the distribution network after 2008 do not have regulated prices.

149 If metering point is less than 95 kW.

150 For small non- household consumers connected to distribution network and consuming less than 100,000 m^3 per year.

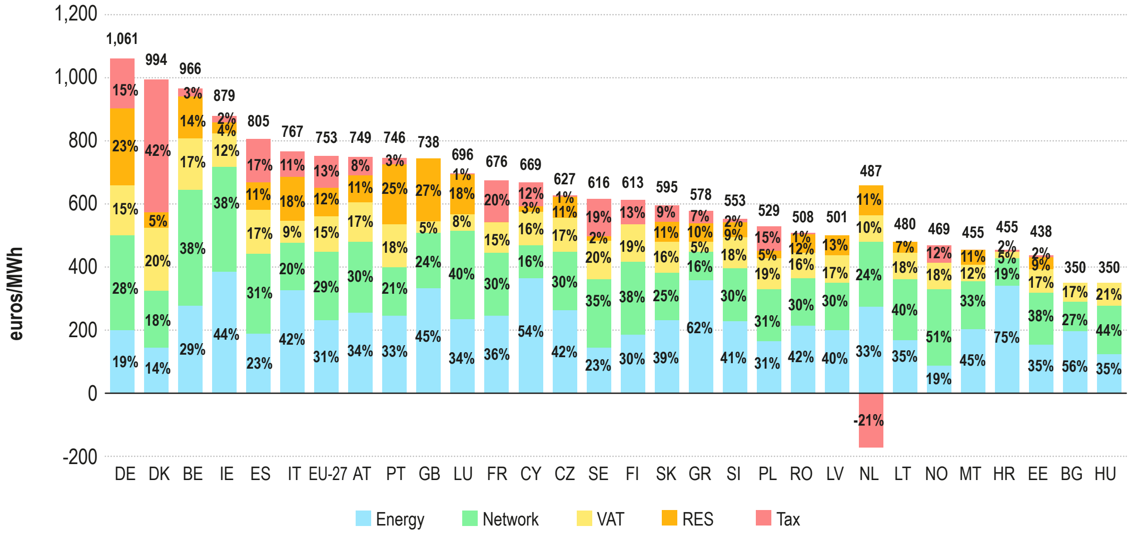
151 See: https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_202_esms.htm.

152 See: https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_202_esms.htm.

153 Energy consumption varies greatly across EU MSs, such variation, can impact on the breakdown on the energy bills.

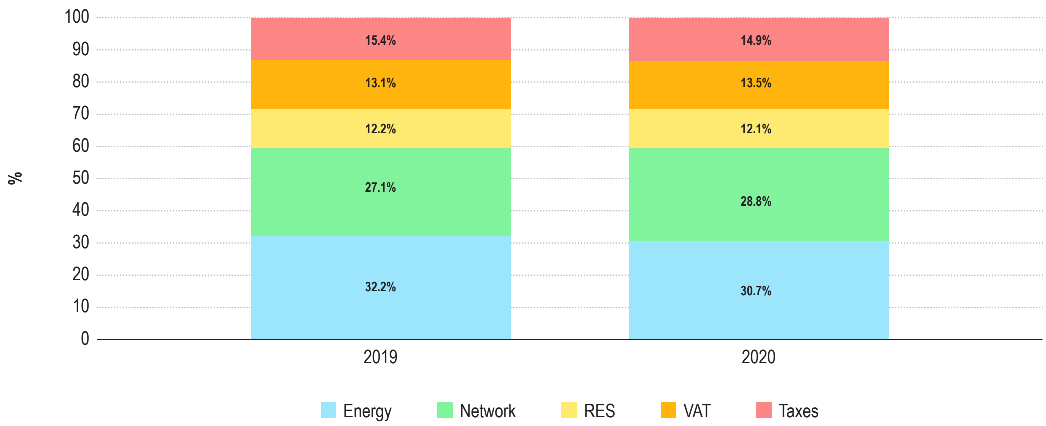
154 Average consumption per household in Norway is circa 16 000 kwh per year almost four times the EU average consumption. Based on actual consumption, network charges make up approximately 33% of the electricity bill in Norway.

Figure 50: Breakdown of electricity prices & network breakdown – 2020 (euros)[155]



324 Figure 51 shows that in 2020, on average, 31% of the final price consisted of the energy component (contestable charges), while the remaining 69% of the electricity bill consisted of non-contestable charges, i.e. the sum of network costs, taxes, levies and other charges.

Figure 51: Electricity weighted average breakdown – 2019-2020 (%)



Source: Eurostat Band DC: 2,500–5,000 kWh (household electricity consumption) (May 2021).

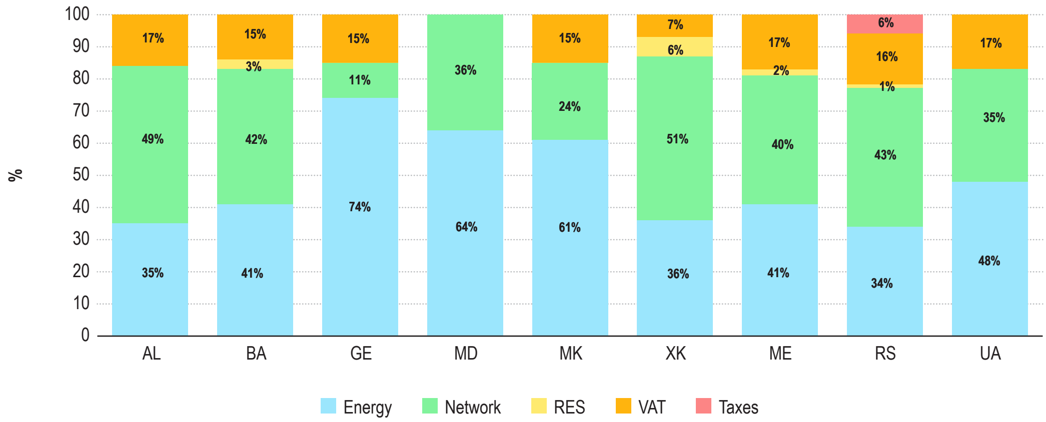
Price breakdown - EnC

325 Figure 52 shows that the breakdown of the final electricity price for households in the EnC CPs in 2020. The composition of final household electricity price varies widely across EnC CPs. The share of the energy component in the final bill was the highest in Georgia (74%) and the lowest in Serbia (34%). In the EnC CPs, the share of network costs in the total household electricity price ranged between 11% in Georgia and 51% in Kosovo*.

155 The tax reduction subcomponent (tax credit) that applies to electricity customers in the Netherlands was significantly increased as of January 2020 (by more than €200 annually) and is now higher than the annual energy tax amount that corresponds to a typical residential customer in Amsterdam. Even in cases when the tax credit is higher than the tax amount, the customers still receive the full credit as a discount from their overall annual bill. In practice, this has resulted in a negative value of the Dutch tax component in the price breakdown. This development has also significantly reduced household electricity prices countrywide, which is visible in the tax component.

326 The share of RES charges in the final price gives an indication of the support for renewable electricity production in the EnC CPs. In Albania, Georgia and Moldova, no RES support mechanism was reported. In Ukraine, the RES support is part of the transmission charge and in North Macedonia, it is part of the energy charge and are not presented separately in the EUROSTAT database. In other EnC CPs, the RES support varies between 1% of the final household price in Serbia and 6% in Kosovo*. Diverse VAT shares correlate to differences in taxation policies in the EnC CPs: in Moldova, for example, there is no VAT contribution in the final electricity price for households while in Kosovo* it is only 7%. In other EnC CPs, VAT shares range between 15% and 17%.

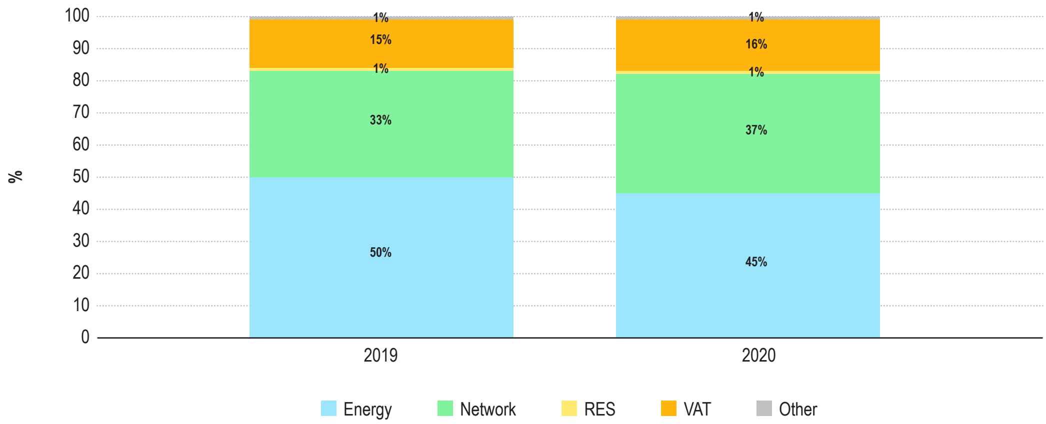
Figure 52: Breakdown of electricity prices for households in EnC CPs – 2020 (%)



Source: Eurostat, NRA (for Ukraine) and national office for statistics (for Albania).

327 Figure 53 shows that in 2020, on average, 45% of the final price in the EnC CPs consisted of the energy component (contestable charges), while the remaining 55% of the electricity bill consisted of non-contestable charges, i.e. the sum of network costs, taxes, levies and other charges. The share of energy component decreased by 5 percentage points in comparison to 2019, however still is substantially higher than in the EU MSs.

Figure 53: Electricity weighted average breakdown in the EnC CPs – 2019-2020 (%)



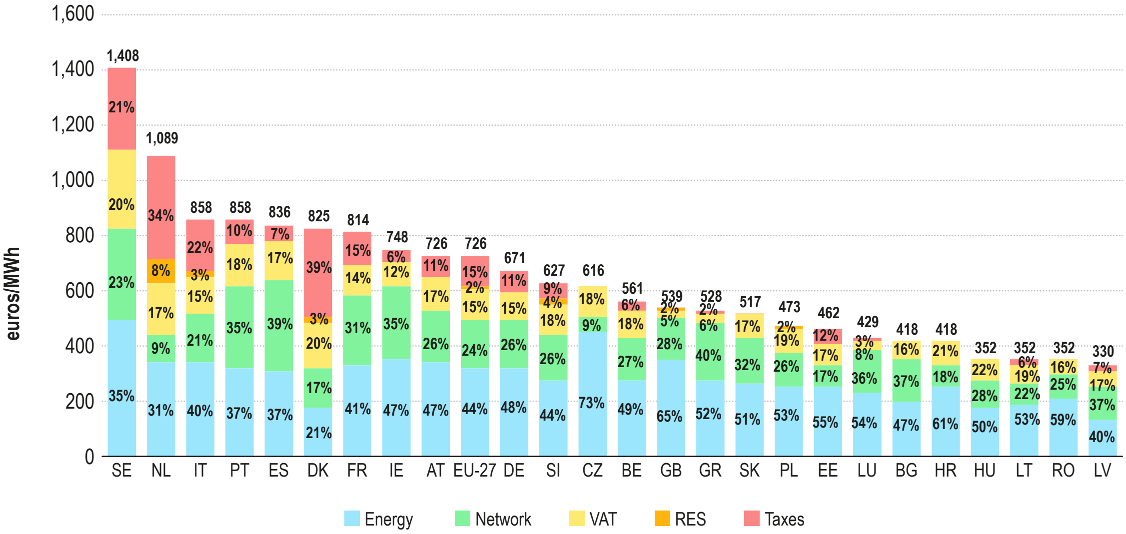
Source: Eurostat, NRA (for Ukraine) and national office for statistics (for Albania).

4.1.3.2 Gas price breakdown

328 Figure 54 shows the breakdown[156] of final gas prices, where data was available and where a gas retail market exists. It illustrates that the composition of the final gas bill for household consumers continues to vary greatly across MSs and ranks each MS by the total cost of gas. For example, the energy component accounted for 73% of the final bill in Czech Republic, while it represented only 21% of the final bill in Denmark.

329 Network costs, including both distribution and transmission network costs, accounted for the largest share in the final price in Greece (40%) and Spain (39%). Hungary, Croatia, Sweden and Denmark have the highest share of VAT in the final gas price (21% and 20%), while the Netherlands, Denmark and Italy had the highest proportion of taxes and charges in 2020.

Figure 54: Breakdown of gas price – 2020 (euros)[157]



Source: Eurostat, Band D2: 20–200 GJ (household gas consumption) and Ofgem.

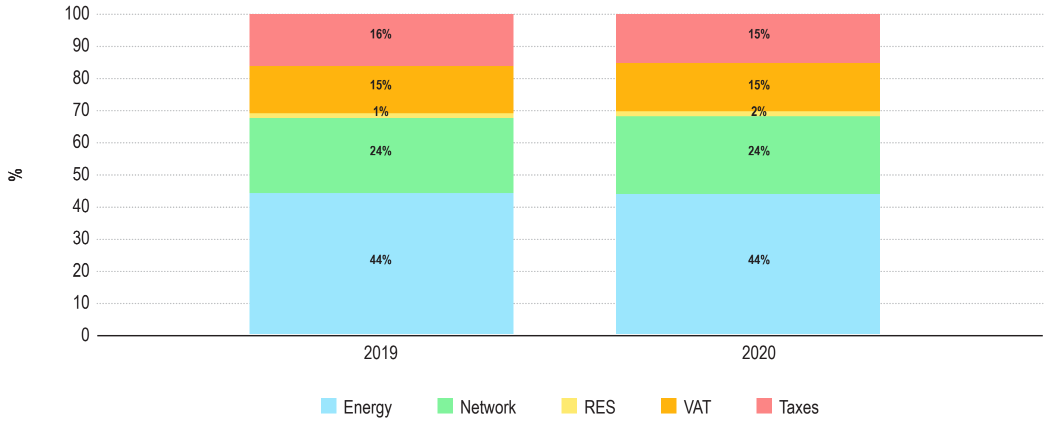
330 As shown in Figure 55, on average, less than half of the final price paid in 2020 by end consumers covered the energy component of their annual gas bill, while the rest covered the sum of the network costs, taxes, levies and other charges.

331 The energy component showed a slight decrease in 2020 when compared to 2019. This decrease was driven by a reduction in the price of wholesale gas caused by both a reduction in demand and also large volumes of liquefied natural gas (LNG). In turn, this led to non-contestable components to rise, exceeding the values of the past years.

156 Based *Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) - (June 2020).*

157 Figures are rounded to nearest whole number.

Figure 55: Average gas price breakdown for households – 2019-2020 (%)

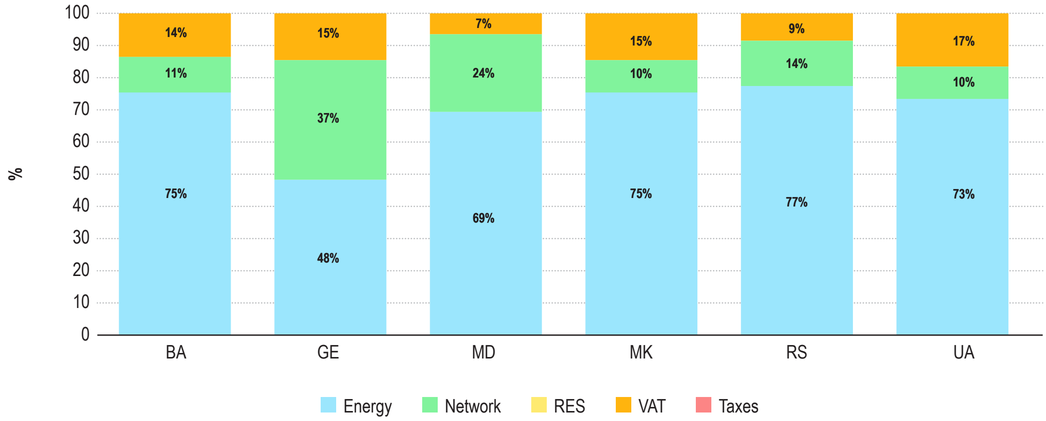


Source: Eurostat, Band D2: 20–200 GJ (household gas consumption) and Band I5: 1,000,000–4,000,000 GJ (industrial gas consumption) - (June 2020).

4.1.3.3 Gas price breakdown – Energy Community Contracting Partners

332 Figure 56 illustrates the breakdown of gas prices for households in the EnC CPs, for which the information was available and where a gas market exists[158]. The share of energy component in the final gas price in 2020 ranged from 48% in Georgia to 77% in Serbia. The share of network charges, including both distribution and transmission network costs, ranged from 10% in North Macedonia and Ukraine to 37% in Georgia. The composition of the network cost also varies greatly across EnC CPs, whereby transmission share ranges from 3% in Moldova to 87% in Bosnia and Herzegovina.

Figure 56: Breakdown of household gas prices in the EnC CPs – 2020 (%)



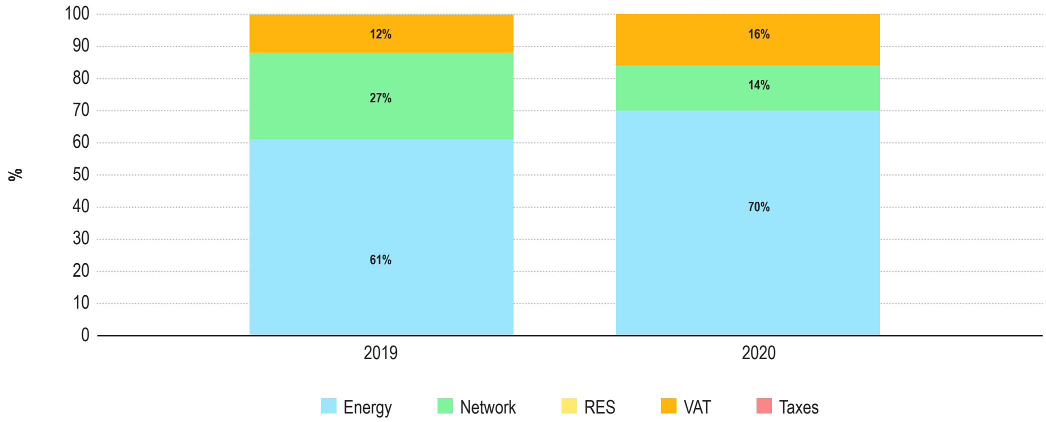
Source: EnC calculations, based on Eurostat and data provided by NRAs.

333 The weighted average breakdown of gas prices in the EnC CPs showed some changes from 2019, especially in regards to the energy component, whereby the difference observed in Figure 57 originates largely from unavailability of data for Ukraine for 2019 in the Eurostat database. According to the Ukrainian NRA, the structure of final gas price for households did not change substantially in 2020 in comparison to 2019.

334 Differently from the EU MSs, more than half of the final price paid in 2020 by end consumers of gas in the EnC CPs, on average, covered the energy component i.e. contestable component of their annual gas bill.

158 There is no gas market in Albania, Kosovo* and Montenegro.

Figure 57: Weighted average breakdown of gas price for households in the EnC CPs – 2019-2020 (%)



4.1.4 Mark ups – Electricity and Gas

335 This section assesses the evolution of the mark-ups from 2014 to 2020 and the responsiveness of the energy component of retail prices to changes in the wholesale price from 2008 to 2020 for electricity and from 2012 to 2020 for gas. The analysis focuses on the household markets.

336 The mark-up is an indicator of the theoretical gross 'profitability' of suppliers, as well as an indicator of the level of responsiveness of retail energy prices to changes in prices on wholesale markets. The gross 'profitability' level is the difference between prices charged to consumers and the estimated costs to supply them with energy. This analysis assumes that suppliers are rational and employ a 'close-to-optimal' procurement strategy, as detailed in the methodology and data underlying mark-ups in retail markets[159]. As such, the mark-ups below give one view as it aims to make MSs comparable. When looking at individual MSs only, it is best to complement with extra data. To be clear, mark-ups are not the same as profits, this is because suppliers have additional operating costs (e.g. marketing, sales, consumer services, overhead, etc.) in bringing a product to the market.

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

338 Figure 58 shows that the estimated average mark-ups in the retail electricity and gas markets for the household market vary widely across countries in the EU. In the case of gas, the average retail mark-up in the household market increased significantly across the EU in 2020 compared to the 2014-2019 average, same in the case of electricity throughout the same period.

339 From 2014 to 2019 the largest mark-ups in the household electricity retail markets were observed in Great Britain, Belgium, Ireland[160] and Germany. In 2020, the electricity household mark-ups in Ireland, Great Britain and Greece were the highest. In the gas markets, the mark-ups in Sweden[161] and Germany were the highest in 2020, whereas Greece, Great Britain and Sweden had the highest average values over the 2014-2019 period. The lowest positive mark-ups in 2020 were observed in the household electricity markets of Spain and Estonia and of the gas markets in Denmark, Croatia, and Bulgaria.

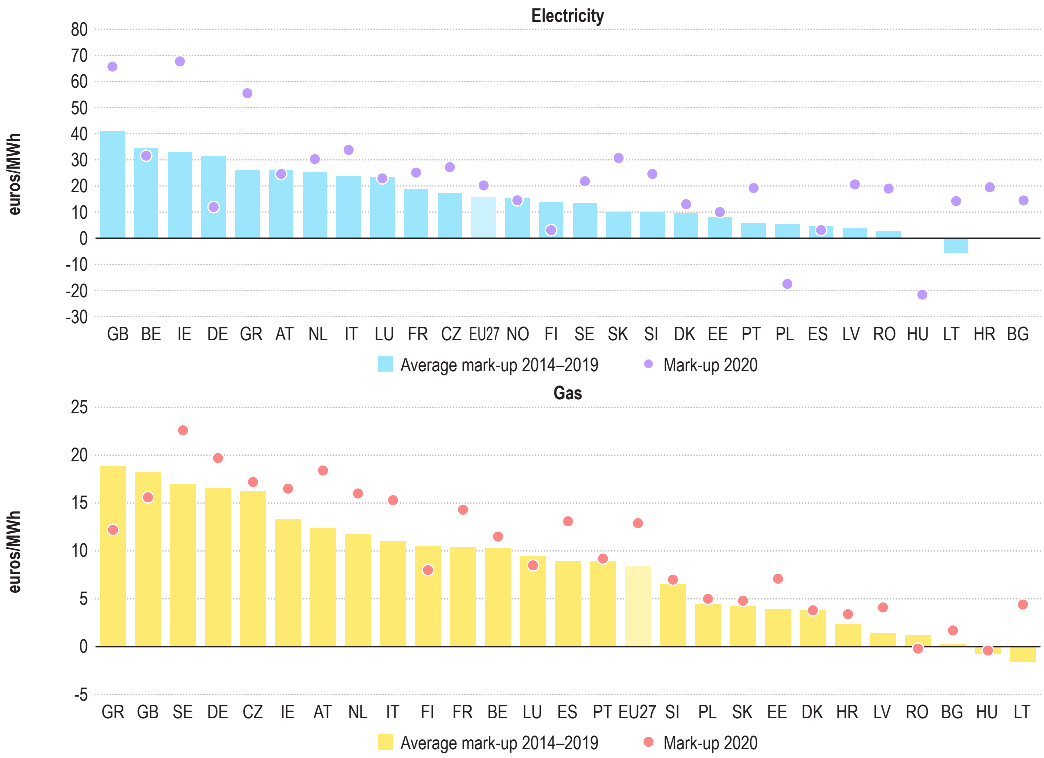
340 Figure 58 also shows that, on average in the EU, the electricity mark-up is about twice the gas mark-up, when expressed in euros/MWh. However, as a principal factor driving the level of mark-ups are, inter alia, differences in average consumption levels (i.e. 3.500 kWh for electricity and 11.000 kWh for gas) the average mark-up per consumer would actually be higher in gas than in electricity. Similarly, the average national consumption levels are also a relevant factor. For example, in electricity, the mark-up of 2020 in Sweden measured in euros/MWh is lower than in Belgium, but measured in euros/consumer the former would be higher as the average annual electricity consumption per household consumer in Sweden of approximately 9,500 kWh is much higher than in Belgium (i.e. 3,800 kWh).

159 See Annex 6: https://www.acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER_Market_Monitoring_Report_2015.pdf.

160 The inclusion of imperfection and capacity charges in Eurostat data results in high mark up for Ireland.

161 Swedish NRA calculates mark up at 8.3 euros/MWh.

Figure 58: Average annual mark-up in retail electricity and gas markets for household consumers in EU MSs and Norway from 2014–2020 and annual mark-up in 2020 (euros/MWh)[162]



Source: ACER calculations based on Eurostat (July 2020), NRAs, European power exchanges data, Eurostat Comext and ICIS Heren.

Note: This figure includes the average annual mark-ups in the retail electricity and gas markets for household consumers for the 2014–2020 period.

341 In some countries with regulated prices[163], average mark-ups for the monitored period were negative because the energy component of the retail prices was set at a level below wholesale energy costs. See Section 2.4 for more information regarding price intervention.

342 The setting of end-user prices below energy sourcing costs may seem attractive to consumers in the short term. However, such a policy is an absolute barrier to market entry for new suppliers, and hence, to competition. In markets with persistent negative mark-ups, market participants do not receive the appropriate signals, which can lead to inefficiencies and negatively impact consumers in the medium term as investment in the network may be lower than what is required.

343 Where prices are set below actual costs, consumers do not receive the "correct" price signals[164] regarding their consumption. This may also lead to wasteful consumption. In addition to this, negative mark-ups hinder product and service innovation, deter new suppliers from entering the market and may remove the incentive for consumers to be active in energy markets.

4.1.4.1 Responsiveness of the energy component of the retail price to wholesale energy price

344 Figure 59 shows the responsiveness of the energy component of retail prices to changes in the wholesale energy price and the evolution of the mark-up over the 2008–2020 period for electricity and the 2012–2020 period for gas at EU level[165].

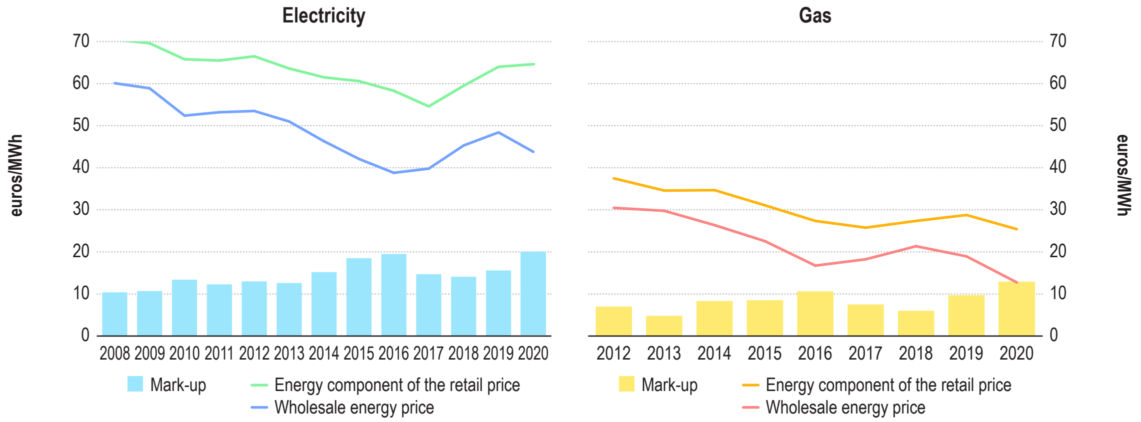
162 The Lithuanian NRA has stated that "In Lithuania negative mark ups occur due to the settings of the regulated price methodology, where the price for year t is set in year t-1 based on market price forecast for year t. The difference between forecast and actual market price in year t is compensated in year t+1".

163 The distinction between countries with regulated and non-regulated prices is based on 'CEER Retail Markets Monitoring Report', December 2018 (Chapter 3): https://www.ceer.eu/documents/104400/-/-/31863077-08ab-d166-b611-2d862b039d79.

164 Correct prices relates to input cost of energy.

165 Based on 25 countries in electricity and gas for which data was available. UK prices no longer considered for 2020.

Figure 59: Responsiveness of the energy component of the retail prices to changes in wholesale prices and evaluation of mark-ups in the household markets from 2008 to 2020 for electricity and from 2012 to 2020 in gas – (euros/MWh)



Source: Eurostat, NRAs, European power exchanges data, Eurostat Comext, ICIS Heren and ACER calculations.

Note: The EU average mark-up is assessed as the arithmetic average of MSs mark-ups. Gas data available only from 2012 onwards. Data about the energy component of gas retail prices are obtained from the ACER Retail Database up to the year 2016 and from Eurostat for 2017, 2018, 2019, 2020 except for Finland, due to unavailability in Eurostat. Prices in nominal terms.

345 As seen in Figure 59, a relatively strong correlation is observed in electricity between the energy component and wholesale prices from 2008 to 2013 and for 2017. However, divergence can be seen between 2013 and 2016 and again in 2020, where wholesale prices reductions were not followed by a similar reduction in the energy component of the retail prices. Overall, the energy component of electricity prices decreased, on average, by -9.2% over the 2008-2020 period, while at the same time wholesale prices decreased by -28.3%. This led to a 101.4% increase in mark-ups over this period. Such divergence may be driven by the imbalance of information that electricity consumers have in comparison to electricity suppliers. Divergence may also be driven by a lack of action on the part of the electricity consumer which may present profiting opportunities to the supplier.

346 From 2012 to 2020, in the household gas market, the average retail energy component and the average wholesale price decreased by -31.2% and -57.8% respectively, while the average mark-up increased by 84.8%. The downward slope of the average wholesale price and of the average energy component of the retail price diverged in 2015, 2016 and noticeably in 2020, when the average retail energy component price did not follow the average decreases in wholesale gas prices. In 2017, retail prices decreased, on average, despite higher wholesale prices.

347 When comparing the evolution of gas and electricity retail and wholesale prices over time, the responsiveness of the energy component of retail prices to wholesale energy prices for gas is higher than for electricity. This is also clearly visible in the evolution of the mark-ups for electricity. Figure 60 illustrates the relationship between the change in the energy component of retail prices and the change in wholesale prices in electricity and gas markets for household consumers in EU MSs and Norway, expressed by the correlation coefficient of these two variables[166]. If two variables in a country correlate well, this should be reflected in a high positive value of the correlation coefficient, while the negative and low value imply a weak correlation. Figure 60 is based on the data behind the charts for individual countries presented in Annex 1, which show the degree of correlation between the energy component of retail prices and wholesale prices for households at national level.

166 Figure 62 is based on the individual charts presented in Figure A1-1 and Figure A1-2 in the Annex 1.

Figure 60: Correlation between the retail energy component price for household consumers and wholesale price in electricity (2008 – 2020) and gas markets (2012-2020) in EU MSs and Norway – (correlation coefficient)

Source: ACER Retail Database, Eurostat, NRAs, European power exchanges data, Eurostat Comext, ICIS Heren and ACER calculations.

348 Figure 60 shows that, on average, there was a better correlation between sourcing costs and the energy component of retail prices in gas markets than in electricity markets (i.e. more countries with a higher correlation coefficient).

349 However, the correlation between wholesale and retail energy markets is weak in several MSs as retail prices have not responded well to changes in the wholesale price. Poorer performing markets could be driven by a number of factors such as poor supplier choice for consumers, lack of action on the part of the consumer, or the prevalence of interference in the price paid by consumers. Section 2 provides more detail on outcomes which may impact consumer choice and thus the correlation between the wholesale and retail prices.

350 As indicated in previous reports, the energy component of retail prices and wholesale prices appears to correlate better in two groups of countries, but for different reasons. Prices correlate well in those markets characterised by lively competition, where final retail prices closely follow the wholesale market price, i.e. the offers available to consumers contain a direct reference to wholesale costs and a mark-up, e.g. electricity markets in Norway, Sweden, and Finland. In addition, a good correlation is observed in certain countries with regulated retail electricity prices, e.g. in Hungary and Poland. In these countries, retail household prices are set closely to follow changes in wholesale prices.[167]

167 In France, there is a specificity with the ARENH mechanism, which leads to a small portion of the final price being directly linked to the wholesale price.

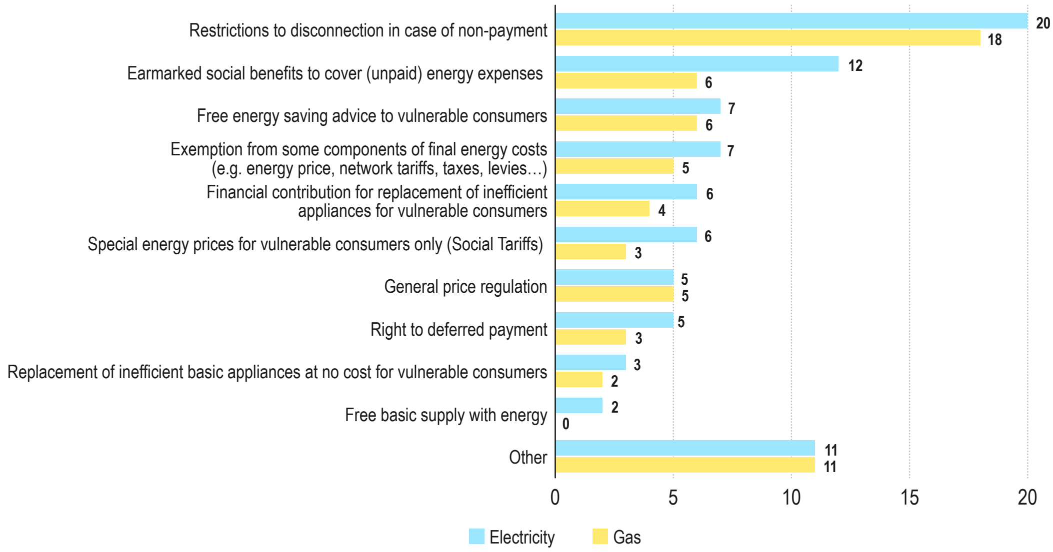
4.2 Energy Poverty and Consumer Protection

4.2.1 Vulnerable Consumers and Energy Poverty

351 The protection of vulnerable consumers and consumers at risk of energy poverty is core to the CEP and requirements regarding such consumers are outlined in the Directive.

352 Figure 61 demonstrates which safeguards are currently in place to protect the vulnerable and energy poor. MSs frequently restrict disconnection due to non-payment to protect vulnerable consumers, with the availability of this safeguard in gas increasing compared to 2019. Some MSs also maintain special energy prices for such groups. Other measures such as social benefits to cover energy costs, exemptions from parts of the energy costs (especially funding contributions to renewable energy or energy efficiency) or (partial) grants for replacing old appliances with new, more energy efficient ones have gained popularity.

Figure 61: Safeguards for vulnerable consumers



Source: CEER 2021.

353 In most MSs, the availability of energy-specific safeguards is limited. Only seven MSs offer five or more safeguards in electricity and four MSs in gas. 16 MSs have two or fewer safeguards for vulnerable consumers. While energy-sector specific safeguards are often rather restricted, the overall social welfare regime of each MSs may offer the national specific level of protection in different ways also beyond energy needs.

4.2.1.1 Vulnerable consumers Energy Community

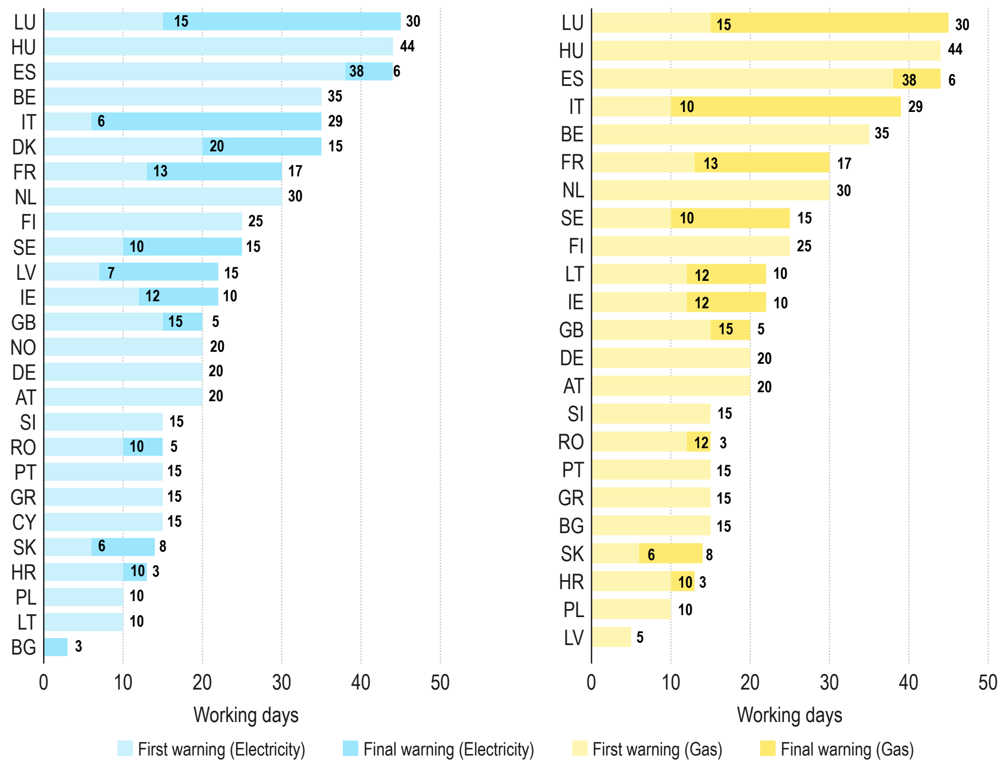
354 The explicit definitions of vulnerable consumers have been introduced in the majority of the EnC CPs, except Georgia and Bosnia and Herzegovina (for electricity). Although there are a variety of national approaches in defining the criteria for obtaining the status of a vulnerable consumer, the common criteria are income levels and critical dependence on electricity powered equipment for health reasons. The most common measures for protection of vulnerable consumers in the EnC CPs are restrictions for disconnection due to non-payment and social benefits to cover energy expenses.

4.2.2 Disconnection due to non-payment

355 Consumers are widely protected against an immediate loss of access to electricity and gas across the EU. In most MSs, warning procedures alert consumers to pay their energy bills on time to avoid disconnection. In addition to written reminders to settle accounts, some MSs have introduced additional prohibitions to disconnect on specific days (e.g. weekends), seasons (e.g. winter) or in specific circumstances (e.g. if consumers critically depend on energy for life-supporting appliances). Article 10 of Directive 2019/944 requires that electricity suppliers provide household consumers with adequate information on alternative measures to disconnection sufficiently in advance of any planned disconnection.

356 A lengthier disconnection process enables consumers to settle their pending bills. It also increases the likelihood of payment or allows them to seek alternatives. However, excessively long processes may incentivise consumers to delay payment. This can have negative impacts on, suppliers and DSOs which depend on timely payments to sustain their business. As shown in Figure 62, many MSs differentiate between a first reminder to pay (or warning) and a final warning about imminent disconnection in the event of prolonged non-payment. As such, the duration between a first reminder and actual disconnection ranges from less than a week (Latvia) to nine weeks (Luxembourg). In Bulgaria, where no first reminder exists, a final warning is issued three days ahead of disconnection.

Figure 62 Legal minimum duration of the disconnection process in EU MSs, Great Britain and Norway – 2020 (Number of working days)



Source: CEER 2021.

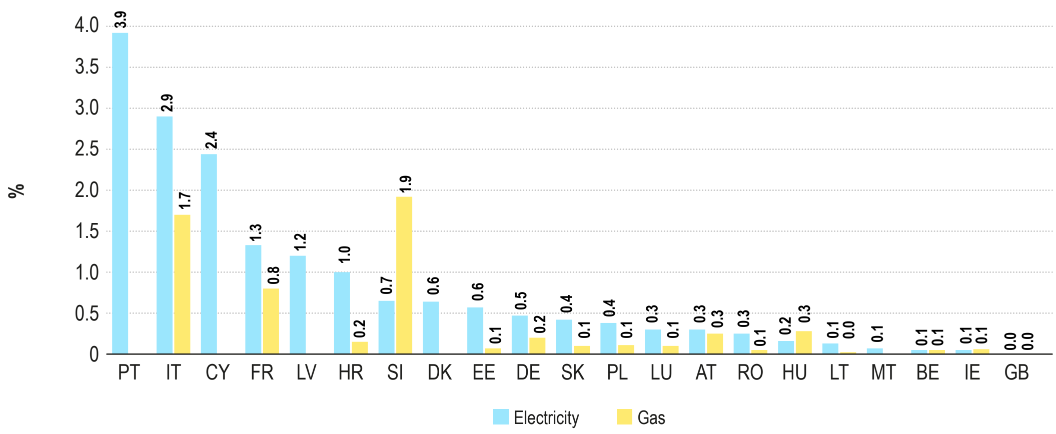
357 As in previous years, disconnection processes take longer than their legal minimum duration in most MSs. For instance, in Great Britain the actual average duration of a disconnection is about 80 working days, while in Lithuania it is 52 days. In contrast, actual disconnection processes are significantly shorter in Latvia and Slovakia (14 working days) and Cyprus and Greece (15 working days). However, nowhere are they shorter than the respective national legal minimum. These findings also apply to gas consumers.

358 Article 10 of Directive 2019/944 states that electricity suppliers shall provide household consumers adequate information on alternative measures to disconnection sufficiently in advance of any planned disconnection. Such alternative measures should not constitute an extra cost to the consumers facing disconnection, and may refer to sources of support to avoid disconnection, prepayment systems, energy audits, energy consultancy services, alternative payment plans, debt management advice or disconnection moratoria.

359 In 2020, nineteen MSs and Great Britain and Norway in electricity and gas declared that such information is already provided to household consumers, although not necessarily by suppliers. In most cases, available alternative measures to disconnections are payment plans, the installation of a prepayment meter, information about various kinds of (social) benefits, and, if applicable, the registration as a vulnerable consumer.

360 Both Directive 2019/944 and Directive 2009/73 oblige NRAs to monitor disconnection rates. The data presented in Figure 63 refers to the cases of disconnections because of non-payment of energy bills only, since these are relevant from the point of view of consumer protection. A comparison to last year's report[168] clearly shows that disconnection rates are significantly lower due to relief measures and waiver programs following the COVID-19 pandemic. For instance, electricity disconnection rates have declined more than 50% in Austria, Belgium, Hungary, Ireland, Malta, Poland, and Romania. Likewise, gas disconnection rates significantly dropped to less than half of the 2019 level in Austria, Belgium, Ireland, Poland and Slovakia.

Figure 63: Share of disconnections due to non-payment in EU MSs, Great Britain and Norway – 2020 (% of household metering points)



Source: CEER 2021.

361 As an alternative to disconnection, prepayment meters are available for household consumers in some but not all MSs. Figures on the shares of equipped final household consumers are only available for five MSs in electricity ranging between a very low 0.03% in Austria to 14.8% in Great Britain. In gas, the situation is almost identical ranging from 0.01% in Austria and Germany up to 14% in Great Britain and 17.1% in Ireland. In the remaining countries, the share of prepayment meters is most often zero or, rarely, unknown to the NRA.

4.2.3 Energy poverty

362 MSs shall assess the number of households in energy poverty (Article 3 3d Regulation 2018/1999). According to Article 29 of Directive 2019/944, MSs shall establish and publish a set of criteria, which may include low income, high expenditure of disposable income on energy and poor energy efficiency when assessing the number of households in energy poverty. EU guidance on what to consider in this assessment covers necessary domestic energy services needed to guarantee basic standards of living in the national context, social and other relevant policy and has been made available in a Staff Working Document[169].

363 According to a Eurobarometer survey from 2019[170], "addressing energy poverty and ensuring a fair energy transition so that no citizen or region is left behind" ranks top among four[171] potential EU policy responsibilities in public opinion across the EU. Across the EU, 90% of respondents (totally) agree that addressing energy poverty should be the EU's responsibility with notable cross-country variation ranging from 79% in Romania to 98% in Greece.

364 In 2020, ten NRAs reported having an official definition of energy poverty: Bulgaria, Cyprus, France, Great Britain, Greece, Ireland, Latvia, Romania, Slovakia, and Spain. Compared with 2019, two more NRAs

168 See: http://acer.europa.eu/Official_documents/Acts_of_the_Agency/Publication/ACER%20Market%20Monitoring%20Report%202019%20-%20Energy%20Retail%20and%20Consumer%20Protection%20Volume.pdf.

169 See: https://ec.europa.eu/energy/sites/default/files/swd_on_the_recommendation_on_energy_poverty_swd2020960.pdf.

170 For further details and a full report, including country fact sheets see https://europa.eu/eurobarometer/surveys/detail/2238 (last accessed 6 July 2021).

171 The three other potential policy objectives and EU responsibilities in this survey were: 1) "Ensure that increased competition in EU energy markets translates into more competitive and affordable prices for consumers" with 88% of EU respondents who agree with that policy objective); 2) Facilitate consumers' choice of energy sources and suppliers (87 % agreement); and 3) Empower consumers to produce and consume their own energy (84 % agreement). For further details, see https://europa.eu/eurobarometer/surveys/detail/2238.

(Greece and Latvia) had introduced definitions this year. As for the assessment criteria, low income and high energy consumption are the most widespread ones (in six MSs and Great Britain). Poor energy efficiency is only mentioned three times (electricity) or once (gas) as an assessment criterion. Some MSs have added additional assessment criteria, such as delays in paying bills.

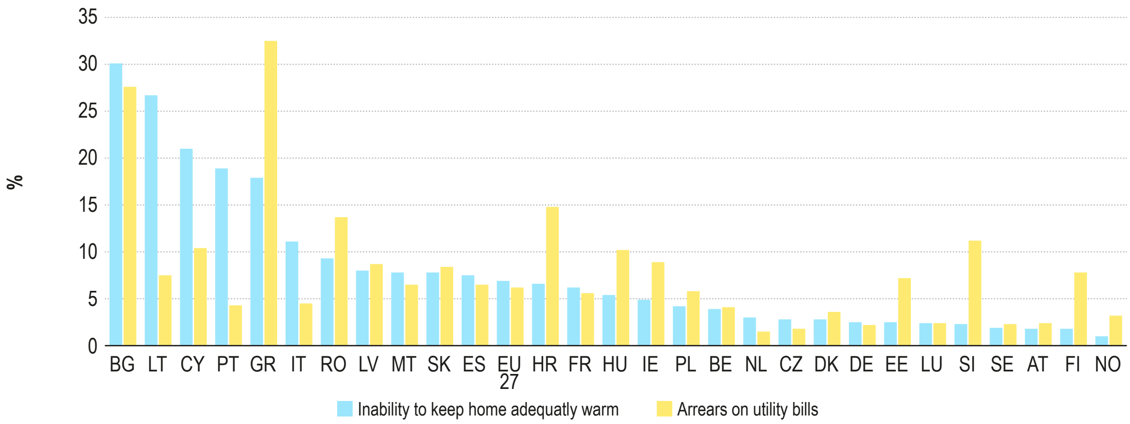
365 Five MSs report statistics on the share of energy poor people among the total population. These are Cyprus (4.0%), Great Britain[172] (13.4%), Italy (3%), Latvia (9.2%) and Spain (3.7%)

366 The Staff Working Document further proposes to measure energy poverty with the help of four different types of indicators. Energy poverty could be measured by (1) indicators comparing energy expenditure and income of households, (2) indicators based on self-assessment, which ask households directly how affordable energy is, (3) indicators based on direct measurement of physical variables to determine the adequacy of energy services (e.g. room temperature), and finally (4) indirect indicators on related factors, such as arrears on utility bills, number of disconnections, and housing quality.

367 Seven NRAs and Great Britain report that national measures include indicators comparing expenditure with income. In four MSs, energy poverty is measured with indicators based on self-assessment and four other countries make use of indirect measurements. Meanwhile, indicators based on direct measurements are scarce throughout Europe (only one NRA reports this). Interestingly, however, there is evidence that some MSs already use multiple indicators of measuring energy poverty to better capture the varying nature of the phenomenon. For instance, France and Spain use three types of indicators while Great Britain, Latvia and Romania use two types of indicators. No single NRA reported using all four types of indicators.

368 Updated data from Eurostat and the Energy Poverty Advisory Hub is only available for two indicators fitting the descriptions above[173]. Among the listed primary indicators, arrears on utility bills and the inability to keep one's home adequately warm are examples of indirect and self-assessment indicators respectively. As shown in Figure 64, energy poverty as measured with these two indicators varies significantly across the EU MSs. It ranges from 1% of the total population who are unable to keep their homes adequately warm in Norway to 32.5% of the Greek population in arrears on utility bills. In some MSs, the share of energy poor populations exceeds 10% according to these indicators. More than 10% of the total population are unable to keep their homes adequately warm in Italy (11.1%), Greece (17.9%), Portugal (18.9%), Cyprus (21%), Lithuania (26.7%) and Bulgaria (30.1%). More than 10% of the total population are in arrears on their utility bills in Hungary (10.2%), Cyprus (10.4%), Slovenia (11.2%), Romania (13.7%), Croatia (14.8%), Bulgaria (27.6%) and Greece (32.5%).

Figure 64: Two primary indicators of energy poverty in 2019: s of the total population who are unable to keep their homes adequately warm and share of total population in arrears on utility bills – (%)



Source: *Energy Poverty Advisory Hub*.

172 This figure relates to England only. There are different percentages for Scotland and Wales as devolved nations in Great Britain have different definitions of fuel poverty.

173 For further details and information on energy poverty see https://www.energypoverty.eu/. Data can be accessed via Eurostat: 1) inability to keep home adequately warm - https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes01/default/table?lang=en; 2) arrears on utility bills - https://ec.europa.eu/eurostat/databrowser/view/ilc_mdes07/default/table?lang=en.

369 These hardships are exacerbated among the poorer population. Among the population at-risk-of-poverty (not shown), that is, households with median incomes of 60% or below the national median, more than half (51.1%) of the Bulgarian population is unable to keep their homes adequately warm. In Greece, 58% of the poorer population is in arrears on utility bills. In general, the prevalence of energy poverty, as measured with these two indicators, is about three times higher among the poorer, at-risk-of-poverty population than the total population.

370 The Staff Working Document also recommends a wider national debate about energy poverty, involving many different stakeholders. When asking NRAs, they report that national governments (in twenty MSs and Great Britain), NRAs (in twelve MSs and Great Britain) and subnational governments at regional and/or local levels (eleven) are most often part of national discourses on energy poverty. In addition, energy companies, ADR bodies and NGOs, including consumer organisations, also take part in these debates in nine MSs. However, only in six MSs there are more than three stakeholder groups involved (Austria, Belgium, Germany, Estonia, Croatia and Luxembourg).

4.2.3.1 Energy poverty - EnC

371 None of the EnC CPs had defined energy poverty in 2020, so there were no official statistics on the number of households in energy poverty. Nevertheless, the majority of CPs engaged in preparation of NECPs, although there is still no legal obligation for the EnC to implement Regulation 2018/1999 and Directive 2019/944[174]. An ongoing study on addressing energy poverty in the EnC, with finalization expected in c 2021, should assist CPs in assessing the number of energy-poor households and in defining adequate policies and measures for reducing energy poverty.

4.2.4 Supply of last resort

372 To ensure the right to universal service according to Article 27 of Directive 2019/944, MSs may appoint a supplier of last resort (SOLR) and impose on DSOs an obligation to connect consumers. Directive 2009/73, also calls for a SOLR for consumers connected to the gas system but does not call for the imposition of a universal service obligation. However, the European legislation is not exhaustive on the meaning and functions of SOLR.

373 In electricity, a SOLR has been called upon in eleven instances of business cessation in 2020 in five MSs. In gas, a SOLR has been called upon in seven such instances across three MSs. Hence, abrupt, and unorderly endings of business are rare events across European electricity and gas markets given the large number of operating businesses. However, given the price increases observed across the EU in 2021, instances of a SOLR being called upon may increase in 2021.

374 According to NRAs' assessment, SOLR prices tend to be more expensive than non-SOLR prices in 15 MSs in electricity and 13 MSs in gas. Such price comparisons are not possible in other MSs because of the case-by-case nature of SOLR pricing. However, no NRA states that SOLR energy prices are generally cheaper than non-SOLR prices.

375 Many MSs report figures on the share of final household consumers supplied by the supplier(s) of last resort (eighteen in electricity and fifteen in gas). In many MSs, the share is below 1% (eight in electricity, ten in gas). In contrast, more than 70% of final household consumers are supplied by the supplier(s) of last resort in Cyprus (100%, where there is only one electricity supplier), Croatia (electricity), Estonia (gas), Romania (electricity) and Slovakia (electricity and gas).

4.2.4.1 Supply of last resort - Energy Community

376 A supplier of last resort for electricity has been appointed in all EnC CPs, except Georgia[175]. For gas, a supplier of last resort exists in Bosnia and Herzegovina (Republika Srpska entity), North Macedonia, Moldova, Serbia and Ukraine. SOLR prices are approved or set by NRAs in all CPs except Serbia[176] and Ukraine. The NRAs of Albania, Kosovo* and Ukraine reported more expensive prices of SOLR than non-SOLR prices.

174 Adoption of Directive 2019/944 for the EnC CPs is expected in November 2021.

175 Also in Georgia there is a legal requirement to establish a SOLR, however it has not been assigned yet.

176 These prices are determined during the selection of SOLR in the tender procedure organized by the Ministry of Mining and Energy.

4.3 Complaints

377 This section also analyses available complaint data from MSs across Europe. Due to national differences in both how complaints are defined/handled, and population sizes, the number of complaints vary significantly between MSs. However, when complaints to NRA´s, ADRs and Ombudsmen are compared, most complaints in most MSs concern suppliers.

378 European consumers have the right to effective complaint-handling procedures and out-of-court mechanisms for the settlement of disputes. This section describes who is responsible for complaint handling, a consumer´s access to information about how to complain, and the legal maximum time to respond to a complaint for energy companies, NRAs, Alternative Dispute Resolution (ADRs), and Ombudsmen.

379 The most common complaint-category for electricity suppliers is invoicing and billing, while the most common complaint category for electricity DSOs is quality of supply. The most common complaint-category for gas suppliers is invoicing and billing, while the most common complaint category for gas DSOs is issues with grid connection.

4.3.1 Complaint Handling bodies and procedures

380 According to the latest European Commission´s Consumer Market Monitoring Survey[177], on average, 9% of European consumers[178] experience problems with their electricity services. This ranges from 2% in Luxemburg and Slovenia to 24% in Malta. On average, 7% of gas customers experience problems, ranging from 2% in Greece to 14% in Italy.

381 When complaining, just over 50% turn to their contractual counterparty in energy affairs, i.e. their supplier and/or the DSO. Another 10% turn to a public authority, 10% to a consumer organization and 4% to an Ombudsman[179]. However, complaining doesn´t automatically make the consumers more satisfied. On average 36% of complaining electricity customers were fairly or very dissatisfied with the outcome of the complaint with 43% for gas).

382 Directive 2019/944 requires that MSs introduce speedy and effective complaint-handling procedures. Here MSs need to assign roles and responsibilities in handling consumer complaints and design a process on how to handle consumer complaints. Article 10 gives final consumers the right to a good standard of service and complaint handling by their suppliers.

383 In most MSs (22 for electricity and 20 for gas), the role of dealing with final consumer complaints has been assigned to NRAs. In some MSs (fourteen for electricity and fourteen for gas), NRAs also forward complaints to other responsible parties.

384 Information about what consumers complain about and how often they do is widely available. In 17 MSs, NRAs must publish complaint data about final household consumers. In four MSs [180], DSOs for electricity and gas must publish complaint data. In five MSs[181], suppliers must publish such data. In eleven MSs the Alternative Dispute Resolution (ADR) body or the Ombudsman also must publish data. However, in five MSs (Belgium, Estonia[182], Poland and Slovakia), reporting data on consumer complaints is not obligatory for any of the above-mentioned parties.

385 In most MSs, information about where and how to complain is mandatory in contracts and bills. In nine MSs[183] for electricity and five for gas[184], consumers must be provided the contact details of relevant complaint services on advertising/information material such as leaflets, flyers, etc.

177 Published in 2021.

178 9% in EU27 (Iceland, Norway and Great Britain not included).

179 European Commissions Consumer Market Monitoring Survey 2021.

180 Greece, Croatia, France and Portugal.

181 Great Britain, Greece, Croatia, Portugal and Romania.

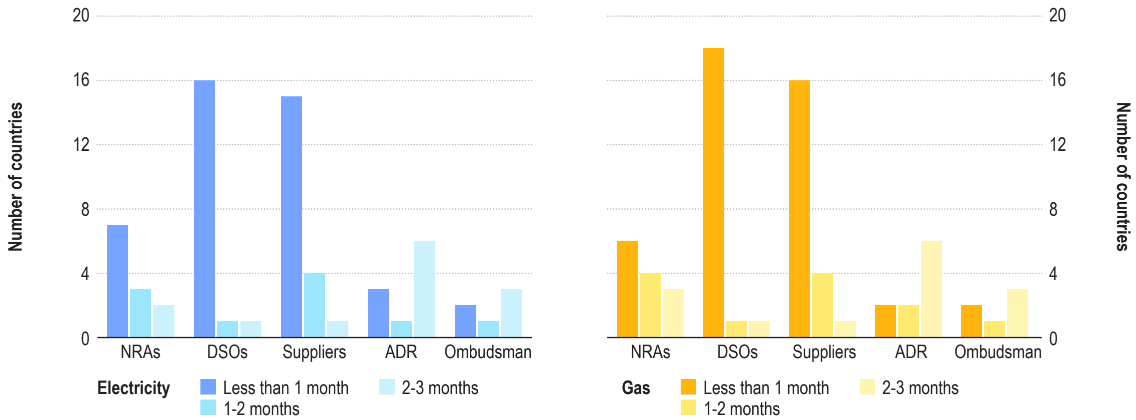
182 Not obligatory for gas.

183 Belgium, Cyprus, Denmark, Great Britain, Greece, Croatia, Hungary, Malta and Slovenia.

184 Belgium, Great Britain, Greece, Hungary and Slovenia.

386 To accelerate the complaint services, a short legal maximum processing time is set for the various market actors, as shown in Figure 65. For example, in 16 MSs for electricity and 18 MSs for gas, DSOs are requested to respond to consumer complaints within 1 month or less. NRAs and Ombudsman are given more time to handle complaints due to their role and responsibility in acting as a balanced and neutral party between energy service companies and consumers.

Figure 65: Legal maximum processing time to handle complaints in MSs and Norway – 2020 (No. of MSs)



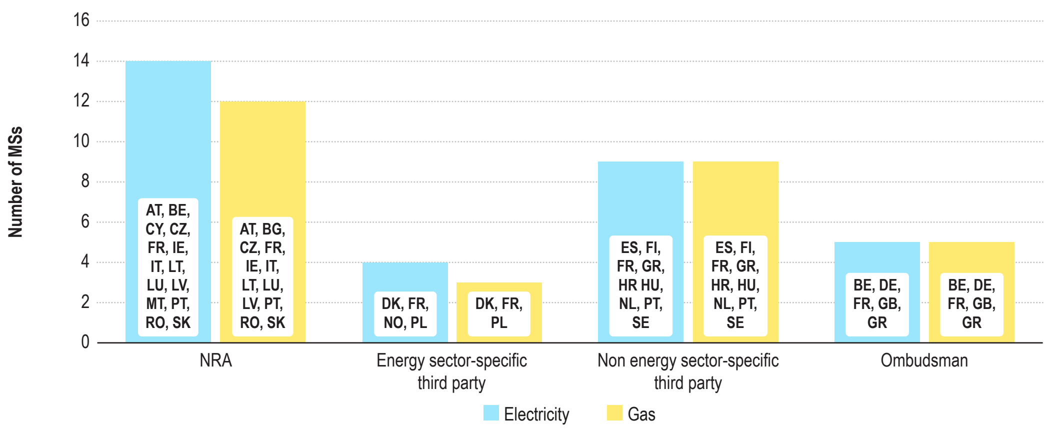
Source: CEER 2021.

4.3.2 Alternative Dispute Resolution (ADR)

387 In 2020, 23 MSs had implemented an ADR mechanism for electricity and gas that is free of charge. Portugal, the Netherlands, Croatia and Denmark also have an ADR mechanism, but with a fee. In Norway, Poland, Slovenia and Slovakia, the ADR-responsibilities are given to a party other than the above-mentioned bodies. According to Article 26 of Directive 944/2019, ADR-services should also be available for commercial customers. However, this is not yet the case in Denmark, Finland, Norway and Sweden.

388 Figure 66 shows that most often MSs have assigned the role of ADR in both electricity and gas sectors to the NRA. Non-energy sector specific third parties, such as non-sector specific consumer bodies, come in second place. Meanwhile, MSs have frequently shied away from assigning responsibility to energy sector-specific third parties as well as an Ombudsman.

Figure 66: Entities responsible for ADR in EU MSs and Norway – 2020 (No. of MSs)



Source: CEER 2020.

389 European ADRs together settled 17 926 disputes for final household customers[185] and 2 391 disputes for commercial customers[186].

185 Ranging from 1 case in Latvia to 1557 in Italy.

186 Ranging from 0 cases in Latvia, Romania and Slovakia to 5238 in France.

4.3.3 Complaint data

390 Consumer complaint data can be an important source of information for NRAs. The data can be used to understand how the market functions and what the specific issues that impact consumers are. The information can also guide decisions on where to focus monitoring exercises or to suggest changes in the regulation.

391 The number of final household consumer complaints received by NRAs, suppliers, DSOs, ADRs or energy Ombudsmen continues to vary significantly across MSs because of different definitions used and population sizes. Apart from that, variation is caused by differences in handling and reporting procedures in MSs, so that the absolute number of complaints is not a straightforward indicator of the quality of service in a country. Hence, a cross-national comparison of the number of complaints is challenging and robust conclusions about consumer protection and market-functioning are difficult to draw from such comparison.

392 According to available MS data, in 2020, approximately 11.9 million complaints in electricity and 4.3 million complaints in gas were reported to suppliers, DSOs, ADR bodies, Ombudsmen or NRAs.

393 Suppliers received the most complaints in both the electricity and gas markets: 89% of all complaints regarding electricity and 88% of all complaints regarding gas were directed towards suppliers. However, data on complaints received by suppliers is only reported by 14 out of 29 NRAs[187], of which a few MSs compose the majority of complaints[188]. The other NRAs are not able to submit numbers of complaints received by suppliers.

394 DSOs received significantly fewer complaints than suppliers: 10% of all complaints in the electricity market and 11% of all complaints in the gas market were directed towards DSOs. In total, 14 NRAs were aware of complaints received by DSOs[189].

395 Only a small portion of all complaints is sent directly to NRAs, ADRs and energy Ombudsmen (1% of all complaints in both markets). However, statistics on complaints directly addressed to these public bodies appear to be more comparable than data on complaints submitted to suppliers or DSOs thanks to better reporting across MSs. These complaints may include ones which had not been solved by the energy companies and thus “moved on” to NRAs, ADRs and Ombudsmen potentially representing the most contested cases.

396 The following two sections comment on the final household consumer complaints directly addressed to NRAs, ADRs and/or Ombudsmen in countries where these public bodies register complaints separately for electricity and gas suppliers and DSOs.

4.3.3.1 Electricity market

397 In thirteen MSs the NRA, ADR, Ombudsman or some other public entity register complaints separately for suppliers and DSOs in the electricity market[190]. The conclusions in this section are based on data from these MSs.

398 Even though suppliers attract more complaints than DSOs in most countries, there are a few exceptions. In Hungary and Sweden, 66% and 53%, respectively, of all complaints regarding the electricity market concern DSOs.

399 Figure 67 shows that problems with invoicing/billing and debt collection are the most common reason to complain about electricity suppliers (on average, 31% of all complaints). Issues regarding contracts and sales are almost as common (on average, 30% of all complaints).

400 When it comes to electricity DSOs, the most common reason to complain are issues regarding the connection to the grid (on average 23% of all complaints) followed by invoicing/billing and debt collection (on average 18% of all complaints).

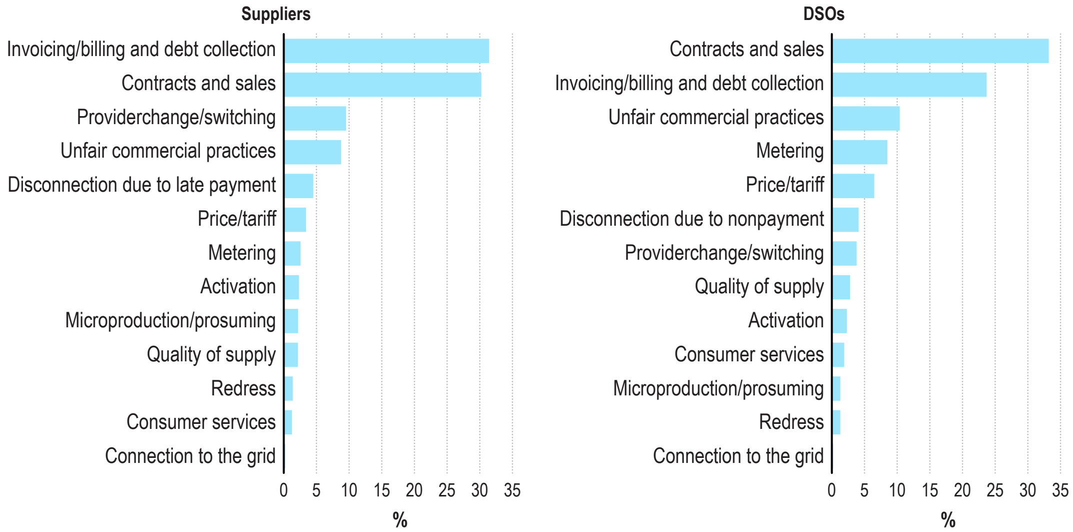
187 Austria, Cyprus, Spain, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Poland, Portugal, Romania and Slovenia.

188 Greece 3 946 036, Great Britain 2 769 291, Romania 2 132 565 and Spain 717 472 complaints received by suppliers reported to the NRA.

189 Austria, Spain, France, Great Britain, Hungary, Italy, Latvia, Luxemburg, Malta, Poland, Portugal, Romania, Slovenia and Slovakia.

190 Austria, Belgium, Denmark, Spain, Finland, Croatia, Hungary, Ireland, Luxemburg, Malta, the Netherlands, Portugal, Sweden.

Figure 67: Average national shares of types of final household consumer complaints in the electricity market directly addressed to NRAs, ADR or Ombudsmen in 13 MSs across Europe that register supplier and DSO complaints separately – 2020 (%)

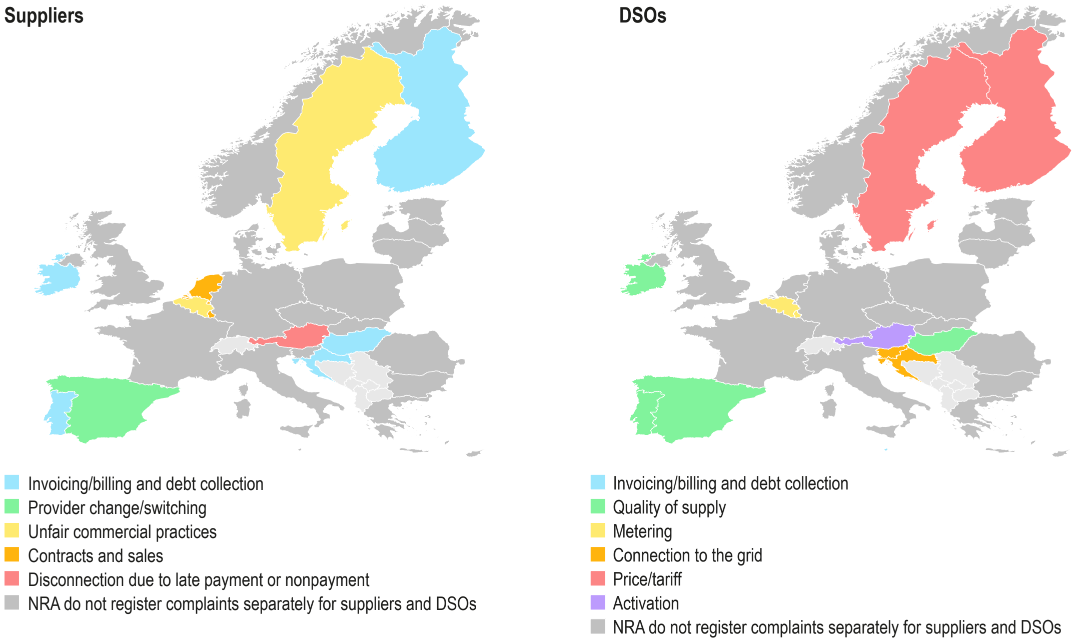


Source: CEER 2020.

Note: For the presentation of the types of consumer complaints, the population weighting and the number of complaints reported by each NRA are not considered. Resulting figures thus refer to MS-level average percentages of complaints in the various categories.

401 Electricity customers across the EU complain about different things. Figure 68 shows the variations across Europe regarding the dominant complaint category for suppliers and DSOs. In Sweden, 67% of complaints regarding suppliers concerned unfair commercial practices. In Spain, 66% of complaints regarding electricity suppliers concerned switching[191]. Regarding DSOs, in Portugal 32% of the complaints concerned quality of supply and in Belgium 35% of complaints concerned metering.

Figure 68: Most common reason to complain in MSs across Europe – 2020



Source: CEER 2021.

191 However, metering was the dominant category in the case of complaints directly addressed to suppliers.

402 One reason for NRAs, ADRs or Ombudsmen to register complaints is to analyse how the market functions and address the most common problems that consumer's experience. Fifteen MSs register complaints separately for electricity suppliers and DSOs. However, some of the above-mentioned complaint categories are very general and thus difficult to analyse and address without more information. Only three MSs (Austria, Croatia and Sweden) report that sub-categories are used to the above-mentioned complaint categories. For example, in Austria the most common complaint regarding electricity suppliers concerns the category of disconnections due to late or non-payment (92 out of 448 supplier complaints). Here the Austrian regulator used seven sub-categories[192], to be able to follow the number of disconnections and final reminders/inkasso-cases that were related to the COVID-19 pandemic, among other things.

403 In Sweden, the most common complaint regarding electricity DSOs concerns the *price/tariff* category (160 out of 318 complaints). Here the Swedish regulator used six sub-categories[193] in order to analyse, for example, if it was the total price, the size of the company´s latest raise or the price mechanism that customers complained about.

4.3.3.2 Gas market

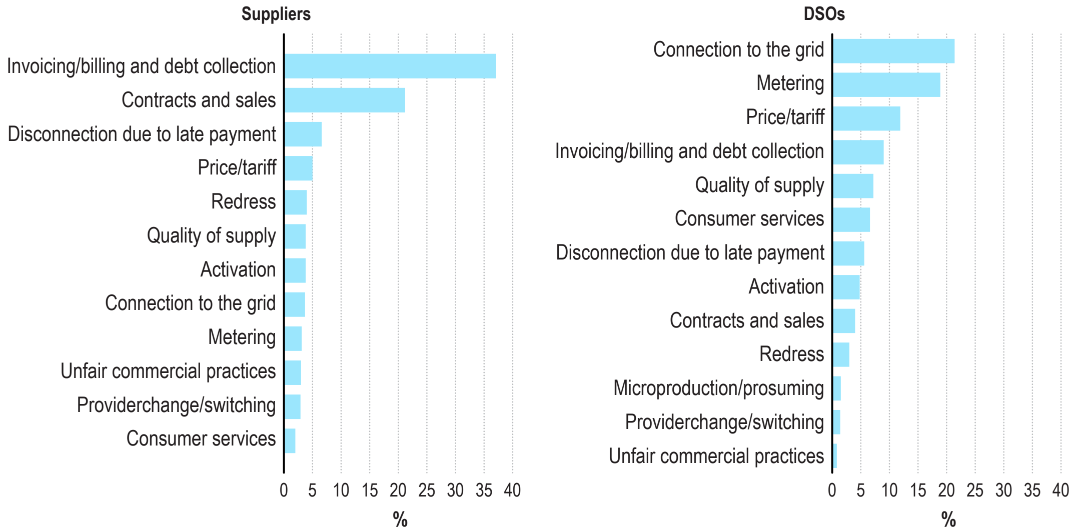
404 In thirteen MSs[194], the NRA, ADR, Ombudsman or some other public entity registers complaints separately for suppliers and DSOs in the gas market. The conclusions in this section are based on data from these MSs.

405 In general, suppliers attract more complaints than DSOs. However, there are exceptions. As an example, in Hungary, 54% of all complaints regarding the gas market concern DSOs.

406 Figure 69 shows that in the nine MSs, problems with invoicing/billing and debt collection are the most common reason to complain about gas suppliers (on average, 37% of all complaints). Issues regarding contracts and sales come second, with an average of 21% of all complaints.

407 When it comes to gas DSOs, the most common reason to complain are issues regarding the connection to the grid (on average, 21% of all complaints) followed by metering (on average, 19% of all complaints).

Figure 69: Average national shares of types of final household consumer complaints in the gas market directly addressed to NRAs, ADR or Ombudsmen in 9 MSs across Europe that register supplier and DSO complaints separately – 2020 (%)



Source: CEER 2021.

Note: For the presentation of the types of consumer complaints, the population weighting and the number of complaints reported by each NRA are not considered. Resulting figures thus refer to MS-level average percentages of complaints in the various categories.

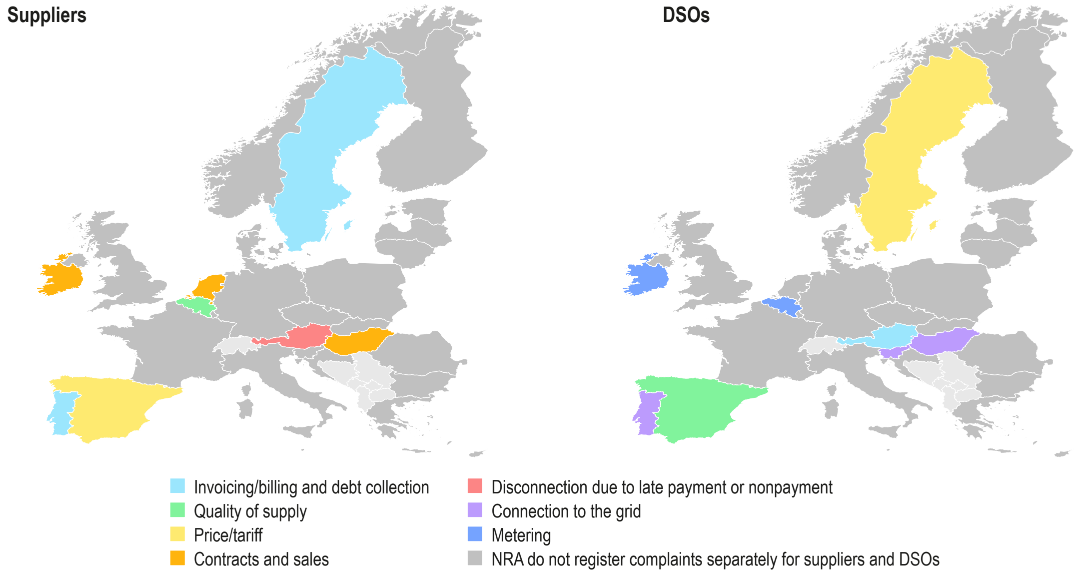
192 Disconnection (31 complaints), disconnection COVID-19 (9), supply of last resort (7), final reminder/inkasso (31), final reminder/inkasso COVID-19 (7), prepayment meter (2), deposit (5).

193 Total cost too high (61 complaints), discontent with the NRA´s regulation (29), discontent with how the tariff is built up (24), raise of price/tariff too high (19), discontent with price-differences between grid-areas (15), profits are too high (8).

194 Austria, Belgium, Denmark, Spain, France, Hungary, Ireland, Italy, Luxemburg, Netherlands, Poland, Portugal and Sweden.

408 The content of the complaints varies across the EU. Figure 70 shows the dominant complaint category for suppliers and DSOs. In Spain, 36% of complaints regarding gas suppliers concern invoicing/billing and debt collection[195]. In the Netherlands, 72% of complaints regarding gas suppliers concern contracts and sales[196]. Regarding gas DSOs, in Portugal, 15% of the complaints concern connection to the grid[197] and in Austria 26% concern invoicing/billing and debt collection[198].

Figure 70: Most common reason to complain in MSs across Europe – 2020



Source: CEER 2021.

Note: Spain provided complaints directly addressed to suppliers and DSOs. All other countries in the map provided complaints to NRA, ADR or Ombudsman.

409 One reason for NRAs, ADRs or Ombudsmen to register complaints is to analyse how the market functions and address the most common problems that consumers experience. Nine MSs register complaints separately for gas suppliers and DSOs. However, some of the above-mentioned complaint categories are very general and thus difficult to analyse and address without more information.

410 Only Austria reports that they use sub-categories to the above-mentioned complaint categories. In Austria, the most common complaint regarding gas suppliers concerns Invoicing/billing and debt collection (46 out of 180 complaints). These complaints are divided between the following sub-categories: bill corrections/adjustments due to corrected past consumption levels (15), instalments (13) and consumption (18).

195 87,431 out of 242,117 complaints addressed directly to suppliers. In the case of complaints addressed directly to the NRA switching was the dominant category concerned.

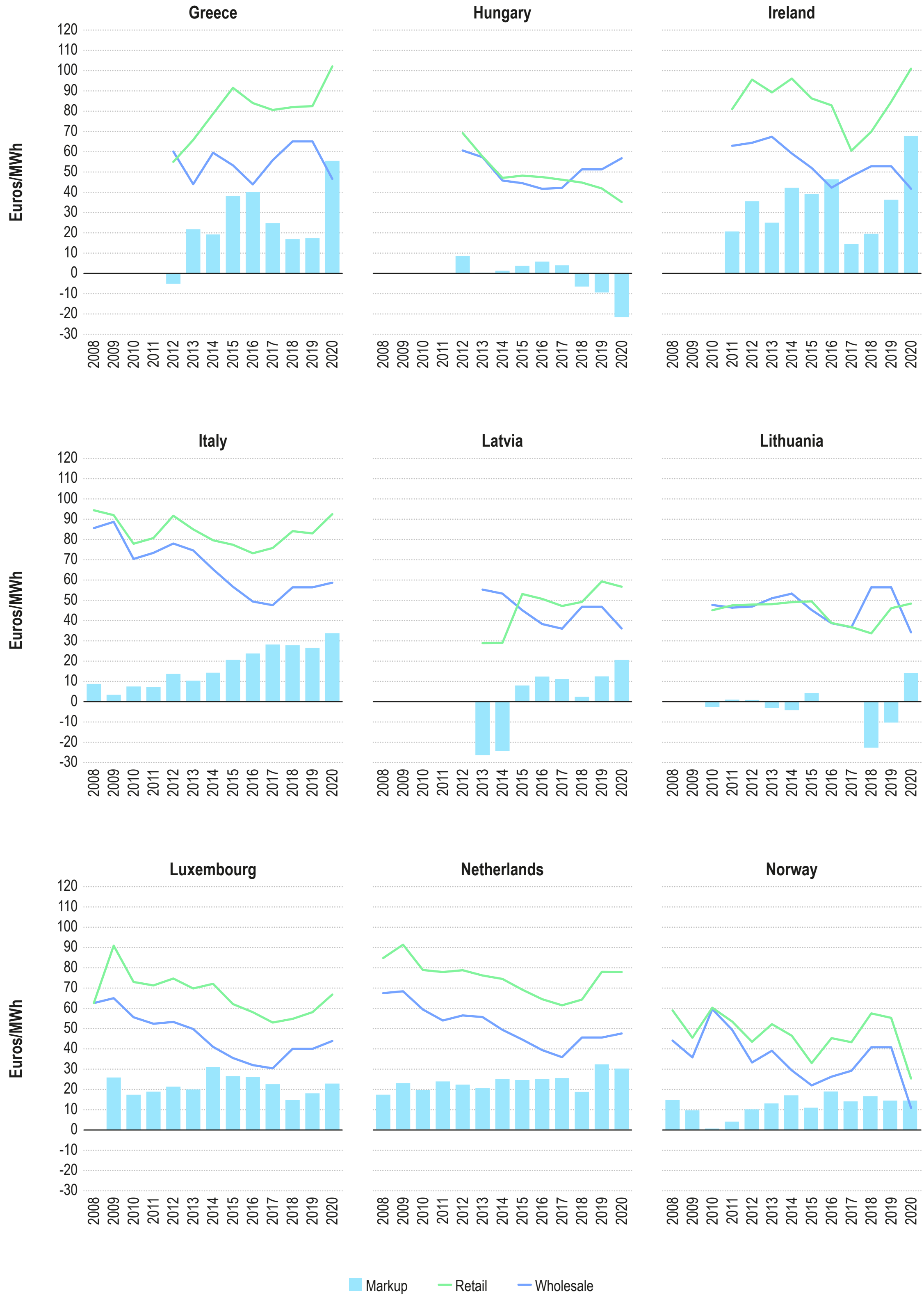
196 7,061 out of 9,866 complaints.

197 38 out of 246 complaints.

198 29 out of 111 complaints.

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

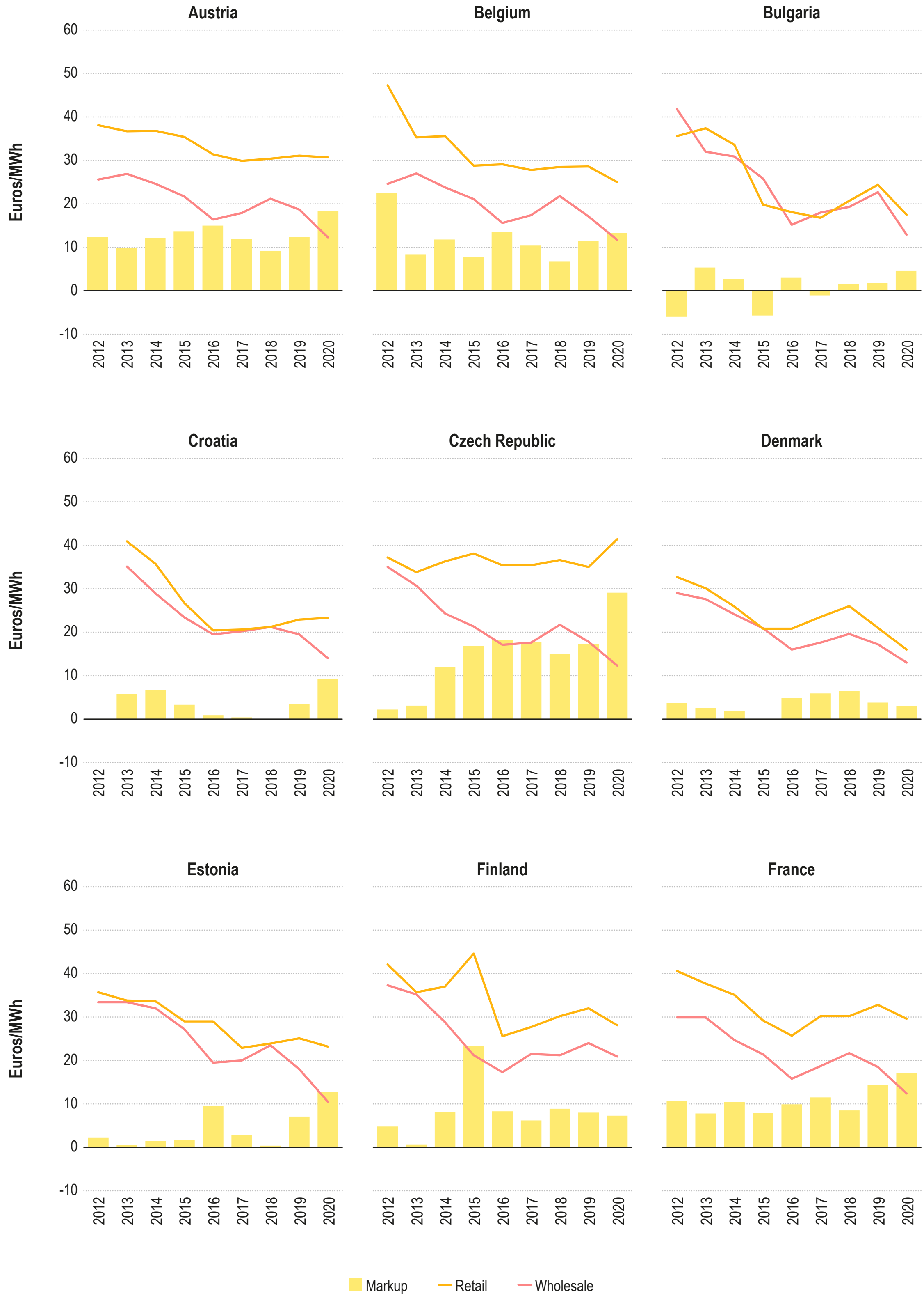
Figure A1-1: Responsiveness of the energy component of retail electricity prices to wholesale electricity prices and evaluation of mark-up in the household market – 2008-2020 (euros/MWh)

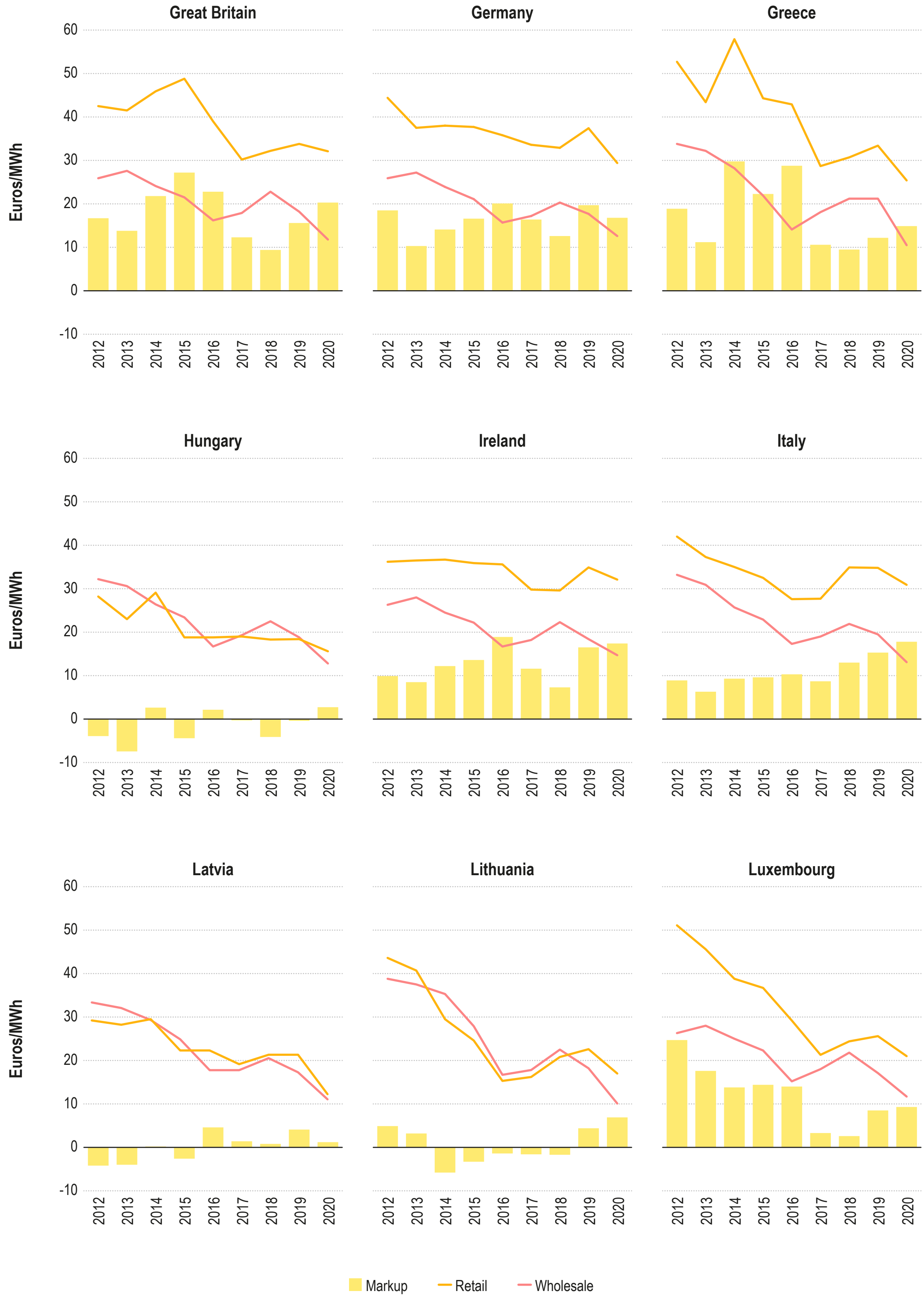

Greece
Hungary
Ireland
Italy
Latvia
Lithuania
Luxembourg
Netherlands
Norway
Euros/MWh
120
110
100
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Markup
Retail
Wholesale

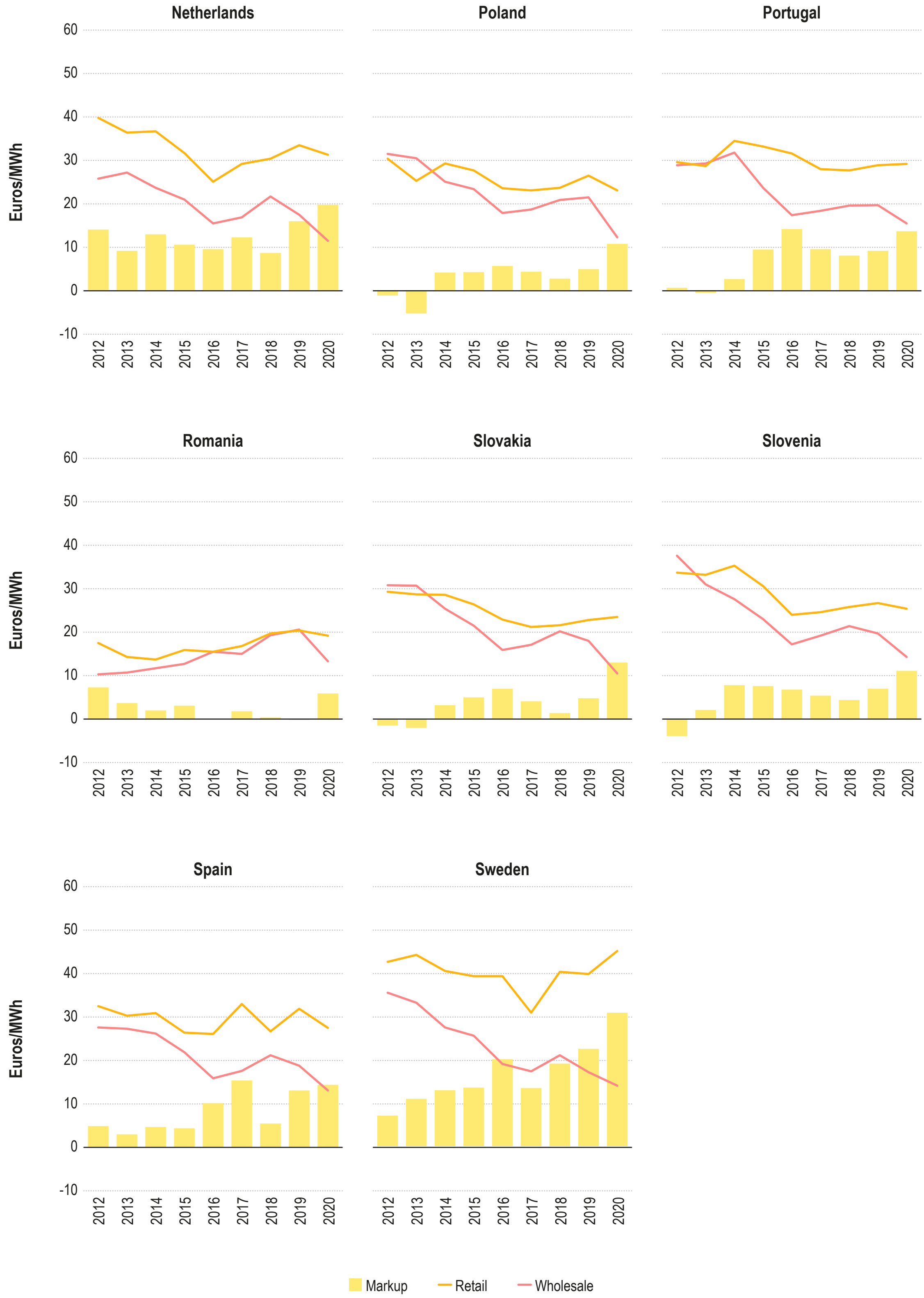
Source: Eurostat, European power exchanges, and ACER calculation.

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

Figure A1-2: Responsiveness of the energy component of retail gas prices to wholesale gas prices and evaluation of mark-up in the household market – 2008-2020 (euros/MWh)




Great Britain
Germany
Greece
Hungary
Ireland
Italy
Latvia
Lithuania
Luxembourg
Euros/MWh
60
50
40
30
20
10
0
-10
2012
2013
2014
2015
2016
2017
2018
2019
2020
Markup
Retail
Wholesale



Source: ACER Database, Eurostat, Eurostat Comext, ICIS Heren, NRAs and ACER calculations.

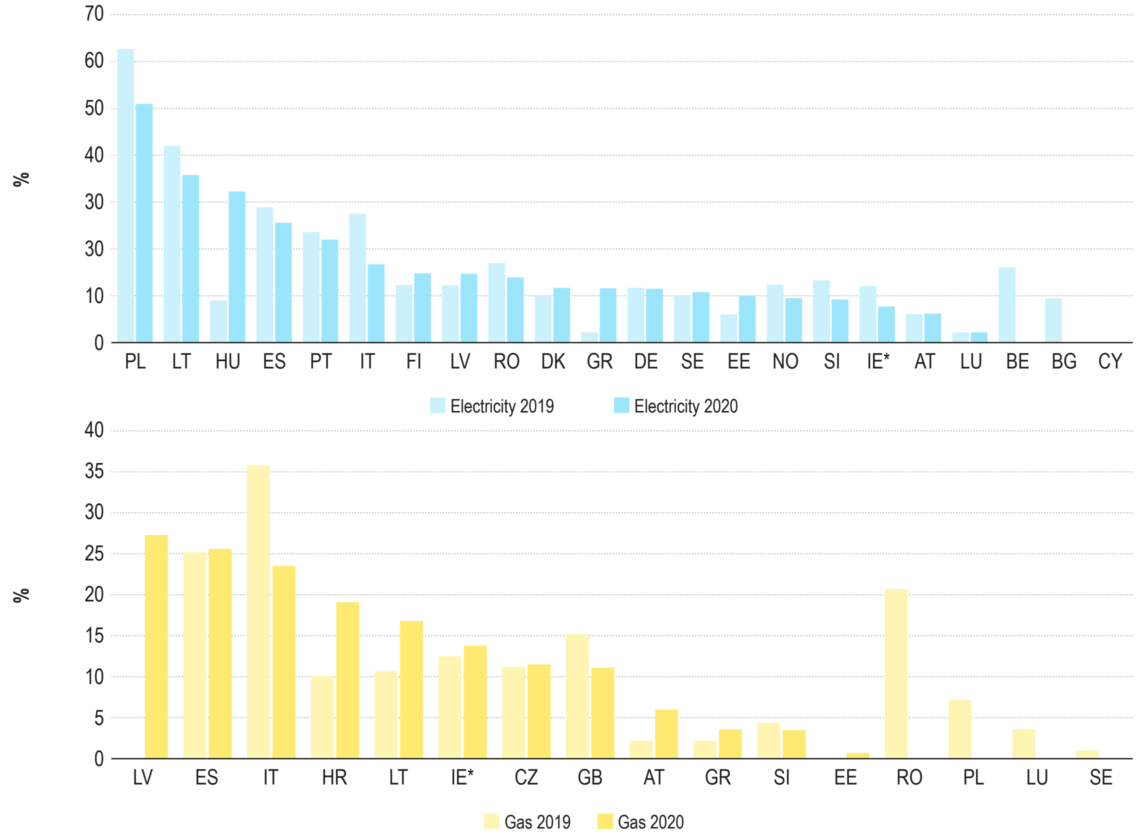
Note: In the legend to all charts, the term 'Retail' refers to the 'Energy component of the retail price' and the term 'Wholesale' to the 'Wholesale energy price'.

Annex 2: Non-household consumer switching rates

411 Compared to household consumers, switching behaviour of non-household consumers is more sensitive to market developments (e.g. prices) and available information. For this reason, the European averages over the years and the data collected on a MS basis are generally higher than the ones for households. One important reason is certainly the strong incentive for non-household consumers to minimize costs, which yield higher saving potentials if one considers higher consumption. Therefore, non-household consumers might exercise more negotiation power or access to legal advice and technical expertise, compared to household consumers. These advantages help them to easily compare suppliers and switch more frequently.

412 Figure A2 shows the switching rates by volume for electricity and gas for non-household consumers in 2019 and 2020.

Figure A2: Non-household consumer switching rates in EU MSs – (volume)



Note: Both electricity and gas switching rates for IE are by meter points rather than by volume.

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413 Switching rates in the EnC CPs' electricity sectors are somewhat higher than those of the households, whereby the regulatory authorities reported the share of consumption of non- households that changed supplier in the total number of consumption of non- households is in most cases higher than shares measured in the number of metering points. For example, in Ukraine the switching rate of non- households in the number of metering points of 9.27 % corresponds to the switching rate by volume of 16.05 %. In other CPs, the relevant rates are 2.70 % (4.23 %) in Serbia, 15.95% (17.58%) in North Macedonia, 2.58 % (3.05 %) in Bosnia and Herzegovina, 1.07% (17.40%) in Moldova and less than 1 % (14.26 %) in Kosovo*. For the gas sector, information on switching rates of non- households in Ukraine, Serbia and Moldova was reported, amounting to 7.38%, 0.12% and 0.32%, respectively, in number of metering points.