European Commission

Second consumer market study on the functioning of the retail electricity markets for consumers in the EU

Final report

Ipsos-London Economics-Deloitte consortium
September 2016

Justice and Consumers

EUROPEAN COMMISSION

Produced by Consumers, Health, Agriculture and Food Executive Agency (Chafea) on behalf of the European Commission Directorate-General for Justice and Consumers

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Directorate-General for Justice and Consumers
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Glossary

Country codes

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
HR	Croatia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
IS	Iceland
NO	Norway

Abbreviations used

ADR	Alternative Dispute Resolution
DSO	Distribution System Operator
SPOC	Single Point of Contact
TEP	Third Energy Package
PPS	Purchasing Power Standard
kWh	Kilo watt hours
GWh	Giga watt hours
kVa	Kilo volt-amperes
PV	photovoltaic

Abstract

This study on the functioning of retail electricity markets for consumers in the EU is the follow up to the first market study conducted in 2009/2010, and published by the European Commission in 2010.[1] The objectives of the current study are to investigate if a well-functioning electricity market is in place for consumers in the EU and assess how the performance of retail electricity markets for consumers has developed since the first market study. The study also examines the extent to which consumers are able to make informed and empowered choices and what motivates their behaviour in the electricity market.

The study covers all EU Member States, Iceland and Norway. Between July 2014 and October 2015, the following activities were carried out: consultations with national stakeholders (energy regulators, consumer associations, Alternative Dispute Resolution entities active in the retail energy sector, electricity associations, enforcement bodies and company mediators); a consumer survey measuring consumers' awareness, attitudes and experiences with electricity services; a behavioural experiment consisting of a "stay or switch" exercise and a comprehension test of bills and marketing material; a mystery shopping exercise replicating consumers' experiences in four areas ("questions about billing", "finding a cheaper tariff", information available on "switching and complaint handling" and "green tariffs and efficient energy use"); and, a price collection exercise compiling and analysing a comprehensive and representative sample of electricity prices offered to household consumers.

[1] European Commission (2010). The functioning of the retail electricity markets for consumers in the European Union.

1. Introduction and background

1.1 Objectives and scope of the study

In July 2014, Ipsos, London Economics and Deloitte were commissioned to conduct the 2nd consumer market study on the functioning of retail electricity markets for consumers in the European Union (EU). This study is the follow up to the first market study conducted in 2009/2010, and published by the European Commission in November 2010.[2] The objectives of the current study are to:

- Investigate if a well-functioning electricity market is in place for consumers in the EU, Iceland and Norway; specifically, in terms of:
  - quality of services and availability of information (Chapter 2),
  - choice of electricity companies and price tariffs (Chapter 3),
  - comparability of offers and switching rates (Chapters 3 and 4),
  - billing practices (Chapter 5),
  - unfair commercial practices and complaint handling (Chapter 6),
  - prices and affordability (Chapters 7 and 8), and
  - sustainable energy use and innovation (Chapters 9 and 10).
- Examine the extent to which consumers are able to make informed, rational and empowered choices and whether they possess the necessary tools to undertake this behaviour.
- Assess how the performance of retail electricity markets for consumers has developed since the 2010 market study, and how the implementation of the Third Energy Package has benefitted consumers.

The scope of the study is limited to retail electricity markets; the retail electricity market is the final part of the electricity supply chain and does not include generation, transmission and distribution of electricity. The study (and data collection – see next section) covers household consumers in all 28 EU Member States, Iceland and Norway and focuses mainly on the interaction between electricity companies and household consumers of electricity. Non-household consumers, such as SMEs, fall outside the scope of the study.

1.2 Main tasks and methodology used

A set of detailed research questions was developed to assist the assessment of: (1) the functioning of the retail electricity markets and (2) consumers' participation in the market.

The research questions on the **functioning of the retail markets** focused on the regulatory environment, available choice, comparability, bills, prices, affordability, availability and quality of information, quality of service, complaint handling, sustainable use of energy and innovation. The research questions on **consumer participation in the electricity market** focused on general consumer attitudes and expectations, consumer awareness, consumer engagement with the market, and consumer mobility, consumer experiences, problems and complaints.

[2] European Commission (2010). The functioning of the retail electricity markets for consumers in the European Union.

The detailed research questions were principally addressed through an extensive primary data collection exercise. In particular, the following main tasks were carried out:

- a **regulatory review** that consisted identifying and describing the state of play with regards to the presence and scope of certain EU consumer energy rights[3] in national legislation across the EU28, Norway and Iceland;
- **consultations with national stakeholders**, i.e. energy regulators, consumer associations, Alternative Dispute Resolution (ADR) entities active in the retail energy sector, electricity associations, enforcement bodies and company mediators. The consultations aimed at collecting stakeholders' views and perceptions of the functioning of the market and market conditions for consumers, as well as information about the regulatory environment, protection of vulnerable consumers, complaint handling, innovation and enforcement regimes;
- a **consumer survey** that focussed on consumer awareness, attitudes and expectations, consumer mobility, consumer engagement, choice, affordability, consumer perceptions on quality of service, consumer attitudes towards energy efficiency, problems experienced by consumers and complaint behaviour;
- a **price collection exercise** that had as objective to compile and analyse a comprehensive and representative sample of electricity prices offered to consumers, by collecting detailed tariff information from electricity companies covering at least 80% of consumers, for three different consumption levels and for different contract types (peak/off-peak vs. unique price contracts, fixed vs. variable price contracts, green vs. non-green energy contracts);
- a **mystery shopping exercise** that focussed on the availability and quality of information and assistance provided to consumers, and attempted to replicate consumers' experiences using four scenarios: "on billing", "on finding a cheaper tariff", "on available information regarding switching and complaint handling" and "on available information regarding green tariffs and efficient energy use";
- a **behavioural experiment** that consisted of a "stay or switch" exercise that tested whether consumers are able to select the best deal available (i.e. the deal that is the cheapest for the respondent's consumption profile) and a comprehension test of bills and marketing material.

1.2.1 Main task 1: Regulatory overview and stakeholder consultation

Main Task 1 consisted of three data gathering channels: a literature review, regulatory overview and stakeholder consultation. Data gathering for this task was mainly conducted between January 2015 and September 2015[4].

The **literature review** focussed largely on available data on the retail electricity markets, such as reports commissioned by the European Commission, the Agency for the Cooperation of Energy Regulators (ACER) and the Council of European Energy Regulators (CEER). At the same time, the literature review included literature available at national level, such as reports from national regulators and academic studies (e.g. studies focussing on energy poverty and switching).

The **regulatory overview** consisted of verifying the presence and scope of certain EU consumer energy rights across the EU28, Norway and Iceland. The list of EU consumer energy rights that the study would focus on was taken from the official EU brochure for retail consumer energy rights[5]. The study checked for the presence of these rights across

[3] i.e. EU consumer energy rights presented in the European Commission's brochure "European Energy – Consumers' rights" (http://ec.europa.eu/energy/en/topics/markets-and-consumers/consumer-rights-and-protection).

[4] The literature review focusing on EU level data was completed between September 2014 and January 2015.

[5] European Commission's brochure "European Energy – Consumers' rights" (http://ec.europa.eu/energy/en/topics/markets-and-consumers/consumer-rights-and-protection).

each of the 30 countries included in the study, both by checking for the transposition of the relevant Directives as well as by contacting national regulatory offices and Single Points of Contact (SPOCs).

For the **stakeholder consultation**, the study relied on the same questionnaire as the one used in the first market study, with some additions and modifications agreed with the Commission. Energy regulators, consumer associations, ADR entities active in the retail energy sector, electricity associations, enforcement bodies and company mediators were all surveyed using an electronic survey tool. The study received 109 responses from 28 regulators, 30 consumer associations, 21 enforcement bodies, 13 ADR/Ombudsmen, 11 electricity associations and 6 company mediators. Of the 109 responses, 18 were either started but not finished; and as such, did not provide usable data. The analysis of the stakeholder consultation data presented in this report is thus based on the responses of 91 stakeholders. The consultation with national stakeholders was supplemented with interviews with a group of industry professionals to provide further background understanding of the retail electricity market. A detailed list of stakeholders who participated in the study can be found in Annex 8.

As part of Main Task 1, three **case studies** exploring innovations in the retail electricity market were conducted; the topics of the case studies are: (1) smart metering, (2) green certificates in self-generation and (3) collective switching. The case studies relied on the literature review and in-depth interviews.

1.2.2 Main task 2: Consumer survey

The objective of the consumer survey was to get insights in consumers' awareness, attitudes and experiences with electricity services. The consumer survey was designed to target members of the general population (aged 18+), who are fully or jointly in charge of paying the electricity bill in their household. In total, 29,119 interviews were conducted across 30 countries (EU28, Iceland and Norway).

A mixed-mode approach was used for data collection, involving online, telephone and face-to-face interviewing. The data collection method in each country was decided by looking at the internet penetration rate. In countries where the internet penetration was too low to guarantee a representative sample, both online and telephone interviews were conducted; this resulted in a core sample that was broadly representative of the general population. In countries with a low internet penetration rate where behavioural experiments were conducted (see Main task 5), a proportion of the sample was interviewed via an in-home self-completion survey (rather than by phone).[6]

In two of the smallest countries, an online approach was not viable. In Cyprus and, to a lesser extent, Malta, online penetration is limited. Furthermore, population sizes of these countries are too small to support an online panel without serious bias. Therefore, in these countries, only telephone interviews were conducted.

Fieldwork took place between 9 February and 9 April 2015 for the online interviews. The fieldwork for the telephone interviews and in-home completions of the questionnaire (and experiment) took place throughout May and June 2015.

The detailed methodology for the consumer survey is presented in Annex 1.

[6] The first market study (conducted in 2010) used a telephone methodology across all countries. Due to the change in methodology, comparisons between the current study and the first market study should be made with caution.

1.2.3 Main task 3: Price and tariff collection

The objective of the price collection exercise was to analyse a comprehensive and representative sample of electricity prices and tariffs offered to consumers. The methodology of the current study built upon the methodology used in the 2010 data collection exercise, seeking to ensure data comparability between the two studies but also across Members States. To this end, final electricity prices were collected across the same three components (supply costs; transmission, distribution and network costs; and, taxes and additional costs) and the same units (fixed and variable price elements) as done in 2010. However, as will be further explained below, the data collection method itself departed from the one used in 2010.

The price collection exercise was guided by the following criteria:

- **Representative set of prices:** To achieve representative prices across Member States, the collection aimed at collecting 100% of the price data offered by the main electricity companies[7] on selected tariffs (the tariff types recorded are detailed below).
- **80% of retail market to be covered:** The price collection exercise focused on recording tariffs offered by the electricity companies that cumulatively supplied at least 80% of the national retail market. This followed the same approach as the 2010 study.

Firstly, the price collection used a multi-pronged approach, which was a departure from the 2010 study; the 2010 study employed solely desk-based research.[8] In the current study, regulator databases, where available, were used as the first source of data. The second step was to combine this approach with desk-based research in cases where regulators did not have a database or their database did not reach the data threshold (80% of the national retail market).

The sources used for collecting tariffs were as follows (used in the order of their availability):[9]

1. Regulator's own dataset;
2. Regulator's own comparison tool;
3. Private sector comparison tool certified by the regulator;
4. Combination of data from regulator (e.g. data from the regulators' own price comparison websites or data on transmission, distribution and network costs. In some cases, electricity tariffs were regulated, e.g. Malta) and private sector data (comparison tool certified by the regulator or desk research); and
5. Only private sector data (comparison tool certified by the regulator, desk research or data obtained from the electricity supplier, e.g. in the Czech Republic).

Secondly, the tariff types recorded were for "green" energy tariffs (100% renewable energy sources) and "grey" energy tariffs (renewable and fossil fuel mix). The definition of green tariffs in the present study differs from that used in the 2010 study. Namely, in the 2010 study at least 50% (or more) of electricity generated had to be from green sources. In the present study, green tariffs are those for which 100% of electricity is generated from renewable sources. In addition to recording data for these tariffs, the data collection template also recorded tariffs for variable and fixed rates contracts, as well as high, low and medium consumption levels. Where there are multiple rates

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[7] The study sought to collect tariffs from electricity providers that cumulatively supplied at least 80% of the retail market.

[88] The differences observed in prices and tariffs between the two studies may be due to changes in the national markets or due to differences in the methodological approach.

[9] That is, a sequential approach was used, working from 1 to 5. The method used for each country is presented in Annex 2.

associated with a tariff which apply according to the time the electricity is consumed (e.g. peak/off-peak, day/night), the higher and lower rates were collected.

Collected data were formatted for entry into a data collection template. This data template allowed for the accommodation of the specific information collected, i.e. the **components** of the electricity prices and the **units** in which these components are presented.

Final electricity prices are derived from three different components:

- **Supply costs** include the commodity price (i.e. the cost paid by the supplier for electricity generation), plus the cost of interactions with consumers (such as billing) and administrative costs, plus supplier profits and other costs of running the business.
- **Transmission, distribution and network costs** are the costs of distributing electricity to customers, including maintaining the grid and load balancing.
- **Taxes and additional costs** include any components of the price related to taxes, levies, social subsidies or public service obligations, as well as any costs not covered by the other categories.

The units[10] in which these data components can be presented are:

- **Fixed element** – fixed amount (i.e. it does not depend on kWh consumed);
- **Variable element** – depending on the amount of kWh consumed for a certain period of time.

Units were measured per a period of one day.

The detailed methodology for the price and tariff collection is presented in Annex 2.

1.2.4 Main task 4: Mystery shopping

The mystery shopping exercise covered 10 countries: the Czech Republic, France, Germany, Italy, Lithuania, Poland, Slovenia, Spain, Sweden and the UK. The country selection was done in order to cover all four geographic regions (North, West, South and East European countries) and also to reflect market developments in terms of market maturity (defined by a matrix that combines various indicators, for example: year of market opening, number of electricity companies and switching activity).[11] Across the 10 countries, a total of 4,000 evaluations were completed between 11 December 2014 and 18 March 2015.

The aim of the mystery shopping exercise was to replicate, as closely as possible, real consumers' experiences when it comes to the following four scenarios:

- **Scenario 1 "Billing":** mystery shoppers were instructed to: (1) check the information provided on their electricity bill and (2) contact their electricity company by phone to ask for clarifications about their electricity bill.
- **Scenario 2 "Cheaper tariff":** mystery shoppers were instructed to: (1) try to find a cheaper tariff offered by their own electricity company; (2) try to find cheaper offers from various other electricity companies and (3) answer a set of questions about the cheapest tariff they had found.
- **Scenario 3 "Switching and complaint handling":** mystery shoppers were instructed to: (1) visit the website of an electricity company and look for

[10] The units should not be confused with fixed and variable prices.

[11] Low market maturity countries: France and Lithuania; medium market maturity countries: Poland, Slovenia and Spain; high market maturity countries: the Czech Republic, Sweden and the UK. For more details, see Section 1.3.

information on switching and complaint handling and (2) contact this company by phone to request information about switching and complaint handling.

- **Scenario 4 "Green tariffs and energy efficiency":** mystery shoppers were instructed to (1) visit the website of an electricity company and look for information on "green" tariffs, efficient energy use and recent innovations/initiatives and (2) contact this company by phone to ask for similar information.

For scenario 1 "Billing", mystery shoppers sought to obtain assistance related to understanding their own electricity bill by contacting their electricity company by phone. For scenario 2 "Cheaper tariff", mystery shoppers were free to choose a method and mode of contact; some mystery shoppers searched online for cheaper tariffs/offers (on electricity companies' websites and/or by using comparison tools), others contacted electricity companies by phone, and another group of shoppers used both methods. Scenario 3 "Switching and complaint handling" and scenario 4 "Green tariffs and energy efficiency" were carried out both via online evaluations of electricity companies' websites and through phone calls to electricity companies in order to cover the most commonly used channels of interaction between consumers and electricity companies.

For scenario 1 "Billing" and scenario 2 "Cheaper tariff", mystery shoppers interacted with their own electricity company using personal data (e.g. using their own electricity bills). When selecting mystery shoppers for scenarios 1 and 2, the shoppers formed a representative sample of electricity consumers in the respective countries (e.g. for electricity companies with a larger market share, a larger number of mystery shoppers that were customers of those electricity companies were selected to participate in the exercise). For scenario 3 "Switching and complaint handling" and scenario 4 "Green tariffs and energy efficiency", the evaluation did not depend on contacts with one's own electricity company; as such, during the selection of electricity companies, it was attempted to generate mystery contacts with a larger number of companies, including also electricity companies with very small market shares.

The aim of the mystery shopping exercise was to assess whether electricity companies provide complete and accurate information (on their website and via phone) that can easily be found and understood by consumers. Mystery shoppers are "real" consumers; as such, mystery shoppers evaluating the same company would not necessarily be in agreement when providing their responses. For example, it has been noted that when mystery shoppers were looking for information about complaint handling, there are a few instances in which one mystery shopper found such information on the electricity company's website, but another mystery shopper evaluating the same electricity company reported not having found the same piece of information. In a situation like this, one can expect that the same will happen when consumers visit this electricity company's website; some will find the information on complaint handling, and others will not. As such, when analysing the results of the website evaluations, the analysis focuses on the proportion of consumers who have access to information, rather than the proportion of electricity companies that present information on their websites[12].

The detailed methodology for the mystery shopping is presented in Annex 5.

[12] Each time, **the proportion of mystery shoppers who found specific information** on a provider's website, rather than reporting the **proportion of providers' websites that contain such information**, is reported.

1.2.5 Main task 5: Behavioural experiments

The behavioural experiments were conducted in conjunction with the consumer survey in 10 Member States: the Czech Republic, France, Germany, Italy, Lithuania, Poland, Slovenia, Spain, Sweden and the UK (the same set of countries as for the mystery shopping exercise, see Main task 4). In total, 10,056 respondents completed the behavioural experiments.

The experiments included the following tests:

- "**Stay or switch"**: this experiment tested the impact of pricing structure and bill presentation on respondents' ability to choose the cheapest electricity deal. Bills were presented to respondents in one of two ways: (1) a standard bill, which was based on the design of actual bills collected through desk research; and (2) a best practice bill, which was based on the recommendations made by the Working Group on Billing[13] and the Working Group Report on Billing and Personal Data Management[14].
  In addition, the "stay or switch" experiment tested the effect of switching costs on respondents' behaviour and choice in the experiment. Switching costs were simulated by introducing a real effort task. This task required respondents to input information from their bill before being able to view alternative offers.
- **Bill comprehension**: the bill comprehension exercise tested respondents' understanding of electricity bills. Respondents were allocated to one of six bill types, which varied in terms of the inclusion of a comparability box, how historical consumption was presented and whether additional surplus information (not relevant to understanding the task) was included on the bill.
- **Marketing material comprehension**: this task tested how common marketing methods impact respondents' ability to correctly understand an offer. The method tested was dripping of information. In this case, relevant information was presented behind a "pop-up" button. In addition, the presentation of upfront information was varied such that some participants saw marketing materials that were presented in an easy comparable format (a standard format) and others saw materials with information that was more difficult to compare (non-standard).

Profiles

In order to frame the experiment in a realistic way, each respondent was allocated to an electricity usage profile. To do this, respondents were asked a set of profiling questions about their household's electricity use. The profile questions were based on questions asked to consumers on regulators' and electricity companies' websites when consumers input their personal information to reveal deals that are available, or to access information about their electricity usage. The questions were:

- Number of people in the household and number of bedrooms;
- What activities electricity is used for (heating, water, cooking); and
- When electricity is used (all day or mainly evenings and weekends).

Based on respondents' answers to these questions, they were allocated to one of seven profiles that varied by kWhs used per year, from low consumption to very high consumption. For example, in the UK, the range was between 2,200 kWhs and 16,000 kWhs. The profiles were tailored to each Member State to account for countries that, on average, use more or less electricity. This process used the median household consumption in each Member Sate taken from Eurostat. In addition, targeted web-based research was used in order to set a maximum and minimum consumption for each

[13] European Commission (2009), Working Group Report on Billing.

[14] European Commission (2013), Working Group Report on e-Billing and Personal Energy Management, Report prepared for the 6th Energy Forum.

country. A level for each profile was then set. It should be noted that while these profiles aim to capture consumption levels by different household types, it is not possible to accurately estimate consumption based on key usage characteristics used in the experiment (i.e. bedrooms, number of people etc.) based on data available.[15]

The detailed methodology for the behavioural experiment is presented in Annex 6.

1.3 Transposition of the Third Energy Package and market maturity

One of the objectives of this study is to examine the impact of the **Third Energy Package (TEP)** on the functioning of retail electricity markets for consumers. After the TEP was introduced, Member States transposed it into national legislation at different times; the timing of transposition for Member States is presented in Annex 7. The Third Energy Package includes rules designed to benefit European energy consumers and protect their rights. One of these rights, for example, is the right to choose or change suppliers without extra charges.

The **maturity of the retail electricity market** is important in terms of explaining cross-country differences of certain findings, for example of switching rates levels. Therefore, a composite index for market maturity, grouping countries in terms of different levels of competition and market conditions, was developed. A range of indicators can be used to assess market maturity; such as, years since market liberalisation, market concentration levels, market entry/exit levels, price dispersion and switching activity. Table 1 presents the various indicators that were used to create the market maturity composite index.

In order to calculate a composite measure, all indicators were normalised[16]; moreover, the order of the variables was changed so that, for all variables, a score of 0 corresponds to the lowest level of market maturity, while a score of 1 represents the highest level. Next, the average of the normalised variables was calculated (i.e. all variables entering the index are equally important), which leads to a numerical score for each country. These numerical scores were then used to determine the grouping of countries in low, medium and high market maturity – as presented in Table 1.

[15] For more details on how the profiles were set in the experiment, see Annex 5.

[16] Normalisation is applied when indicators are measured in different units – e.g. the number of household electricity suppliers (an absolute number, ranging from 1 to 97) vs. switching activity (a percentage ranging from 0% to 31s%). Normalization of ratings means adjusting values measured in different units to a common scale to facilitate comparison.

Table 1: Indicators of market maturity and composite measure (EU28, 2014)									
	1. Year of legislative market opening	2. Proportion of household consumers supplied under regulated prices	3. Overall number of household suppliers	4. Number of household suppliers active nationwide	5. Number of main suppliers - with market shares > 5% by metering points	6. CR3 - Market shares of three largest suppliers in household retail market by metering points (%)	7. Switching activity	Composite index	Country group
Austria	2001	0%	138	25	6	61	4%	0.56	High
Belgium	2007	0%	53	12	5	76	12%	0.46	High
Bulgaria	2007	100%	4	4	3	100	0%	0.13	Low
Croatia	2009	93%	8	8	1	99	4%	0.10	Low
Cyprus	2014	100%	1	1	1	100	0%	0.01	Low
Czech Republic	2006	0%	-	28	4	78	5%	0.42	Medium
Denmark	2003	80%	50	25		45	4%	0.37	Medium
Estonia	2013	0%	35	23	2	85	0%	0.27	Medium
Finland	1997	0%	72	45	4	40	11%	0.63	High
France	2007	90%	174	12	2	98	4%	0.17	Low
Germany	1998	0%	970	39	4	41	8%	0.73	High
Greece	2007	0%	26	7	1	100	0%	0.22	Medium
Hungary	2007	99%	83	14	4	85	0%	0.22	Medium
Ireland	2005	0%	6	6	4	93	14%	0.40	Medium
Italy	2007	0%	381	21	1	85	8%	0.37	Medium
Latvia	2007	100%	5	5	1	98	0%	0.08	Low
Lithuania	2015	100%	3	3	1	100	0%	0.01	Low
Luxembourg	2007	0%	7	5	2	98	0%	0.25	Medium
Malta	Closed	100%	1	1	1	100	0%	0.00	Low
Netherlands	2004	0%	50	50	3	79	13%	0.48	High
Poland	2007	98%	28	25	5	81	1%	0.27	Medium
Portugal	2006	53%	60	9	2	96	31%	0.34	Medium
Romania	2007	100%	198	17	5	71	0%	0.30	Medium
Slovakia	2007	100%	22	18	3	90	3%	0.18	Low
Slovenia	2007	0%	11	11	6	65	3%	0.46	High
Spain	2009	48%	191	36	3	90	12%	0.34	Medium
Sweden	1996	0%	123	97	5	43	10%	0.74	High
UK	1999	0%	24	24	6	56	11%	0.60	High

Source: Information on indicator 1 (year of market opening) can be found in Table 95 of the 1st Electricity market study (http: //ec.europa.eu/consumers/archive/consumer_research/market_studies/docs/retail_electricity_full_study_en.pdf). Indicators 2 to 7 are presented in ACER/CEER Market Monitoring Report 2015 (http://www.europarl.europa.eu/meetdocs/2014_2019/documents/itre/dv/acer_market_monitoring_report_2014_/acer_market_monitoring_report_2014_en.pdf).

1.4 Analysis by respondent characteristics

1.4.1 Socio-demographic characteristics

Performance in the behavioural experiment and some of the results of the consumer survey were analysed taking into account the following socio-demographic characteristics:

- Age (over 64 year-olds, compared to under 65 year-olds) [17];
- Activity status (economically inactive, compared to economically active respondents); and
- Level of education (low, medium and high level of education).

1.4.2 Affordability of electricity bills

In the analysis of the consumer survey data, specific attention is paid to affordability, distinguishing between respondents who sometimes (or often) could not pay their electricity bills on time and respondents who could afford paying their electricity bills. This characteristic was found to be a stronger predictor of perceptions, awareness and behaviour in the electricity markets than other socio-demographic characteristics (for example, see Figure 1).

1.4.3 A composite index measuring "conscious" electricity use

Throughout this report, specific attention is also paid to differences in consumers' responses that can be associated with a more "conscious" electricity use. A composite index of awareness was created by averaging respondents' scores across five items measuring awareness of various aspects of their household's electricity use:

- I know how much I pay for electricity (per month, year or any other frequency);
- I know how much electricity I use (per month, year or any other frequency) in kWh;
- I know how the electricity that I use is produced (e.g. nuclear generation, wind, gas, solar, petroleum, coal, etc.);
- I know the main characteristics of the tariff I am on (e.g. whether I am on a fixed or variable price, the use of renewable energy, etc.); and
- I know how the price I pay for electricity is calculated.

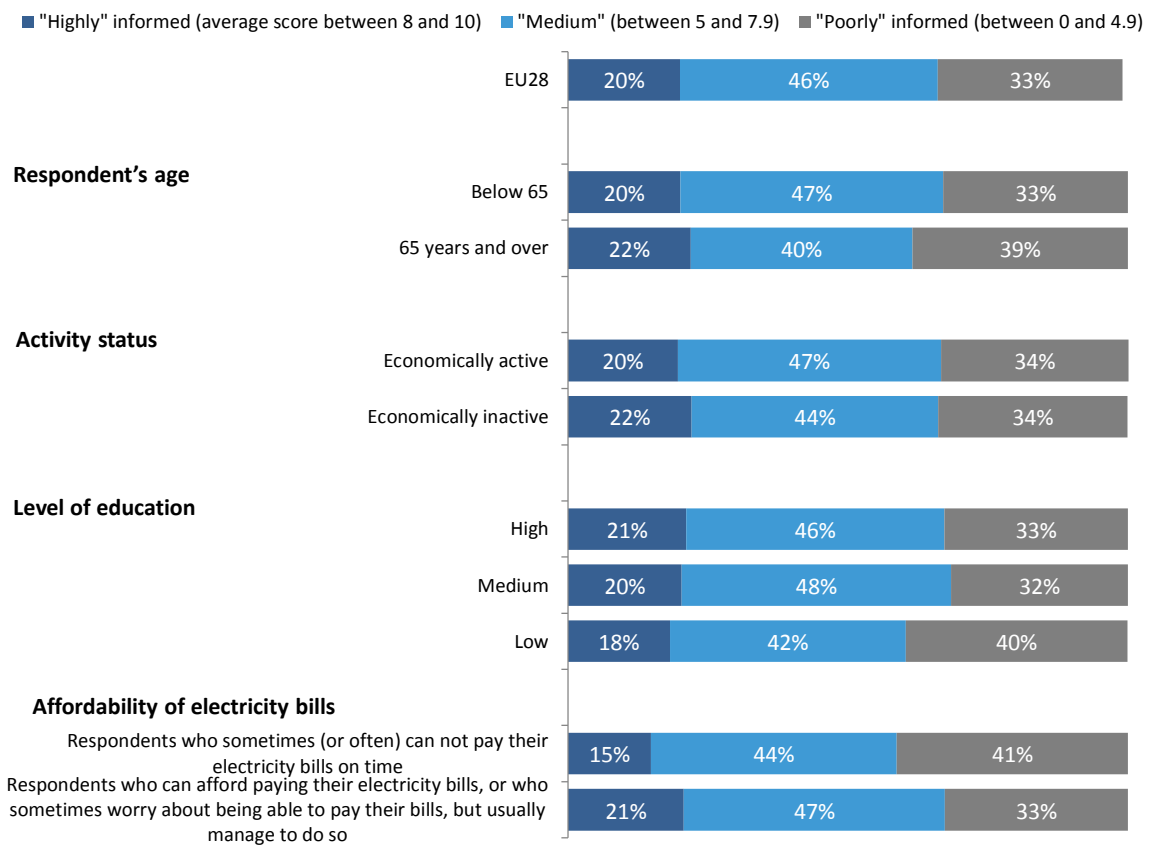
Respondents with average scores between 8 to 10 were labelled as being "highly informed", respondents with average scores between 5 and 7.9 as "medium informed" and respondents with average scores between 0 to 4.9 as "poorly informed".

Figure 1 shows that, across the EU28, 20% of consumers surveyed were well informed and knowledgeable about the cost of their electricity bill, their consumption, the characteristics of their electricity tariff, and also knew how the price they paid for electricity was calculated and how the electricity they used was produced. A third (33%) of respondents were "medium informed", while almost half (46%) of respondents proved to be "poorly informed" and less knowledgeable.

[17] The impact of age was investigated by splitting the sample by below 65 and 65+; this is because the literature generally defines older consumers as being in this age bracket. For example, WHO identifies 65+ as a common definition of older" or "elderly" (See http: //www.who.int/healthinfo/survey/ageingdefnolder/en/), as well as the OECD, which uses 65+ as the definition of "elderly population" (See https: //data.oecd.org/pop/elderly-population.htm). Similarly, 65+ is used in statistical publications in Member States such as Germany (See https: //www.destatis.de/EN/Publications/Specialized/Population/OlderPeopleEU.html) or the UK (See http: //www.ons.gov.uk/ons/rel/census/2011-census-analysis/what-does-the-2011-census-tell-us-about-older-people-/what-does-the-2011-census-tell-us-about-older-people--short-story.html).

The largest differences in the composite index of self-reported awareness of electricity use are observed for the variable measuring **affordability of electricity bills**. While 21% of respondents who could afford paying their electricity bills were "highly" informed (i.e. they had an average score between 8 and 10), this proportion was 15% for respondents who sometimes (or often) could not pay their electricity bills on time. Moreover, 41% of respondents in the latter group were "poorly" informed (i.e. they had average scores between 0 and 4.9), compared to 33% of the former respondents. Unsurprisingly, the study's findings show that consumers who were struggling to pay electricity bills and those with a lower level of education were less likely to know how much they used and paid for electricity, how the price for electricity was calculated, what the characteristics of their tariff were, and how the electricity they used was produced.

Figure 1: Composite index measuring self-reported awareness of electricity use, by respondent characteristics



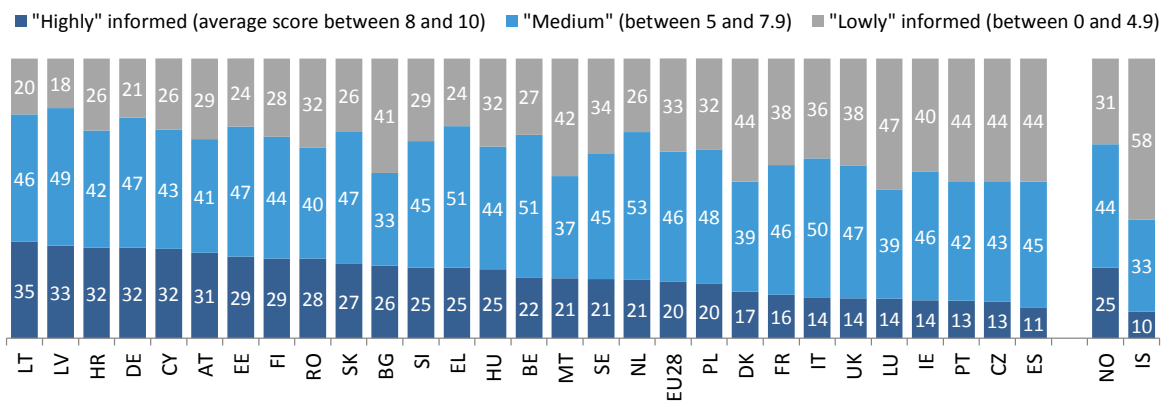
Composite index based on Q1_1 to 5 (respondents' average score on the 5 items was calculated; these average scores were regrouped into three categories: "highly" (average scores between 8 and 10), "medium" (average scores between 5.9 and 7) and "poorly" informed (average scores between 0 and 4.9)

% EU28, Base: all respondents

Source: Consumer survey

Looking at the results by country, it can be seen that the proportion of "highly informed" respondents ranges from 10% in Iceland and 11% in Spain to 35% in Lithuania. The largest share of respondents who were "poorly" informed (average scores between 0 and 4) was observed in Iceland (58%); in eight EU countries, at least 40% of respondents belonged to the non-informed group (for example, 44% in Spain, the Czech Republic, Portugal and Denmark).

Figure 2: Composite index measuring self-reported awareness of electricity use, by country



Composite index based on Q1_1 to 5 (respondents' average score on the 5 items was calculated; these average scores were regrouped into three categories: "highly" (average scores between 8 and 10), "medium" (average scores between 5.9 and 7) and "poorly" informed (average scores between 0 and 4.9)

%, by country, Base: all respondents

Source: Consumer survey

1.5 Structure of the report

The report is structured as follows:

- Chapter 2 discusses consumers' views on the functioning of the retail electricity market. It includes an analysis of consumer satisfaction, access to information and consumer awareness.
- Chapter 3 presents consumers' views on available choice in the electricity market, their experience with comparing offers and tariffs as well as their performance when confronted with market complexity.
- Chapter 4 addresses consumer mobility and assesses the level of switching, reasons for switching and potential barriers to switching.
- Chapter 5 presents consumers' views and understanding of their electricity bills.
- Chapter 6 analyses the incidence and types of problems experienced by consumers in retail electricity markets and examines complaint procedures and complaint behaviour.
- Chapter 7 provides a cross-country analysis of price trends and structure.
- Chapter 8 analyses affordability of electricity and presents measures implemented across Member States to improve affordability.
- Chapter 9 presents consumers' attitudes towards energy consumption and energy efficiency.
- Chapter 10 focuses on retail electricity market innovation, in particular on smart metering, collective switching, and self-generation of electricity and feed-in tariffs.
- Chapter 11 summarises the conclusions and provides policy recommendations.

2. General perceptions and awareness of the electricity market

This chapter analyses consumers' views on different aspects of the functioning of the electricity market and, where possible, compares these views with the views of energy regulators, consumer_associations, ADR entities active in the retail energy sector, electricity associations, enforcement bodies and company mediators. In particular, this chapter covers:

- Consumers' general perceptions of the electricity market (Section 2.1);
- Consumers' perceptions of electricity companies' quality of service (Section 2.2);
- Consumers' assessment of the assistance (and customer service) provided by electricity companies (Section 2.3);
- Consumers' views on the information provided by electricity companies (Section 2.4);
- The extent to which consumers are informed about their household's electricity use (Section 2.5.1), their current electricity contract (Section 2.5.2) and consumer protection bodies (Section 2.6);
- Consumers' trust in electricity companies (Section 2.7); and
- Consumers' perceptions about the role of energy regulators (Section 2.8).

Box 1: Main findings with regards to general perceptions of the electricity market and consumer awareness

- **Perceptions regarding overall electricity market conditions.** Across the EU28, 26% of survey respondents rejected the statement that the retail electricity market in their country was not functioning very well as opposed to 23% who "strongly agreed" with this statement and expressed doubts about the existence of a well-functioning market in their country. Furthermore, 19% of survey respondents "strongly agreed" that electricity market conditions for consumers in their country were improving, however, the proportion disagreeing, was somewhat higher, at 22%. The highest percentage of consumers disagreeing that market conditions were improving was recorded in Bulgaria (62%).
- **Consumers' assessment of the quality of service.** Across the EU28, 40% of survey respondents "strongly agreed" that their electricity company offered overall a high quality service; this figure varied between 20% in Bulgaria and 64% in Cyprus. In 2010, Bulgaria and Malta, and to a lesser extent, Greece and Spain, stood out as countries with a relatively poor quality of service. Out of these countries, conditions in Malta seem to have improved with 55% of respondents "strongly agreeing" that their electricity company offered overall a high quality service. Among consumers who had contacted their electricity company in the past 12 months, 45% replied that the assistance and information they had received fully lived up to what they wanted.
- **Trust in electricity companies.** In Austria and Finland, roughly two-thirds of survey respondents "strongly agreed" when asked whether they trusted their electricity company to respect the rules and regulations set up to protect consumers. In Bulgaria and Spain, on the other hand, not more than one in six respondents "strongly agreed". In the first market study, it was noted that the ratings on this item were particularly low in Bulgaria and Malta. While Bulgaria is still found at the bottom of the country ranking, Malta now scores better with 52% of respondents who "strongly agreed" when asked whether they trusted their electricity company to respect the rules and regulations.
- Across most EU Member States, more than a third of consumers would "strongly" recommend their electricity company to friends or family. In sharp contrast, in Bulgaria, 41% of respondents would not recommend their electricity company; in four other countries, more than one in five respondents shared this view: Romania (24%), Croatia (22%), Spain and Greece (both at 21%).
- **Consumers' views about the information provided by electricity companies.** Respondents in the consumer survey were asked to rate the quality of information provided by their electricity company. Respondents in Germany and Austria were overall the most satisfied with the information provided by their electricity company (on topics such as services and tariffs, energy sources, how to file a complaint

Box 1: Main findings with regards to general perceptions of the electricity market and consumer awareness

and more efficient energy use), while respondents in Bulgaria were overall the least satisfied.

- **Consumers' awareness.** Respondents in the consumer survey were asked whether they felt informed about various aspects of **their household's electricity use**. Respondents were most likely to agree that they knew how much they paid for electricity (52% "strongly agreed"). A third of respondents "strongly agreed" when asked whether they knew how much electricity they used or when asked whether they knew the main characteristics of the tariff they were on. The lowest levels of awareness were measured with regards to aspects such as how the price of electricity was calculated and the sources of the electricity they used (26% and 24%, respectively, "strongly agreed").
- Across the EU28, 57% of respondents answered that they had **read the terms and conditions of their contract with their electricity company** and 46% reported knowing the advance period in case they wanted to terminate their contract with their current electricity company.
- **Role of the national energy regulator.** 24% of survey respondents "strongly agreed" that the national energy regulator played an essential role in monitoring and enforcement of the retail electricity market; 15% expressed doubts about the national energy regulator's role. 42% of survey respondents "strongly agreed" when asked whether the national energy regulator could do a better job in making the electricity market work for consumers.

2.1 General perceptions of the electricity market

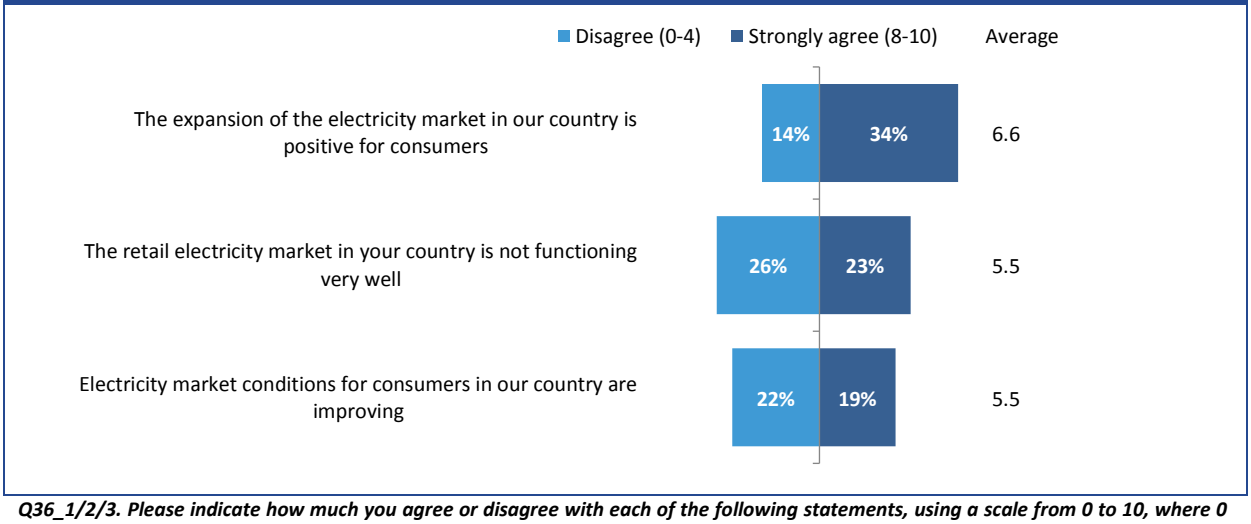
Across the EU28, the **expansion of the electricity market** in respondents' countries was seen as very positive by 34% of survey respondents; they expressed this view by selecting the highest scores (scores 8 to 10) on the agreement scale[18] – see Figure 3 on the next page.

Roughly a quarter (23%) of survey respondents "strongly agreed" (scores 8 to 10) that the **retail electricity market in their country was not functioning very well**; compared to 26% who disagreed (scores 0 to 4). The average scores for these statements were 6.6 and 5.5, respectively.

Less than a quarter of survey respondents disagreed when presented with the statement that the **electricity market conditions for consumers in their country were improving** (22% selected scores 0 to 4), while the proportion expressing "strong" agreement (scores 8 to 10) was slightly below a fifth – at 19%. The average score for this statement was 5.5.

[18] They selected scores 8, 9 or 10 on an agreement scale from 0 to 10. Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. Figure 3 presents the results across the EU28; the numbers in the right-hand column of the figure show the average scores on the scale, while the percentages give more information about the distribution of respondents across the scale values. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

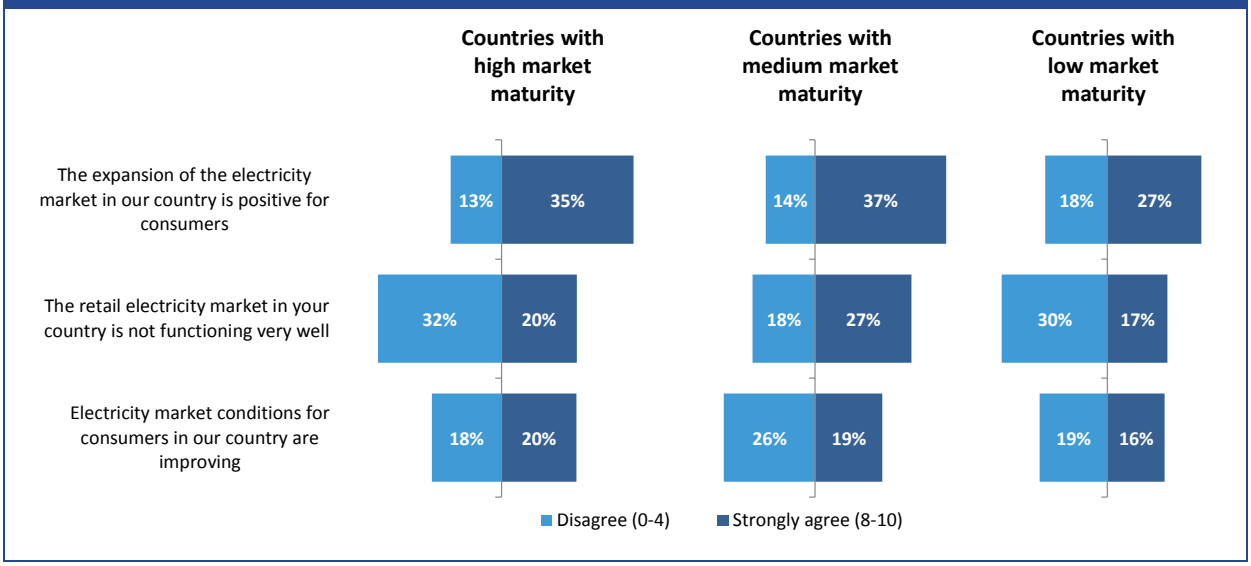
Figure 3: Agreement with statements about the functioning of the retail electricity market



Q36_1/2/3. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
%, EU28, Base: All respondents
Source: Consumer survey

Respondents in countries with medium market maturity[19] were overall the most likely to "strongly agree" (scores 8 to 10) that the retail electricity market in their country was not functioning very well (27% vs. 17% in low market maturity countries[20] and 20% in high market maturity countries[21]) and they were also the most likely to disagree (scores 0 to 4) that market conditions in their country were improving (26% vs. 19% in low market maturity countries and 18% high market maturity countries).

Figure 4: Agreement with statements about the functioning of the retail electricity market, by market maturity



Q36_1/2/3. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree.
%, EU28 (countries grouped in terms of market maturity), Base: All respondents
Source: Consumer survey

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[19] Medium market maturity countries: Belgium, Ireland, Luxembourg, Poland, Portugal, Romania, Slovakia, Slovenia and Spain.

[20] Low market maturity countries: Bulgaria, Croatia, Cyprus, Estonia, France, Greece, Hungary, Latvia, Lithuania and Malta.

[21] High market maturity countries: Austria, Czech Republic, Denmark, Finland, Germany, Italy, Netherlands, Sweden and the UK.

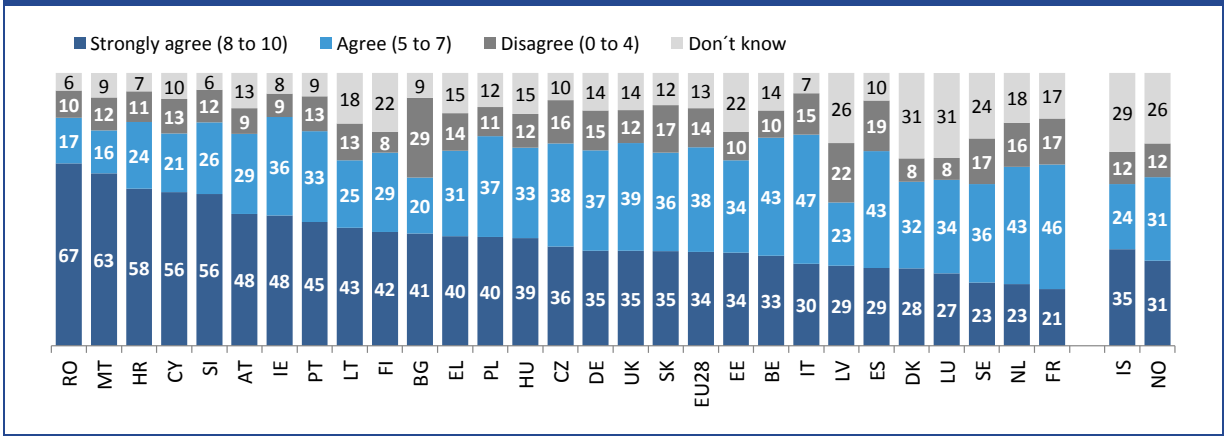
Figure 4 (on the previous page) also shows that respondents in countries with low market maturity were less likely to "strongly agree" that the expansion of the electricity market in their country was positive for consumers (27% selected scores 8 to 10, compared to 35%-37% of respondents in countries with more mature retail electricity markets).

Individual country results

In five Member States, a majority of respondents evaluated the expansion of the electricity market in their country very positively (i.e. they "strongly agreed" by selecting scores 8 to 10 on the scale): 56% in Cyprus and Slovenia, 58% in Croatia, 63% in Malta and 67% in Romania. At the lower end of the country ranking, less than a quarter of respondents in France, the Netherlands and Sweden "strongly agreed" that **the expansion of the electricity market in their country was positive for consumers** (21% in France; 23% in the Netherlands and Sweden).

Respondents in Bulgaria were the most divided in their opinions: 41% "strongly agreed" (scores 8 to 10), compared to 29% who disagreed (scores 0 to 4), that the expansion of the electricity market in their country was positive for consumers. Bulgaria was characterised by the highest proportion of respondents who disagreed; in Spain and Latvia, roughly a fifth of respondents disagreed with the statement (19% and 22%, respectively).

Figure 5: Agreement with the statement: "The expansion of the electricity market in our country is positive for consumers", by country



Q36_3. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree: The expansion of the electricity market in our country is positive for consumers.

%, by country, Base: All respondents

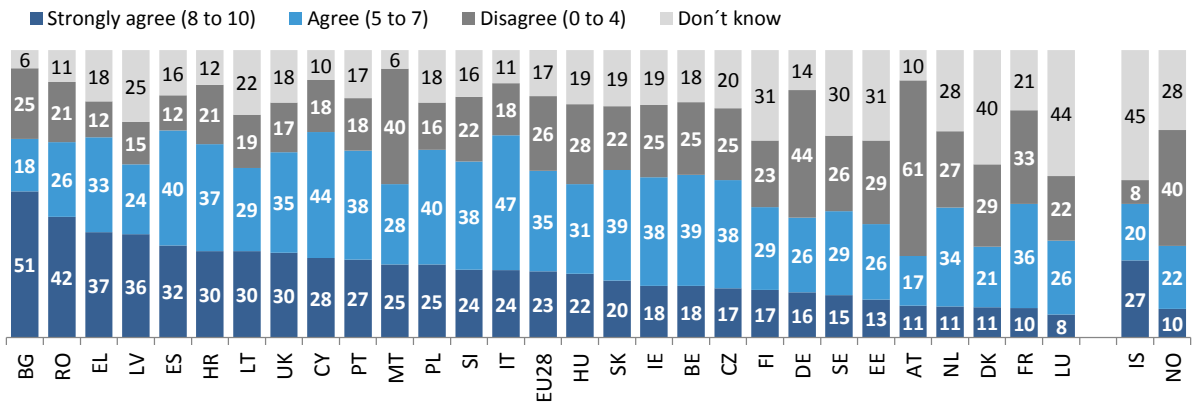
Source: Consumer survey

The proportion of respondents who "strongly agreed" (scores 8 to 10) that **the retail electricity market in their country was not functioning very well** varied between 8% in Luxembourg and 51% in Bulgaria. Bulgaria was the only country where a slim majority "strongly agreed" with this statement; in Latvia, Greece and Romania, more than a third of respondents expressed "strong" agreement that the retail electricity market was not functioning very well in their country (between 36% and 42%)

France, Denmark, the Netherlands and Norway joined Luxembourg at the lower end of the country ranking with roughly a tenth (10%-11%) of respondents who selected the lowest scores on the scale (scores 0 to 4). Austria was characterised by the highest proportion of respondents who disagreed with this statement: 61% of respondents selected scores 0 to 4. In Malta and Germany, respectively, 40% and 44% of respondents disagreed that the retail electricity market in their country was not functioning very well.

Across a number of countries, a considerable proportion of respondents did not express an opinion; the proportion of "don't know" responses ranged from 6% in Bulgaria and Malta to 44% in Luxembourg and 45% in Iceland.

Figure 6: Agreement with the statement: "The retail electricity market in your country is not functioning very well", by country



Q36_1. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree: The retail electricity market in your country is not functioning very well.

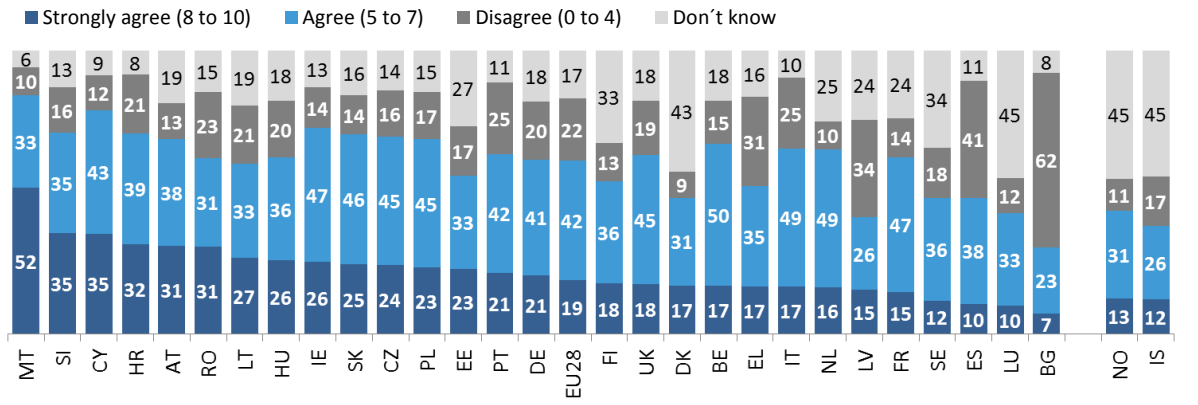
%, by country, Base: All respondents

Source: Consumer survey

Respondents in Bulgaria were the least likely to think that **market conditions for consumers were improving in their country**: 62% disagreed (scores 0 to 4), while a minority of 7% "strongly agreed". Respondents in Malta, on the other hand, were the most positive in their evaluation; 52% of them "strongly agreed" (scores 8 to 10) that electricity market conditions for consumers in their country were improving. Malta was the only country where a slim majority of respondents expressed "strong" agreement; in Cyprus and Slovenia, 35% of respondents "strongly agreed" with the statement.

Also for this statement, a considerable number of respondents answered that they did not know whether the retail electricity market conditions were improving in their country; the highest proportions of "don't know" responses were observed in Denmark (43%), Iceland, Luxembourg and Norway (all 45%).

Figure 7: Agreement with the statement: "Electricity market conditions for consumers in our country are improving", by country



Q36_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree: Electricity market conditions for consumers in our country are improving.

%, by country, Base: All respondents

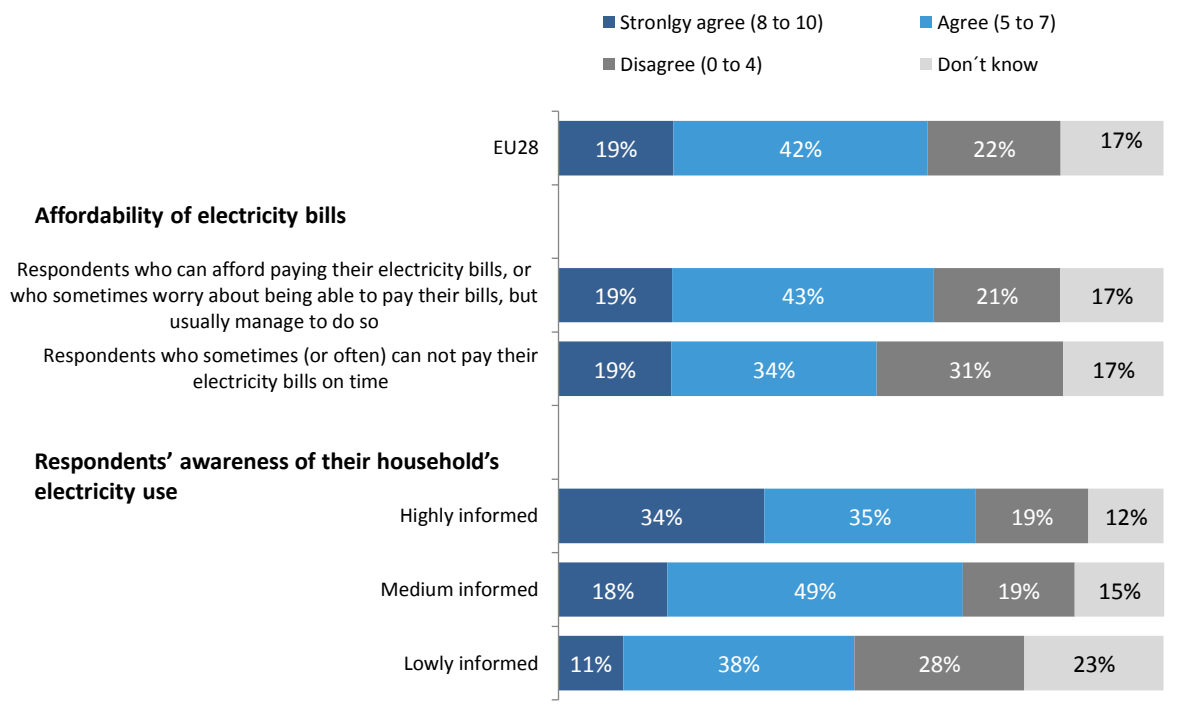
Source: Consumer survey

General perception of the electricity market by affordability of electricity bills and "conscious" electricity use

The study shows that especially consumers who have difficulties to pay electricity bills on time indicated that there is room for improvement with regards to the functioning of the retail electricity market in their country. For example, Figure 8 illustrates that respondents who sometimes (or often) could not pay their electricity bills on time were more likely to disagree that electricity market conditions for consumers were improving in their country: 31% selected scores 0 to 4, compared to just 21% of respondents who were able to pay their electricity bills on time.

In Figure 8, it can also be seen that respondents who use electricity in a more conscious way[22] were more positive in their evaluation of the electricity market in their country. While 34% of "highly" informed respondents "strongly agreed" that the electricity market conditions for consumers in their country were improving, only 11% of "poorly" informed respondents shared this view.

Figure 8: Agreement with the statement: "Electricity market conditions for consumers in our country are improving", by respondent characteristics



Q36_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree: Electricity market conditions for consumers in our country are improving.

% EU28, Base: All respondents

Source: Consumer survey

[22] See Section 1.4.3, for more details about the composite index measuring respondents' self-reported awareness of their household's electricity use.

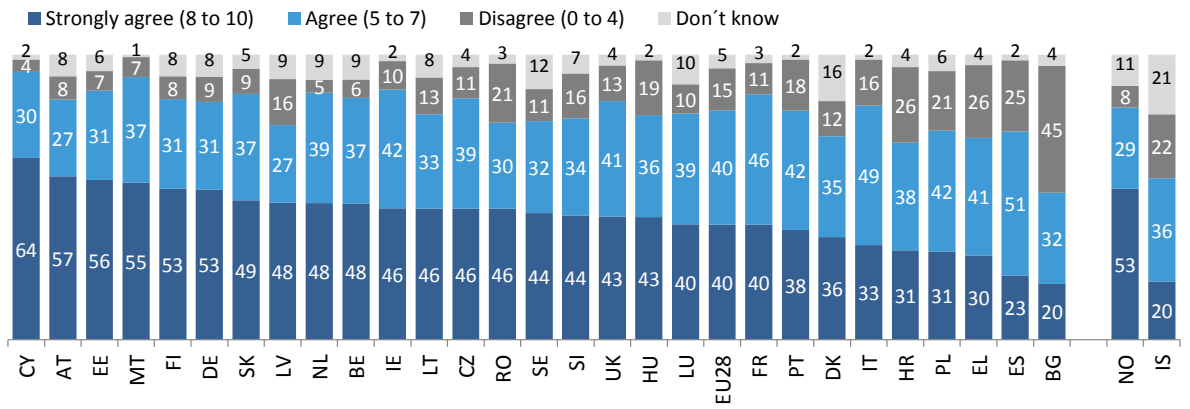
2.2 Consumers' views on overall quality of service

Across the EU28, 40% of survey respondents "strongly agreed" (scores 8 to 10) that **their electricity company offered overall a high quality of service**. The average score for this statement was 6.7.

The proportion of respondents who "strongly agreed" (scores 8 to 10) that their electricity company offered overall a high quality of service ranged from 20% in Iceland and Bulgaria to 64% in Cyprus. Germany, Finland, Malta, Estonia and Austria joined Cyprus at the higher end of the country ranking with a slim majority of respondents who selected the highest scores on the scale (between 53% and 57%).

In the 2010 market study, Bulgaria and Malta, and to a lesser extent, Greece and Spain, stood out as countries with a relatively poor quality of service. Although Bulgaria, Spain and Greece are still found at the bottom of the country ranking, Malta now scores better with 55% of respondents who "strongly agreed" (scores 8 to 10) that their electricity company offered overall a high quality of service. Austria and Cyprus stood out in 2010 as countries with a high quality of service; both countries kept their position at the top of the country ranking.

Figure 9: Overall satisfaction with the quality of service, by country



Q2_10. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". [PROVIDER] offers overall a high quality service

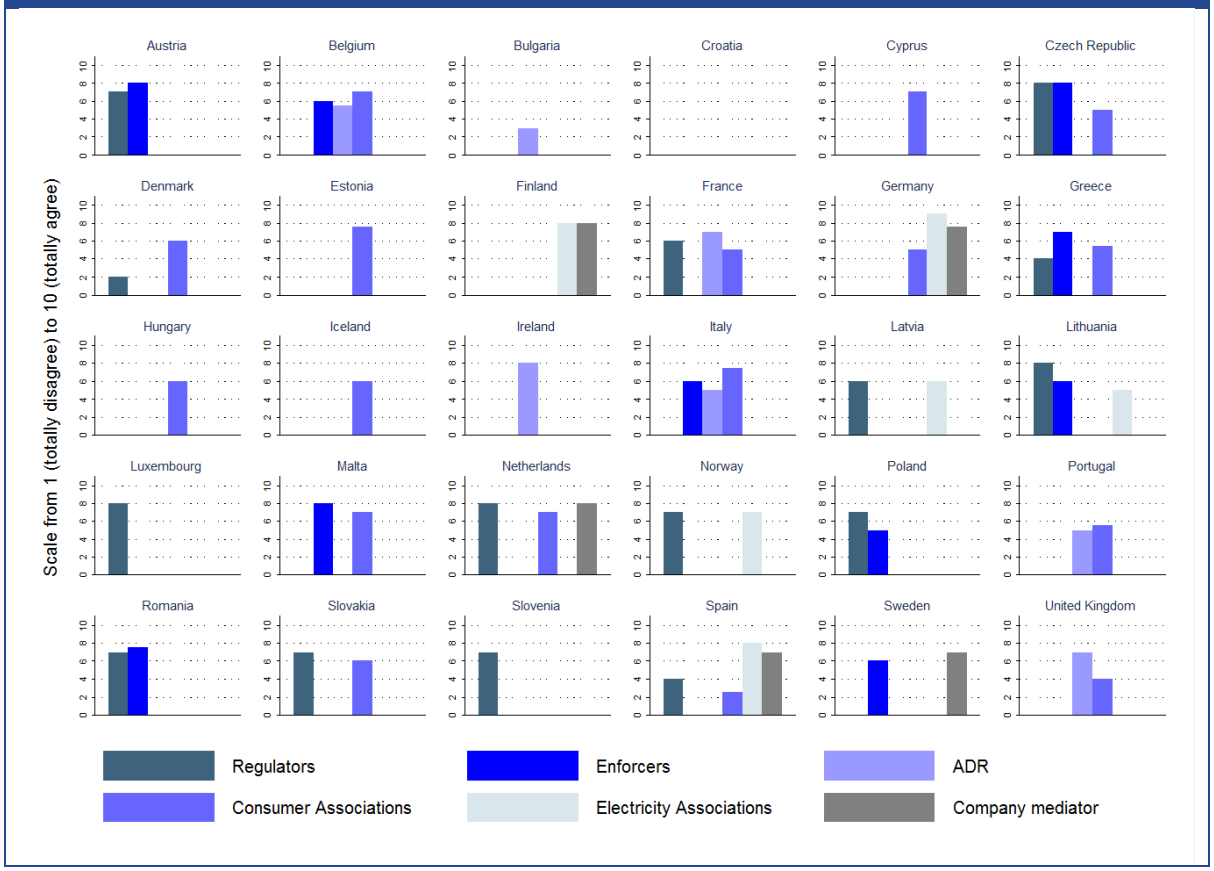
% by country, Base: all respondents

Source: Consumer survey

Participants in the stakeholder consultation were asked whether they thought that services of electricity companies in their country lived up to what consumers want (results presented in Figure 10). In 11 countries, various stakeholder groups were in agreement that the services did live up to what consumers want; this was the case in Austria, Belgium, Finland, Latvia, Malta, the Netherlands, Norway, Portugal, Romania, Slovakia and Sweden. Among these 11 countries, stakeholders in Finland were the most positive in their evaluations, while those in Portugal were the least positive.

In another group of countries (the Czech Republic, Denmark, France, Germany, Greece, Italy, Lithuania, Poland, Spain and the United Kingdom), a more mixed picture emerged with the different stakeholder groups not sharing the same opinion. In Spain, for example, the consumer associations interviewed expressed the view that services of electricity companies in their country did not live up to what consumers want; this is in line with the observations from the consumer survey (in Spain, just 23% of respondents "strongly agreed" that their electricity company offers a high quality service). An opposite view, however, was expressed by the electricity association and company mediator interviewed in Spain; they selected scores 7 and 8 on the 10-point agreement scale and thus indicated that electricity companies' services do live up to consumers' expectations.

Figure 10: Stakeholders' perceptions of consumers' satisfaction with services of electricity companies

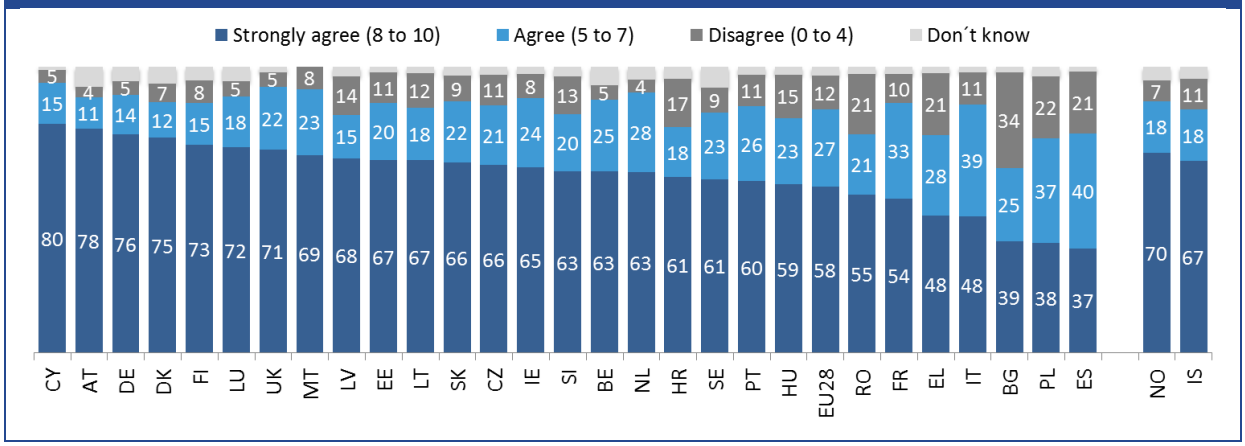


Note: Stakeholder agreement with the statement: 'In your opinion, to what extent do the services of electricity suppliers in your country live up to what consumers want?' (Blank means no response received)

Source: Stakeholder consultation

Across the EU28, 58% of respondents "strongly agreed" (scores 8 to 10) that the **electricity service was reliable and worked well all the time**. Across most countries, a large share of respondents appeared to be satisfied with the reliability of the electricity service; the most notable exceptions were Spain, Poland and Bulgaria. In these countries, less than 4 out of 10 respondents (37%-39%) selected the highest scores on the scale.

Figure 11: Agreement with the statement: "The electricity service is reliable, i.e. it works well, all the time", by country



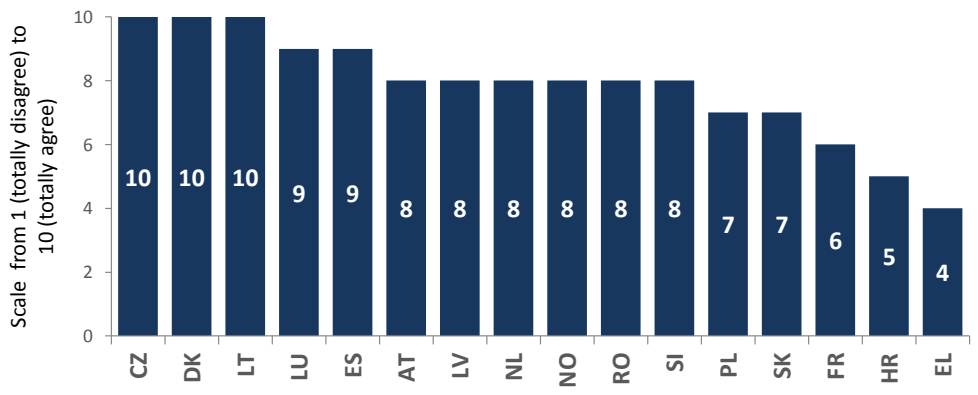
Q2_1. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". The electricity service is reliable, i.e. it works well, all the time (e.g. cut-offs, etc.)

%, by country, Base: all respondents

Source: Consumer survey

The **views of regulators**[23] with regards to reliability of supply range from 4 in Greece to the highest scores of 10 in the Czech Republic, Denmark and Lithuania[24]. The responses from regulators are more varied than the average responses from consumers (from 6.2 in Spain[25] to 9.0 in Austria). It is also worth noting that in particular regulators in Spain and Poland rate the reliability of supply much higher than consumers in these countries.

Figure 12: Regulators' views about the reliability of supply



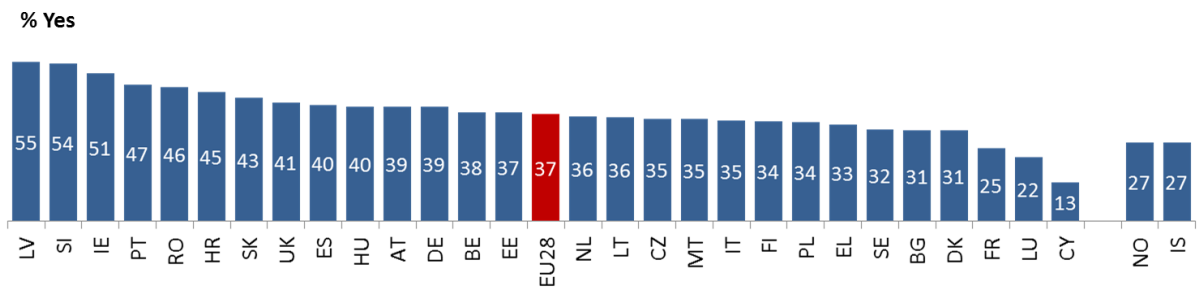
Note: Regulator agreement with the statement: 'The electricity is reliable, i.e. it works well, all the time and without supply interruptions'. The regulator in Sweden responded 'don't know'; the regulators in other countries did not participate in the consultation, or did not respond to this question.
Source: Stakeholder consultation

2.3 Consumers' views on availability and quality of assistance

2.3.1 Consumers who contacted their electricity company in the past 12 months

Across the EU28, 37% of survey respondents had **contacted their electricity company** in the 12 months preceding the survey; at individual country level, this figure varied between 13% in Cyprus and 55% in Latvia.

Figure 13: % of respondents who had contacted their electricity company in the last 12 months, by country



Q3. In the last 12 months, have you contacted your electricity company concerning any of the following issues? (multiple responses)
% who selected at least one issue, by country, Base: all respondents
Source: Consumer survey

[23] As expressed in the stakeholder consultation.

[24] Regulators were presented with a 10-point agreement scale (from 1 to 10) and were asked to position themselves on that scale.

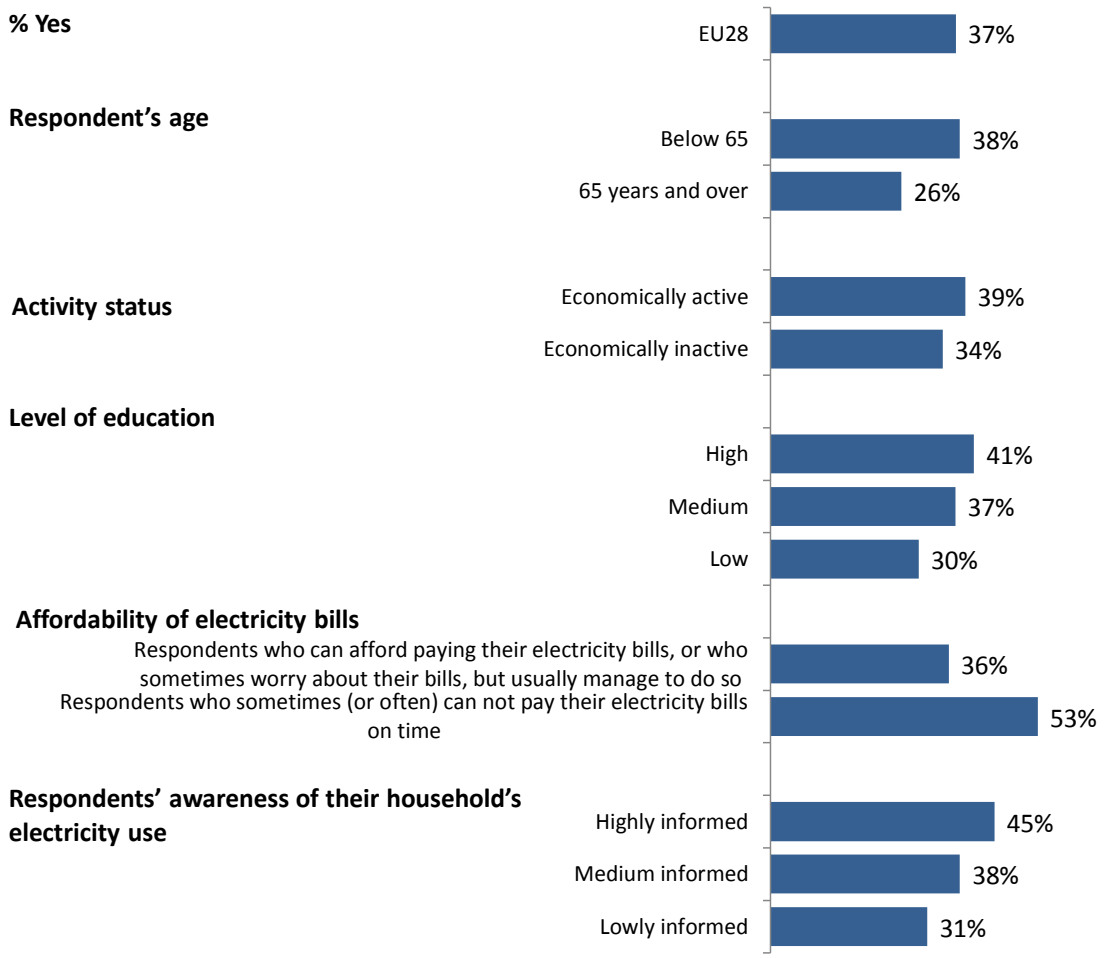
[25] The average score in Bulgaria was 5.8; Bulgarian regulator' views are not shown in the chart because the regulator in Bulgaria did not participate in the consultation.

While 36% of respondents who could afford paying their electricity bills had contacted their electricity company in the past 12 months, this proportion was 53% for respondents who sometimes (or often) could not pay their electricity bills on time.

Respondents over 65 years, economically inactive respondents and low-educated respondents were less likely to have contacted their electricity company in the past 12 months. For example, 30% of low-educated respondents had contacted their electricity company compared to 41% of highly educated respondents.

A difference was also observed between respondents who use electricity in a more conscious way and those who were less informed about their household's electricity use; while 45% of the former had contacted their electricity company in the past 12 months, this proportion was 31% for the latter group.

Figure 14: % of respondents who had contacted their electricity company in the last 12 months, by respondent characteristics



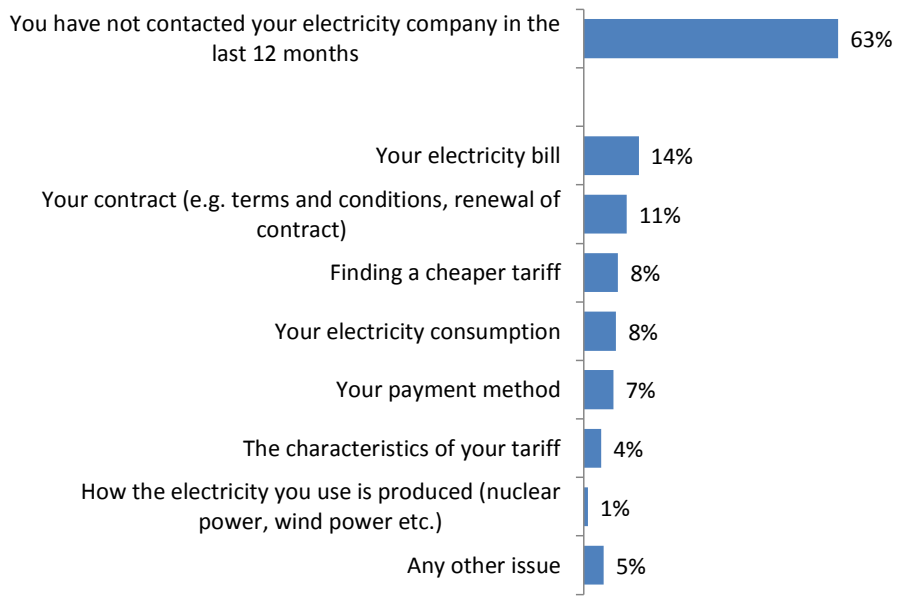
Q3. In the last 12 months, have you contacted your electricity company concerning any of the following issues? (multiple responses)
% who selected at least one issue, EU28, Base: all respondents
Source: Consumer survey

2.3.2 Main reasons for which consumers had contacted their electricity company

The chart below lists the main topics of enquiries for which respondents had contacted their electricity company: for example, 14% had contacted their electricity company with questions about their electricity bill, 11% with questions about their contract and 8% to find out if a cheaper tariff was available.

A minority (5%) of respondents had contacted their electricity company for "another issue". When asked to specify this issue, some said they had contacted their electricity company because they were moving house, and a few respondents mentioned questions linked to issues such as installing solar panels or the company's customer loyalty scheme.

Figure 15: Main reasons for contacting one's electricity company



Q3. In the last 12 months, have you contacted your electricity company concerning any of the following issues? (multiple responses)
%, EU28, Base: all respondents
Source: Consumer survey

Results by affordability of electricity bills

Among respondents who indicated that they sometimes (or often) could not pay their electricity bills on time, 26% had contacted their electricity company to ask questions about their electricity bill (compared to an EU average of 14%) and 15% to ask questions about payment methods (compared to an EU average of 7%).

Individual country results

In Hungary, Croatia, Ireland, Slovenia and Latvia, more than a fifth of respondents had contacted their electricity company in the past 12 months to ask questions about their electricity bill (between 21% and 26%). Respondents in Latvia were also among the most likely to have contacted their electricity company with questions about their contract (26%), about their electricity consumption (16%) or about the payment method (18%).

In Ireland, the UK and Slovenia, roughly one in six (16%-17%) respondents had contacted their electricity company in the past 12 months to find out if a cheaper tariff was available to them; in most other countries, this figure remained below 10%.

Table 2: Contacting one's electricity company, by country

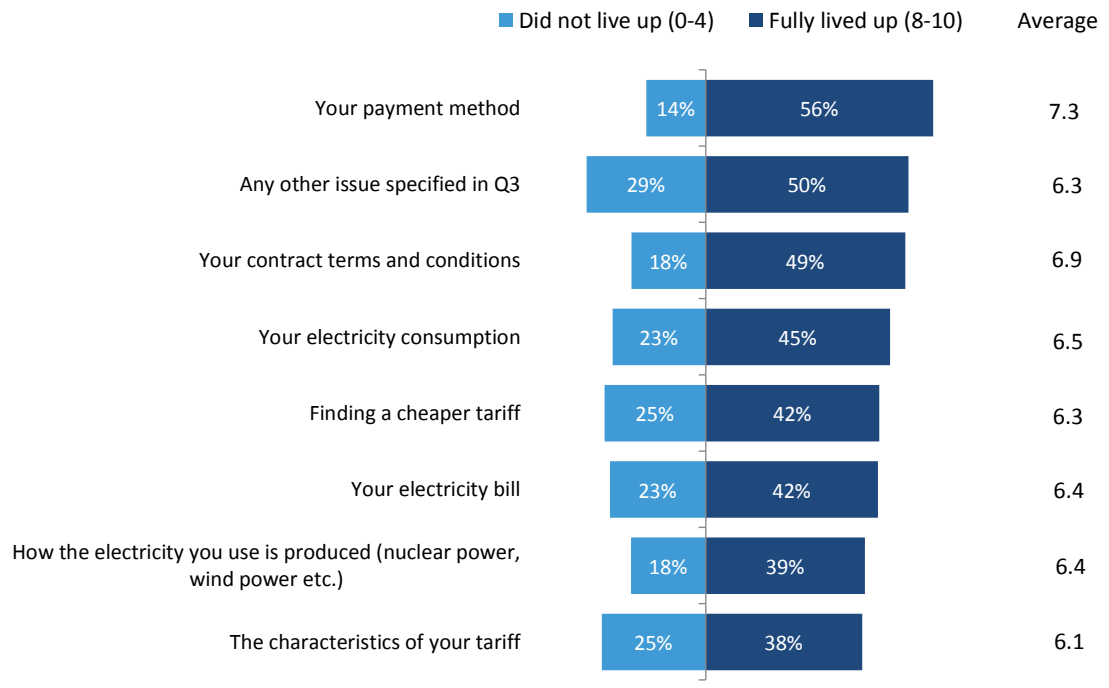
	You have not contacted your electricity company in the last 12 months	Your electricity bill	Your contract (e.g. terms and conditions, renewal of contract etc.)	Finding a cheaper tariff	Your electricity consumption	Your payment method	Any other issue	The characteristics of your tariff	How the electricity you use is produced (nuclear power, wind power etc.)
CY	87%	4%	1%	1%	2%	2%	5%	1%	0%
LU	78%	10%	6%	2%	5%	6%	3%	2%	1%
FR	75%	9%	6%	3%	6%	5%	5%	3%	0%
BG	69%	15%	2%	0%	9%	5%	10%	3%	0%
DK	69%	15%	7%	6%	7%	6%	4%	1%	2%
SE	68%	8%	15%	7%	4%	5%	3%	2%	2%
EL	67%	13%	5%	9%	7%	10%	5%	7%	0%
FI	66%	10%	19%	5%	2%	3%	3%	1%	1%
PL	66%	14%	9%	8%	9%	8%	2%	3%	2%
CZ	65%	14%	11%	8%	6%	7%	4%	3%	1%
IT	65%	13%	8%	10%	10%	6%	3%	6%	1%
MT	65%	15%	1%	1%	5%	5%	17%	1%	1%
LT	64%	14%	9%	5%	6%	8%	8%	6%	1%
NL	64%	8%	17%	6%	5%	5%	6%	3%	1%
EU28	63%	14%	11%	8%	8%	7%	5%	4%	1%
EE	63%	14%	19%	6%	8%	5%	5%	7%	0%
BE	62%	14%	12%	6%	7%	9%	4%	4%	0%
AT	61%	15%	13%	7%	9%	10%	4%	4%	1%
DE	61%	13%	14%	8%	7%	6%	5%	3%	1%
HU	60%	21%	9%	2%	10%	12%	5%	3%	0%
ES	60%	16%	12%	11%	9%	7%	5%	9%	1%
UK	59%	14%	11%	16%	6%	10%	5%	3%	1%
SK	57%	17%	11%	5%	7%	16%	4%	2%	0%
HR	55%	22%	9%	7%	15%	14%	5%	5%	0%
RO	54%	20%	9%	5%	13%	9%	15%	6%	2%
PT	53%	19%	16%	11%	15%	7%	5%	8%	1%
IE	49%	23%	15%	16%	7%	14%	5%	5%	1%
SI	46%	25%	14%	17%	17%	12%	6%	5%	1%
LV	45%	26%	26%	14%	16%	18%	3%	8%	1%
IS	73%	18%	3%	1%	9%	6%	4%	1%	0%
NO	73%	11%	8%	5%	5%	6%	4%	1%	0%

Q3. In the last 12 months, have you contacted your electricity company concerning any of the following issues? (multiple response)
%, by country, Base: all respondents
Source: Consumer survey

2.3.3 Quality of assistance

Respondents who had contacted their electricity company in the past 12 months were also asked to evaluate the services they had received. The proportion of respondents who answered that the assistance and information they had received fully lived up to what they had wanted (scores 8 to 10 on the scale) varied between 38% for questions about their electricity tariff to 56% for questions about payment methods. The average scores ranged from 6.1 to 7.3, respectively.

Figure 16: Quality of assistance



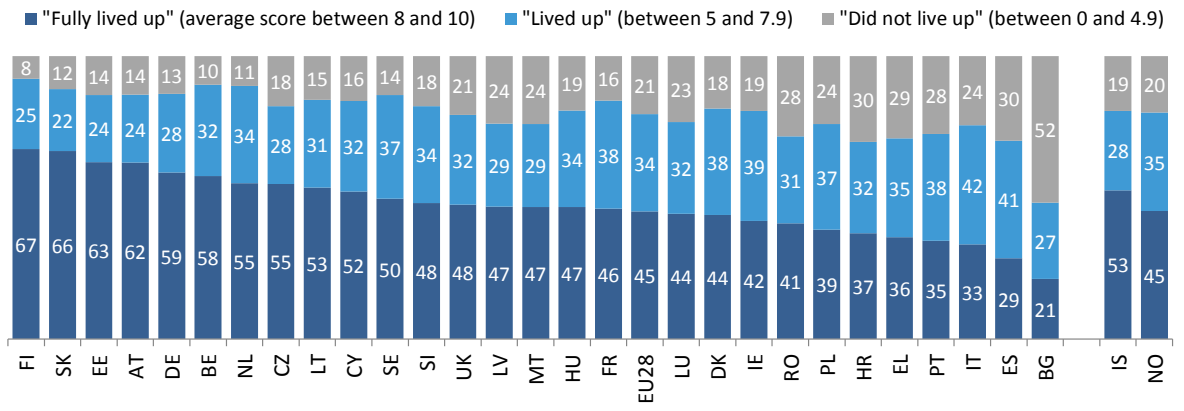
Q4. To what extent would you say the assistance/information you received lived up to what you wanted? Please use a scale from 0 to 10, where 0 means that the assistance/information you received "did not live up to what you wanted at all" and 10 means that it "fully lived up to what you wanted".

%, EU28, Base: Respondents who have contacted their electricity company for at least one issue

Source: Consumer survey

In Figure 17, respondents' evaluations of the quality of assistance and information are summarised across the various topics for which respondents had contacted their electricity company. Bulgaria is once again found at the bottom of the country ranking; in this country, 52% of respondents (who had contacted their electricity company) indicated that the assistance and information they had received did no live fully up to what they had wanted (scores 0 to 4 on the scale). In sharp contrast, in Finland, just 8% of respondents shared this view, while 67% replied that the assistance and information they had received fully lived up to what they had wanted (scores 8 to 10 on the scale).

Figure 17: Quality of assistance (summary), by country



Q4. To what extent would you say the assistance/information you received lived up to what you wanted? Please use a scale from 0 to 10, where 0 means that the assistance/information you received "did not live up to what you wanted at all" and 10 means that it "fully lived up to what you wanted".

Composite index based on Q4_1 to 8 (respondents' average score on the 8 items was calculated; these average scores were regrouped into three categories: "fully lived up" (average scores between 8 and 10), "lived up" (average scores between 5 and 7.9) and "did not live up" (average scores between 0 and 4.9) – "Don't know" responses were excluded.

% by country, Base: Respondents who have contacted their electricity company for at least one issue

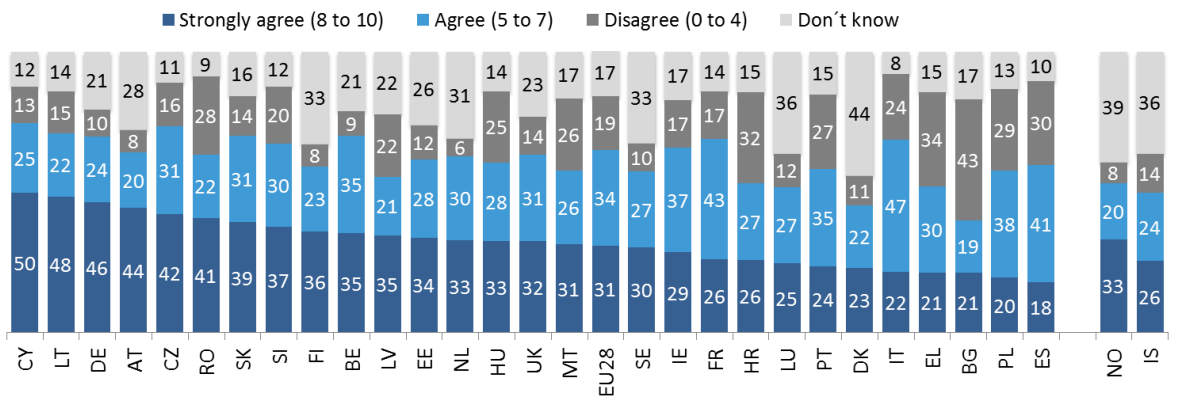
Source: Consumer survey

2.3.4 Speed of service

When asked whether **their electricity company reacted promptly and accurately when contacted with a question**, 31% of survey respondents across the EU28 "strongly agreed". The proportion of respondents who "strongly agreed" (scores 8 to 10) ranged from 18% in Spain to 50% in Cyprus.

The proportion of respondents who disagreed (scores 0 to 4), on the other hand, was 19% overall (at EU28 level) and varied between 6% in the Netherlands and 43% in Bulgaria.

Figure 18: Agreement with the statement: "When contacting [PROVIDER] to ask a question, they react promptly and accurately", by country



Q2_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": When contacting [PROVIDER] to ask a question, they react promptly and accurately.

%, by country, Base: all respondents

Source: Consumer survey

2.4 Consumers' views about availability of information

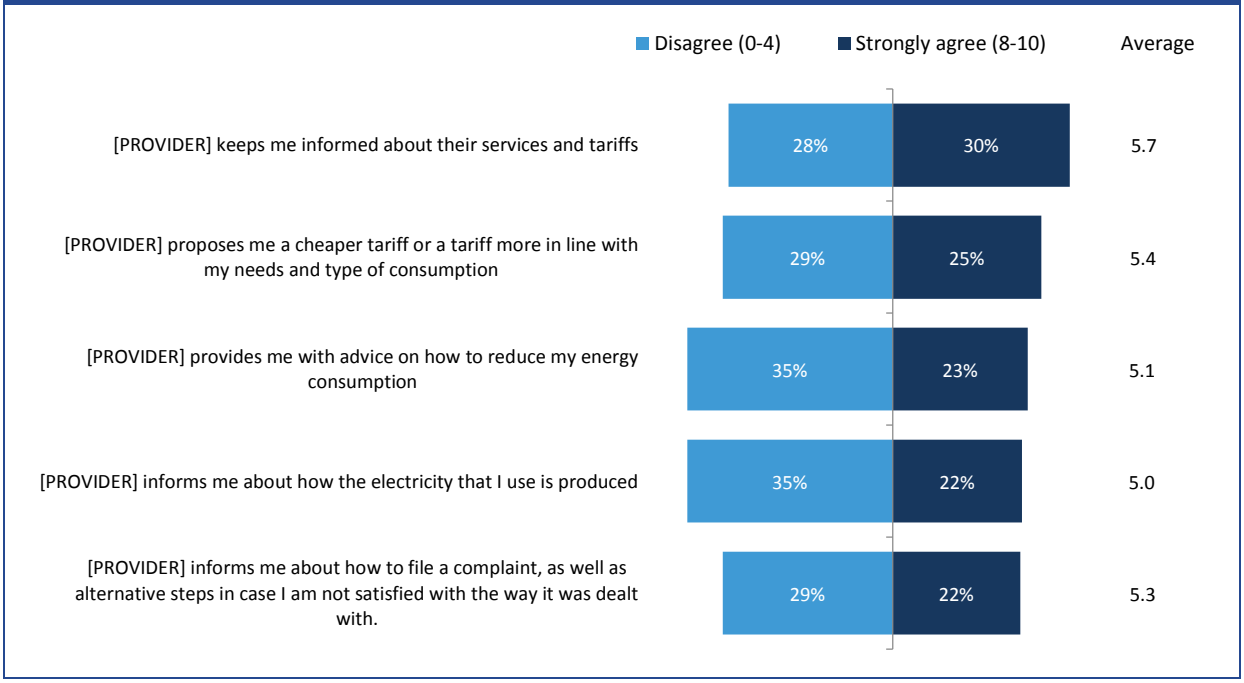
Across the EU28, 30% of respondents "strongly agreed" (scores 8 to 10) that **their electricity company kept them informed about their services and tariffs**, while 28% disagreed (score 0 to 4) with the statement (results presented in Figure 19).

When asked whether their **electricity company proposed them a cheaper tariff or a tariff that was more in line with their preferences or consumption level,** 29% of survey respondents across the EU28 disagreed (scores 0 to 4), while a quarter of respondents "strongly agreed" (scores 8 to 10).

The largest proportions of "disagree" responses (scores 0 to 4) were observed for the statements about **advice on reducing energy consumption** and **information about energy sources**. More than a third (35%) of respondents disagreed that their electricity company provided them with advice on how to reduce their energy consumption and the same proportion (35%) disagreed that their electricity company informed them about how the electricity they used was produced. The average scores for these statements were 5.1 and 5.0, respectively.

The proportion of respondents expressing "strong" agreement (scores 8 to 10) when asked whether **their electricity company informed them about how to file a complaint or about alternative dispute resolution bodies** was 22%; a higher proportion – 29% – disagreed that they received such information.

Figure 19: Agreement with statements about availability and quality of information

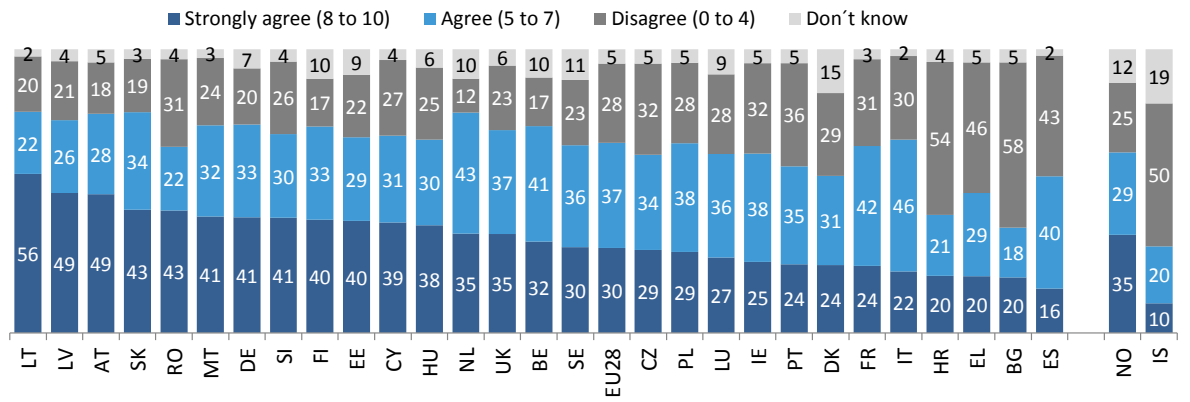


Q2_3/4/5/6/8. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree"
% EU28, Base: all respondents
Source: consumer survey

Individual country results

The proportion of respondents who "strongly agreed" (scores 8 to 10) that **their electricity company kept them informed about their services and tariffs** ranges from 10% in Iceland and 16% in Spain to 56% in Lithuania. The largest share of respondents who disagreed (scores 0 to 4) was observed in Bulgaria (58%); in four other EU countries, a relative or absolute majority indicated that they were not informed about their electricity company's services and tariffs (36% in Portugal, 43% in Spain, 46% in Greece, 50% in Iceland and 54% in Croatia).

Figure 20: Agreement with statement: "[PROVIDER] keeps me informed about their services and tariffs", by country

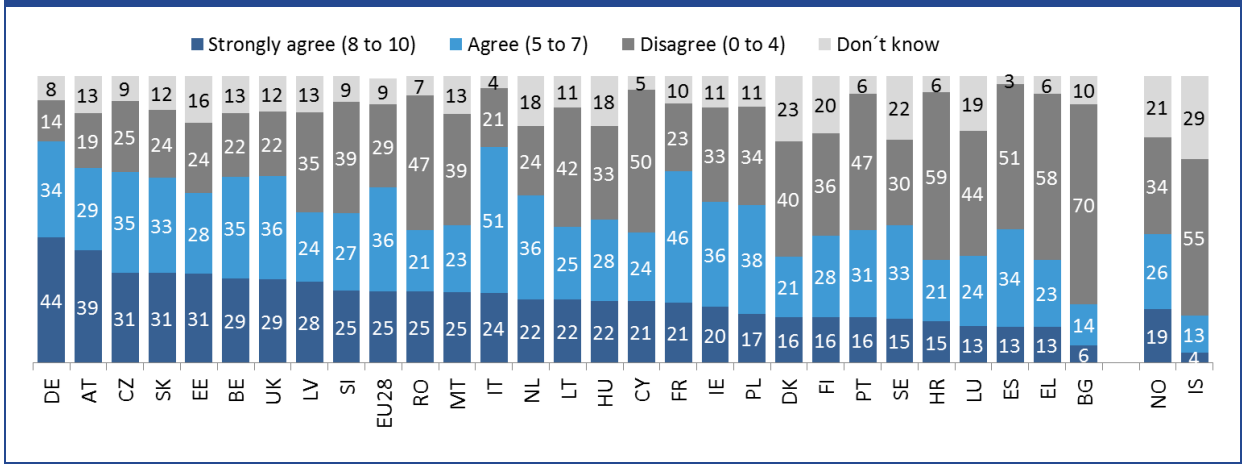


Q2_3. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] keeps me informed about their services and tariffs.
%, by country, Base: all respondents
Source: Consumer survey

Figure 21 shows that Germany was characterised by the highest proportion of respondents who "strongly agreed" (scores 8 to 10) that **their electricity company proposed them a cheaper tariff or a tariff that was more in line with their preferences or consumption level** (44% of respondents selected scores 8 to 10). The lowest levels of "strong" agreement were measured in Iceland and Bulgaria (4% and 6%, respectively); in fact, in these two countries, 55% and 70%, respectively, of respondents disagreed (scores 0 to 4) with the statement. In three additional countries, Spain (51%), Greece (58%) and Croatia (59%), a majority of respondents selected scores 0 to 4.

In the 2010 study, Germany and Italy stood out with a very high proportion of respondents who indicated that they had received advice from their electricity company about a cheaper tariff available to them. In the current study, Germany and Italy still score high (although respondents in Italy are less likely to "strongly agree", 75%, in total, tends to agree – scores to 5 to 10 – with the statement). It is also worth noting that, although Latvia was one of the worst-performing countries in 2010, the country now scores better with 28% of respondents who "strongly agreed" that their electricity provider proposed to them a cheaper tariff or a tariff that was more in line with their preferences or consumption level.

Figure 21: Agreement with statement: "[PROVIDER] proposes a cheaper tariff or a tariff more in line with my preferences and type of consumption", by country



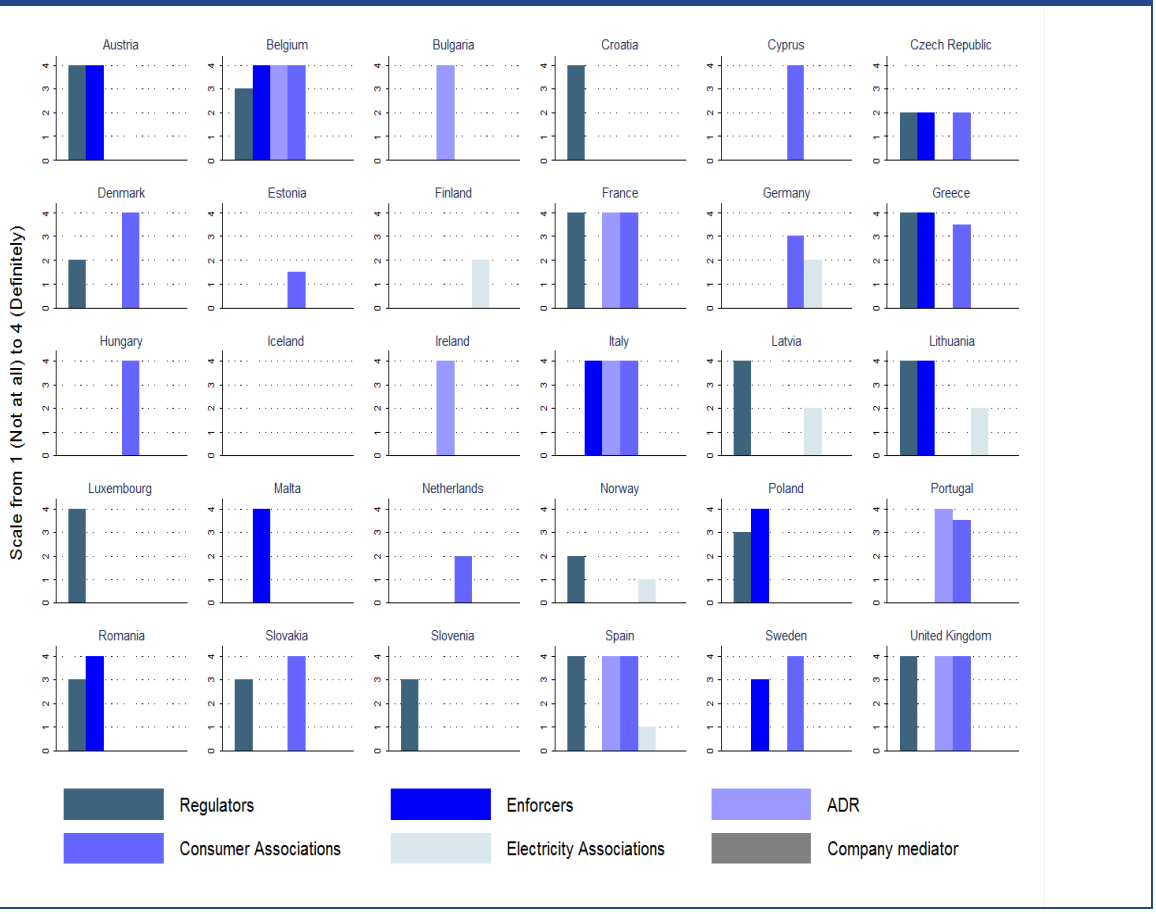
Q2_4. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] proposes a cheaper tariff or a tariff more in line with my preferences and type of consumption.

%, by country, Base: all respondents

Source: Consumer survey

Figure 22 shows that stakeholders in the electricity market tended to agree that it is a task of electricity companies to propose to consumers a cheaper tariff or a tariff more in line with their preferences and thereby ensure a personalised service based on the type of consumption.

Figure 22: Stakeholders' view on the importance of informing consumers about cheaper tariffs

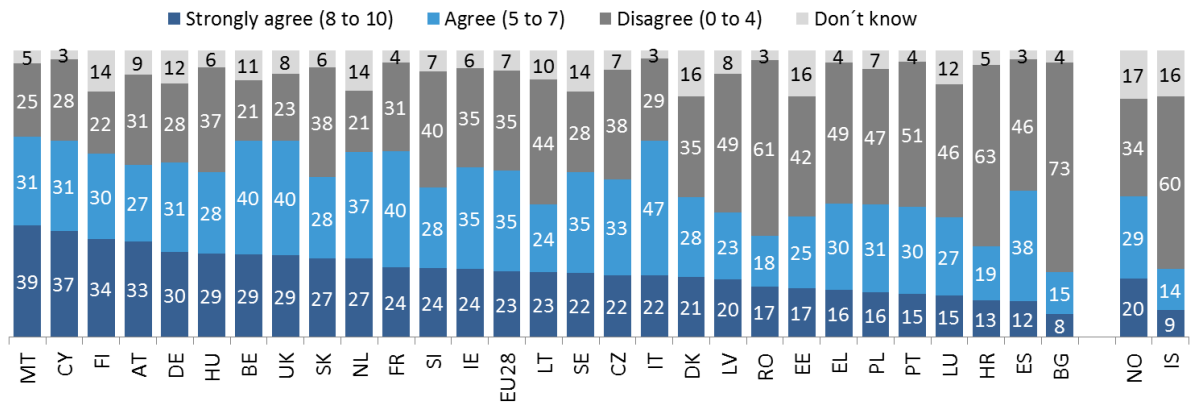


Note: Stakeholder's response to the question: Should electricity suppliers propose consumers a cheaper tariff or a tariff more in line with their references and thereby ensure a personalised service based on the type of consumption? (Blank means no response received)

Source: Stakeholder consultation

Across the EU28, 23% of respondents "strongly agreed" (scores 8 to 10) that their **electricity company provided them with advice on how to reduce their energy consumption**; this figure varied between 8% in Bulgaria and 39% in Malta. In more than half of the countries surveyed, however, the largest share of respondents disagreed (scores 0 to 4) with this statement (from 34% in Norway and 35% in Denmark to up to 73% in Bulgaria).

Figure 23: Agreement with statement: "[PROVIDER] provides me with advice on how to reduce my energy consumption", by country



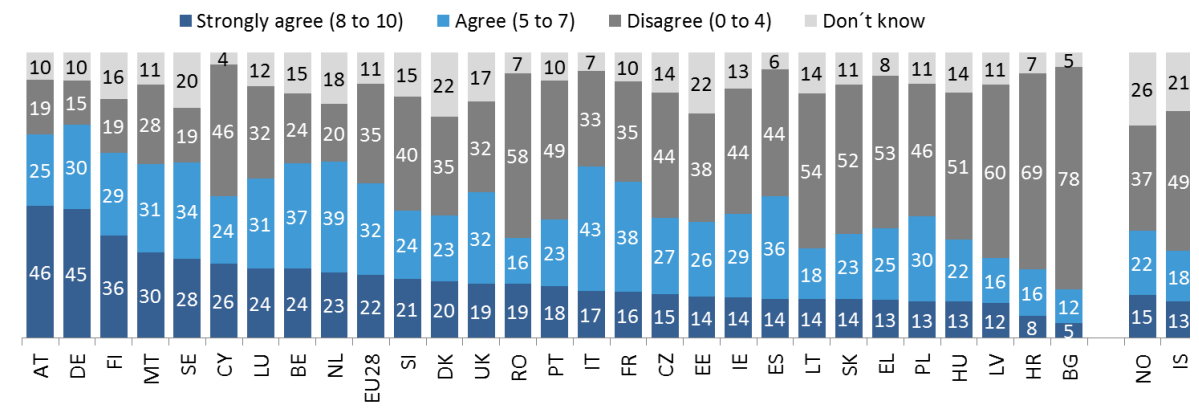
Q2_5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] provides me with advice on how to reduce my energy consumption.

%, by country, Base: all respondents

Source: Consumer survey

The proportion of respondents who "strongly agreed" (scores 8 to 10) that **their electricity company informed them about how the electricity they used was produced** varied between 5% in Bulgaria and 46% in Austria. Germany joined Austria at the higher end of the country ranking with 45% of respondents who "strongly agreed". In nine EU28 countries, a majority of respondents disagreed (scores 0 to 4) that they were informed by their electricity company about how the electricity they used was produced; the highest level of disagreement was – once again – observed in Bulgaria (78%).

Figure 24: Agreement with statement: "[PROVIDER] informs me about how the electricity that I use is produced", by country



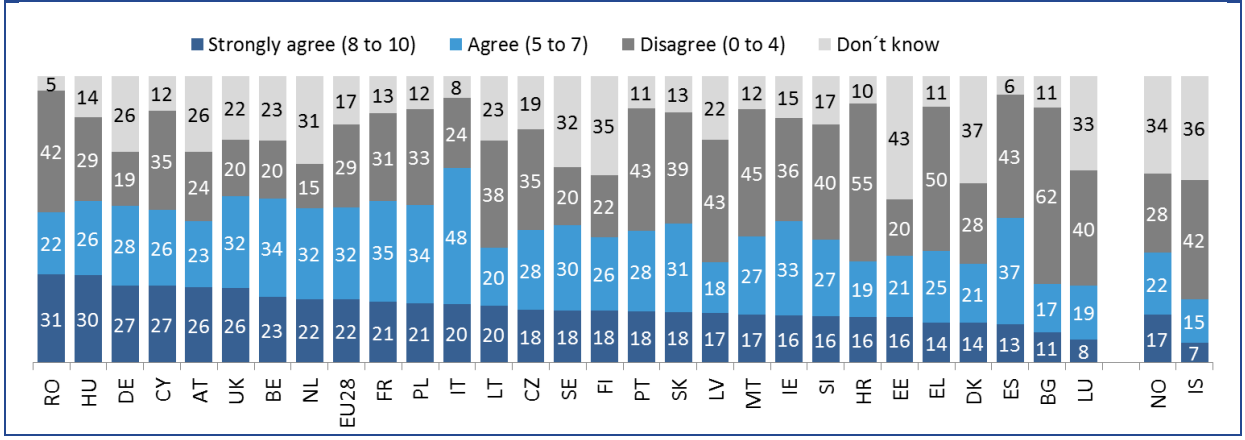
Q2_6. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] informs me about how the electricity that I use is produced (e.g. nuclear generation, wind, gas, solar, petroleum, coal, etc.)

%, by country, Base: all respondents

Source: Consumer survey

The number of respondents expressing "strong" agreement (scores 8 to 10) when asked whether **their electricity company informed them about how to file a complaint or about alternative dispute resolution entities** remained low across all countries (from 7% in Iceland and 8% in Luxembourg to 30% in Hungary and 31% in Romania). Across most countries, respondents who disagreed (scores 0 to 4) outnumbered those who "strongly agreed"; the largest difference in agreement was observed in Bulgaria (62% of respondents disagreed, compared to 11% who "strongly agreed").

Figure 25: Agreement with the statement: "[PROVIDER] informs me about how to file a complaint as well as alternative dispute resolution bodies in case I am not satisfied with the way my complaint was dealt with (e.g. mediation or ombudsman), by country



Q2_8. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] informs me about how to file a complaint as well as alternative dispute resolution bodies in case I am not satisfied with the way it was dealt with (e.g. mediation or ombudsman)

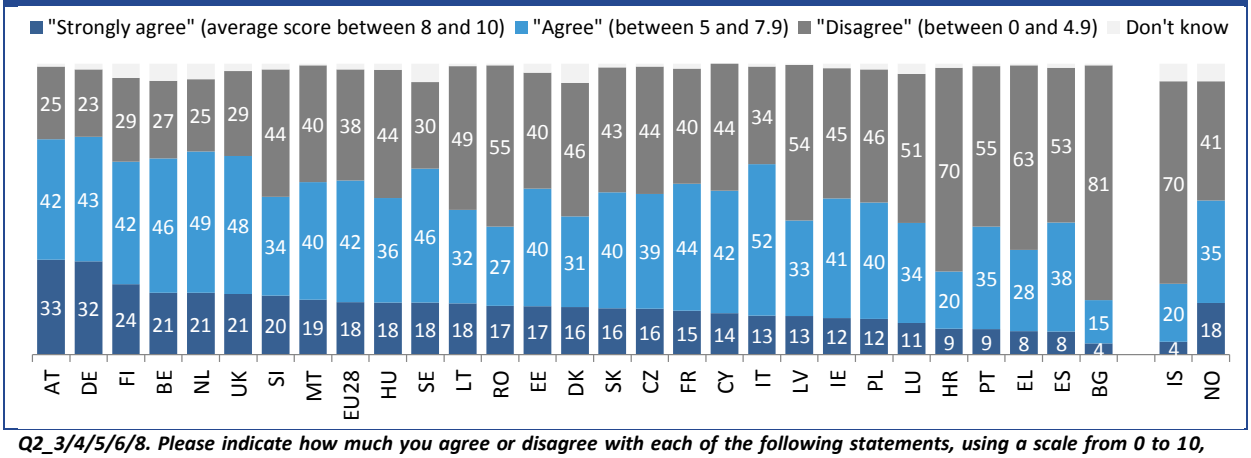
%, by country, Base: all respondents

Source: Consumer survey

A composite index of consumers' views about availability of information

A composite index of consumers' views about **availability of information** was created by averaging respondents' scores across the five items measuring respondents' perceptions about information provided by their electricity companies. Respondents with average scores between 8 and 10 were labelled as "strongly agreeing" that their electricity company informed them about various aspects, respondents with average scores between 5 and 7.9 as "agreeing" and respondents with average scores between 0 and 4.9 as "disagreeing".

Figure 26: Availability and quality of information (composite index), by country



Q2_3/4/5/6/8. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".

Composite index calculated based on answers to Q2_3/4/5/6/8 (respondents' average score on the 5 items was calculated; these average scores were regrouped into three categories: "Strongly agree" (average scores between 8 and 10), "Agree" (average scores between 5 and 7.9) and "Disagree" (average scores between 0 and 4.9); % by country, Base: all respondents

Source: Consumer survey

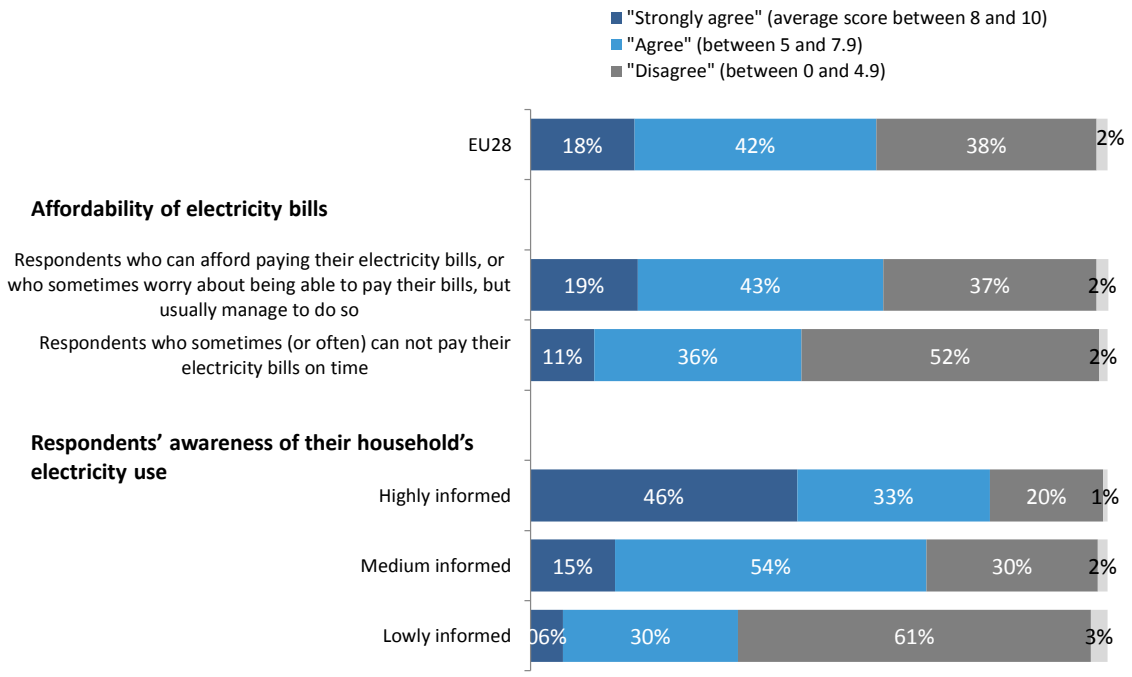
Figure 26 (on the previous page) illustrates that respondents in **Germany and Austria** were overall the **most satisfied** with the information provided by their electricity company (32%-33% had average scores of between 8 and 10); while respondents in **Bulgaria** were overall the **least satisfied** (81% had an average score of less than 5). In total, in nine countries, a majority of respondents had an average score lower than 5: 51% in Luxembourg, 53% in Spain, 54% in Latvia, 55% in Portugal and Romania, 63% in Greece, 70% in Croatia and Iceland, and 81% in Bulgaria.

How do consumers' views about availability of information relate to affordability of electricity bills and "conscious" electricity use?

Respondents who sometimes (or often) could not pay their electricity bills on time were overall less satisfied with the information provided by their electricity company: 52% had an average score of less than 5, compared to 37% of respondents who could afford paying their electricity bills.

Respondents who use electricity in a more conscious way were very positive when evaluating the information provided by their electricity company: 46% of "highly" informed respondents had an average score of between 8 and 10 on the composite index, compared to 20% who had an average score below 5. In sharp contrast, just 6% of "poorly" informed respondents had an average score of 8 or higher, while 61% scored below 5.

Figure 27: Availability and quality of information (composite index), by respondent characteristics



Q2_3/4/5/6/8. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".

Summary index based on Q2_3/4/5/6/8 (respondents' average score on the 5 items was calculated; these average scores were regrouped into three categories: "Strongly agree" (average scores between 8 and 10), "Agree" (average scores between 5 and 7.9) and "Disagree" (average scores between 0 and 4.9)

% EU28, Base: all respondents

Source: Consumer survey

2.5 Consumers' awareness about various aspects of their electricity use

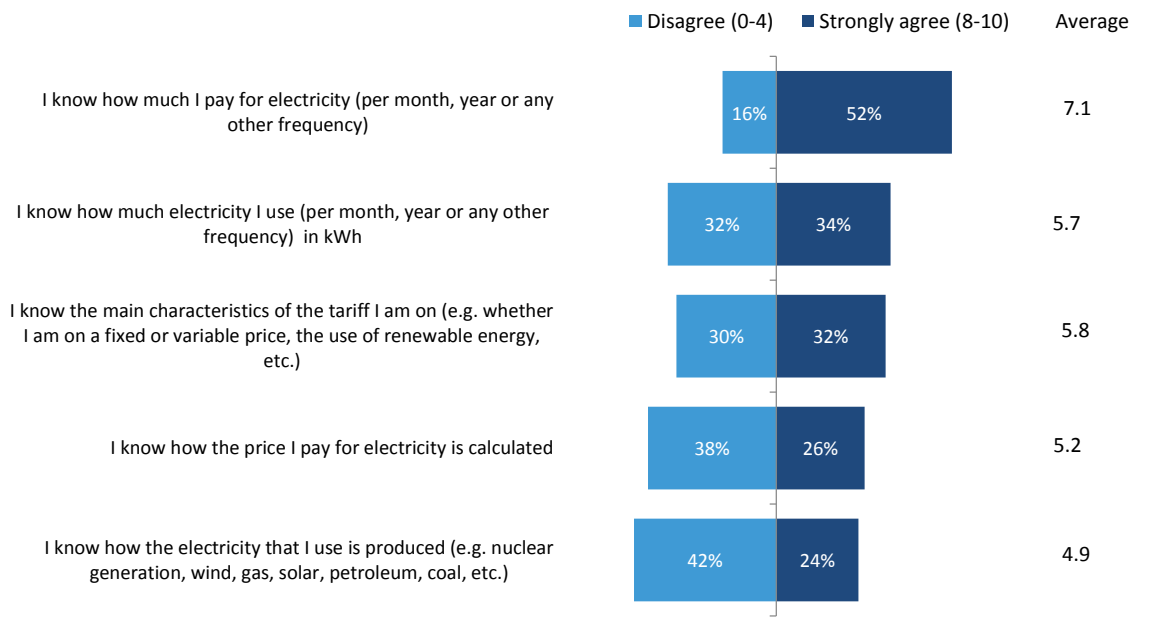
2.5.1 Consumers' awareness about their household's electricity use

The consumers surveyed were also asked whether they felt informed about various aspects of their household's electricity use. Looking across all statements, respondents were most likely to agree that they knew **how much they paid for electricity**; 52% of respondents selected scores 8 to 10 ("strongly agree"), compared to 16% who selected scores 0 to 4 (disagree); the average score for this item was 7.1.

One in three respondents selected the highest scores on the scale when asked whether they knew **how much electricity they used** (34% "strongly agreed") or whether they knew the **main characteristics of the tariff they were on** (32% "strongly agreed"). The average scores for these statements were 5.7 and 5.8, respectively.

The lowest levels of awareness were measured for the statements about how the price of electricity was calculated and how electricity was produced. Roughly 4 in 10 (42%) respondents selected scores 0 to 4 when asked whether they knew **how the electricity they used was produced** (average score of 4.9) and 38% selected the lowest scores on the scale when asked whether they knew **how the price of electricity was calculated** (average score of 5.2).

Figure 28: Self-reported awareness of electricity use

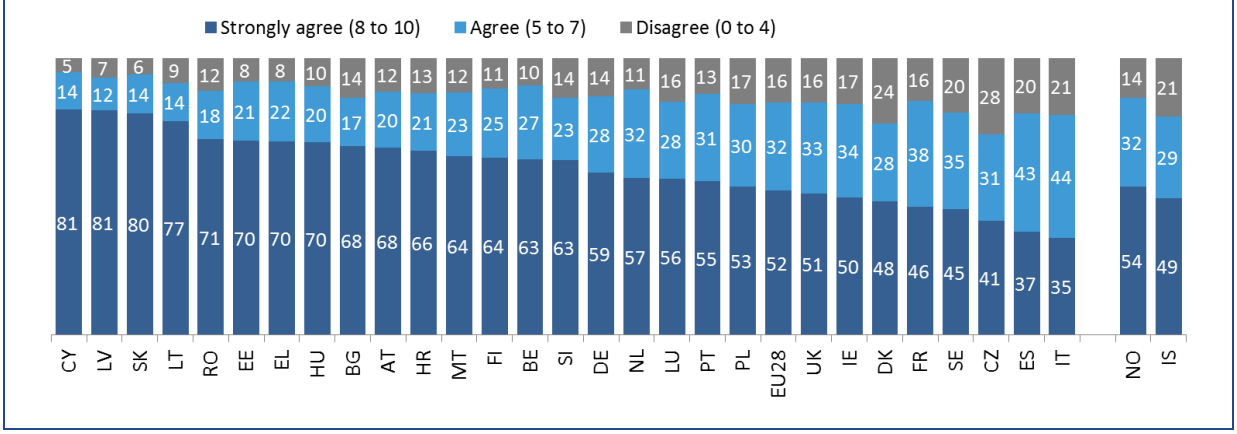


Q1_1 to 5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
%, EU28, Base: all respondents
Source: Consumer survey

Individual country results

Across the EU28, 52% of respondents said they knew **how much they paid for electricity** (i.e. they "strongly agreed" with the statement by selecting scores 8 to 10). In Slovakia, Latvia and Cyprus, roughly 8 in 10 (80%-81%) respondents "strongly agreed" that they knew how much they paid for electricity; in Italy and Spain, however, a considerably lower level of awareness was observed (35% and 37%, respectively, selected scores 8 to 10).

Figure 29: Agreement with the statement: "I know how much I pay for electricity (per month, year or any other frequency)", by country



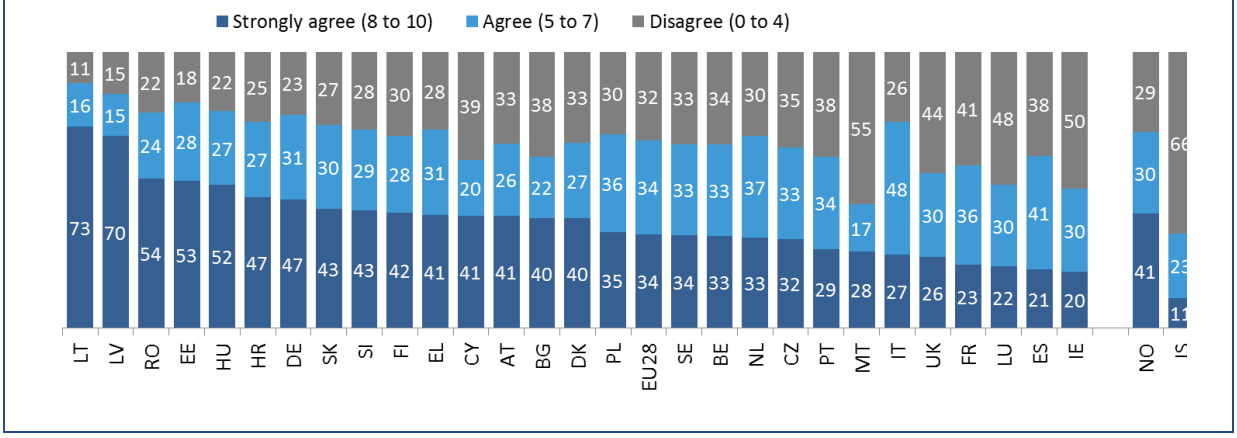
Q1_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". "I know how much I pay for electricity (per month, year or any other frequency)"

%, by country, Base: all respondents

Source: Consumer survey

A large variation was observed across countries in the proportion of respondents who answered that they were aware of **how much electricity they used**. While just 11% of respondents in Iceland, and 20% of respondents in Ireland "strongly agreed" (scores 8 to 10) that they knew how much electricity they used, this proportion increased to 70% in Latvia and 73% in Lithuania. In another three countries, a slim majority of respondents "strongly agreed" when asked whether they knew the amount of electricity they used: 52% in Hungary, 53% in Estonia and 54% in Romania.

Figure 30: Agreement with the statement: "I know how much electricity I use (per month, year or any other frequency) in kWh", by country



Q1_1. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". "I know how much electricity I use (per month, year or any other frequency) in kWh"

%, by country, Base: all respondents

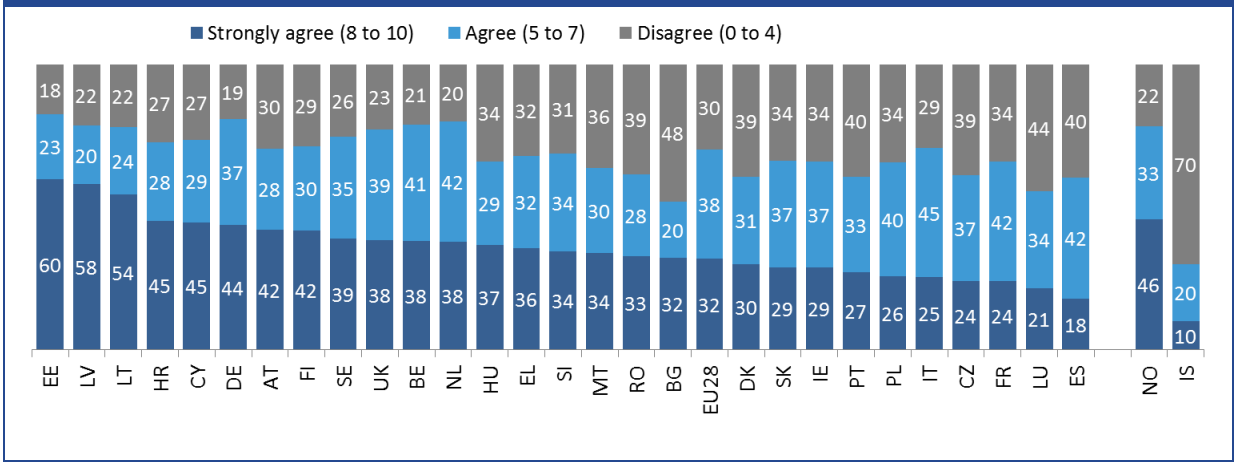
Source: Consumer survey

The first market study highlighted that Latvia and Lithuania stand out as countries with a high level of awareness of the volume of electricity consumed and the amount consumers pay, and no change has been observed in this regard.

When respondents were asked whether they **knew the main characteristics of their tariff**, Lithuania and Latvia, this time joined by Estonia, were found again at the higher end of the country ranking. In these three countries, between 54% and 60% of respondents strongly agree (scores 8 to 10) that they knew the main characteristics of their tariff.

Similarities were also seen at the lower end of the country ranking; for example, 40% of respondents in Spain and 44% of respondents in Luxembourg disagreed (scores 0 to 4) that they knew the main characteristics of their tariff. The highest levels of disagreement, however, were observed in Bulgaria (48%) and Iceland (70%).

Figure 31: Agreement with the statement: "I know the main characteristics of the tariff I am on (e.g. whether I am on a fixed or variable price, the use of renewable energy, etc.)", by country



Q1_4. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". "I know the main characteristics of the tariff I am on (e.g. whether I am on a fixed or variable price, the use of renewable energy, etc.)"

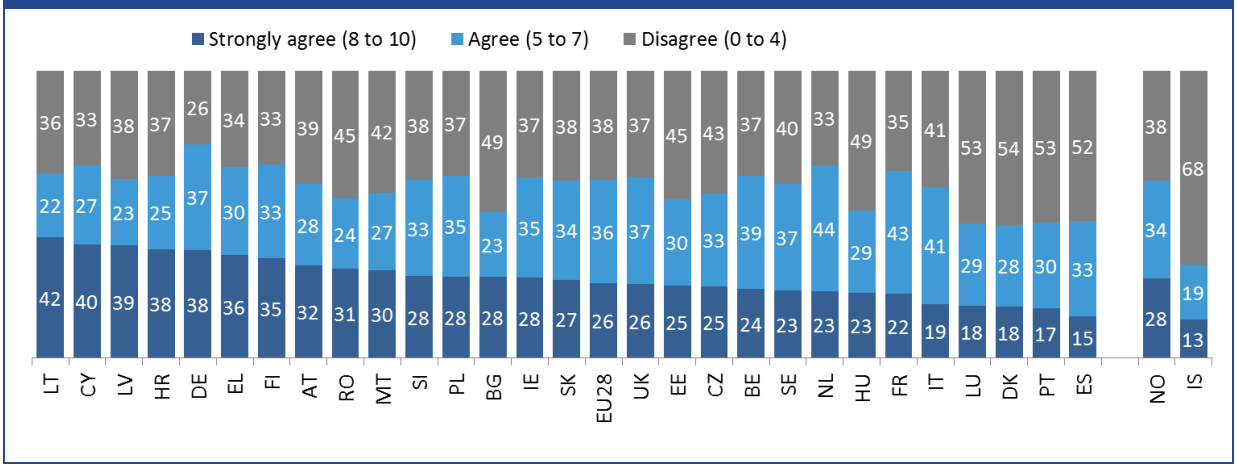
%, by country, Base: all respondents

Source: Consumer survey

Respondents were also asked whether they knew **how the price they paid for electricity was calculated**. Figure 32 shows that, across all countries, respondents were less likely to know (i.e. they selected scores 8 to 10) how the price they paid for electricity was calculated than to know how much they paid for electricity.

Only in Croatia, Latvia, Cyprus, Lithuania and Germany did roughly 4 in 10 respondents "strongly agree" (scores 8 to 10) that they knew how the price for electricity was calculated (between 38% and 42%). In Iceland, Spain, Portugal, Denmark and Luxembourg, on the other hand, not even half as many respondents "strongly agreed" (between 13% and 18%); in these five countries, a majority of respondents disagreed (scores 0 to 4) that they know how the price they paid for electricity was calculated (from 52% in Spain to 68% in Iceland).

Figure 32: Agreement with the statement: "I know how the price I pay for electricity is calculated", by country



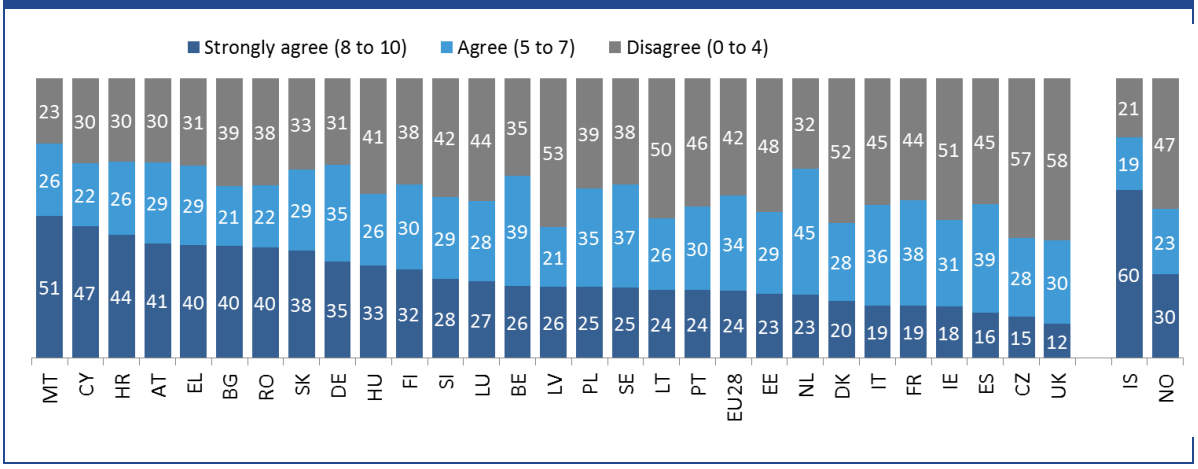
Q1_3. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". "I know how the price I pay for electricity is calculated"

%, by country, Base: all respondents

Source: Consumer survey

Across the EU28, 24% respondents "strongly agreed" (scores 8 to 10) that they knew **how the electricity they used was produced**; the proportion expressing "strong" agreement varied between 12% in the UK and 51% in Malta. An even higher level of agreement, however, was observed in Iceland (60%). In five countries, a slim majority of respondents disagreed (scores 0 to 4) that they knew how the electricity they used was produced: 51% in Ireland, 52% in Denmark, 53% in Latvia, 57% in the Czech Republic and 58% in the UK.

Figure 33: Agreement with statement: "I know how the electricity that I use is produced (e.g. nuclear generation, wind, gas, solar, petroleum, coal, etc.)", by country



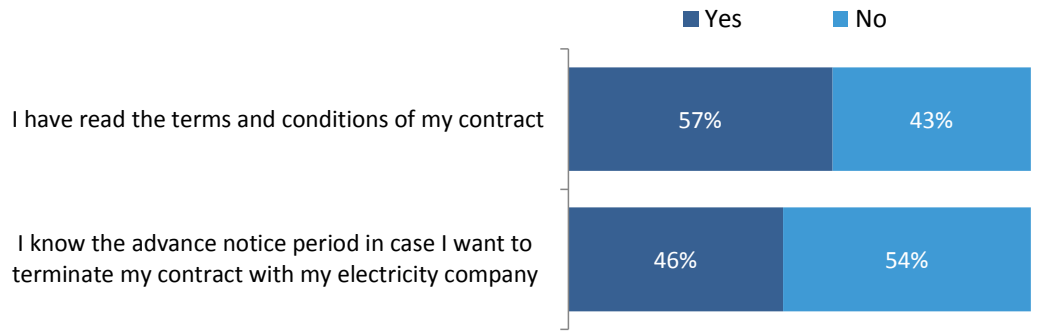
Q1_5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". "I know how the electricity that I use is produced (e.g. nuclear generation, wind, gas, solar, petroleum, coal, etc.)"

%, by country, Base: all respondents

2.5.2 Self-reported awareness about contract terms

Across the EU28 (except Cyprus, Latvia and Malta[26]), 57% of survey respondents answered that they had read the terms and conditions of their contract with their electricity company and 46% reported knowing the advance period in case they wanted to terminate their contract with their current electricity company.

Figure 34: Self-reported awareness of contract terms and advance notice period

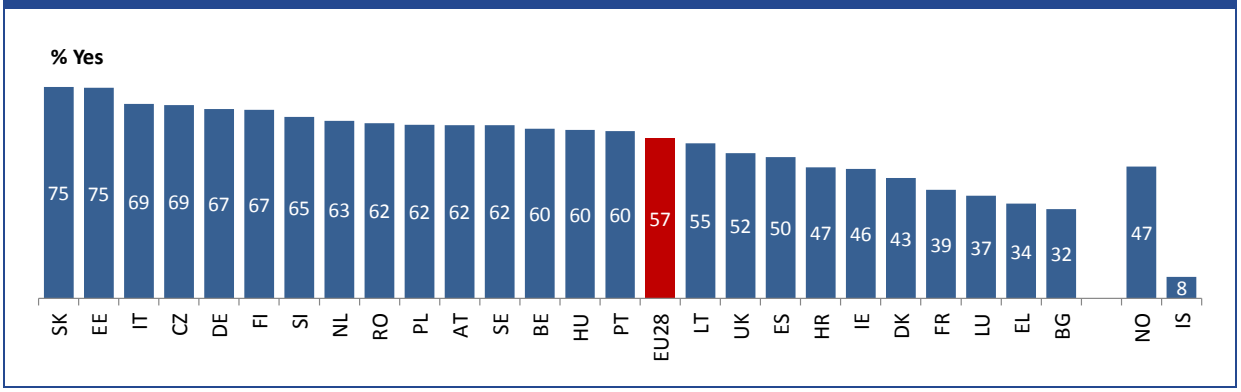


Q25. For each of the following statements about your contract with [PROVIDER], please indicate whether it applies to you or not.
%, EU28 (except Cyprus, Latvia and Malta), Base: All respondents
Source: Consumer survey

Individual country results

The proportion of survey respondents who answered that they had **read the terms and conditions of their current electricity contract** ranged from 32% in Bulgaria to 75% in Slovakia and Estonia. Other countries with a high proportion of respondents who had read the terms and conditions of their contract are Finland, Germany, the Czech Republic and Italy; in these countries, roughly two-thirds of respondents reported that they had read the terms and conditions of their electricity contract. In Iceland, a vast majority of respondents admitted not having read the terms and conditions of their contract (92% "no" responses vs. 8% "yes" responses).

Figure 35: Self-reported awareness of contract terms and conditions, by country



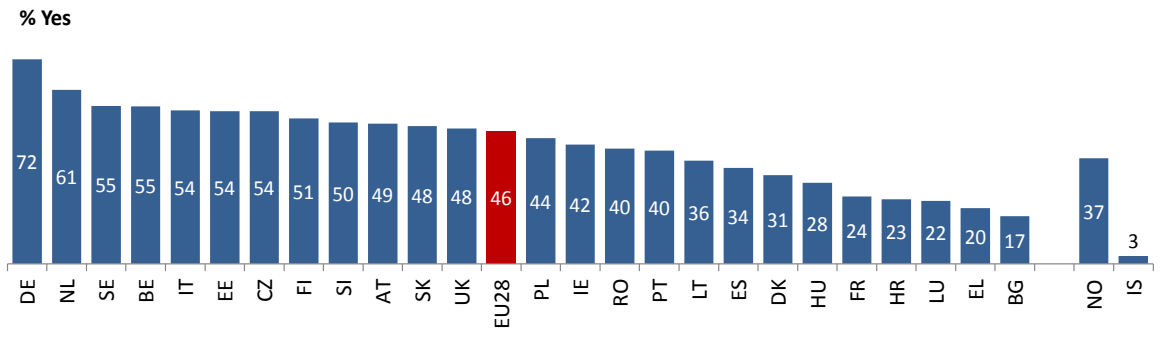
Q25_1. For each of the following statements about your contract with [PROVIDER], please indicate whether it applies to you or not: 'I have read the terms and conditions of my contract'
%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

[26] In Cyprus, Latvia and Malta, respondents were not asked this question. This question was only asked to respondents in countries where the electricity market has been liberalised.

Respondents in Iceland, Bulgaria, Greece, Luxembourg and France were not only among the least likely to have read the terms and conditions of their current electricity contract (between 8% and 39%), they were also among the least likely to **know the advance notice period in case they wanted to terminate their contract** with their current electricity company (between 3% and 24% "yes" responses). A similar figure was also observed in Croatia (23% "yes" responses for knowing the advance period); however, Croatia (47%) scored somewhat better in terms of self-reported awareness of contract terms and conditions.

At the higher end of the country ranking, Germany, followed by the Netherlands, had the highest proportions of "yes" responses for knowing the advance period to terminate their contract (72% and 61%, respectively).

Figure 36: Self-reported awareness of the advance notice period, by country



Q25_2. For each of the following statements about your contract with [PROVIDER], please indicate whether it applies to you or not: 'I know the advance notice period in case I want to terminate my contract with my electricity company'

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

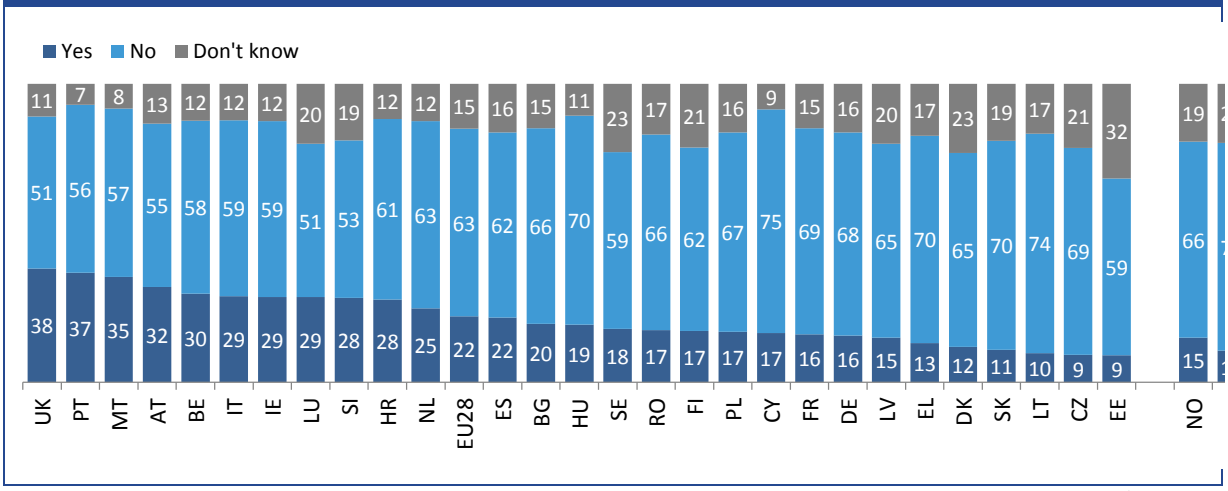
Source: Consumer survey

2.6 Consumers' awareness of consumer protection bodies

Across all countries, a majority of survey respondents indicated that they could not name an organisation that they could turn to for help about electricity tariffs (ranging from 51% in the UK and Luxembourg to 75% in Cyprus). The highest awareness levels were measured in Malta (35% "yes" responses), Portugal (37%) and the UK (38%).

A correlation was noticed between level of education and consumer awareness: while 27% of highly educated respondents indicated that they could name an organisation that they could turn to for help about electricity tariffs, this figure decreased to 17% for lowly educated respondents.

Figure 37: Awareness of an organisation (regulator, ombudsman, consumer protection body) respondents can turn to for advice or help about electricity tariffs, by country



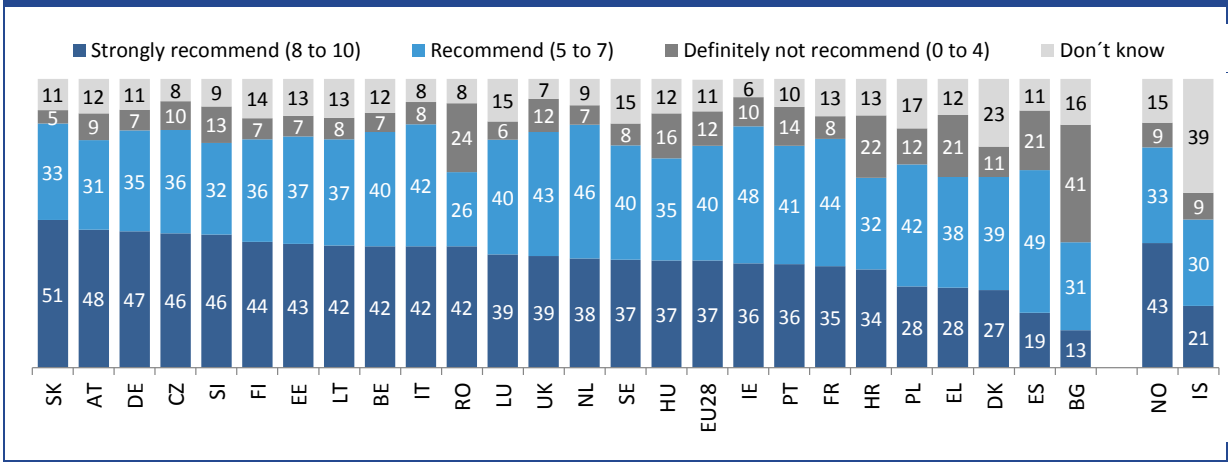
Q18_5. Please indicate whether each of the following statements applies to you or not: "I can name an organisation (regulator, ombudsman, consumer protection body) that I could turn to for advice or help about electricity tariffs"
%, by country, Base: all respondents
Source: Consumer survey

2.7 Trust in electricity companies and regulators

Figure 38 shows that, across most countries surveyed, at least a third of survey respondents would **strongly recommend** (scores 8 to 10) **their electricity company to someone they knew and who was thinking about switching electricity company** (from 34% in Croatia to 51% in Slovakia).

In sharp contrast, in Bulgaria, 41% of respondents answered that they would not recommend their electricity company (scores 0 to 4). In four other countries, more than one in five respondents selected scores 0 to 4 on the scale: Romania (24%), Croatia (22%), Spain and Greece (both 21%).

Figure 38: Would respondents recommend their electricity company to friends or family?, by country



Q23. If someone you know was thinking about changing electricity company, would you recommend your electricity company or not? Please use a scale from 0 to 10, where 0 means that you would "not recommend at all" and 10 means that you would "definitely recommend" your current electricity company.

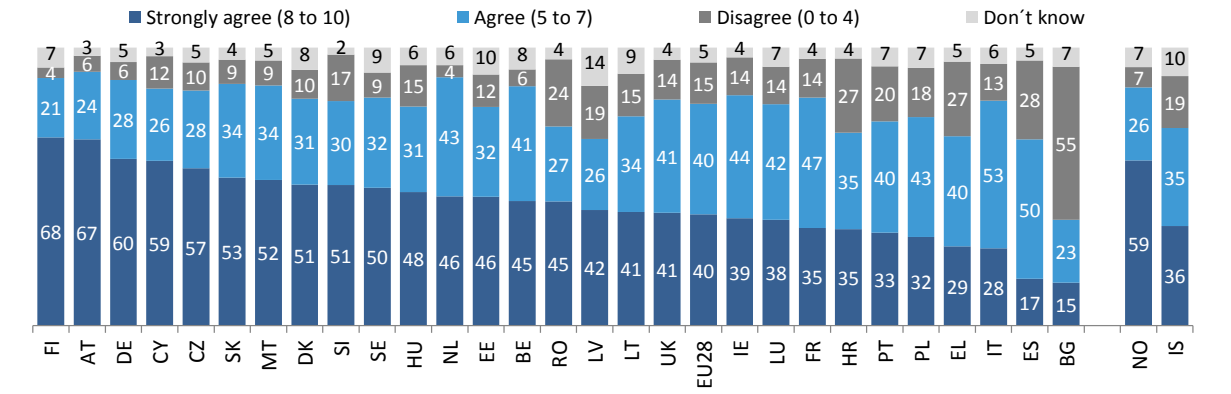
% by country, Base: all respondents; Question not asked in Cyprus, Latvia and Cyprus

Source: Consumer survey

The extent to which surveyed consumers trust their electricity company to respect rules and regulations is shown in Figure 39. In Austria and Finland, roughly two-thirds (67%-68%) of respondents "strongly agreed (scores 8 to 10) when asked whether **they trusted their electricity company to respect the rules and regulations** set up to protect consumers. In Bulgaria and Spain, on the other hand, roughly one in six respondents "strongly agreed" (15% and 17%, respectively). In Bulgaria, 55% of respondents disagreed with the statement (scores 0 to 4), while in Spain, this figure remained lower – at 28%.

In the previous study, it was noted that the ratings on this item were particularly low in Bulgaria, Greece and Malta. While Bulgaria is still found at the bottom of the country ranking, Malta now scores better (with 52% of respondents who "strongly agreed" when asked whether they trusted their electricity company to respect the rules and regulations). In 2010, the highest scores were observed in Finland and Ireland; Finland kept its position at the top of the country ranking, but Ireland now scores not better than the EU28 average results.

Figure 39: Trust in electricity companies to respect rules and regulations, by country



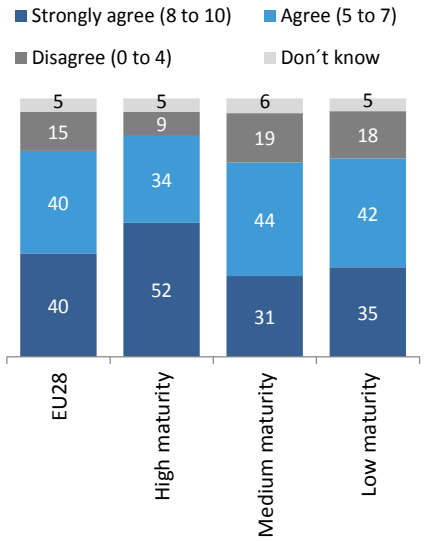
Q5_8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I trust [PROVIDER] to respect the rules and regulations protecting consumers

% by country, Base: all respondents

Source: Consumer survey

Respondents in countries with more mature electricity markets were considerably more likely than consumers in countries with less mature markets to "strongly agree" (scores 8 to 10) that they trusted their electricity company to respect the rules and regulations protecting consumers (52% vs. 31% in countries with medium mature markets and 35% in low mature markets).

Figure 40: Trust in electricity companies to respect rules and regulations, by country



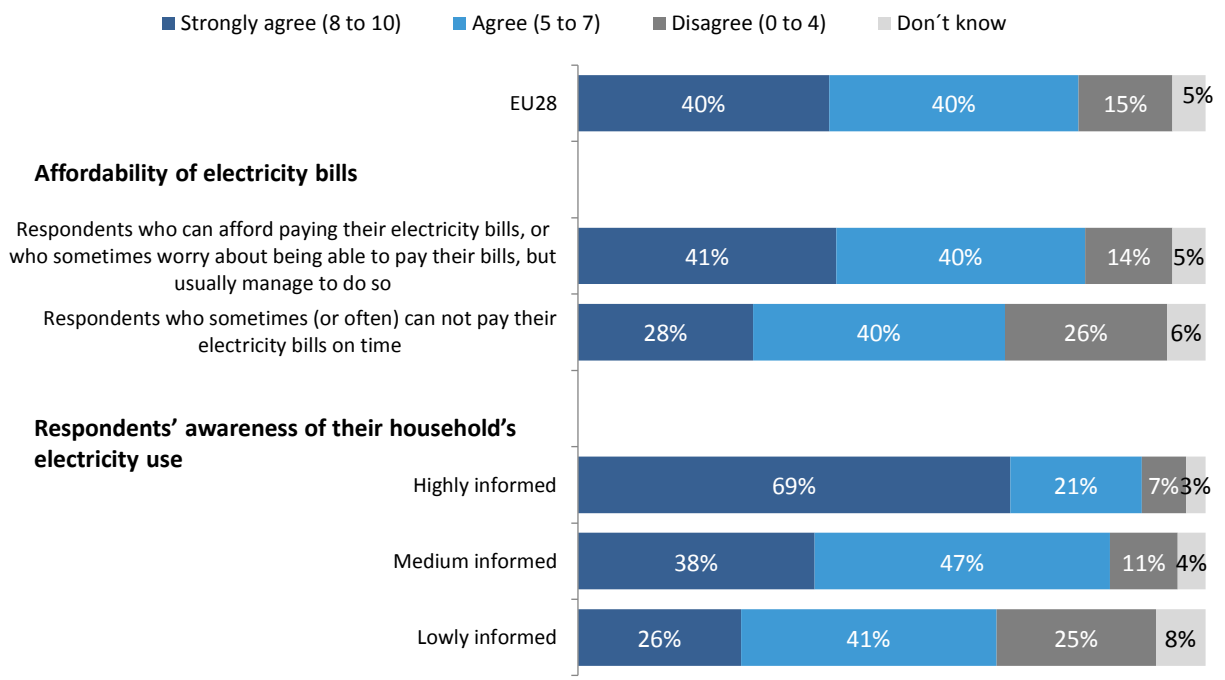
Q5_8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I trust [PROVIDER] to respect the rules and regulations protecting consumers
% EU28 (countries grouped in terms of market maturity), Base: all respondents
Source: Consumer survey

Trust by affordability of electricity bills and "conscious" electricity use

Respondents who sometimes (or often) could not pay their electricity bills on time were less likely to "strongly agree" that that they trusted their electricity company to respect the rules and regulations protecting consumers: 28% selected scores 8 to 10, compared to 41% of respondents who felt more comfortable about paying their electricity bills on time.

A majority (69%) of respondents who use electricity in a more conscious way selected scores 8 to 10 when asked whether they trusted their electricity company; among "poorly" informed respondents, however, only 26% selected the highest scores on the agreement scale.

Figure 41: Trust in electricity companies to respect rules and regulations, by respondent characteristics



Q5_8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I trust [PROVIDER] to respect the rules and regulations protecting consumers

% EU28, Base: all respondents

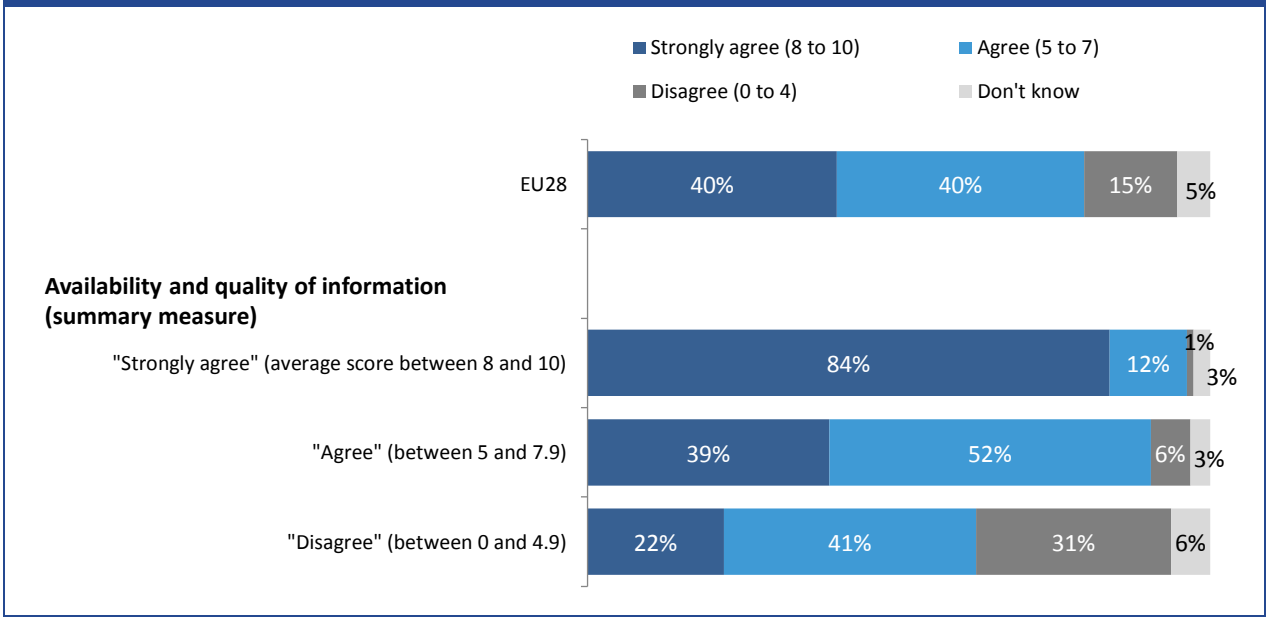
Source: Consumer survey

Information provision and trust

As noted in Section 2.4, a composite index of consumers' views about **availability of information** was created by averaging respondents' scores across the five items measuring respondents' perceptions about information provided by their electricity companies.

Among respondents who "strongly agreed" (average scores between 8 and 10) that their electricity company informed them about various aspects, 84% "strongly agreed" that they trusted their electricity company to respect the rules and regulations protecting consumers; this figure drops to 22% for respondents who "disagreed" (average scores between 0 and 4.9) that their electricity company informed them about various aspects.

Figure 42: Trust in electricity companies to respect rules and regulations, by availability and quality of information (summary measure)



Q5_8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I trust [PROVIDER] to respect the rules and regulations protecting consumers Q2_3/4/5/6/8. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".

Composite index based on Q2_3/4/5/6/8 (respondents' average score on the 5 items was calculated; these average scores were regrouped into three categories: "Strongly agree" (average scores between 8 and 10), "Agree" (average scores between 5 and 7.9) and "Disagree" (average scores between 0 and 4.9)

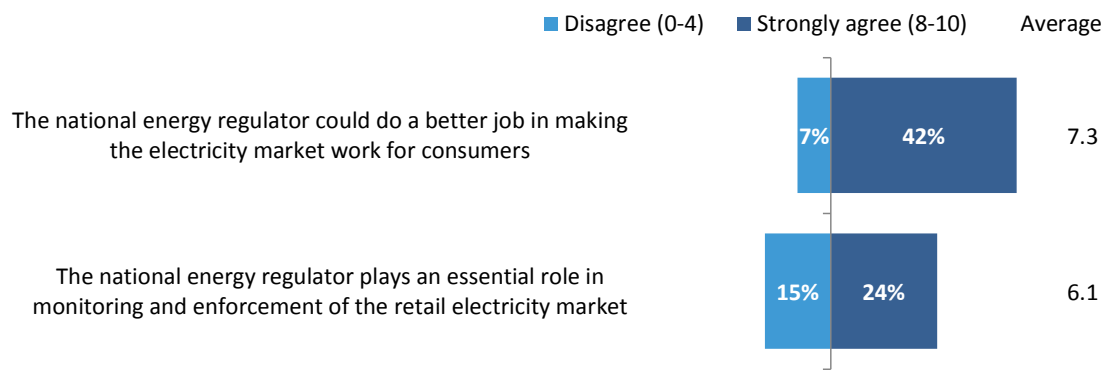
% EU28, Base: all respondents

Source: Consumer survey

2.8 Consumers' views about the role of national energy regulators

Across the EU28, 42% of survey respondents expressed "strong" agreement (scores 8 to 10) when presented with the statement that **the national energy regulator in their country could do a better job of making the electricity market work for consumers**. Roughly a quarter (24%) of respondents "strongly agreed" that the **national energy regulator played an essential role in monitoring and enforcement of the retail electricity market**; 15% of respondents expressed doubts about the national energy regulator's role (they disagreed with the statement by selecting scores 0 to 4).

Figure 43: Agreement with statements about energy regulators

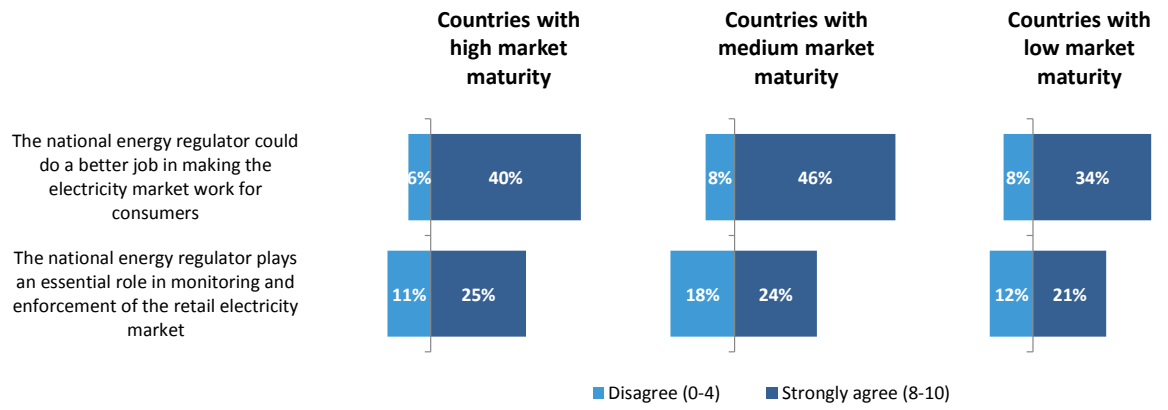


Q36_4/5.Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree.
%, EU28, Base: All respondents
Source: Consumer survey

In countries with medium market maturity, 46% of respondents "strongly agreed" that the national energy regulator could do a better job of making the electricity market work for consumers; the corresponding figure in countries with the most mature electricity markets was somewhat lower – at 40%.

Respondents in countries with low market maturity were the least likely to "strongly agree" that the national energy regulator played an essential role in monitoring and enforcement of the retail electricity market (21% vs. 24%-25% in countries with more mature markets) or that the energy regulator could do a better job of making the electricity market work for consumers (34% vs. 40%-46% in countries with more mature markets).

Figure 44: Agreement with statements about energy regulators, by market maturity



Q36_4/5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree.
%, EU28 (countries grouped in terms of market maturity), Base: All respondents

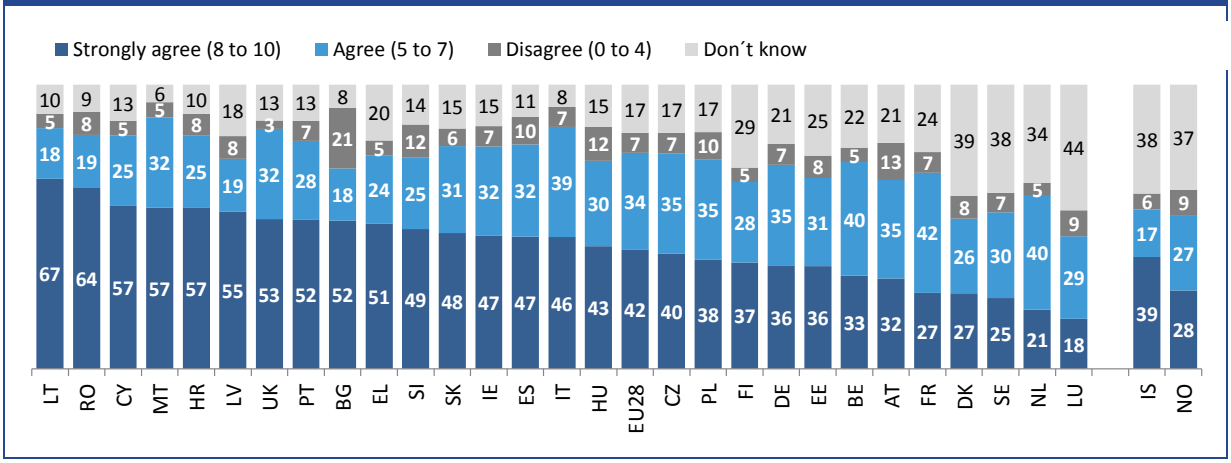
Source: Consumer survey

Individual country results

The level of "strong" agreement (scores 8 to 10) with the statement that the **national energy regulator could do a better job of making the electricity market work for consumers** varied between 18% in Luxembourg and 67% in Lithuania. Although a minority of respondents in Luxembourg "strongly agreed" with this statement, the proportion expressing disagreement (scores 0 to 4) was even lower (9%).

In Luxembourg, 44% of respondents selected the "don't know" response when presented with this statement about the national energy regulator. The other countries at the lower end of the country ranking also had high proportions of "don't know" responses: 34% in the Netherlands, 37% in Norway, 38% in Iceland and Sweden and 39% in Denmark.

Figure 45: Agreement with the statement: "The national energy regulator could do a better job in making the electricity market work for consumers", by country



Q36_5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": The national energy regulator could do a better job in making the electricity market work for consumers

%, by country, Base: All respondents

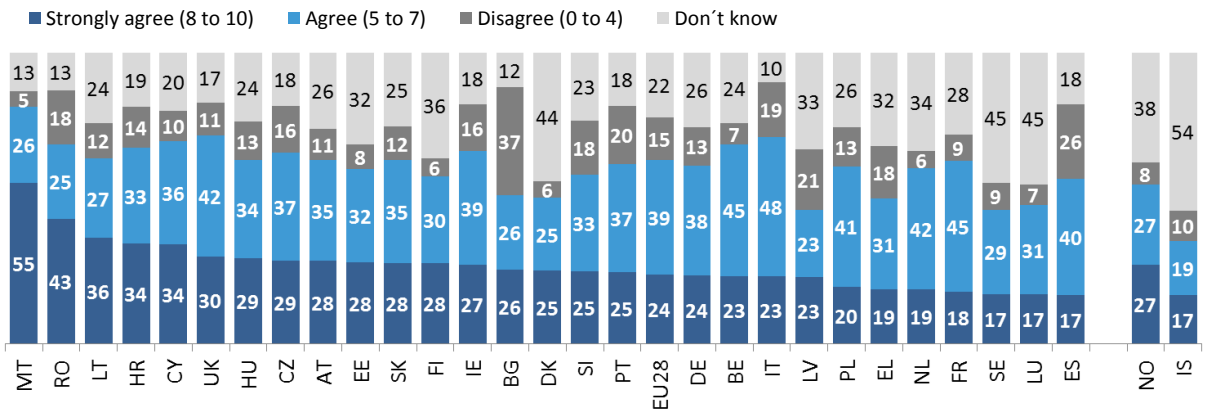
Source: Consumer survey

The proportion of respondents who "strongly agreed" that **the national energy regulator played an essential role in monitoring and enforcement of the retail electricity market** was less than a third in most countries (from 17% in Iceland, Luxembourg, Spain and Sweden to 30% in the UK – see Figure 46). Higher proportions were observed in Cyprus (34%), Croatia (34%), Lithuania (36%), Romania (43%) and Malta (55%).

Bulgaria was once again the country with the highest proportion of respondents who disagreed (scores 0 to 4) with the statement (37%); in Spain, roughly a quarter (26%) of respondents disagreed that the national energy regulator played an essential role in monitoring and enforcement of the retail electricity market.

A considerable proportion of respondents across most countries could not express an opinion; the proportion of "don't know" responses ranged from 10% in Italy to 45% in Luxembourg and Sweden, and 54% in Iceland.

Figure 46: Agreement with the statement: "The national energy regulator plays an essential role in monitoring and enforcement of the retail electricity market", by country



Q36_4. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": The national energy regulator plays an essential role in monitoring and enforcement of the retail electricity market.

%, by country, Base: All respondents

Source: Consumer survey

3. Choice and comparability

The first section of this chapter considers **consumers' and stakeholders' perceptions of choice** in terms of number of different tariffs available (from their own electricity company and other companies). Chapter 7 (Section 7.3) provides further details on how much choice consumers ***actually*** have in terms of number and type of tariffs; the analysis presented in Section 7.3 is based on data collected through the price collection exercise.

The second section of the chapter looks at **comparability** and at the perceived level of complexity of comparing tariffs and offers. Section 3.2.1 presents consumers' experience with comparing tariffs and offers. Section 3.2.2 focuses on consumers' views on comparability of tariffs and offers, while Section 3.3 presents the results of the behavioural experiment testing how complexity impacts on consumers' understanding of offers.

Box 2: Main findings with regards to "choice and comparability"

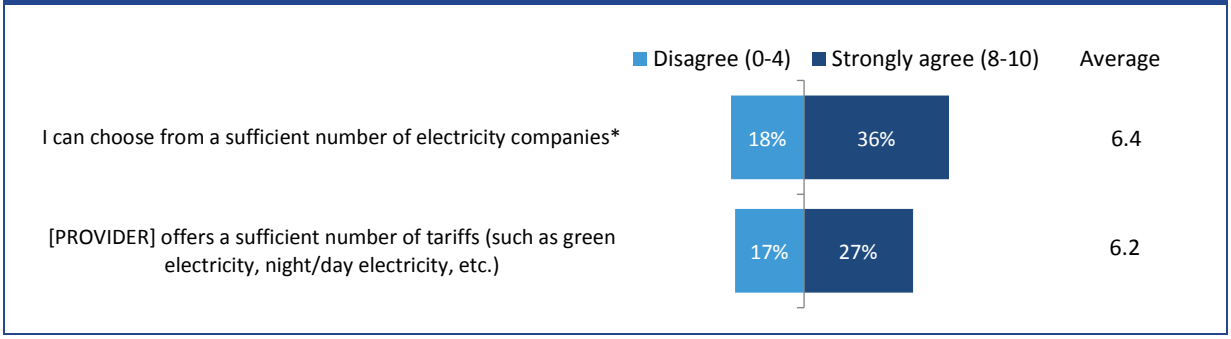
- **Satisfaction with choice of tariffs.** Across the EU28, 27% of survey respondents "strongly agreed" that their electricity company offered a sufficient number of tariffs (such as green tariffs, night/day tariffs etc.); this figure ranged from 3% in Iceland to 42% in Estonia and Germany.
- **Satisfaction with choice of electricity companies.** Between 7% of survey respondents in Bulgaria and 55% in Germany and the Netherlands "strongly agreed" that they could choose from a sufficient number of electricity companies. Bulgaria stood out with 76% of respondents who disagreed with this statement; also in Romania and Lithuania, a majority of respondents disagreed. In the first market study, the ratings on this item were very low in Estonia; in 2015, however, Estonia is found among the best-scoring countries – with 53% of respondents who "strongly agreed" they could choose from a sufficient number of electricity companies.
- **Consumers' experience with comparing tariffs and offers.** 44% of survey respondents answered that they had compared tariffs from their own electricity company (from 11% in Iceland to 66% in Germany) and 41% had compared tariffs from different electricity companies (from 9% in Iceland to 65% in Germany).
- **Difficulty of comparing tariffs and offers.** Comparability of offers and tariffs is essential in terms of consumers' understanding and mobility, and a prerequisite of better consumers' choices. Among respondents who had compared tariffs from different electricity companies, 30% thought it was difficult to compare such tariffs. Among respondents who had compared tariffs from their current electricity company, 17% thought that comparison was difficult. The study's findings show that across most Member States, comparing tariffs from different electricity companies was perceived as more difficult than comparing tariffs from one's own electricity company.
- Among respondents who had not tried to switch electricity company, between 5% in Lithuania and 25% in Denmark answered that it was difficult to compare offers from different electricity companies. Lithuania had a very low proportion selecting this response, but this is of course linked to the fact that a large proportion (39%) of respondents in the country reported that there was no alternative local electricity company.
- **Results of the behavioural experiment.** Presenting important information for assessing the total cost of an offer behind a "pop-up" led to fewer respondents in the behavioural experiment correctly answering the comprehension question (42% vs. 71% when information was not dripped). The opposite, however, was found for information that is not important; when information that was not required to answer the comprehension questions was dripped, respondents performed better (85% compared to 79% when information was shown upfront).

3.1 Consumers' views on choice in the market

Across the EU28, 27% of respondents "strongly agreed" (scores 8 to 10)[27] that their **electricity company offered a sufficient number of tariffs** (such as green tariffs, night/day tariffs etc.).

More than a third (36%) of respondents[28] "strongly agreed" (scores 8 to 10) when asked whether they could **choose from a sufficient number of electricity companies;** one in six (18%) respondents disagreed (scores 0 to 4) with this statement.

Figure 47: Consumers' views on available choice



Q17_1/4. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
** Item not asked in Cyprus, Malta and Latvia.*
%, EU28, Base: All respondents
Source: Consumer survey

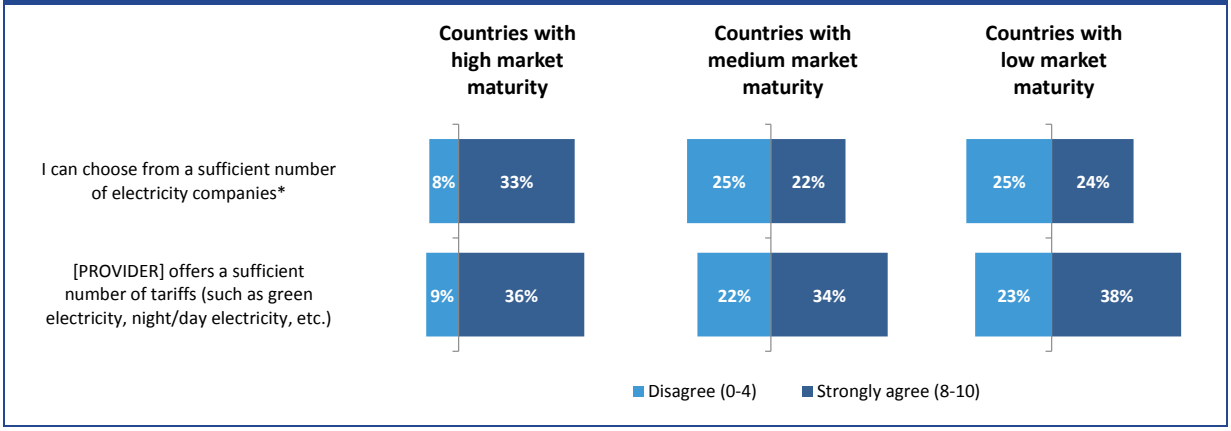
As expected, in countries with high market maturity, 33% of respondents "strongly agreed" (scores 8 to 10) that they could choose from a sufficient number of electricity companies; in countries with less mature electricity markets, fewer respondents expressed "strong" agreement (22% and 24% respectively, in medium and low market maturity countries) – see Figure 48 for more details.

When looking at the results of the question on whether electricity companies offered a sufficient number of tariffs, the largest differences were observed in the proportions disagreeing. In countries with high market maturity, 9% of respondents "disagreed" (scores 0 to 4) that their electricity company offered a sufficient number of tariffs; however, in countries with less mature markets, this proportion was more than twice as high (22% and 23%, respectively, in medium and low market maturity countries).

[27] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. Figure 47 presents the results across the EU28; the numbers in the right-hand column of the figure show the average scores on the scale, while the percentages give more information about the distribution of respondents across the scale values. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

[28] This statement was not presented to respondents in Cyprus, Malta and Latvia.

Figure 48: Consumers' views on available choice, by market maturity



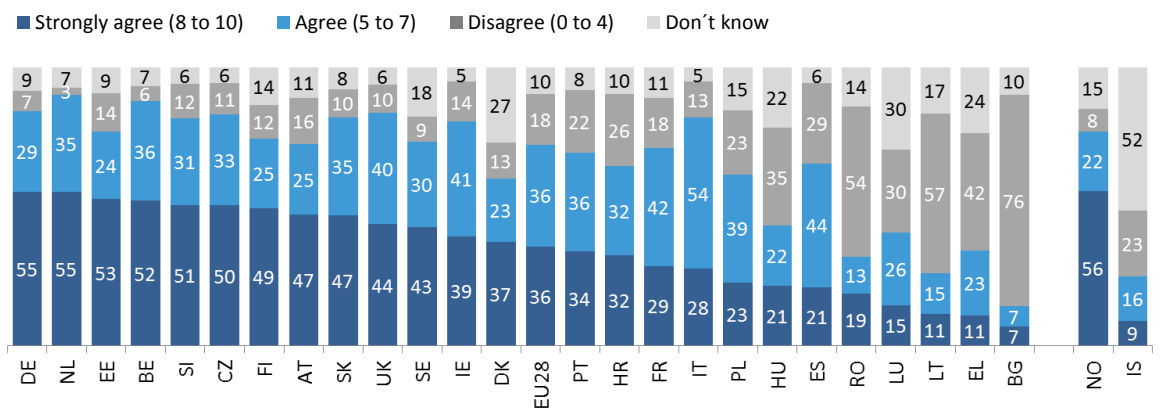
Q17_1/4.Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
** Items not asked in Cyprus, Malta and Latvia.*
%, EU2 (countries grouped by market maturity), Base: All respondents
Source: Consumer survey

Individual country results

The proportion of respondents who "strongly agreed" (scores 8 to 10) that they could **choose from a sufficient number of electricity companies** ranged from 7% in Bulgaria to 55% in Germany and the Netherlands (and 56% in Norway).

Bulgaria stood out with 76% of respondents who disagreed (scores 0 to 4) that they could choose from a sufficient number of electricity companies; also in Romania and Lithuania, a majority of respondents disagreed with this statement (54% and 57%, respectively). In fact, when respondents in these three countries were asked why they had not tried to switch electricity company, a large proportion answered that there was no alternative local electricity company: 51% in Bulgaria, 44% in Romania and 39% in Lithuania (for more details, see Section 4.7.2).

Figure 49: Agreement with the statement: "I can choose from a sufficient number of electricity companies", by country



Q17_4. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I can choose from a sufficient number of electricity companies.
%, by country, Base: All respondents; Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

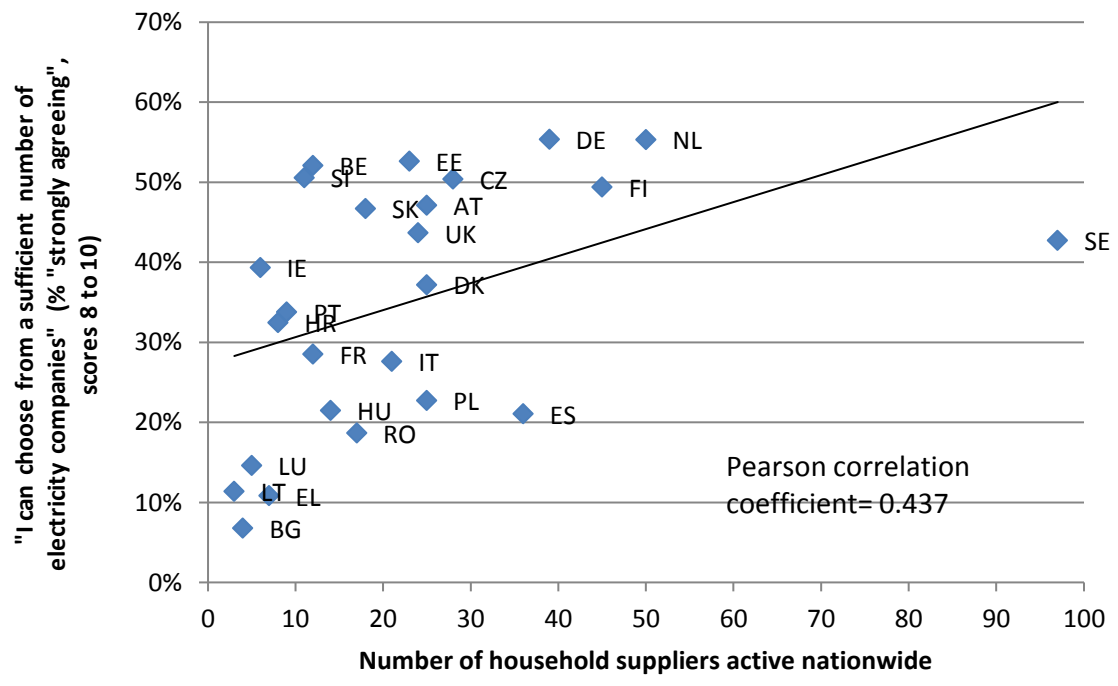
It also appears that, in some countries, a considerable number of consumers were not aware of the number of electricity companies offering services in their area; in Hungary, Greece, Denmark, Luxembourg and Iceland, more than a fifth of survey respondents selected the "don't know" response (between 22% and 52%). This finding is in line with the fact that, across the EU28, 40% of survey respondents admitted not being able to

name another electricity company they could switch to (this figure varied between 15% in Ireland and 79% in Bulgaria).

A comparison with the 2010 market study shows some similarities in the country rankings, but also some important developments. In the previous study, the ratings on this item were very low in Estonia (the country had the second lowest average value); in 2015, however, Estonia is found among the best-scoring countries – with 53% of respondents who "strongly agreed" they could choose from a sufficient number of electricity companies. This result was also supported by the findings of the stakeholder consultation; when consumer associations were asked whether "consumers can choose from a sufficient number of electricity companies", an average score of 8.5 out of 10 was measured.

As can be seen in Figure 49, there is also a positive correlation between satisfaction with the number of alternative electricity companies and the number of nationwide household electricity providers[29]. The number of main nationwide electricity providers rather than the total number of providers was used in this analysis, in order to take into account that some providers (i.e. small ones) may be only regional providers.

Figure 50: Relationship between satisfaction with choice of electricity companies and number of nationwide household suppliers

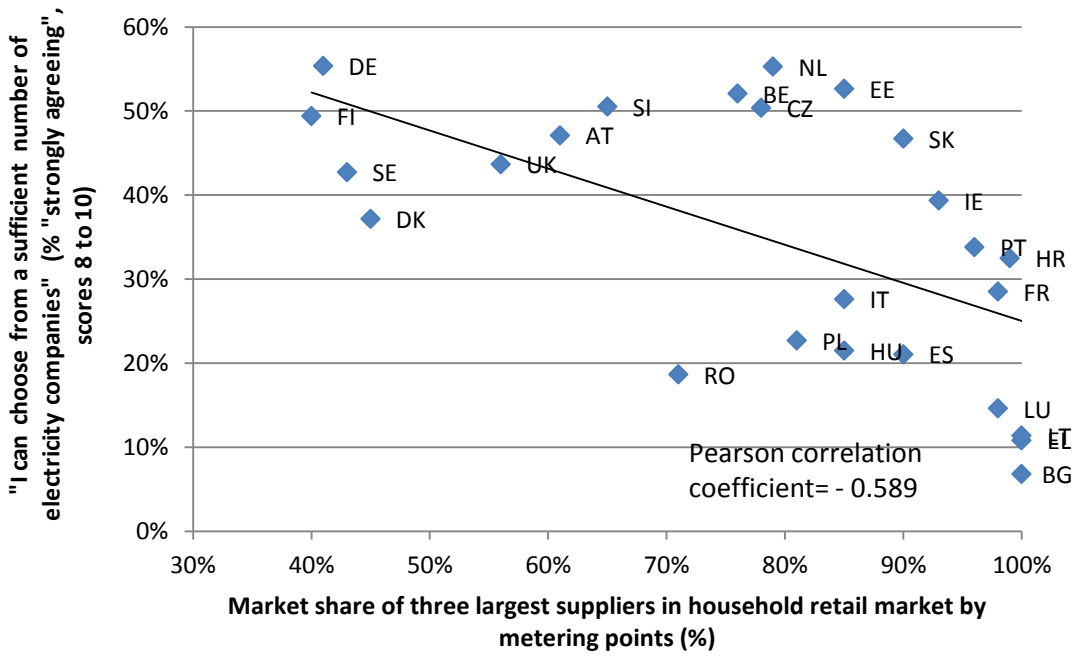


X-axis: Number of household electricity providers active nationwide
Y-axis: Consumer survey Q17_4, % "totally agreed" (scores 8 to 10), EU28 + NO, IS, Base: all respondents
Source: ***ACER Market Monitoring Report 2015*** **and Consumer survey**

Figure 51 (on the next page) shows that the correlation between satisfaction with choice and "actual" choice when considering the market share of the three largest providers in the household retail market (a correlation of -0.589).

[29] Note: in this scatterplot, Sweden is an outlier (with a very high number of household electricity providers active nationwide). The correlation between satisfaction with the number of alternative electricity companies and the number of nationwide household electricity providers is higher when excluding Sweden from the calculation (.562 vs. .437).

Figure 51: Relationship between satisfaction with choice of electricity companies and market share of three largest suppliers

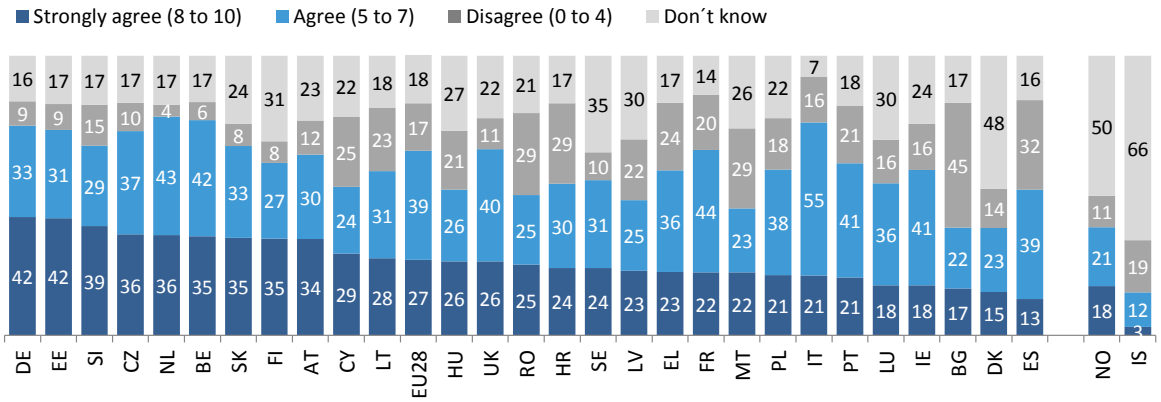


X-axis: Market share of the three largest providers in household retail electricity markets by metering points
Y-axis: Consumer survey Q17_4, % "totally agreed" (scores 8 to 10), EU28 + NO, IS, Base: all respondents
Source: ***ACER Market Monitoring Report 2015*** **and Consumer survey**

In Germany and Estonia, 42% of respondents "strongly agreed" (scores 8 to 10) that **their electricity company offered a sufficient number of tariffs**; the proportion disagreeing (scores 0 to 4) in these countries was 9%. In Bulgaria, on the other hand, 45% of respondents selected scores 0 to 4 on the scale.

It was noted above that, in five countries, more than a fifth of survey respondents were not aware of the number of electricity companies offering services in their area (see Figure 49); the results for the statement about the number of tariffs show that this is the case in 16 countries. For example, in Sweden, 35% of respondents selected the "don't know" response when asked whether their electricity answered that they "did not know" how many tariffs were offered by their electricity company.

Figure 52: Agreement with the statement: "[PROVIDER] offers a sufficient number of tariffs", by country



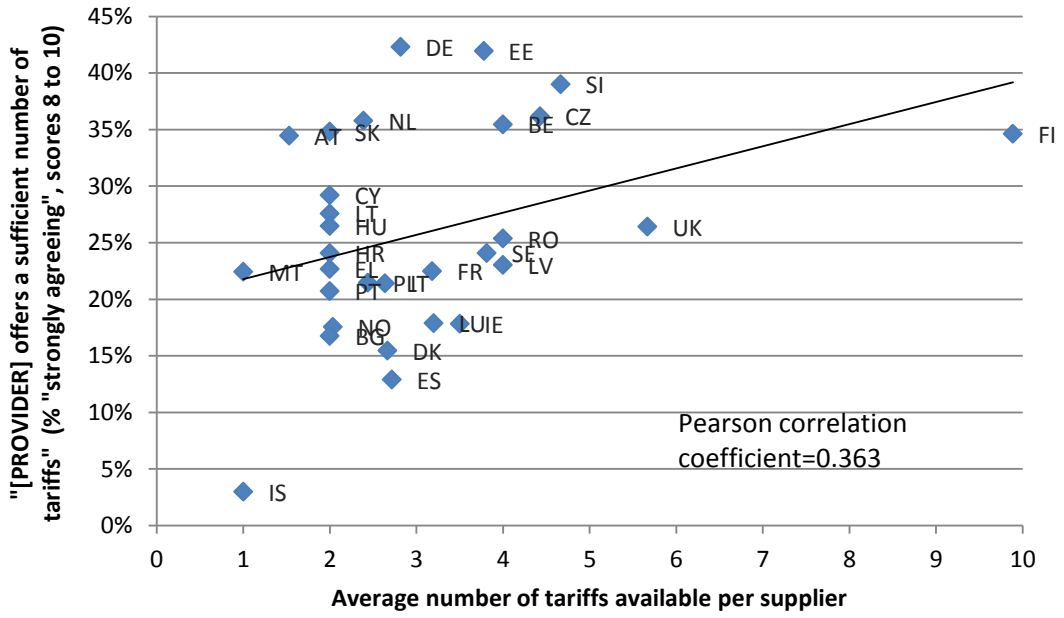
Q17_1. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] offers a sufficient number of tariffs (such as green electricity, night/day electricity, etc.)
%, by country, Base: All respondents

Source: Consumer survey

The data suggest a weak positive relationship between actual choice and consumer satisfaction with choice. It seems to be the case that consumers who are less satisfied with the choice of tariffs offered by their electricity company, live in countries where electricity companies, on average, offer relatively few different tariffs.[30] It should, however, be emphasised that a high level of satisfaction with the choice of tariffs is not necessarily associated with a large number of tariffs. In nine countries, electricity companies, on average, offer two tariffs; however, in these countries, the proportion of respondents who "strongly agreed" that their electricity company offers a sufficient number of tariffs varied between 17% in Bulgaria and 35% in Slovakia.

In Denmark, electricity companies, on average, offer 2.7 tariffs – a figure close to the EU28 average. However, just 15% of survey respondents in Denmark "strongly agreed" that their electricity company offered a sufficient number of tariffs. During the stakeholder consultation, some participants pointed out that consumers in Denmark were not necessarily aware of the different tariffs offered by electricity companies; a finding that is supported by the results of the consumer survey (where 48% of respondents selected the "don't know" response).

Figure 53: Relationship between satisfaction with choice of tariffs from current electricity company and average number of tariffs available per electricity company



X-axis: Price collection exercise, Average number of tariffs available per supplier
Y-axis: Consumer survey Q17_1, % "totally agreed" (scores 8 to 10), EU28 + NO, IS, Base: all respondents
Source: Price collection exercise and Consumer survey

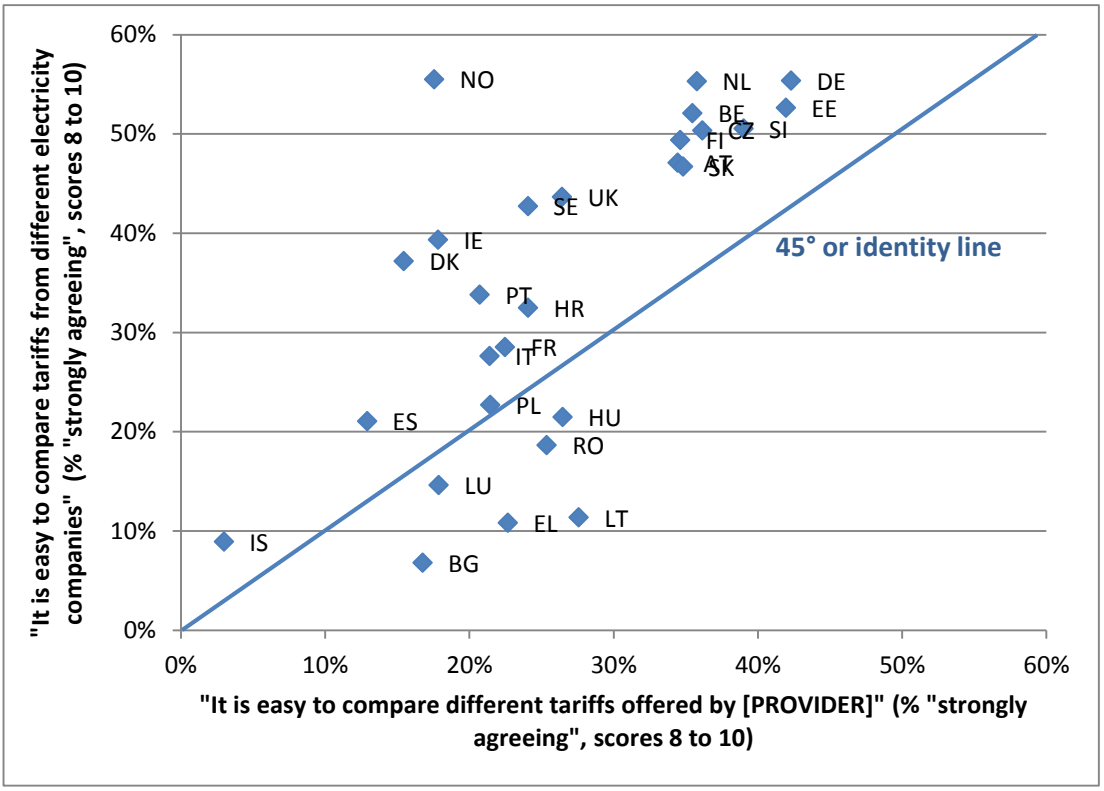
[30] It should be mentioned that the number of tariffs is counted based on the price collection exercise and therefore may not include all available tariffs that providers have on offer.

Satisfaction with choice of tariffs and choice of electricity companies

The scatterplot presented in Figure 54 displays the values for the level of "strong" agreement (scores 8 to 10) for the two statements about choice; the level of "strong" agreement for the statement that respondents' electricity companies offer a sufficient number of tariffs is plotted on the horizontal axis, while the level of "strong" agreement for the statement that respondents can chose from a sufficient number of electricity companies is plotted on the vertical axis. There is a clear correlation between satisfaction with the choice of tariffs and satisfaction with the choice of electricity companies. The correlation coefficient for the relationship between the proportion of respondents who "strongly agreed" that their electricity company offered a sufficient number of tariffs and the proportion who "strongly agreed" that they can chose from a sufficient number of electricity companies is .69 – this number signifies a strong and positive correlation between the two variables at country level.

The scatterplot below also contains a 45° reference line or identity line; if a country is positioned on this line, this mean that the level of "strong" agreement for both statements is the same. A majority of countries, however, are positioned above the 45° reference line or identity line; this mean that the level of "strong" agreement for the statement that respondents can chose from a sufficient number of electricity companies is higher than the level of "strong" agreement for the statement that respondents' electricity companies offer a sufficient number of tariffs.

Figure 54: Satisfaction with "choice of tariffs" vs. "choice of electricity companies", by country



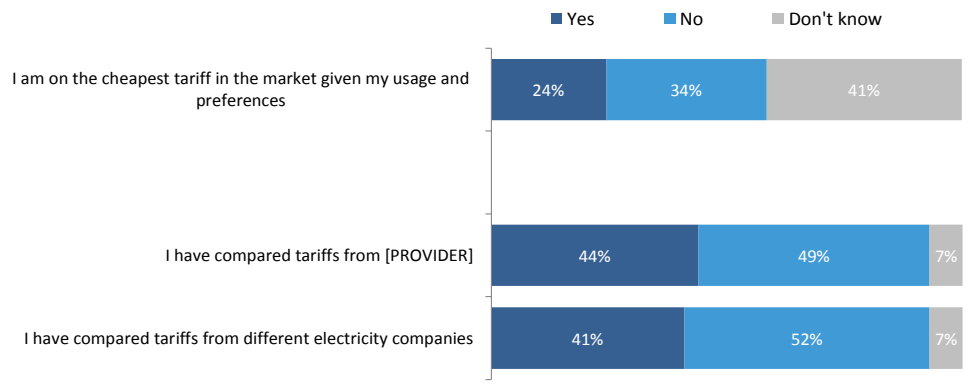
Y-axis: Consumer survey Q17_1, % "totally agreed" (scores 8 to 10), EU28 (excl. CY, LV, MT) + NO, IS, Base: all respondents
Y-axis: Consumer survey Q17_4, % "totally agreed" (scores 8 to 10), EU28 (excl. CY, LV, MT) + NO, IS, Base: all respondents
Source: Consumer survey

3.2 Consumers' views on comparability of tariffs and offers

3.2.1 Consumers' experience with comparing offers and tariffs

The consumer survey found that 41% of respondents did not know whether they were currently on the cheapest tariff (given their usage and preferences). When asked whether respondents had actually compared tariffs, 44% reported having compared tariffs from their own electricity company and 41% had compared tariffs from different electricity companies.

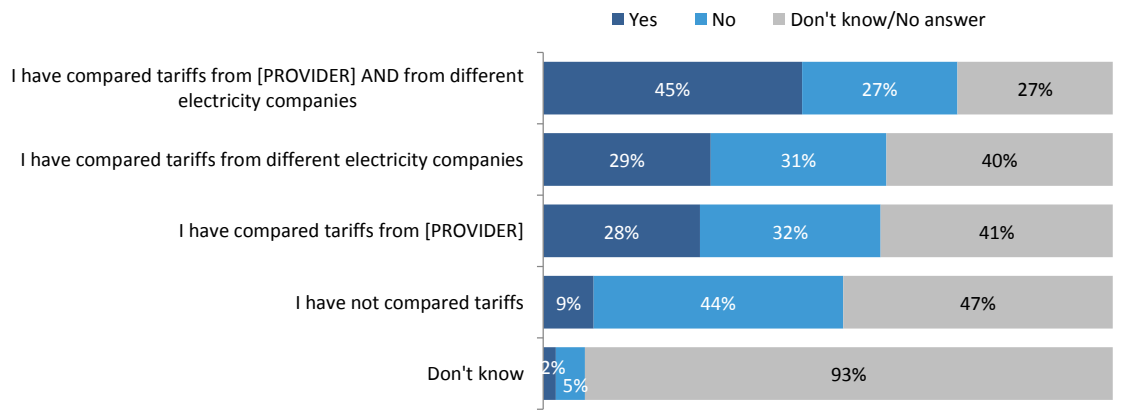
Figure 55: Consumers' experience with comparing offers and tariffs



Q18_1, 2 & 3. Please indicate whether each of the following statements applies to you or not.
Item 'I have compared tariffs from different electricity companies' not asked in Cyprus, Latvia and Malta
%, EU28, Base: All respondents
Source: Consumer survey

Figure 56 illustrates that respondents who have compared both tariffs from their own electricity company and from different companies were the most likely to state that they were currently on the cheapest tariff given their usage and preferences (45%). Among respondents who had not compared any tariffs (neither from their own electricity company, nor from other companies), however, only a minority felt confident that they were on the cheapest tariff (9%).

Figure 56: Agreement with statement: "I am on the cheapest tariff given my usage and preferences", by experience with comparing tariffs and offers



Q18_3 items. Please indicate whether each of the following statements applies to you or not.
%, EU28, without Cyprus, Latvia and Malta, Base: All respondents
Source: Consumer survey

Consumers' experience with comparing offers and tariffs by affordability of electricity bills

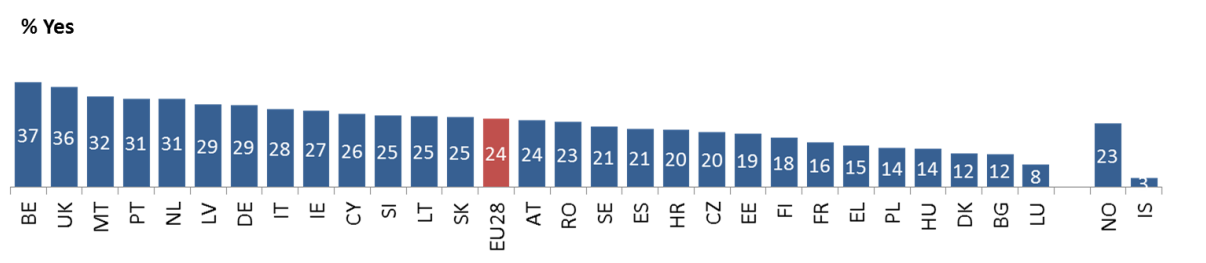
When comparing respondents who sometimes or often cannot afford paying their electricity bills and respondents without such difficulties, it was observed that:

- 44% of respondents with payment difficulties reported that they were currently not on the cheapest tariff, compared to 33% of respondents without payment difficulties;
- 42% of respondents who could afford paying their electricity bills had compared offers from different electricity companies. This proportion decreased to 30% for respondents with problems to pay their electricity bills. The corresponding difference for having compared tariffs from one's own electricity company was 45% compared to 35%, respectively.

Individual country results

The highest proportions of respondents who were confident that they were on the cheapest tariff were found in the UK and Belgium (36% and 37%, respectively). In Luxembourg, on the other hand, respondents were less likely to feel confident that they were on the cheapest tariff, as only 8% of respondents accepted the statement as correct (in Iceland, this figure was even lower – at 3%).

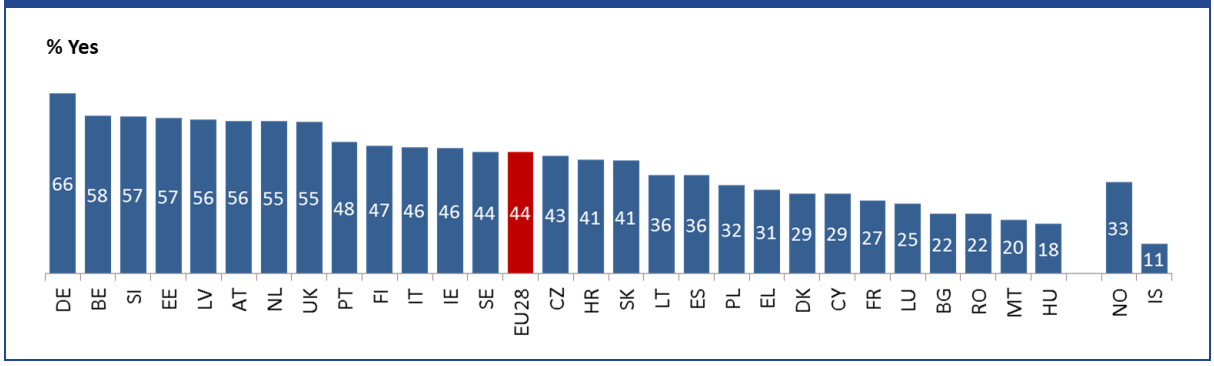
Figure 57: Agreement with the statement: "I am on the cheapest tariff in the market given my usage and preferences", by country



Q18_1. Please indicate whether each of the following statements applies to you or not: I am on the cheapest tariff in the market given my usage and preferences.
% Yes, by country, Base: all respondents
Source: Consumer survey

Looking at the proportions of respondents who had compared tariffs of their own company, a large variation was observed across countries (from 11% in Iceland and 18% in Hungary to 66% in Germany). In eight countries, a majority of respondents said they had compared tariffs of their electricity company (from 55% in the Netherlands and the UK to 66% in Germany).

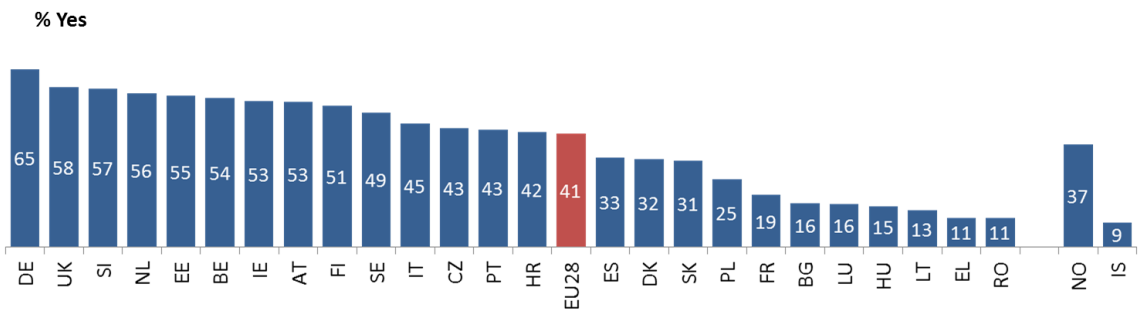
Figure 58: Comparing tariffs from their own electricity company, by country



Q18_3. Please indicate whether each of the following statements applies to you or not: I have compared tariffs from [PROVIDER].
% Yes, by country, Base: all respondents
Source: Consumer survey

A large variation across countries was also observed in the proportion of respondents who answered that they had compared tariffs from different electricity companies (see Figure 59). While just 9% of respondents in Iceland, and 11% of respondents in Romania and Greece had compared tariffs from different electricity companies, this proportion increased to 65% in Germany. In another eight countries, a slim majority of respondents reported having compared tariffs across companies: 51% in Finland, 53% in Austria and Ireland, 54% in Belgium, 55% in Estonia, 56% in the Netherlands, 57% in Slovenia and 58% in the UK.

Figure 59: Comparing tariffs offered by different electricity companies, by country



Q18_2. Please indicate whether each of the following statements applies to you or not: I have compared tariffs from different electricity companies

% Yes, by country, Base: all respondents; Item not asked in Cyprus, Latvia and Malta

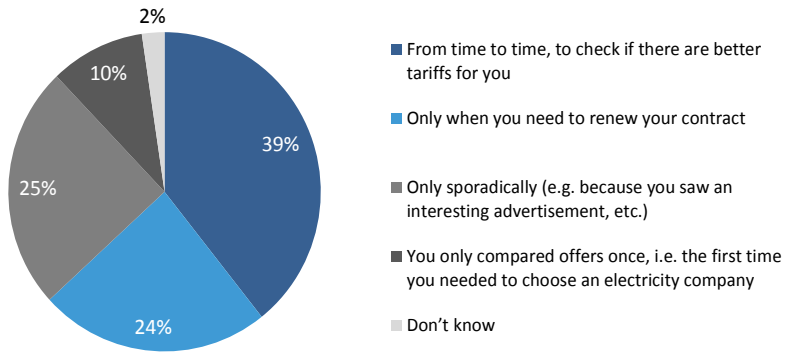
Source: Consumer survey

Looking at the proportions of respondents who had compared tariffs of their own electricity company and of different companies, and the proportions of respondents who thought they were on the cheapest tariff, a specific pattern emerged: each time, the same countries appeared at the higher and lower ends of the country distributions. For example, respondents in Germany were not only the most likely to have compared tariffs of their own company and tariffs of other companies, but they were also more likely than respondents in many other countries to state that they were currently on the cheapest tariff given their usage and preferences.

Frequency and method of comparing tariffs of different electricity companies

Respondents who had compared tariffs of different companies were also asked how frequently they compared tariffs. A relative majority (39%) of these respondents answered that they did so from time to time, to check if there were better tariffs available. Roughly a quarter (23%) answered that they only compared tariffs when they needed to renew their contract, and a similar proportion (24%) compared tariffs, for example, because they had come across an interesting advertisement. One tenth of respondents who had compared tariffs admitted that they had done so only once – i.e. the first time they needed to choose an electricity company.

Figure 60: Frequency of comparing tariffs offered by different electricity companies

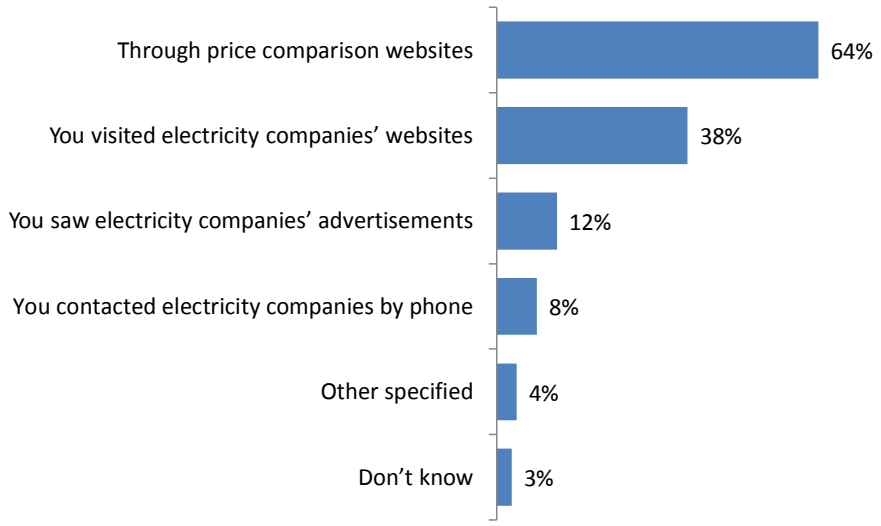


Q19. How frequently do you compare tariffs offered by different electricity companies?
% EU28, Base: Respondents who have compared tariffs offered by different electricity companies
Source: Consumer survey

A majority (64%) of respondents who had compared tariffs of different electricity companies said they had used comparison tools to do so, compared to 38% who had visited the websites of electricity companies and 8% who had contacted electricity companies by phone.

A minority (4%) of respondents indicated to have compared offers in some other way (see Figure 62 above), such as by participating in a collective switching campaign (i.e. initiated by a consumer organisation), by having been contacted directly by an electricity company (e.g. via door-to-door sales etc.) or via a magazine or website specialised in consumers savings (e.g. *TestAankoop/TestAchats* in Belgium, *MoneySavingExpert* in the UK or *Consumentenbond* in the Netherlands).

Figure 61: Method to compare tariffs offered by different electricity companies

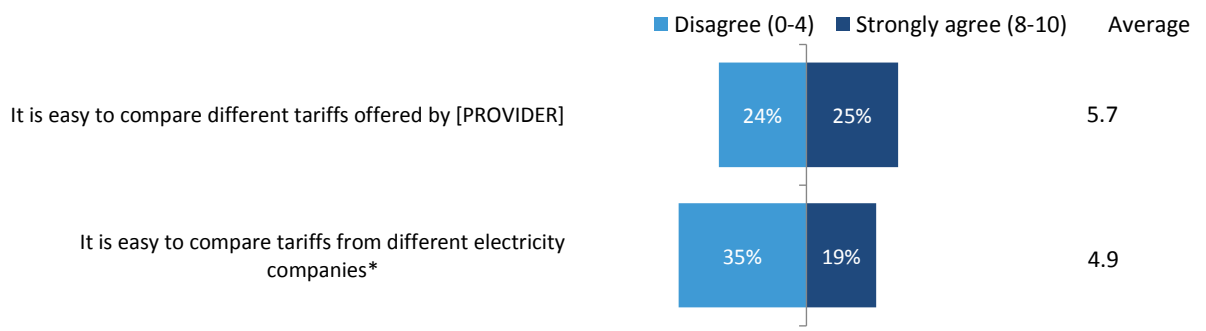


Q20. How did you compare the offers of different electricity companies? (multiple response)
% EU28, Base: Respondents who have compared tariffs offered by different electricity companies
Source: Consumer survey

3.2.2 Consumers' views on comparability

A quarter (25%) of survey respondents "strongly agreed" (scores 8 to 10) that it was **easy to compare different tariffs offered by their electricity company.** When asked whether it was **easy to compare tariffs from different electricity companies**, however, just 19% of respondents expressed "strong" agreement. The average score for the former statement was 5.7, but decreased to 4.9 for the latter statement.

Figure 62: Consumers' views on comparability

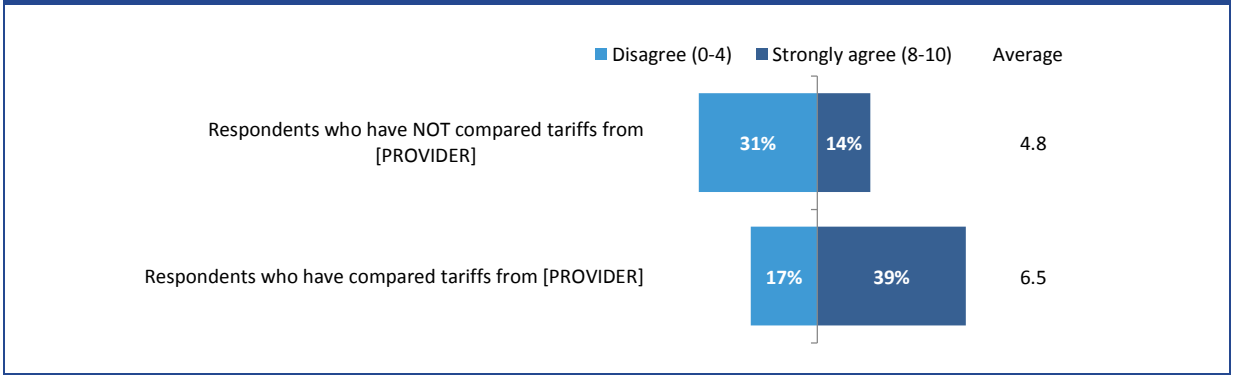


Q17_2/5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
** Items not asked in Cyprus, Malta and Latvia.*
%, EU28, Base: All respondents
Source: Consumer survey

Among respondents who had compared tariffs from **their current electricity company**, 39% "strongly agreed" (scores 8 to 10) that it was easy to compare tariffs; only half as many respondents (17%) disagreed (scores 0 to 4) that it was easy to compare tariffs.

Among respondents who had NOT compared tariffs from their current electricity company, 14% "strongly agreed" (scores 8 to 10) that it was easy to compare tariffs, while 31% disagreed (scores 0 to 4) that it was easy to compare tariffs. Given that these respondents have not actually compared tariffs, their response is based on their perceptions about how difficult it would be to compare tariffs from their electricity company.

Figure 63: Agreement with the statement: "It is easy to compare different tariffs offered by [PROVIDER]", by experience with comparing tariffs



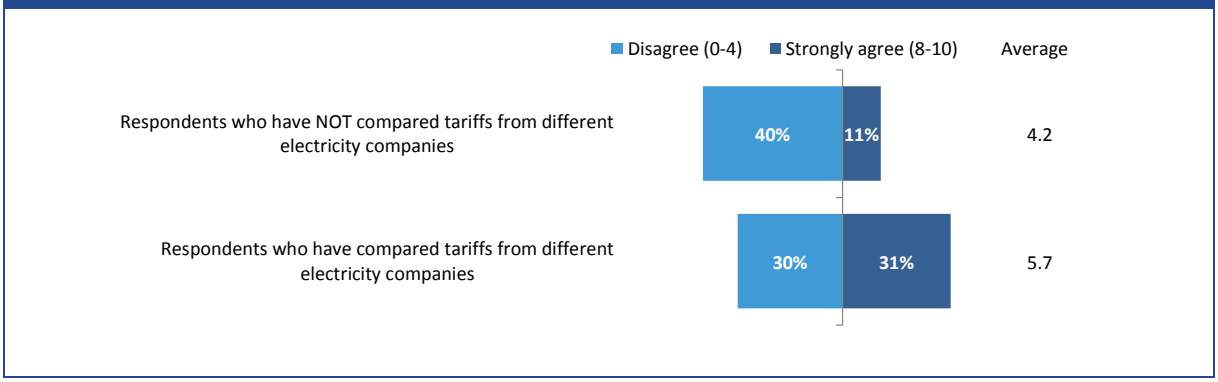
Q17_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is easy to compare different tariffs offered by [PROVIDER].
% EU28, Base: All respondents; Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

Among respondents who had compared tariffs from **different electricity companies**, 31% "strongly agreed" (scores 8 to 10) that it was easy to compare such tariffs; the proportion disagreeing (scores 0 to 4), however, was as high – at 30%.

In other words, also when focusing solely on consumers with actual experience of comparing tariffs, it was observed that comparing tariffs from different electricity companies is perceived as more difficult than comparing tariffs from one's own electricity company. Comparison of tariffs from different electricity companies seem to involve a higher level of complexity than comparison of tariffs from the same electricity company and this may be due to additional difficulties involved with comparing different contracts, tariff plans or pricing formats, marketing practices etc. This hypothesis is supported by the findings of the mystery shopping exercise. In the scenario "cheaper tariff", mystery shoppers were instructed to find a cheaper tariff either from their own electricity company or from other companies; mystery shoppers who had found the cheapest tariff with their own electricity company were more likely than mystery shoppers who had found the cheapest tariff from another electricity company to agree that it was clear why this tariff would be cheaper than their current tariff (for more details, see Section 7.9.3).

Among respondents who had NOT compared tariffs from different electricity companies, just 11% "strongly agreed" (scores 8 to 10) that it was easy to compare such tariffs; the proportion disagreeing (scores 0 to 4) was 40%; once again, since respondents have not actually compared offers, these percentages reflect these respondents' perceptions about how difficult it would be to compare offers.

Figure 64: Agreement with the statement: "It is easy to compare tariffs from different electricity companies", by experience with comparing offers



Q17_5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is easy to compare tariffs from different electricity companies.
% EU28, Base: All respondents; Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

Interestingly, the method used for comparing offers across electricity companies (e.g. using comparison tools vs. contacting electricity companies by phone – for more details about the different comparison methods most frequently used by survey respondents, see Figure 61) did not appear to have had an impact on respondents' experiences with comparing such offers; across all methods, between 29% and 33% of survey respondents "strongly agreed" (scores 8 to 10) that it was easy to compare tariffs from different electricity companies.

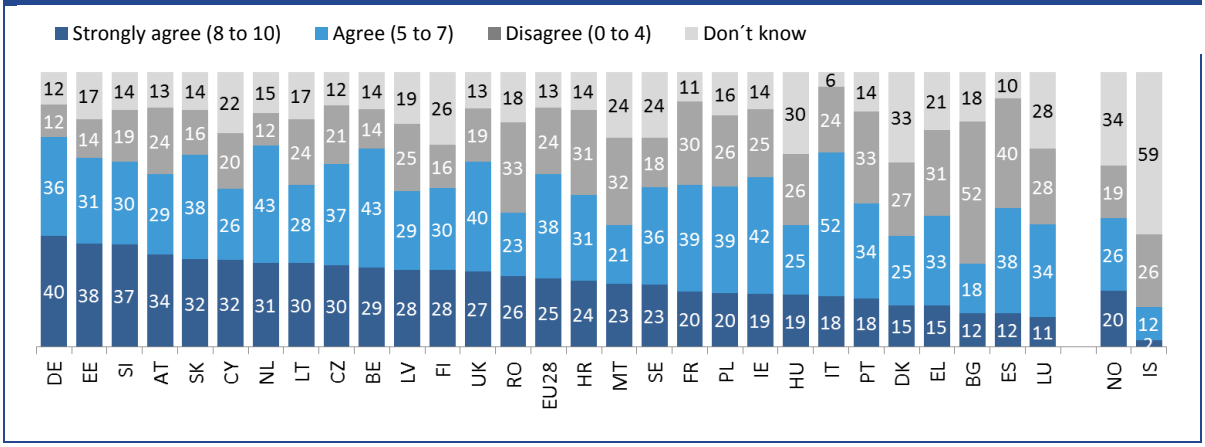
Consumers' views on comparability by affordability of electricity bills

Among respondents who sometimes or often could not afford paying their electricity bills, 42% disagreed (scores 0 to 4) that it was easy to compare different tariffs offered by their electricity company; among respondents without such difficulties, 27% disagreed with the statement. The corresponding difference in the level of disagreement for the statement about comparing offers from different electricity companies was 47% vs. 38%, respectively.

Individual country results

The proportion of respondents who "strongly agreed" (scores 8 to 10) that it was **easy to compare different tariffs offered by their electricity company** was 40% in Germany; Slovenia and Estonia were close to Germany with 37%-38% of respondents expressing "strong" agreement. In Luxembourg, Spain and Bulgaria, on the other hand, not more than roughly 1 in 10 respondents "strongly agreed" with this statement (11%-12%; the lowest figure, however, was observed in Iceland – 2%).

Figure 65: Agreement with the statement: "It is easy to compare different tariffs offered by [PROVIDER]", by country



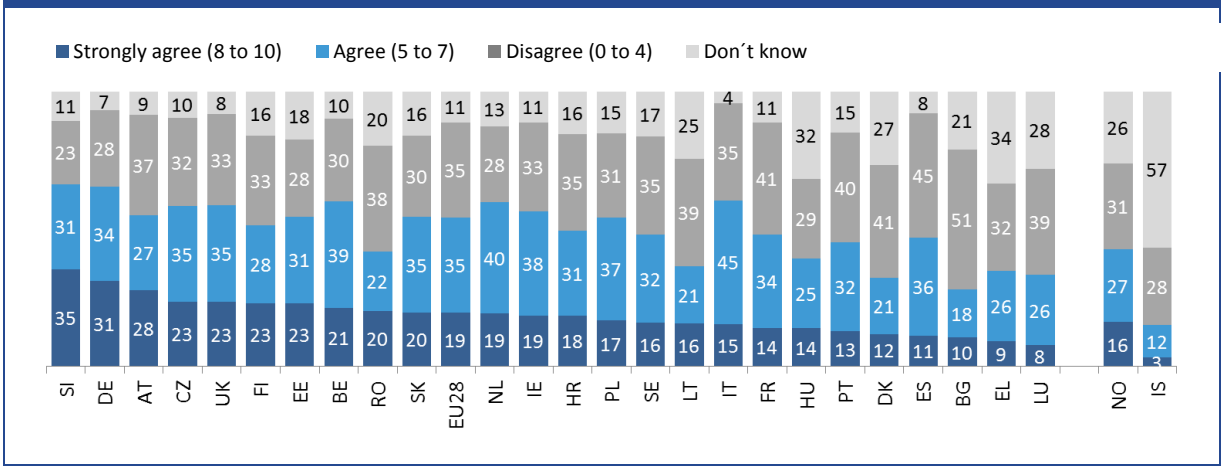
Q17_2. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is easy to compare different tariffs offered by [PROVIDER].

%, by country, Base: All respondents

Source: Consumer survey

Respondents in Luxembourg, Bulgaria, Greece and Spain were also found at the lower end of the country ranking when asked whether it **was easy to compare tariffs from different electricity companies**: between 8% and 11% "strongly agreed" (scores 8 to 10). In Slovenia, on the other hand, 35% of respondents "strongly agreed" (scores 8 to 10) that it was easy to compare tariffs from different electricity companies.

Figure 66: Agreement with the statement: "It is easy to compare tariffs from different electricity companies", by country



Q17_5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is easy to compare tariffs from different electricity companies.

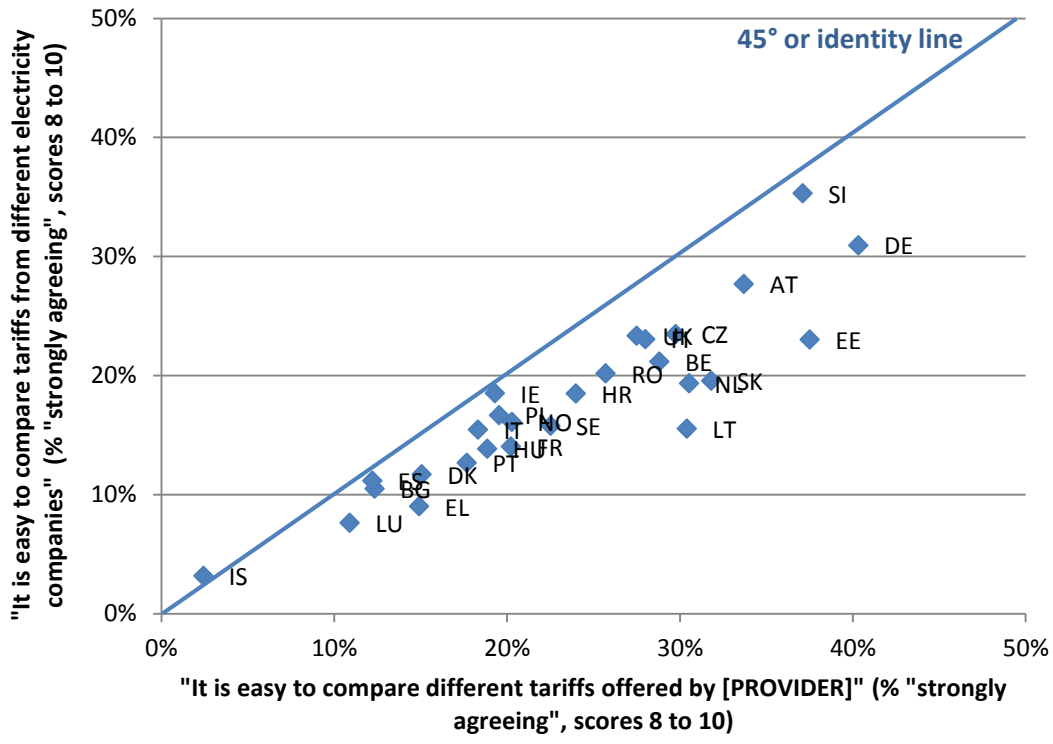
%, by country, Base: All respondents; Question not asked in Cyprus, Latvia and Malta

Source: Consumer survey

The scatterplot presented in Figure 67 displays the values for the level of "strong" agreement (scores 8 to 10) for the two statements about comparing tariffs; the level of "strong" agreement for the statement that it is easy to compare different tariffs offered by respondents' electricity companies is plotted on the horizontal axis, while the level of "strong" agreement for the statement that it is easy to compare tariffs from different electricity companies is plotted on the vertical axis. Each dot on the scatterplot represents a country. The scatterplot contains a 45° reference line or identity line; if a country is positioned on this line, this mean that the level of "strong" agreement for both statements is the same.

Most countries are positioned below the 45° reference line or identity line, which means that the level of "strong" agreement for the statement that it is easy to compare different tariffs offered by a respondent's electricity company is higher than the level of "strong" agreement for the statement that it is easy to compare tariffs from different electricity companies. Results show that across most countries, respondents were somewhat more likely to "strongly agree" that it was easy to compare tariffs of their own electricity company than that it was easy to compare tariffs from different electricity companies. For example, in Belgium, 29% of respondents expressed "strong" agreement for the former statement, compared to 21% for the latter statement.

Figure 67: "Comparing tariffs" vs. "comparing offers across companies" (scatterplot), by country



Q17_2 & 5. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree"

Note: Each axis presents the proportion of respondents who strongly agreed (scores 8 to 10) on the statement; EU28, Base: all respondents

Source: Consumer survey

3.3 Choice complexity – results of a behavioural experiment

In order to test how complexity impacts consumers' understanding of offers in electricity markets, the behavioural experiment included a marketing material comprehension test. The objective of this test was to assess how common marketing methods affect consumers' ability to correctly understand the main features of the offer.

The marketing methods were:

- Upfront information on the key features of the offer was presented in **a non-standardised way** such that comparison between offers was more difficult.

- Relevant information was hidden **behind a "pop-up" button**. In order to accurately answer the test, the respondent would have to click on this button to reveal the additional information.

In order to test respondents' comprehension under the different marketing practices they were asked to identify:

- (1) which offer was the cheapest over a period of one year;
- (2) which offer was cheapest over a two-year period; and,
- (3) whether given the amount of electricity they used (based on the usage profile they were allocated to in the experiment[31]), they could expect to receive the discount on offer.

The information regarding the total cost over one year, the standing charge and unit price for the first 12 months was always shown upfront (i.e. the respondent did not need to click on the "pop-up" button).

The information needed to answer the second and third questions was either shown upfront or were "hidden" behind a "pop-up". The following figures present screen shots of the marketing practices as shown to respondents in the experiment. Each respondent saw two offers on their screen.

[31] Respondents were allocated to usage profiles based on their responses to questions including the number of bedrooms they have in their home, when they use electricity and what they use electricity for, so as to replicate 'real-life' conditions as closely as possible in the experiment. Further details are provided in Annex 6.

Figure 68: Standardised presentation

OFFER X

sign up by February 28th 2015, and you get:
for **12 months***,
standing charge **26.2pence/per day**
unit price **10.5 pence/kWh**

SAVE 10%**

We'll let you know every 6 months if we have a better tariff for you.

*Offer lasts 12 months, after which you return to a standard unit price of 13.1 pence/kWh and the standing charge reverts to 32.7 pence per **day**.
****Savings** estimate is based on competitor prices for a household with annual consumption of 3200 kWh

OFFER Y

sign up by February 28th 2015, and you get:
for **12 months***,
standing charge **23.5pence/per day**
unit price **9.4 pence/kWh**

SAVE 11%**

We'll let you know every 6 months if we have a better tariff for you.

*Offer lasts 12 months, after which you return to a standard unit price of 14.4 pence/kWh and the standing charge reverts to 36.1 pence per day.
**Savings estimate is based on competitor prices for a household with annual consumption of 3200 kWh

Figure 69: Standardised presentation with a "pop-up"

OFFER X

sign up by February 28th 2015, and you get:
for **12 months***,
standing charge **26.2 pence per day**
unit price **10.5 pence/kWh**

SAVE 10%**

We'll let you know every 6 months if we have a better tariff for you.

*, **terms and conditions apply

Click to See T&C

* Offer lasts 12 months, after which you return to a standard unit price of 13.1 pence/kWh and the standing charge reverts to **32.7 pence per day**.
**Savings estimate is based on competitor prices for a household with annual consumption of 3200 kWh

OFFER Y

sign up by February 28th 2015, and you get:
for **12 months***,
standing charge **23.5 pence per day**
unit price **9.4 pence/kWh**

SAVE 11%**

We'll let you know every 6 months if we have a better tariff for you.

*, **terms and conditions apply

Click to See T&C

Figure 70: Non-standardised presentation

OFFER X

save 10%**

for first 12 months*

if you sign up by February 28th 2015

unit price **10.5 pence/kWh**

We'll let you know every 6 months if we have a better tariff for you.

standing charge **26.2 pence per day**

**Savings estimate is based on competitor prices for a household with annual consumption of 3200 kWh

*Offer lasts 12 months, after which you return to a standard unit price of **13.1 pence/kWh** and the standing charge reverts to **32.7 pence per day**.

OFFER Y

if you sign up by February 28th 2015, you get:
for **12 months***

standing charge **23.5 pence per day**
unit price **9.4 pence/kWh**

save 11%**

We'll let you know every 6 months if we have a better tariff for you.

*Offer lasts 12 months, after which you return to a standing charge of **36.1 pence per day** and a standard unit price of **14.4 pence/kWh**

**Savings estimate is based on competitor prices for a household with annual consumption of 3200 kWh

Figure 71: Non-standardised presentation with a "pop-up"

OFFER X

save 10%**

for first 12 months*

if you sign up by February 28th 2015

unit price **10.5 pence/kWh**

We'll let you know every 6 months if we have a better tariff for you.

standing charge **26.2 pence per day**

*, **terms and conditions apply

Click to See T&C

* Offer lasts 12 months, after which you return to a standard unit price of **13.1 pence/kWh** and the standing charge reverts to **32.7 pence per day**. **Savings estimate is based on competitor prices for a household with annual consumption of 3200 kWh

OFFER Y

if you sign up by February 28th 2015, you get:
for **12 months***

standing charge **23.5 pence per day**
unit price **9.4 pence/kWh**

save 11%**

We'll let you know every 6 months if we have a better tariff for you.

*, **terms and conditions apply

Click to See T&C

3.3.1 Dripping Information behind a "pop-up" button

Presenting **information that is not important** for assessing the key features of a deal behind a "pop-up" may help consumers to focus on the more important information. When respondents were asked which of the two offers was the cheapest for the first 12 months (this information was always shown upfront), treatments that placed other information behind a "pop-up" (changes in cost after the first 12 months and the type of household the discounted price applied to), led to a greater proportion of consumers correctly identifying the deal that was cheapest for a 12-month period.

- In the standardised presentation setting, 85% of respondents correctly answered this question when the additional information was dripped in a "pop-up", compared to 79% when the additional information was shown upfront.
- In the non-standardised information setting, the proportions were 73% with drip and 67% without drip.

Saliency of information is important to aid consumer understanding. The removal of information that is not pertinent to assessing the key features of a deal that a consumer is looking for (in this case the respondents needed to correctly find and compare the standing charge and unit price for the first 12 months) to a less prominent position in marketing offers can help consumers to focus on the key material features of the offer, this in turn can help consumers to make better choices.[32]

The opposite is found **when important information is dripped**. When respondents needed to find and compare the total cost of the offers over two years, presenting this information in a "pop-up" led to fewer respondents correctly answering the comprehension question.

- 71% of respondents answered this question correctly when the information on standing charge and unit price after the first 12 months was not dripped compared to 42% when the information was dripped in the standardised presentation setting.
- 67% of respondents answered correctly when information was not dripped compared to 45% when information was dripped in the non-standardised presentation setting.

These observations from the experiment indicate that all information that is required to assess the total cost of alternative electricity offers should be clearly shown upfront and not dripped in a "pop-up". In this experiment, the discounted standing charge and unit price was offered for the first 12 months before reverting to higher standing charge and unit price. In order for respondents to correctly understand and compare the change in price after the discount period this information needed to be shown upfront alongside the discounted price for 12 months.

[32] The change in standing charge and unit price after the first 12 months is of course important when consumers are comparing deals. The experiment observations do not imply that changes in total cost after 12 months should be dripped in a "pop-up". However, the observations indicate that the placement of important cost information should be shown clearly to consumers upfront in advertised offers.

However, the behavioural experiment indicated that in some cases "dripping" information may be associated with respondents choosing the correct option more often. For example, in the comprehension task, respondents were shown an advertised discount for an offer and asked "Given the amount of electricity you use per year, would you expect to receive the discount for Offer X?" Answering this question correctly required respondents to focus their attention and use their electricity consumption, to put in context the marketing material information they were shown. In the comprehension test, the advertised discount presented upfront in the marketing material (as shown in the screen shot figures above) only applied to consumers who had an annual consumption which was the same as the average household. For example, in the UK, the average household consumption was set to 3,200 KWhs per year. In the dripping setting, this information was "hidden" behind a pop-up button. Despite this, a larger share of respondents correctly identified whether they would receive this discount (based on the profile they were allocated to in the experiment) when the information was dripped compared to when it was shown upfront.

- 42% of respondents correctly answered this question when the information was shown upfront, compared to 48% of respondents when the information was dripped in the standardised setting.
- In the non-standardised setting, 45% answered this question correctly when information was shown upfront, compared to 54% when it was dripped.

This may seem to be a slightly counterintuitive finding, however, respondents with experience in markets (including energy, but also goods and services markets in general) may expect the fine print of offered discounts to be "hidden" either in small text or behind a "pop-up". While it is not possible to assess the exact reason in this experiment, there is some evidence, as presented in Table 10 that consumers who compare tariffs across electricity companies may perform better in the marketing materials comprehension test and that experience and learning play an important role and can help in mitigating the effects of some marketing practices. This suggests that experience in markets can reduce the impact of some marketing practices. This has also been found in previous behavioural experiments. For example, the former UK Office for Fair Trading conducted two behavioural experiments that investigated the impact of dripping price information on consumers' behaviour.[33] In both studies, as participants in the experiments gained experience they made fewer decision errors and suffered less detriment due to the dripping of price information.[34]

3.3.2 Presenting upfront information in a standardised or non-standardised format

In the comprehension exercise the offered savings, standing charge and unit price for the first year, and the date by which the consumer had to sign up to the deal, were either presented in a standardised format, such that the order and positioning of all information shown was the same (Figure 68 and Figure 69), or in a non-standardised format where the position and sequence of information was different between the two offers (Figure 70 and Figure 71). Standardising the presentation of information such that details of the offer are placed in the same order and position across different deals helps consumers compare offers and identify which offer is the cheapest.

More respondents were able to correctly assess which offer was the cheapest over one year in the standardised setting compared to the non-standardised one:

[33] Office for Fair Trading (2010). The impact of price frames on consumer decision making; and Office of Fair Trading (2013) Partitioned pricing behavioural research.

[34] In both studies, consumer detriment was measured as earnings lost in the experiment in the drip price treatment (where shipping and handling fees where dripped) compared to a standard unit price treatment (where the unit price of the product and shipping and handling fees were shown upfront).

- 79% correctly identified the cheapest offer when the marketing material was standardised, compared to 67% that managed to do so when the marketing material was non-standardised (in the non-dripping frame).
- 85% answered this question correctly when the marketing material was standardised, compared to 73% that succeeded in doing it when the marketing material was non-standardised (in the dripping frame). These differences are statistically significant at the 95% level.

Table 3 presents the proportion of respondents who correctly answered each comprehension question across the different marketing material frames.

Table 3: Shares of respondents who correctly answered the marketing material comprehension test questions, by marketing material type

Question	Standardised		Non-standardised	
	Without drip	With drip	Without drip	With drip
Which offer is the cheapest over a period of 1 year?	79%	85%	67%	73%
Which offer is the cheapest over a period of 2 years?	71%	42%	67%	45%
Given the amount of electricity you use per year, would you expect to save 10% in Offer X?	42%	48%	45%	54%

Note: Weighted base varies by treatment: Standardised = 5,023; Standardised with drip = 2,542; Non-standardised = 5,027; Non-standardised with drip = 2,544

Source: Behavioural experiment

Effect of price structure on performance in the "stay or switch" task

The behavioural experiment also contained a "stay or switch" experiment (described in more detail in Section 4.8), in which respondents were shown an electricity bill that represented their "current" electricity deal, and asked whether they wanted to "stay" with their "current" deal, or "switch" to an alternative deal, which had one of three price structures:

- Non-complex pricing had just two components, a unit price per kWh and a standing charge per day. This was the simplest price structure.
- Tiered pricing had three components, one unit price for the first batch of energy (e.g. the first 800 kWh), another unit price for additional energy (e.g. above 800 kWh), and a standing charge per day.
- Tiered with discount pricing had the same components as tiered pricing, and in addition, a percentage discount was applied. This was the most complex price structure.

Table 4: Features included in price structures

Feature	Non-complex	Tiered	Tiered with discount
Standing charge (€cent/day)	✓	✓	✓
Flat rate unit price for all kWh (€cent/kWh)	✓		
Tier 1 unit price for the first [X] kWh (€cent/kWh)		✓	✓
Tier 2 unit price for additional kWh (€cent/kWh)		✓	✓
Discount % on the above			✓

The table below indicates that **respondents were less likely to choose the cheapest deal if the price structure was more complicated** (i.e. if the price structure was tiered or tiered with a discount): 66% chose the cheapest deal when the price structure was non-complex, compared to 59% when the price structure was tiered and 55% when the tiered with a discount. The difference is statistically significant at 99%.

Results by country show that the finding that respondents were less likely to choose the cheapest deal if the price structure was complicated holds for all countries, especially for tiered pricing with discount. In the case of France, for example, moving to tiered pricing reduces the probability of choosing the correct deal by 12 percentage points, compared to a baseline of 67% with non-complex pricing. Moving to tiered pricing with a discount further reduces the probability of choosing the correct deal by 6 percentage points.

Table 5: Share of respondents who selected the cheapest deal

	All countries	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI
By price structure of offers:											
Non complex	66%	63%	67%	56%	67%	76%	61%	65%	60%	67%	67%
Tiered	59%	60%	58%	52%	55%	73%	53%	58%	56%	59%	55%
Tiered with discount	55%	53%	62%	49%	49%	65%	47%	55%	51%	54%	55%

Note: Weighted base varies by treatment; Non-complex = 3,357; Tiered = 3,344; Tiered with discount = 3,355;
Source: Behavioural experiment

The results described above (i.e. the relationships between bill type, price structure, whether respondents should stay or switch, and whether respondents actually selected the cheapest deal) are confirmed by regression analysis reported in the table below.

Table 6: Regression results of impact of price structure on probability of choosing the cheapest deal

	Tiered price		Tiered price with discount		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**-7 pp*** **	0.02	**-11 pp*** **	0.02	**60%*** **	0.007
CZ	-3 pp	0.04	**-10 pp*** **	0.04	**59%*** **	0.02
DE	**-9 pp** **	0.04	-5 pp	0.04	**63%*** **	0.02
ES	-4 pp	0.04	-7 pp	0.04	**52%*** **	0.02
FR	**-12 pp*** **	0.04	**-18 pp*** **	0.04	**57%*** **	0.02
UK	-3 pp	0.04	**-12 pp*** **	0.04	**71%*** **	0.02
IT	**-8 pp* **	0.04	**-13 pp*** **	0.04	**54%*** **	0.02
LT	**-7 pp* **	0.04	**-10 pp** **	0.04	**59%*** **	0.02
PL	-4 pp	0.04	**-9 pp** **	0.04	**56%*** **	0.02
SE	**-7 pp* **	0.04	**-12 pp*** **	0.04	**60%*** **	0.02
SI	**-12 pp*** **	0.04	**-11 pp** **	0.04	**59%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. The dependent variable in the regressions reported in the table below represents whether or not (1 or 0) respondents chose the cheapest deal. The explanatory variables are dummies representing whether respondents saw the best practice bill (rather than the standard bill). Statistically significant coefficients are highlighted ***: significant at 99%; **: significant at 95%; *: significant at 90%.
Source: Behavioural experiment

3.3.3 Share of respondents that clicked the "See the Terms & Conditions" button

Saliency of information is important in helping consumers understand offers and identify the cheapest deal. Presenting important cost information behind a "pop-up" button can hinder consumers' ability to assess the total cost of an offer (as discussed above). The interaction between the presentation of upfront information and likelihood that consumers will "search" for additional information behind a "pop-up" (or in the small print) is therefore important when considering "best practice" information provision to consumers.

In the experiment, when upfront information was standardised, a larger proportion of respondents clicked on the "pop-up" to reveal the dripped terms and conditions, 42% in the standardised setting compared to 39% in the non-standardised setting. This difference is statistically significant at the 95% level.

This suggests that consumers may be less likely to access information relevant to understanding offers, if the information is not presented upfront, and if offers cannot be easily compared side-by-side in a standardised way.

3.3.4 Effect of respondent characteristics and behaviours on comprehension

From a policy perspective, it is important to examine whether certain consumer characteristics or behaviours are associated with different performance in the marketing materials comprehension task. For example, if a certain socio-demographic group has significantly worse performance in the task on average, policy can be targeted towards consumers in that group to help them assess and act on information. Similarly, if certain behaviours (e.g. comparing tariffs across electricity companies) are associated with better performance in the marketing materials comprehension task, policy targeted towards encouraging those behaviours may also help consumers.

This section describes respondents' average scores in the marketing material comprehension task, by respondent **socio-demographic characteristics**. As seen in Table 7, 60% of respondents below the age of 65 years responded correctly in the marketing material comprehension task, compared to 58% of respondents 65 years and over. Looking at respondents' level of education, it was note that 62% of respondents with a high education level responded correctly, compared to 59% of respondents with a medium level of education and 56% of respondents with a low education level.

Table 7: Share of respondents answering the marketing material comprehension questions correctly (average across all questions), by socio-demographic characteristics											
	All countries	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI
By respondent age:											
Below 65	60%	58%	62%	60%	60%	61%	57%	57%	57%	64%	56%
65 years and over	58%	50%	56%	51%	62%	64%	54%	49%	54%	63%	46%
By employment status of respondents											
Economically active	60%	58%	61%	60%	60%	60%	55%	58%	58%	65%	56%
Economically inactive	60%	55%	60%	57%	61%	64%	58%	52%	56%	62%	54%
By education level of respondent											
High	62%	64%	61%	63%	61%	65%	59%	59%	58%	66%	58%
Medium	59%	56%	62%	58%	59%	60%	58%	53%	57%	63%	54%
Low	56%	55%	57%	51%	64%	56%	52%	52%	53%	60%	48%
Total	60%	57%	61%	59%	61%	61%	57%	56%	57%	64%	55%

Note: Weighted base varies by category: Below 65 = 8,461; 65 years and over = 1,595; Economically active = 6,058; Economically inactive = 3,998; High education level = 3,463; Medium education level = 4,836; Low education level = 1,736.
Source: Behavioural experiment

As seen in Table 8, the impact of these socio-demographic categories (except for the impact of economic inactivity) is statistically significant, although in all cases the result may be driven by a few countries (such as the Czech Republic and Spain, which have large and statistically significant impacts for respondents' age and education level).The experiment cannot provide reasons for these observations, however, they are relevant from a national policy perspective.

Table 8: Regression results: impact of respondent age, employment status and education level on the likelihood that respondent answered correctly (average across all questions)										
	65 years and over		Economically inactive		High education level		Low education level		Average score in marketing materials comprehension task	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**-0.02****	0.01	0.002	0.008	**0.03*****	0.008	**-0.04*****	0.01	**0.60*****	0.004
CZ	**-0.08*****	0.03	**-0.03***	0.02	**0.09*****	0.03	**-0.03***	0.02	**0.57*****	0.01
DE	**-0.06****	0.03	-0.007	0.02	0.006%	0.02	**-0.04***	0.02	**0.61*****	0.01
ES	**-0.09*****	0.02	-0.02	0.02	**0.08*****	0.02	**-0.10****	0.02	**0.59*****	0.01
FR	0.02	0.02	0.009	0.02	0.01	0.02	0.04	0.03	**0.61*****	0.01
UK	0.04	0.02	**0.04***	0.02	**0.06*****	0.02	**-0.06****	0.03	**0.61*****	0.01
IT	-0.03	0.02	0.03	0.02	0.03	0.02	-0.07***	0.02	**0.57*****	0.01
LT	**-0.08*****	0.02	**-0.05*****	0.02	**0.06*****	0.02	-0.04	0.03	**0.56*****	0.01
PL	-0.03	0.03	-0.02	0.02	0.02	0.02	-0.04	0.04	**0.57*****	0.01
SE	-0.02	0.02	-0.03	0.02	0.03	0.02	-0.04	0.04	**0.64*****	0.01
SI	**-0.10****	0.04	-0.03	0.02	**0.04****	0.02	-0.07	0.07	**0.55*****	0.01

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

Consumer trust in advertising, pre-contractual and promotion materials

The consumer survey included questions to assess respondents' level of trust in advertising. Trust in advertising is a measure of credulity. The Unfair Commercial Practices Directive, Guidance Chapter on Vulnerable Consumers, includes credulity within the definition of vulnerability. Therefore, it is important to test if respondents that exhibit higher self-reported trust levels tend to perform differently than respondents with lower levels of trust.

Respondents in the consumer survey were asked whether they agreed with a number of statements relating to the advertising and contractual information provided by electricity companies[35]. Statements relevant to the marketing material comprehension test are:

- Statement 1: Advertising from electricity companies does not deceive, mislead or omit relevant information;
- Statement 2: Pre-contractual documents from [company name] did not mislead or omit relevant information;
- Statement 7: Electricity companies make their tariffs appear more attractive than they really are to encourage customers to switch.[36]

Table 9 presents regression results for the impact of agreeing with these statements (defined as indicating a response of 6 or more on a scale from 0 to 10) on the proportion

[35] Respondents were asked to indicate their agreement on a scale of 0 to 10 (with 0 indicating total disagreement and 10 indicating total agreement).

[36] Q5a, Q5b and Q5g in the consumer survey.

of correct responses in the marketing material comprehension test. Statistically significant impacts have been highlighted.

Respondents who agreed that **advertising** from electricity companies was not deceptive or misleading tended to score lower in the marketing material comprehension test. Overall, respondents who indicated that they agreed with the statement that advertising from electricity companies was not deceptive or misleading, scored 8 percentage points lower in the marketing material comprehension test (significant at 99%). This impact is statistically significant at 95% or more for all countries except in the case of Lithuania, Sweden and Slovenia. This indicates that consumers who reported having greater trust in advertising may also be more credulous when it comes to marketing materials, and may not identify and assess relevant information when choosing between offers.

Respondents who agreed that **pre-contractual information** does not mislead, scored worse overall in the marketing material comprehension test (2 percentage points lower, statistically significant at the 95% level). Respondents who agreed that companies **make their tariffs appear more attractive** did slightly better in the comprehension test overall (2.5 percentage points higher, statistically significant at the 99% level). However, it should be cautioned that these impacts might be driven by a few countries in both cases. In the case of trust in pre-contractual information, the impacts may be driven by large effects in Spain and France. In the case of trust in promotional materials, impacts may be driven by large effects in the Czech Republic, France, Poland and Sweden.

Table 9: Regression results: impact of trust in advertising, pre-contractual information and promotion from electricity companies on performance in marketing materials comprehension test

	Advertising		Pre-contractual information		Promotion		Average score in marketing materials comprehension task	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**-0.08*** **	0.01	**-0.02***	0.01	**0.025*** **	0.01	**0.60*** **	0.004
CZ	**-0.04***	0.02	0.015	0.02	**0.076*** **	0.02	**0.57*** **	0.01
DE	**-0.06*** **	0.02	0.003	0.02	0.03	0.02	**0.61*** **	0.01
ES	**-0.06** **	0.02	**-0.055** **	0.02	0.02	0.02	**0.59*** **	0.01
FR	**-0.08*** **	0.02	**-0.04***	0.02	**0.035***	0.02	**0.61*** **	0.01
UK	**-0.11*** **	0.02	-0.02	0.02	-0.03	0.025	**0.61*** **	0.01
IT	**-0.09*** **	0.02	-0.02	0.02	0.04	0.02	**0.57*** **	0.01
LT	-0.03	0.02	-0.03	0.02	-0.03	0.02	**0.56*** **	0.01
PL	**-0.05*** **	0.02	-0.007	0.02	**0.04***	0.02	**0.57*** **	0.01
SE	-0.03	0.028	0.04	0.02	**0.04***	0.02	**0.64*** **	0.01
SI	-0.02	0.02	0.02	0.025	0.015	0.02	**0.55*** **	0.01

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

Experience with comparing tariffs and performance in the marketing materials comprehension test

A wider experience with comparing tariffs across electricity companies may be one of the reasons why respondents tended to perform better in the marketing materials comprehension task. If consumers "learn by doing" under the current market conditions,

then policy measures that encourage consumers to search and compare tariffs, will also help consumers identify the best offers.[37] In the consumer survey, respondents were asked whether they agree with a number of statements, including:

- Statement 2: I have compared tariffs from different electricity companies;
- Statement 3: I have compared tariffs from [PROVIDER].[38]

Table 10 presents regression results for the impact of agreeing with these statements[39] on the proportion of correct responses in the marketing material comprehension test. Overall, respondents who had compared tariffs from their electricity company did not perform significantly better or worse in the marketing materials comprehension task.

There is some evidence that respondents who had compared tariffs across electricity companies performed better in the marketing materials comprehension task (2 percentage points higher, significant at 99%). This suggests that consumers may "learn by doing". That is, consumers who have compared tariffs across electricity companies may perform better when identifying relevant information in marketing materials. However, this result should be interpreted with caution, since the impact may be driven by a few countries, namely Spain, Sweden and Slovenia. Dropping these countries renders the impact statistically insignificant overall.

Table 10: Impact of history of comparing tariffs from electricity company, and across electricity companies, in marketing materials comprehension task

	Compared tariffs from electricity company		Compared tariffs from different electricity companies		Average score in marketing materials comprehension task	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	0.009	0.008	**0.02*** **	0.008	**0.60*** **	0.004
CZ	0.004	0.02	0.03	0.02	**0.57*** **	0.01
DE	-0.005	0.02	0.02	0.02	**0.61*** **	0.01
ES	**0.06*** **	0.02	**0.06*** **	0.02	**0.59*** **	0.01
FR	-0.02	0.02	-0.01	0.02	**0.61*** **	0.01
UK	0.007	0.02	0.02	0.02	**0.61*** **	0.01
IT	-0.01	0.02	0.003	0.02	**0.57*** **	0.01
LT	**0.05** **	0.02	0.006	0.03	**0.56*** **	0.01
PL	-0.01	0.02	**-0.04** **	0.02	**0.57*** **	0.01
SE	**0.035* **	0.02	**0.035* **	0.02	**0.64*** **	0.01
SI	0.013	0.02	**0.035* **	0.02	**0.55*** **	0.01

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.
Source: Behavioural experiment

[37] As previously stated, experience and learning have been found in other studies to reduce the impacts of marketing practices on behaviour (e.g. Office for Fair Trading (2013) and Office for Fair Trading (2010)).

[38] Q18 in the consumer survey.

[39] Defined as indicating a response of 6 or more on the scale of 0 to 1.

4. Switching

Consumers' choice and engagement with the market play an important role in boosting competition and in improving overall quality of service in a given market. In this context, switching could be a proxy for competition and is an example of activity that enables consumers to benefit from better deals on offer be it from alternative electricity companies or from their own electricity company.

Section 4.1 presents an overview of the regulatory framework related to switching, while Section 4.2 provides details about the levels of provider and tariffs switching across Member States. This chapter also gives insight on consumers' assessment of the ease of switching (Section 4.4), on consumers' awareness of switching rules (Section 4.5), and on the quality of information received from electricity companies as regards switching rules (Section 4.3). Section 4.6 and 4.7 seek to examine the underlying reasons for switching or not switching tariffs or providers. The last section (Section 4.8) presents the findings of the "stay or switch" behavioural experiment, testing the impact of complexity of pricing information, and the impact of the "best practice" bill[40] .

Box 3: Main findings with regards to "switching"

- **Legal provisions on switching.** All but one of the EU Member States have implemented legislation to give consumers the right to switch electricity companies; in Croatia, the legal instrument to govern switching was under preparation at the time when this study was conducted. A majority of Member States have specified a time limit of three weeks for the switch, which is in line with the EU Directive. However, when mystery shoppers (in 10 countries) asked electricity companies about the duration of the switching process, however, at least 3 in 10 shoppers in Slovenia (30%), Poland (36%), the Czech Republic (42%) and Italy (47%) were informed that the change would take more than three weeks.
- **Switching rates.** Despite the potential for financial gains, the level of switching rates remains relatively low. In the UK, the Netherlands and Ireland, 28% of survey respondents had switched electricity company in the past three years. In Iceland, Bulgaria, Luxembourg, Lithuania, Hungary, Romania and Greece, the switching rate remains negligible (between 0.2% and 2%). The proportion of respondents who had switched tariff while staying with their current electricity company in the past three years ranged from 1% in Bulgaria to 28% in the UK.
- **Awareness of the right to switch.** Bulgaria, Lithuania, Greece, Luxembourg and Iceland stood out with considerably lower proportions of respondents who thought they had the right to switch provider. Although each of the 10 mystery shopping countries has implemented legislation to give consumers the right to switch electricity company, mystery shoppers were not always correctly informed by electricity companies about this right. In the Czech Republic and Lithuania, more than a fifth of mystery shoppers reported that the operator informed them that there were limitations on the energy provider that consumers can choose; moreover, 12% of shoppers in Lithuania answered that the operator did not know whether consumers were free to choose any provider from all those offering their services in the area.
- **Consumers' assessment of barriers to switching.** When asked about the reasons for not switching electricity company, 16% of respondents answered that the savings would not justify the trouble linked to changing electricity companies, 12% mentioned that switching would be too complicated and 4% referred to the length of the switching process. Although perceptions that switching is complicated are rather common, for the majority of survey respondents, who had actually switched electricity company in the past three years, the switching process had been easy: 12% answered that changing electricity company had been easy, compared to 2% who stated the opposite.
- **Comparison tools.** A majority (64%) of survey respondents who had compared tariffs of different electricity companies said they had used comparison tools to do so, compared to 38% who had visited the websites of electricity companies and 8% who had contacted electricity companies by phone. Despite the fact that comparisons tools are the main tool used by consumers to compare offers, when

[40] The "best practice" bill draws on a range of recommendations from the Working Group report on Billing and Personal Data Management (described in greater detail in Section 4.8).

Box 3: Main findings with regards to "switching"

asked to estimate the savings from switching to the cheapest tariff, 25% of mystery shoppers answered that they were not able to estimate the savings (even when using comparison tools) – in other words, they experienced difficulties to assess the benefits related to the choice of tariffs on offer.

- **Results of the "stay or switch" experiment.** Respondents in the experiment were less likely to choose the cheapest deal if the price structure was more complicated: 66% chose the cheapest deal when the price structure had just two components (a unit price per kWh and a standing charge per day), compared to 59% when the price structure had three components (one unit price for the first batch of energy, another unit price for additional energy and a standing charge per day).

4.1 Regulatory framework related to switching

Most countries have implemented the provisions of the Directive 2009/72/EC that give consumers the right to switch electricity providers within a three-week period and without extra charges. In two countries, Iceland and Croatia, switching is a right, but the legal instrument to govern switching was under preparation at the time of the study. An overview of the national regulatory framework related to switching is provided in Table 11.

Table 11: Regulatory framework related to switching

	Right to switch provider enriched in legislation	Is the switching process regulated	What is the legal duration	What is the actual duration	Is the cost of switching regulated
Austria	Yes	Yes	3 weeks	4 - 6 weeks	Yes, no fees allowed
Belgium	Yes	Yes	3 weeks	3 weeks	:
Bulgaria	Yes	Yes	3 weeks	:	:
Croatia	*In preparation*	*In preparation*	*In preparation*	:	:
Cyprus	Yes	:	NA	NA	:
Czech Republic	Yes	Yes	3 weeks	10 days	Yes, free of charge
Denmark	Yes	Yes	3 weeks	10 days	:
Estonia	Yes	Yes	3 weeks	:	:
Finland	Yes	:	:	:	:
France	Yes	Yes	3 weeks	2 weeks	Yes, free of charge
Germany	Yes	Yes	3 weeks	:	Yes, free of charge
Greece	Yes	Yes	30 days	:	:
Hungary	Yes	:	:	:	:
Iceland	Yes	*In preparation*	"Every month"	:	:
Ireland	Yes	:	:	2 weeks	:
Italy	Yes	Yes	3 weeks	:	:
Latvia	Yes	Yes	:	:	:
Lithuania	Yes	Yes	3 weeks	10 days	:
Luxembourg	Yes	Yes	3 weeks	3 weeks	:
Malta	NA	NA	NA	NA	NA
Netherlands	Yes	Yes	3 weeks	20 days	:
Norway	Yes	Yes	3 weeks	3 weeks	Yes, free of charge
Poland	Yes	Yes	3 weeks	Up to 30 days	:
Portugal	Yes	:	:	:	:
Romania	Yes	:	:	:	:
Slovakia	Yes	Yes	3 weeks	3 weeks	Yes, free of charge
Slovenia	Yes	Yes	3 weeks	2 – 4 weeks	Yes, free of charge
Spain	Yes	Yes	3 weeks	Up to 2 months	:
Sweden	Yes	Yes	:	:	:
UK	Yes	Yes	3 weeks	3 weeks	:

Key: In preparation=legal instrument to regulate switching is under preparation, NA= not applicable (i.e. no alternative provider in the market), : = no specific data found or received via stakeholder consultation

Source: Stakeholder consultation and literature review

Consumers' right to switch provider

Although most countries have implemented legislation to give consumers the right to switch electricity company, mystery shoppers were not always correctly informed about this right. Mystery shoppers were instructed to contact electricity companies by phone and ask the operator whether they were free to choose any electricity provider from all those offering services in their area. In the Czech Republic and Lithuania, more than a fifth of mystery shoppers reported that **the operator informed them that there were limitations on the energy provider that consumers can choose** (22% and 24%, respectively); moreover, in Lithuania, 12% of shoppers answered that the operator did not know whether consumers were free to choose any provider from all those offering their services in the area.

Table 12: Electricity providers' response when asked whether consumers are free to choose any provider from all those offering services in their area

	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	Total
	50	100	75	75	75	75	50	100	50	50	700
You are free to choose an energy provider	78%	87%	96%	92%	99%	95%	64%	92%	86%	96%	90%
There are limitations on the energy provider that you can choose	22%	12%	4%	7%	1%	4%	24%	7%	14%	0%	9%
No response	0%	1%	0%	1%	0%	1%	12%	1%	0%	4%	2%

Q9. Ask the operator if you are free to choose any provider from all those offering services in your area; what does he/she reply?
Base: all mystery shoppers
Source: Mystery shopping exercise

Legal and actual duration of the switching process

As noted above, most countries have implemented legislation to give consumers the right to switch electricity company, and among these countries, a majority have specified a time limit of three weeks in line with the EU Directive (see Table 11).

Nonetheless, in some countries, more complicated arrangements raise questions as to whether the switching duration of three weeks is actually achieved:

- In Austria, despite the mandatory three-week period for the switching process, this process can last up to six weeks, as it depends on the registration to the system operator, only due on the first day of the calendar month.
- A stakeholder in Bulgaria stated that the barriers to switching were an extremely serious issue in the market. The same stakeholder stated that switching did not occur within the appropriate timeframe because: *"There still are technical difficulties due to the fact that the switching provisions were only recently adopted in the law."*
- In Estonia, consumers must give 30 days' notice to their electricity company.
- Similarly, in Greece, consumers who want to change electricity company must submit a written request to their current provider or must authorise the new provider of their choice to submit the written request on their behalf. The termination of the agreement shall come into effect 30 days from the date the written complaint is submitted.

Moreover, when mystery shoppers asked about the duration of the switching process, at least 3 in 10 shoppers in Slovenia (30%), Poland (36%), the Czech Republic (42%) and Italy (47%) were informed that the **change would take more than three weeks**. And as such, the response received by the mystery shoppers is not necessarily the same as the information about the duration of the switching process provided by the stakeholders in this study (see in Table 11, in Slovenia, the actual duration would be just 10 days; in Poland, on the other hand, stakeholders estimated the actual duration was "up to 30 days").

Table 13: Electricity providers' response when asked how long it will take to switch

	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	Total
	50	100	75	75	75	75	50	100	50	50	700
The change will take more than 3 weeks	42%	4%	11%	4%	14%	47%	10%	36%	22%	30%	21%
They will make the change within 3 weeks (or less)	24%	66%	41%	76%	58%	15%	34%	36%	72%	20%	46%
Gave another answer (e.g. 'don't know' or 'between 2 and 4 weeks')	34%	30%	48%	20%	28%	38%	56%	28%	6%	50%	33%

Q11. Ask the operator how long it will take for the new provider to make the change; what does he/she reply?
Base: all mystery shoppers
Source: Mystery shopping exercise

More than 4 in 10 mystery shoppers in six countries were informed that it would take more than six weeks to receive a final closure account from their current provider or that is was not clear how long this would take: 43% in Poland, 44% in Slovenia, 52% in the Czech Republic and 58% in Italy; a similar – or even higher – proportion was also observed in Spain (56%) and Lithuania (68%).

Table 14: Electricity providers' response when asked how long it will take for consumers to receive the final closure account from their previous provider

	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	Total
	50	100	75	75	75	75	50	100	50	50	700
Gave another answer (e.g. 'don't know' or 'more than six weeks')	52%	27%	56%	39%	14%	58%	68%	43%	38%	44%	42%
No later than six weeks after you switch, you should receive the final closure account	48%	73%	44%	61%	86%	42%	32%	57%	62%	56%	58%

Q12. Ask the operator how long it will take for you to receive the final closure account from your previous provider; what does he/she reply?
Base: all mystery shoppers
Source: Mystery shopping exercise

Is the switching process free of charge?

Based on the data collected in this study, it is also not clear whether most countries that have regulated the switching process have ensured that it must be free of charge (data was found for seven countries). In fact, even if the switching process itself is free per se, it can occur that the contractual conditions can cause increased costs of switching for consumers. For example, in Belgium, one stakeholder elaborated on contractual terms which could negatively impact consumers' switching behaviour.

> *"Some suppliers include in their contractual terms some provisions about promotions that clients could only benefit if they don't switch to another supplier. Some tariff plans exist that include costs that are billed for one year even if the client switches before (year-based costs and not monthly-based)."*

A similar picture emerged when looking at the results of the mystery shoppers' phone enquiries. On average, across the 10 countries, 17% of mystery shoppers were told by the operator responding to their call **that there could be a fee for cancelling their current energy deal**; this proportion was the highest in the Czech Republic and the UK (40% and 38%, respectively), followed by Poland and Sweden (28% and 32%, respectively).

Table 15: Electricity providers' response when asked if there are any charges when switching electricity provider

	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	Total
	50	100	75	75	75	75	50	100	50	50	700
You will not be charged for the change	60%	94%	83%	89%	59%	86%	80%	67%	66%	80%	77%
A fee for cancelling your current energy deal (e.g. exit fee for fixed rates)	40%	5%	11%	5%	38%	1%	0%	28%	32%	14%	17%
Another extra charge	0%	0%	7%	4%	3%	11%	8%	4%	2%	2%	4%
No response	0%	1%	0%	1%	0%	1%	12%	1%	0%	4%	2%

Q10. Ask the operator if there are any charges when switching provider; what does he/she reply?
Base: all mystery shoppers
Source: Mystery shopping exercise

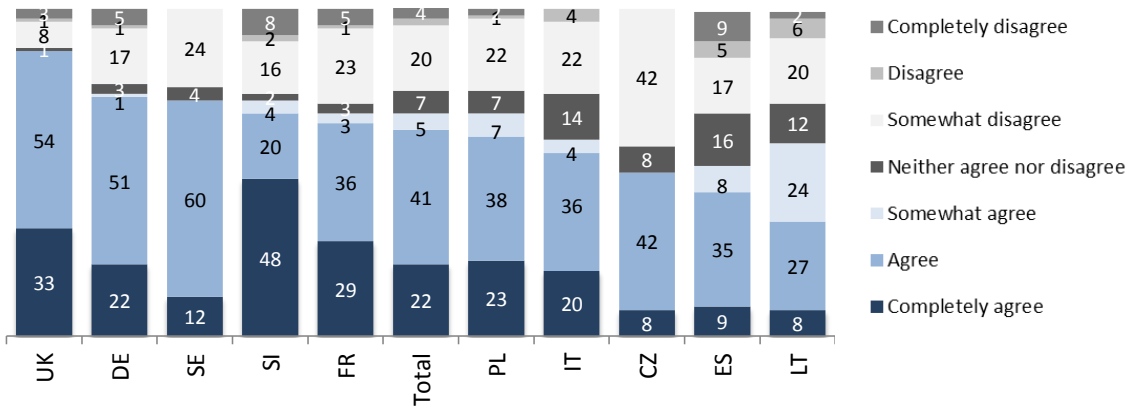
In most countries, a handful of mystery shoppers was informed by the operator that there would be other extra charges when switching provider (2% in Slovenia and Sweden, 3% in the UK, 4% in Poland and France); in Italy and Lithuania, this proportion was higher (11% and 8%, respectively). In Box 4, examples of the type of extra charges that were mentioned by the operators that responded to the mystery shoppers' phone call are provided.

Box 4: Examples of "extra charges" when switching mentioned by electricity providers (when being contacted by phone)

- An activation fee – Italy, Poland
- A fee for starting up the service (€27.16) – France
- An extra charge of €20.54 on the first bill; no explanation was provided for this charge – Italy
- A security deposit (€70) – Italy
- A deposit (€77) – Italy
- An administration cost added on the first electricity bill (€27.59) – Italy
- Administration cost (€35) – France
- A service fee (€27.90) – France
- A fee for contracts of less than one year – Spain
- A yearly charge of 300 SEK/year (or 25 SEK/month) for each new contract – Sweden

Mystery shoppers in Slovenia were the most likely to *completely agree* that they had received clear information about the switching process when contacting an electricity company by phone (48% *completely agreed*). In the UK, 33% of shoppers *completely agree* and 54% *agreed* that that they had received clear information about the switching process when contacting an electricity company by phone; in Lithuania, however, just 8% of shoppers *completely agree* and 27% *agreed.*

Figure 72: Agreement with the statement: "I received clear information about switching providers"



Q13. To what extent do you agree with the following statement: "I received clear information about switching providers"?
Base: all mystery shoppers
Source: Mystery shopping exercise

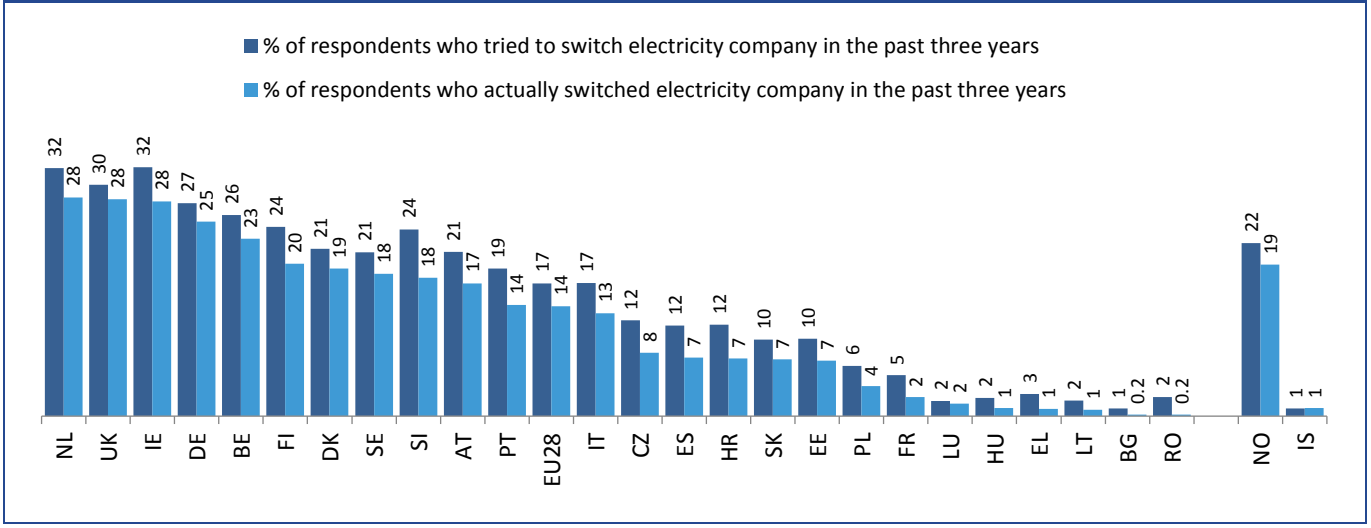
4.2 Switching rates

4.2.1 Reported level of provider switching

In the UK, the Netherlands and Ireland, one in three respondents answered that they had **tried to switch electricity company** in the past three years. Out of these, 28% of respondents in each of these three countries had **actually switched electricity company** in that timeframe.

In Iceland, Bulgaria, Luxembourg, Lithuania, Hungary, Romania and Greece, on the other hand, less than 1 in 20 respondents had tried to switch electricity company in the past three years; as such, in each of these countries, the actual switching rates remain negligible (between 0.2% and 2%).

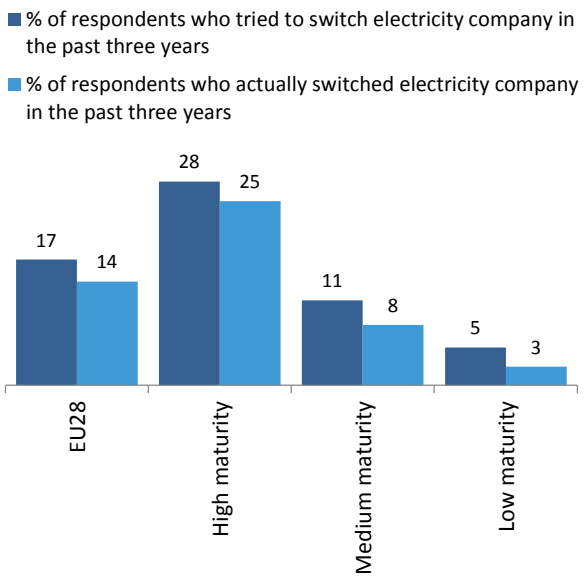
Figure 73: Level of provider switching , by country



Q27. Have you tried to switch your electricity company in the last three years?
Q28. Which of the following best reflects your experience of switching?
% by country, Base: all respondents. Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

The level of provider switching varied from 3% in countries with low market maturity to 25% in countries with high market maturity. In countries with low market maturity, 5% of respondents answered that they had tried to switch electricity company, but only 3% actually switched electricity company; in countries with low market maturity, a large share of respondents tried to switch electricity company, but gave up during the process.[41]

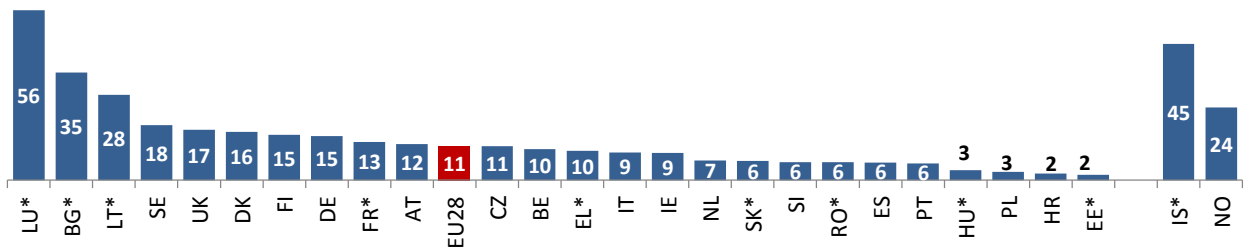
Figure 74: Level of provider switching, by market maturity



Q33. In the last three years, have you tried to change your tariff while staying with the same electricity company?
Q34. Which of the following best reflects your experience of trying to change tariff?
% EU28 (countries grouped by market maturity), Base: all respondents
Source: Consumer survey

Consumers may be required to switch electricity company if they change residence. This is a feature of the market structure and may be seen as artificially inflating switching rates. As a result, it may therefore be more appropriate to compare switching rates which exclude consumers who switched because they moved house. Figure 75 illustrates that 11% of respondents at EU level had switched electricity company because they had moved house; this figure varies between 2% in Estonia to 56% in Luxembourg.

Figure 75: % of respondents who switched electricity company because they moved home, by country



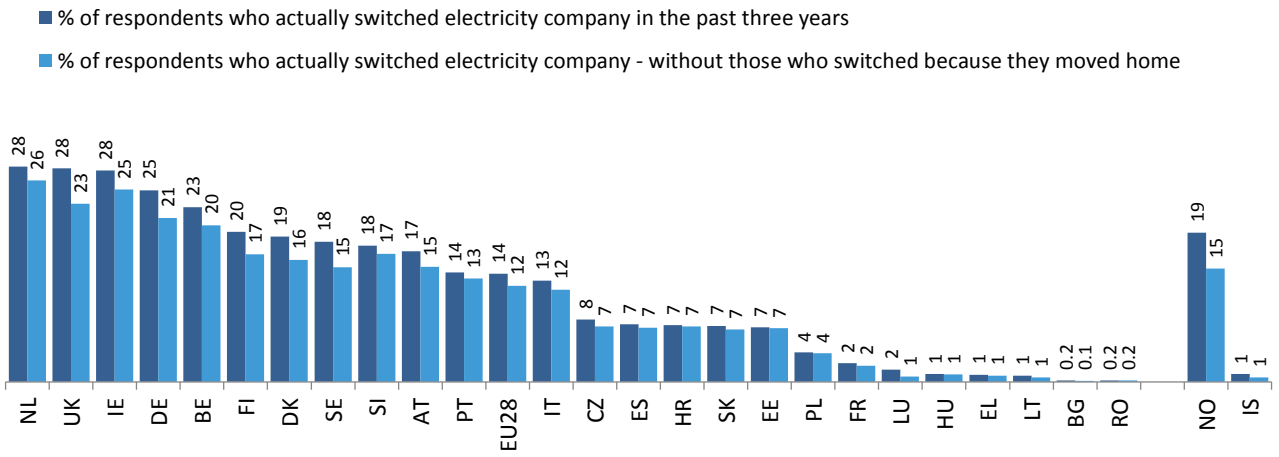
Q31. What were the main reasons for trying to switch your electricity company? You can select up to three reasons. "You moved house"
Note: * n<100; % by country, Base: Respondents who switched electricity company in the past three years. *Question not asked in Cyprus, Latvia and Malta*

[41] In low market maturity countries, of all the respondents who tried to switch, 49% actually switched electricity company and 51% gave up during the process. In high market maturity countries, on the other hand, 90% actually switched electricity company and only 10% gave up during the process.

Source: Consumer survey

Excluding respondents who switched electricity company because they moved house, it was noted that, across the EU28, the provider switching rate is 12%. This figure is higher than the one observed in the 2010 study, when the provider switching rate was 6%. Although caution should be exercised when comparing the results of the two studies (in 2010, respondents were asked whether they had switched in the past two years, while in the current study, the timeframe was three years), it appears that all in all the provider switching rate has increased compared to 2010. The provider switching rate was higher than 10% in 13 countries (out of 30).

Figure 76: Level of provider switching (excluding respondents who moved home), by country

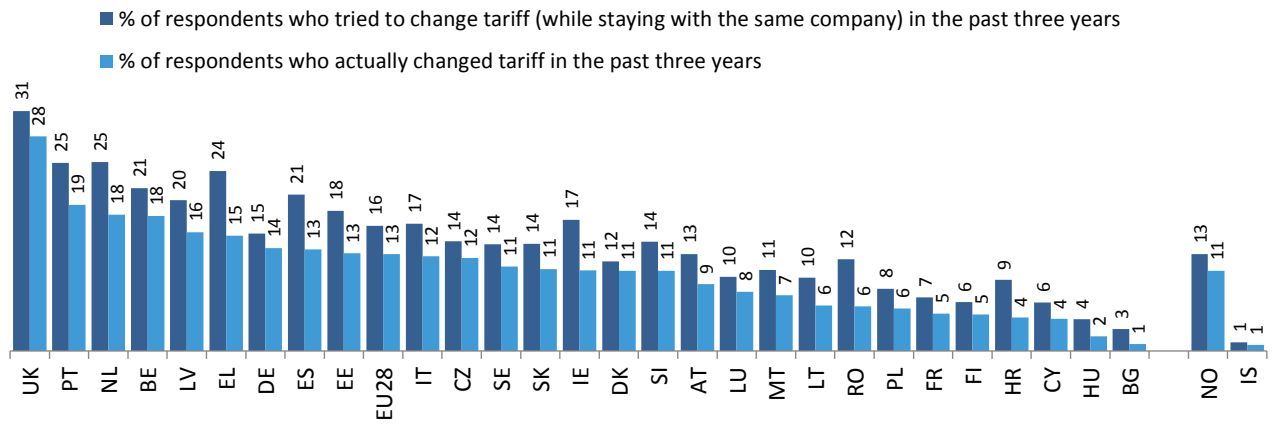


Q27.Have you tried to switch your electricity company in the last three years?
Q28. Which of the following best reflects your experience of switching?
% by country, Base: all respondents. Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

4.2.2 Reported level of tariff switching (of those who stayed with the same provider)

The proportion of survey respondents who had **tried to switch tariff while staying with their current electricity company** in the past three years ranged from 1% in Iceland, 3% in Bulgaria and 4% in Hungary to 31% in the UK. Across most countries, a majority of respondents who had tried to switch tariff also ended up **actually switching tariff**; the highest rates were observed in the UK (28% had changed tariff in the past three years), Portugal (19%), Belgium and the Netherlands (both 18%).

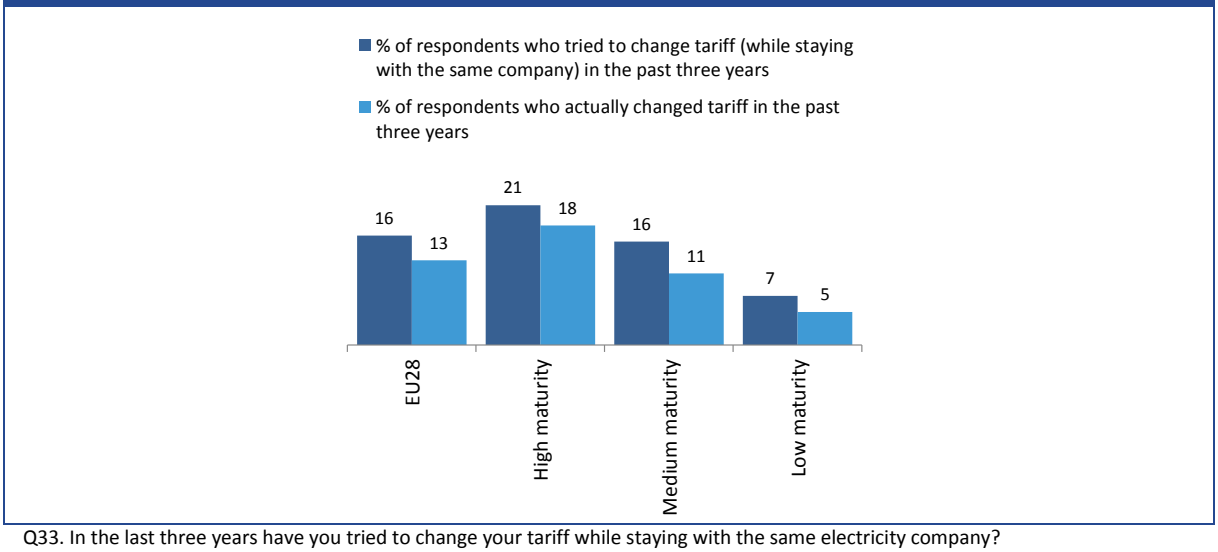
Figure 77: Level of tariff switching (own provider), by country



Q33. In the last three years have you tried to change your tariff while staying with the same electricity company?
Q34. Which of the following best reflects your experience of trying to change tariff?
% by country, Base: all respondents
Source: Consumer survey

The level of tariff switching (while staying with the same electricity company) was 5% in countries with low market maturity, 11% in countries with medium market maturity and 18% in countries with high market maturity.

Figure 78: Level of tariff switching (own provider), by market maturity

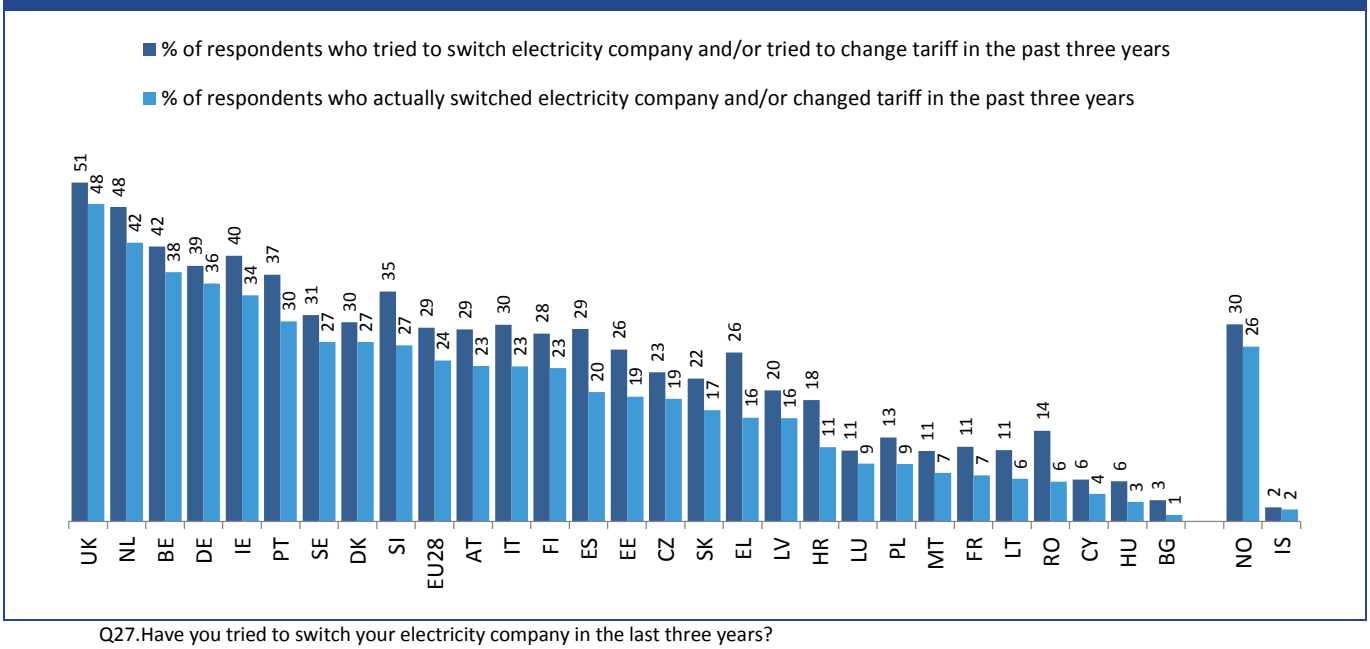


Q33. In the last three years have you tried to change your tariff while staying with the same electricity company?
Q34. Which of the following best reflects your experience of trying to change tariff?
% EU28 (countries grouped by market maturity), Base: all respondents
Source: Consumer survey

4.2.3 Reported level of provider and tariff switching

An indicator of consumer mobility in the European electricity markets can be constructed from the provider and tariff switching rates. Figure 79 shows: (1) the proportion of respondents who had either tried to switch *provider* or *tariff with their current provider* in the past three years, and (2) the proportion of respondents who had either switched *provider* or *tariff with their current provider* in the past three years.

Figure 79: Level of provider and tariff switching, by country



Q27.Have you tried to switch your electricity company in the last three years?
Q28. Which of the following best reflects your experience of switching?
Q33. In the last three years have you tried to change your tariff while staying with the same electricity company?
Q34. Which of the following best reflects your experience of trying to change tariff?
% by country, Base: all respondents
Source: Consumer survey

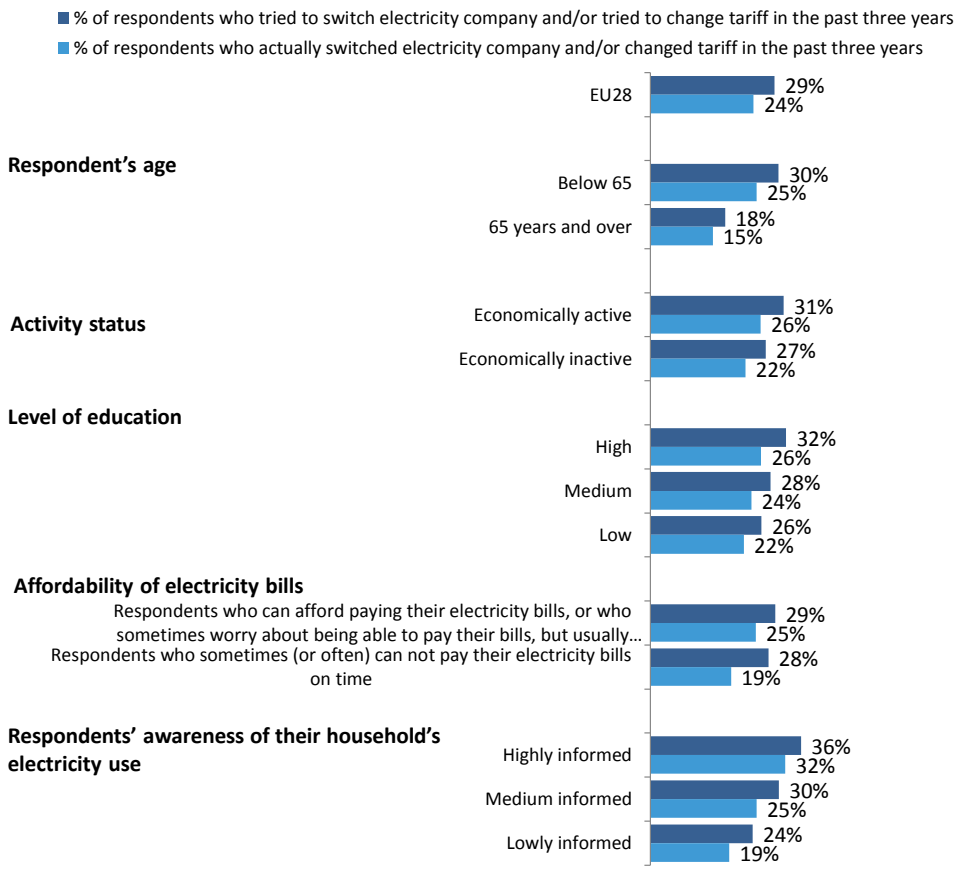
Across the EU28, 29% of respondents had tried to switch provider or tariff with their current provider in the past three years and 24% had actually switched provider or tariff with their current provider (see Figure 79). In the Netherlands and the UK, more than 40% of respondents had switched provider or tariff with their current provider in the past three years (42% and 48%, respectively); however, in Bulgaria, Cyprus, Hungary and Iceland, the level of provider and tariff switching remained below 5%.

Switching rates and socio-demographic characteristics

Switching rates were higher among respondents below 65 year-olds, economically active respondents, more highly educated respondents, respondents who could afford paying their electricity bills and respondents who used electricity in a more conscious way. For example, while 15% of over 65 year-olds had switched provider or tariff with their current provider in the past three years, this figure was 30% for younger respondents (a difference of 15 percentage points).

It is also interesting to note that respondents who sometimes or often could not afford paying their electricity bills on time were as likely as respondents who had no difficulties to pay such bills to have ***tried to switch*** provider or tariff with their current provider in the past three years (28% and 29%, respectively). However, respondents with payment difficulties appear to have been less successful in switching provider or tariff, and the **actual switching rate** for this group was lower (19% vs. 25% for respondents without payment difficulties).

Figure 80: Level of provider and tariff switching, by respondent characteristics



Q27.Have you tried to switch your electricity company in the last three years?
Q28. Which of the following best reflects your experience of switching?
Q33. In the last three years have you tried to change your tariff while staying with the same electricity company?
Q34. Which of the following best reflects your experience of trying to change tariff?
% EU28, Base: all respondents
Source: Consumer survey

4.3 Access to information about switching: information found on electricity companies' websites

Some consumers have access to and prefer the internet as information channel (instead of contacting an electricity companies by phone); as such, it is also important that electricity companies provide information about switching provisions on their websites. Mystery shoppers were also asked to search electricity companies' websites for information regarding the switching provisions set out in the Electricity Directive[42] (for more details, see Box 5 in Section 4.5)

In Lithuania, Spain and Sweden, roughly two-thirds of mystery shoppers could not find any information about switching provisions on the electricity company's website. In Slovenia, on the other hand, 82% of shoppers answered that it was stated on the electricity company's website that, when switching, consumers are not charged for the change. Fewer shoppers in Slovenia were able to find the following statements on the company's website: (1) the new provider must make the change within three weeks (10%), and (2) within six weeks, the final closure account should be received from the previous provider (10%).

In France and Lithuania, none of the mystery shoppers found information on the electricity company's website that stated that consumers might incur a fee for cancelling their current energy deal; in Sweden, on the other hand, 16% of shoppers reported that it was stated on the website that there might be such a fee.

Table 16: Switching rules found on electricity companies' websites

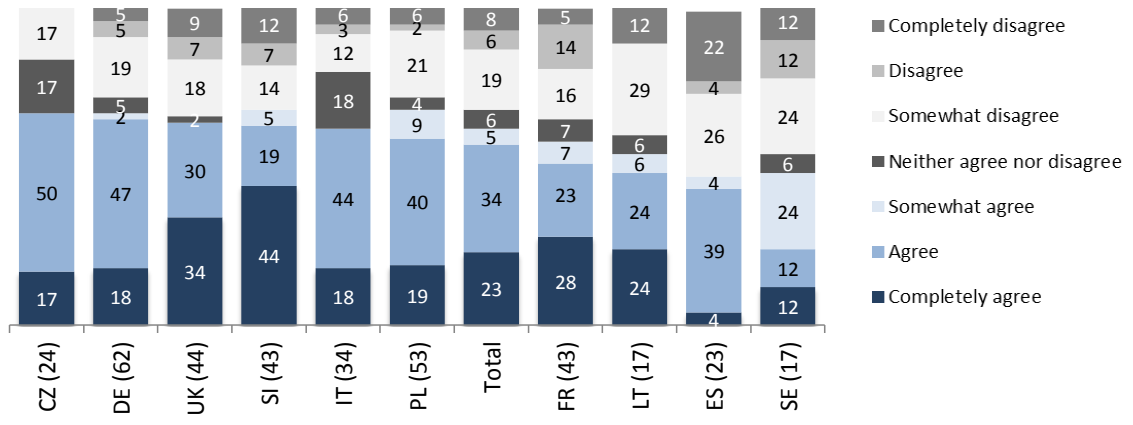
	SI	DE	UK	FR	PL	CZ	IT	LT	SE	ES	Total
	50	100	75	75	100	50	75	50	50	75	700
You will not be charged for the change	82%	57%	21%	52%	50%	36%	45%	30%	10%	24%	42%
The new provider must make the change within three weeks (or less), provided you respect the terms and conditions of the original contract	10%	13%	26%	13%	6%	8%	1%	10%	12%	3%	10%
Within six weeks (or less) after you switch, you should receive the final closure account from your previous provider	10%	11%	24%	4%	7%	2%	0%	2%	2%	4%	7%
It might be that you'll incur a fee for cancelling your current energy deal	10%	5%	17%	0%	6%	8%	1%	0%	16%	5%	7%
None of the above	14%	38%	42%	43%	47%	52%	54%	66%	66%	69%	49%

Q3. Which of the following statements about the switching process were found on the website? (multiple answers allowed)
Base: all mystery shoppers
Source: Mystery shopping exercise

[42] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (Article 3.5 and paragraph 1 of Annex 1 – switching provisions).

In seven of the countries included in the mystery shopping exercise, at least 50% of mystery shoppers, who had found information about switching, *completely agreed* or *agreed* that this information had been easy to find. In particular, in Slovenia, 44% of shoppers *completely agreed*, and a further 19% *agreed* that the information had been easy to find. It is interesting to note that mystery shoppers in Slovenia were also the most likely to *completely agree* that they had received clear information about the switching process when contacting an electricity company by phone (48% *completely agreed* – see Figure 72).

Figure 81: Agreement with the statement: "It was easy to find information about switching provider"



Q5. To what extent do you agree with the following statement: "it was easy to find information about switching provider"?
%, Base: mystery shoppers who found information about switching rules (the number of mystery shoppers that answered the question is reported in brackets)
Source: Mystery shopping exercise

A large variation was also observed across countries in terms of the website's page on which the information about switching was displayed. For example, in the Czech Republic, the largest share of shoppers had found information about switching rules on the FAQ section of the website (46%) while in Germany and Slovenia the largest share of shoppers had found the information on the home page of the electricity company's website (both 56%).

Table 17: Section of electricity companies' websites where information was found about switching rules

	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	*Total*
Base	24	62	23	43	44	34	17	53	17	43	*360*
In the FAQ section	46%	44%	48%	35%	30%	26%	65%	43%	29%	26%	*38%*
On a page to "become a client"	25%	27%	22%	33%	34%	35%	35%	51%	12%	44%	*34%*
On the home page	25%	56%	17%	21%	30%	21%	12%	30%	35%	56%	*34%*
On a specific page about consumers' rights when switching provider	17%	2%	4%	21%	23%	12%	18%	28%	24%	7%	*15%*
Other	0%	6%	9%	2%	14%	26%	6%	0%	18%	5%	*8%*

Q4. Where did you find information about switching provider? (multiple answers allowed)
Base: mystery shoppers who have found at least one of the switching rules on the provider's website
Source: Mystery shopping exercise

Mystery shoppers were also asked to check whether it was possible to switch provider (i.e. become a client) on the website itself (e.g. by filling in an online form); the proportion of shoppers who confirmed that this was possible varied between 34% in Lithuania and Poland and 87% in Germany. Among the shoppers who reported that it was possible to switch provider on the website itself, 34% said that it was clearly stated on the web page that, when signing a contract online, consumers have the right to withdraw from a new contract within the cooling-off period.

Table 18: Possibility to switching provider on the website itself and information about the cooling-off period

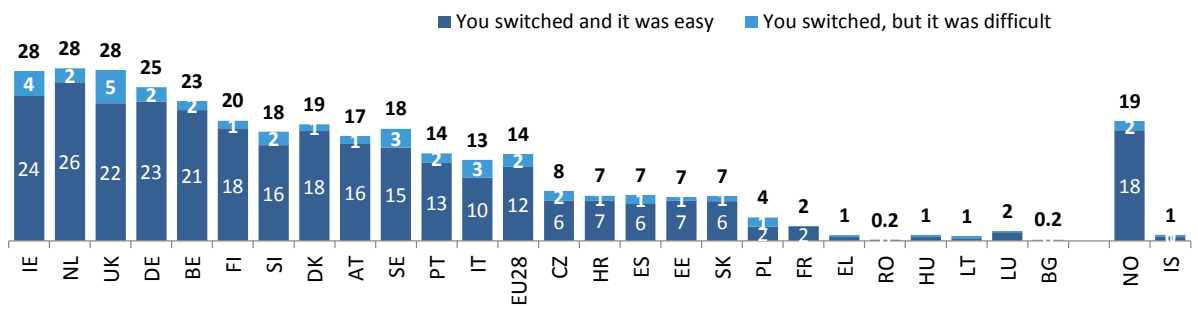
	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	*Total*
Base (all shoppers)	**50**	**100**	**75**	**75**	**75**	**75**	**50**	**100**	**50**	**50**	**700**
Possible to switch provider on the website itself	46%	87%	48%	79%	80%	65%	34%	34%	74%	68%	62%
Base (shoppers who indicated that they can switch on the provider's website)	**23**	**87**	**36**	**59**	**61**	**48**	**17**	**34**	**37**	**34**	**436**
Information about cooling-off period provided on the website	0%	52%	11%	51%	57%	25%	6%	26%	22%	15%	34%

Q6. Can you switch provider (i.e. become a client) on the website itself (by filling out an online form)?
Q6a. If "Yes", was it stated clearly on the page that you have the right to withdraw from a new contract within seven (or more) days when signing the contract online?
Base: all mystery shoppers
Source: Mystery shopping exercise

4.4 Consumers' views on ease of switching

For the majority of survey respondents (across the EU28, without Cyprus, Latvia and Malta), who had switched electricity company in the past three years, the switching process was perceived as easy: 12% answered that changing electricity company had been easy, compared to 2% who stated the opposite.

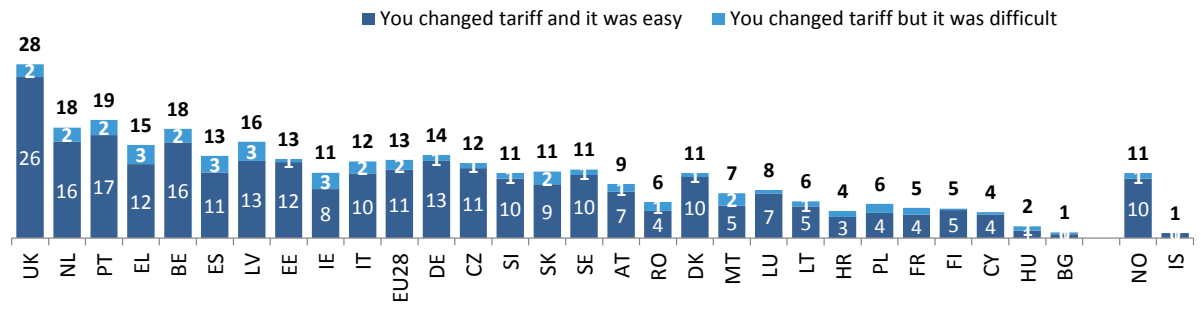
Figure 82: Level of provider switching , by country



Q27.Have you tried to switch your electricity company in the last three years?
Q28. Which of the following best reflects your experience of switching?
% by country, Base: all respondents. Question not asked in Cyprus, Latvia and Malta
Source: Consumer survey

Similarly, respondents who had changed tariff (while staying with their current electricity company) in the past three years and who answered that this change had been easy largely outnumbered those who stated the opposite (11% vs. 2%).

Figure 83: Level of tariff switching (while staying with one's electricity company) , by country



Q33. In the last three years have you tried to change your tariff?
Q34. Which of the following best reflects your experience of trying to change tariff?
% by country, Base: all respondents
Source: Consumer survey

Respondents aged 65 and over and respondents who indicated that they sometimes or often had difficulties to pay electricity bills on time were somewhat more likely to answer that switching electricity companies or changing tariff had been difficult.

4.5 Consumers' awareness of switching rules

The consumer survey measured consumers' awareness of the switching provisions set out in the Electricity Directive[43]; these rights are detailed in Box 5. The existing legal provisions should make it easier for consumers to change provider in a quick way and without extra charges.

Box 5: Extract from Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (Article 3.5 and paragraph 1 of Annex 1 – switching provisions)

Article 3.5. Member States shall ensure that:

a) where a customer, while respecting contractual conditions wishes to change supplier, the change is effected by the operator(s) concerned within three weeks; and
b) customers are entitled to receive all relevant consumption data.

Annex I (MEASURES ON CONSUMER PROTECTION): Without prejudice to Community rules on consumer protection, in particular Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts are to ensure that customers:

e) are not charged for changing supplier;
i) receive a final closure account following any change of electricity supplier no later than six weeks after the change of supplier has taken place.

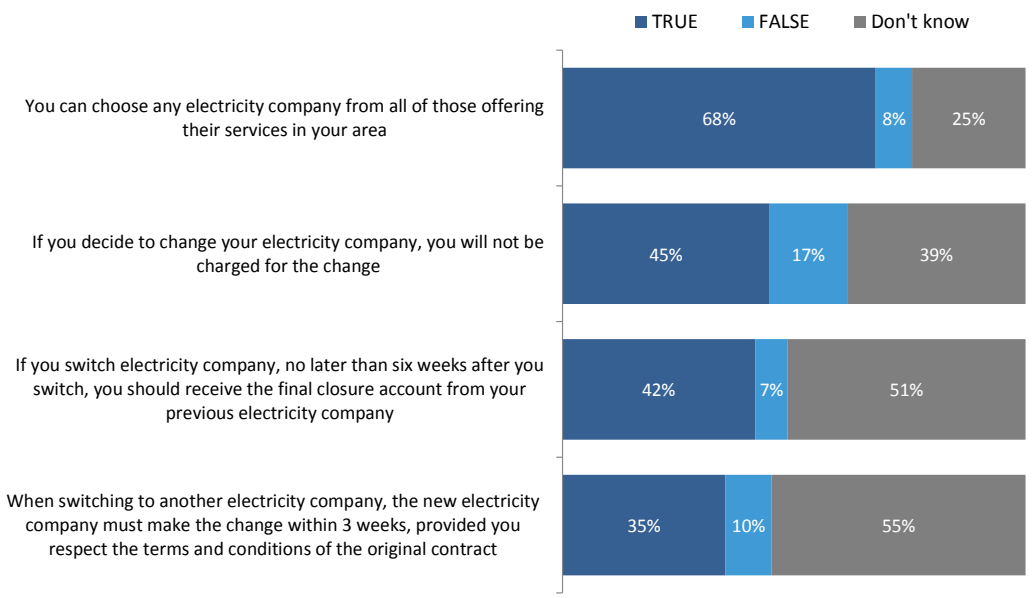
[43] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC.

In total (across the EU28, without Cyprus, Latvia and Malta), 68% of survey respondents thought they were **free to choose any electricity company from those offering services in their area**; 8% stated that this was not true and 25% admitted not knowing whether this statement was true or false.

When asked about the timeline of the switching process that needed to be respected by electricity companies, fewer respondents were aware of their rights: 42% answered that **no later than six weeks after switching, you should receive the final closure account** from your previous electricity company, and 35% confirmed that the **new electricity company needs to make the change within three weeks** (provided that the terms and conditions of the original contract are respected). For each of these statements, a majority of respondents said they did not know if the statement was true or false (51% and 55%, respectively).

Respondents were also asked whether you could be **charged for the change when switching** electricity company; 45% of respondents answered that no such charges were allowed, while 17% stated the opposite and 39% selected the "don't know" response.

Figure 84: Knowledge of switching rules



Q26_1 to 4. The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false.

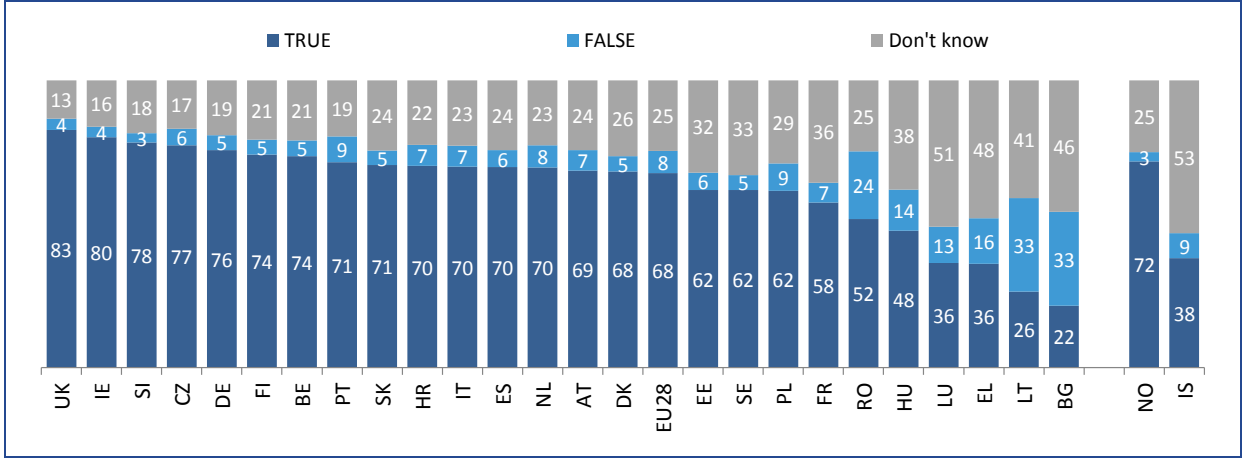
%, EU28 (except Cyprus, Latvia and Malta), Base: All respondents

Source: Consumer survey

Individual country results

In 13 of the countries surveyed, roughly 70% of respondents confirmed that they were free to choose an electricity company from all of those offering services in their area. Bulgaria, Lithuania, Greece, Luxembourg and Iceland stood out with considerably lower proportions of positive replies. In Greece, Luxembourg and Iceland, roughly one in two respondents said they did not know whether this statement was true or false (between 48% and 53%); in Bulgaria and Lithuania, on the other hand, a third of respondents thought that they were NOT free to choose an electricity company (both 33%).

Figure 85: Knowledge of switching rules – free to choose any electricity company offering services in one's area, by country



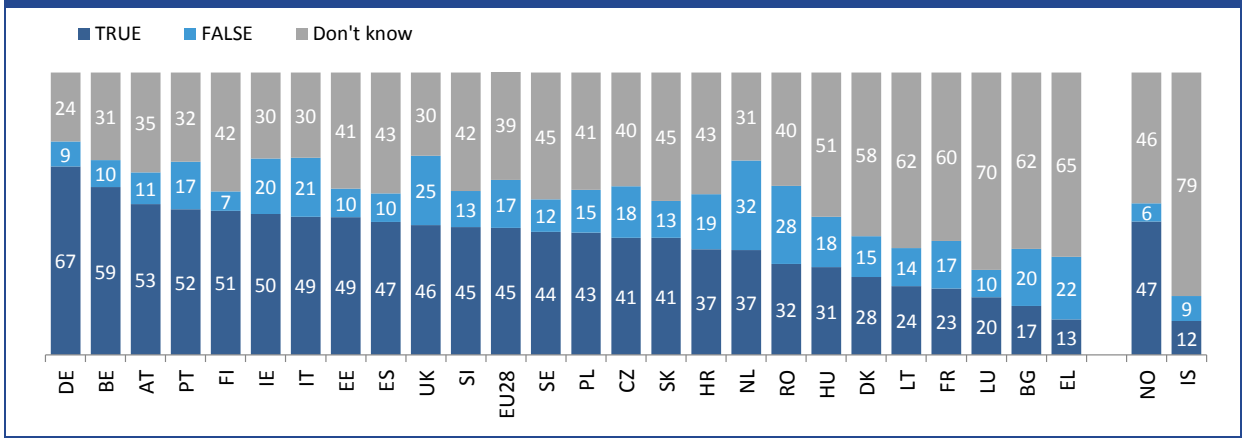
Q26_1. The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false: You can choose any electricity company from all of those offering their services in your area

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

Source: Consumer survey

The country rankings for the remaining statements about switching rules are similar to the ranking observed for the statement presented above. In five Member States – Finland (51%), Portugal (52%), Austria (53%), Belgium (59%) and Germany (67%), more than half of respondents answered that a consumer will not be charged when changing electricity company. In eight countries – Hungary (51%), Denmark (58%), France (60%), Bulgaria and Lithuania (62%), Greece (65%), Luxembourg (70%) and Iceland (79%), more than half of respondents admitted not knowing the answer to this question.

Figure 86: Knowledge of switching rules – no charge when changing electricity company, by country



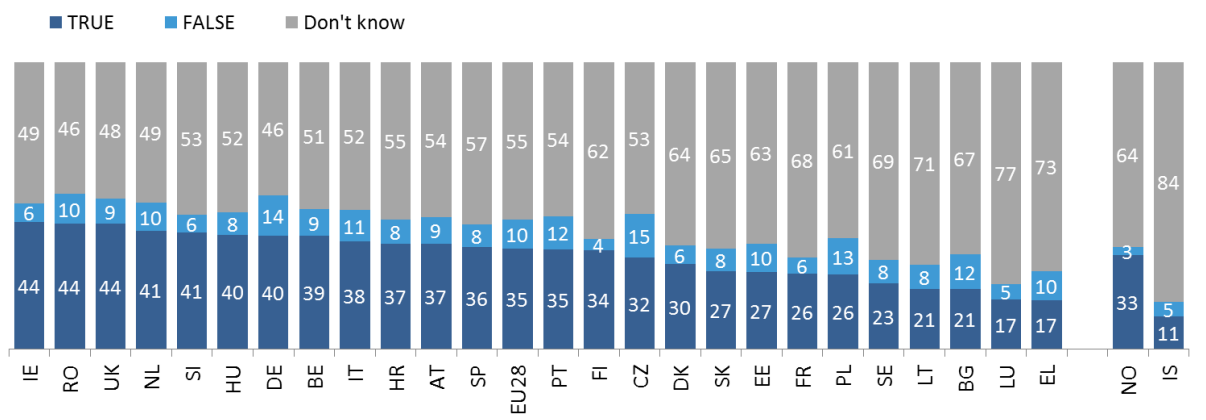
Q26_2 The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false: "If you decide to change your electricity company, you will not be charged for the change"

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

Source: Consumer survey

Across all countries, less than half of respondents knew that, when switching to another electricity company, the new company should make the change within three weeks (provided that the terms and conditions of the original contract were respected). Across the EU28, knowledge of this switching rule ranged from 17% in Greece and Luxembourg to 44% in Ireland, Romania and the UK.

Figure 87: Knowledge of switching rules – change to new electricity company should be done within three weeks, by country



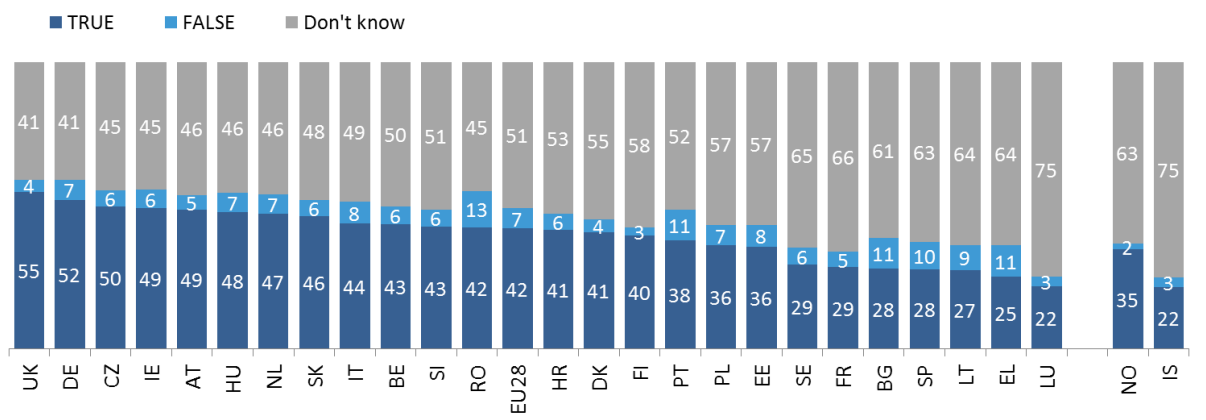
Q26_3 The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false: "When switching to another electricity company, the new electricity company must make the change within 3 weeks, provided you respect the terms and conditions of the original contract."

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

Source: Consumer survey

A similar picture emerged when respondents were presented with the statement that, no later than six weeks after switching electricity company, consumers should receive the final closure account; across most countries, less than half of respondents knew that this rule should be respected. In Germany and the UK, 52% and 55%, respectively, of respondents correctly answered that the final closure account should be received within six weeks.

Figure 88: Knowledge of switching rules – final closure account should be received within six weeks, by country



Q26_4 The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false: "If you switch electricity company, no later than six weeks after you switch, you should receive the final closure account from your previous electricity company"

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

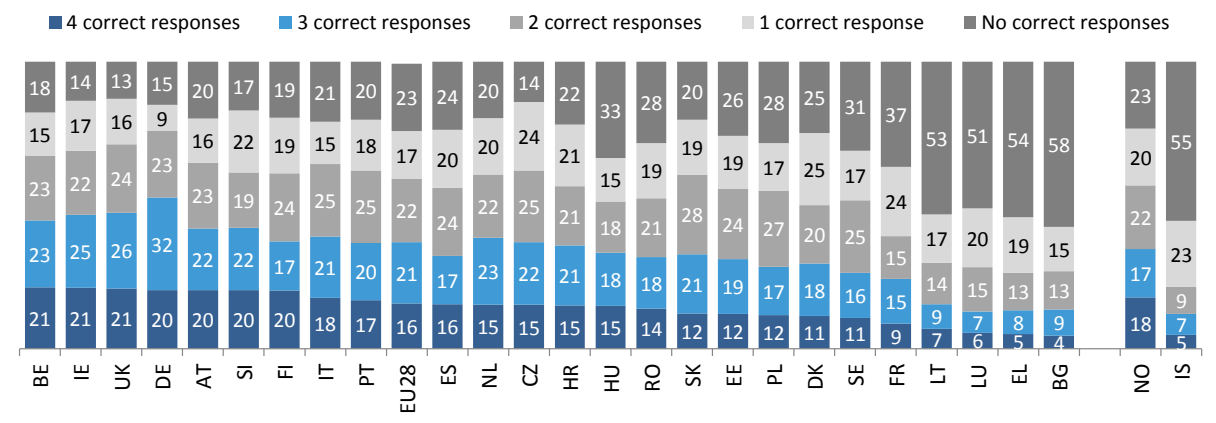
Source: Consumer survey

An overview of knowledge about switching rules

In the following figure, an overview of the number of correctly answered statements – at EU28 level and across countries is presented. The number of "correct" responses corresponds to the number of statements for which respondents *correctly* answered that the switching rule should be respected by electricity companies in their country.

Across all countries, a minority of respondents answered each of the statements about switching correctly (from 4% in Bulgaria to 21% in Belgium, Ireland and the UK). Most notable are the results for Luxembourg, Lithuania, Greece, Iceland and Bulgaria; in these countries, a slim majority of respondents was not able to answer any of the statements correctly (between 51% and 58%).

Figure 89: Number of correct answers on switching rules, by country



Q26_1 to 4 The following are statements regarding consumer rights in the energy sector. Please indicate whether each statement is true or false

%, by country, Base: all respondents; Question not asked in Cyprus, Latvia and Malta

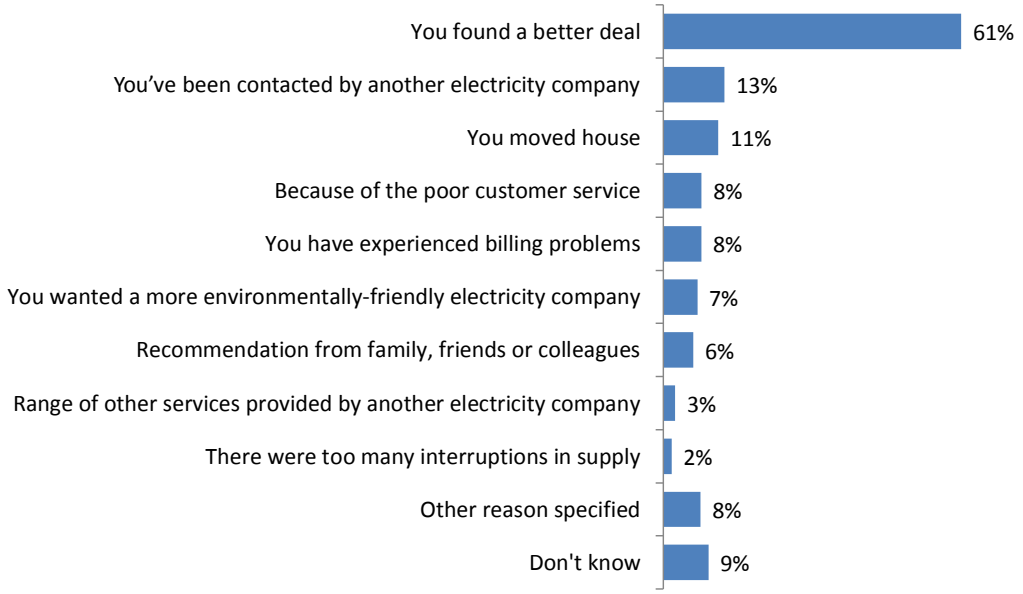
Source: Consumer survey

4.6 Reasons for switching

A majority (61%) of respondents who had tried to switch electricity company said this was because they had found a better deal. Other reasons include: for example, 13% reported that they had been contacted by another electricity company, 7% was looking for a more environmentally friendly electricity company and 6% switched because they had received recommendations from family or friends. However, some respondents initiated the switch because they were dissatisfied with their previous electricity company: 8% referred to a poor customer service, 8% to problems linked to billing and 2% to interruptions in electricity supply.

Almost a tenth (8%) of respondents mentioned "another reason" for having tried to switch; examples of such "other reasons" include: the possibility to switch via a collective switching scheme, a financial bonus for switching to another company, a contract that ended with the previous electricity company and overall disappointment with their previous electricity company.

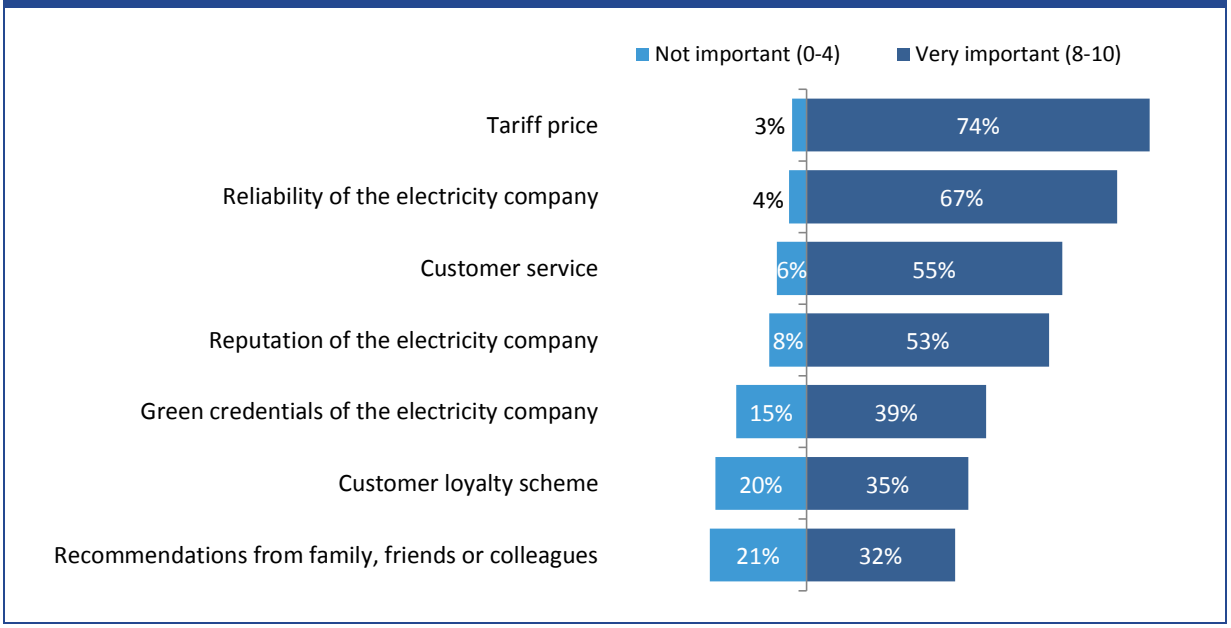
Figure 90: Reasons for trying to switch electricity company



Q31. What were the main reasons for trying to switch your electricity company? (up to three responses)
%, EU28 (except Cyprus, Latvia and Malta), Base: respondents who have tried to switch electricity company in the last three years
Source: Consumer survey

When respondents who had tried to switch were asked which factors they took into account when choosing a new electricity company, 74% answered that **tariff price** was "very important" (scores 8 to 10)[44]. **Reliability of the electricity company** was rated as "very important" by 67% of respondents who had tried to switch and 53% answered that the **reputation of the electricity company** was "very important". The **customer service** of an electricity company was rated as "very important" by 55% of respondents; the remaining items were rated as "very important" by less than half of respondents who had tried to switch.

Figure 91: Factors that consumers consider when choosing an electricity company



Q22. Various factors influence people's choice for an electricity company. Please indicate how important each of the following elements is to you when choosing an electricity company, using a scale from 0 to 10, where 0 means that it is "not at all important" for you and 10 means that it is "very important" for you.

%, EU28 (except Cyprus, Latvia and Malta), Base: respondents who have tried to switch electricity company in the last three years

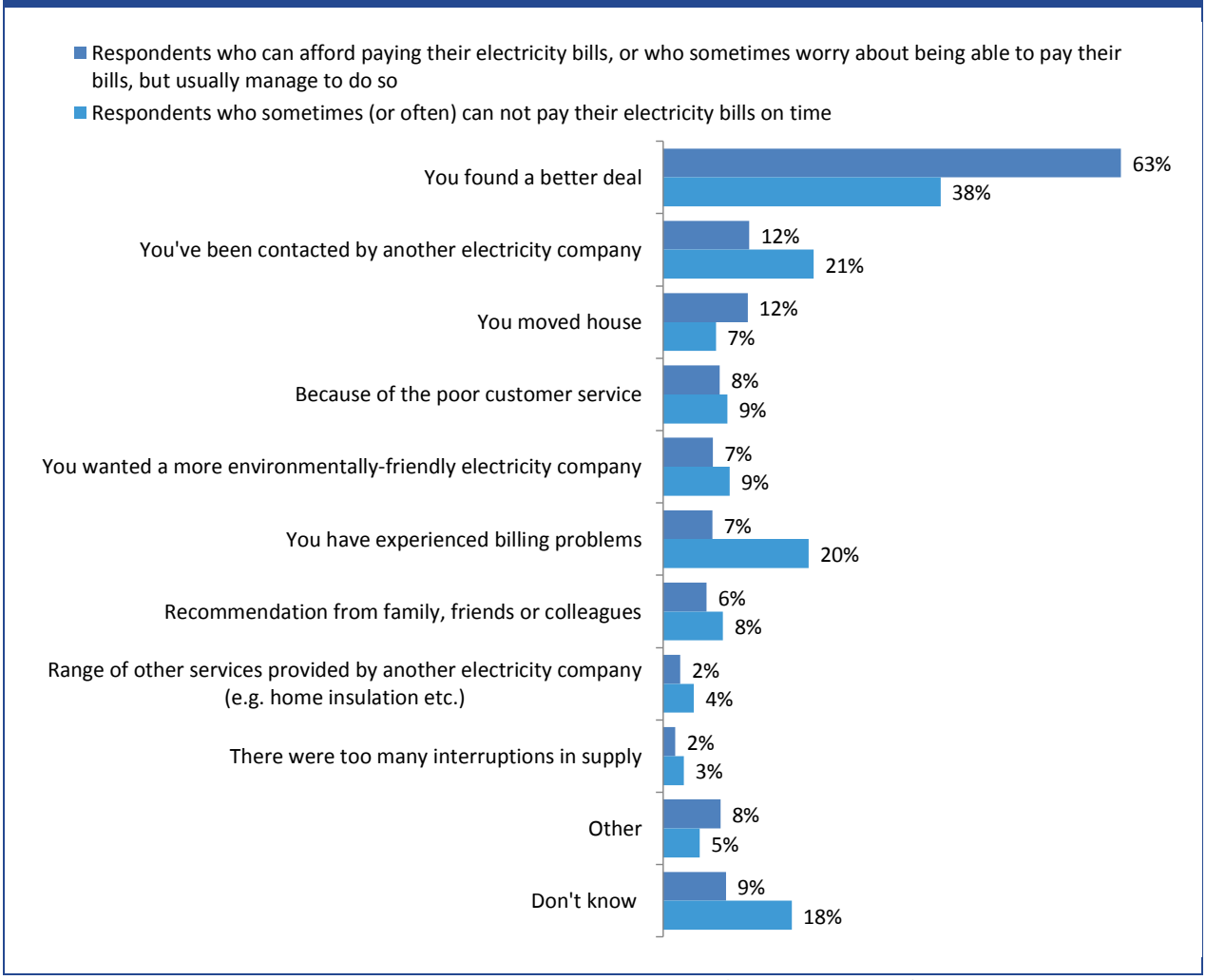
Source: Consumer survey

[44] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. For analysis purposes, respondents who selected scores 8 to 10 were labelled as finding the item "very important" and respondents who selected scores 0 to 4 as finding the item "not important at all".

Results by affordability of electricity bills

Respondents who sometimes or often could not afford paying their electricity bills on time were less likely to state that they had tried to switch electricity company because they had found a better deal (38%, compared to 63% respondents who did not have problems to pay their electricity bills on time), but they were more likely to state that they had been contacted by another electricity company (21% vs. 12%, respectively) or that they had tried to switch due to billing problems (20% vs. 7%, respectively).

Figure 92: Reasons for trying to switch electricity company, by respondent characteristics



Q31. What were the main reasons for trying to switch your electricity company? (up to three responses)
%, EU28 (except Cyprus, Latvia and Malta), Base: respondents who have tried to switch electricity company in the last three years
Source: Consumer survey

4.7 Barriers to switching/reasons for not switching

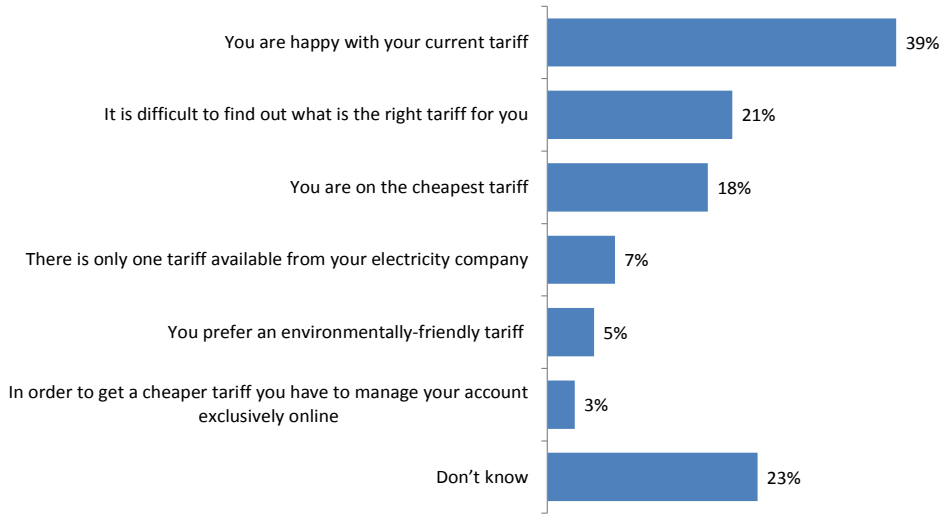
4.7.1 Consumers' reasons for not changing tariff

Roughly 4 in 10 (39%) respondents who had not tried to switch tariff (while staying with their current electricity company), said this was because they were happy with their current tariff and 18% said they were currently on the cheapest tariff.

Roughly one in five (21%) respondents answered that they had not changed tariff because it was difficult to find out what the right tariff would be for them. Other reasons were each time mentioned by a minority of respondents: 7% answered that their electricity company offered only one tariff, 5% preferred an environmentally friendly tariffs and 3% would have had to manage their account online to get the cheaper tariff.

It is, however, also worth pointing out that 23% of respondents who had not tried to change tariff, said they did not really know why they had not tried to do this (i.e. they selected the "don't know" response). The proportion of "don't know" responses varied between 14% in Cyprus and 69% in Iceland (for more details, see Table 19 on the next page).

Figure 93: Reasons for not trying to switch tariffs



Q35. Why have you not considered changing tariff? (up to three responses)
%, EU28, Base: Those who have not tried to change tariff while staying with the same electricity company (Q33 = code 2)
Source: Consumer survey

In 22 countries, the largest share of respondents, who had not tried to switch tariff while staying with their current electricity company, said this was because they were happy with their current tariff. For example, in Slovakia, this reason was selected by 57% of respondents, while all other reasons were selected by not more than a fifth of respondents.

In Cyprus, Bulgaria and Malta, the largest proportion of respondents, who had not tried to switch tariff while staying with their current electricity company, answered that their electricity company offered only one tariff (46%, 47% and 50%, respectively).

Table 19: Reasons for not changing tariff, by country	You are happy with your current tariff	It is difficult to find out what is the right tariff for you	You are on the cheapest tariff	There is only one tariff available from your electricity company	You prefer an environmentally-friendly tariff	In order to get a cheaper tariff, you have to manage your account exclusively online	Don't know
RO	39%	30%	10%	17%	10%	5%	22%
LU	33%	32%	9%	6%	16%	3%	27%
AT	42%	27%	23%	5%	10%	3%	15%
IE	28%	31%	18%	12%	5%	6%	25%
EE	43%	31%	16%	4%	5%	3%	23%
SK	57%	20%	20%	2%	5%	3%	18%
DE	44%	12%	34%	4%	9%	3%	16%
LV	43%	34%	12%	11%	4%	2%	16%
BE	41%	23%	22%	5%	7%	2%	20%
SI	42%	27%	14%	3%	5%	2%	27%
LT	32%	23%	16%	27%	2%	2%	17%
HR	38%	29%	10%	9%	4%	3%	25%
CZ	53%	26%	15%	2%	3%	2%	16%
HU	29%	20%	6%	20%	5%	5%	32%
EU28	39%	21%	18%	7%	5%	3%	23%
UK	38%	21%	27%	4%	3%	4%	19%
SE	38%	17%	20%	3%	5%	2%	30%
NL	37%	12%	24%	6%	6%	1%	29%
FI	41%	17%	14%	3%	5%	1%	33%
IT	46%	16%	18%	7%	3%	3%	21%
PL	33%	30%	11%	6%	6%	5%	23%
PT	46%	20%	16%	4%	3%	2%	23%
EL	25%	26%	9%	21%	3%	2%	27%
DK	23%	26%	7%	4%	5%	2%	44%
MT	13%	13%	4%	50%	4%	0%	27%
BG	10%	18%	2%	47%	3%	2%	28%
FR	36%	27%	6%	8%	3%	2%	28%
ES	35%	16%	13%	5%	4%	4%	33%
CY	25%	14%	7%	46%	2%	1%	14%
NO	39%	17%	18%	3%	2%	2%	37%
IS	6%	13%	1%	16%	0%	3%	69%

Q35. Why have you not considered changing tariff? (up to three responses)

%, EU28, Base: Those who have not tried to change tariff while staying with the same electricity

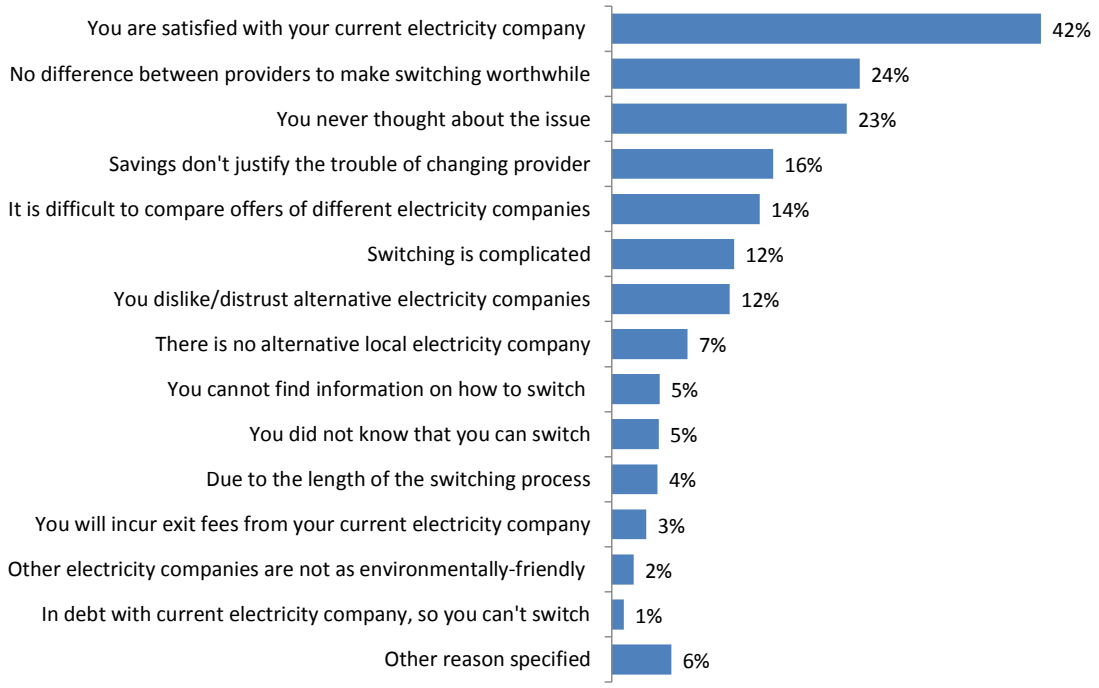
Source: Consumer survey

4.7.2 Reasons for not trying to switch electricity company

Consumers' number one reason for not having tried to switch electricity company in the past three years was that they were satisfied with their current electricity company; this reason was mentioned by 42% of respondents who had not tried to switch. There was, however, also a large proportion of respondents who mentioned the difficulties of switching; for example, 16% answered that the savings would not justify the trouble linked to changing electricity companies, 14% thought it was difficult to compare offers, 12% mentioned that switching would be too complicated and 4% referred to the length of the switching process.

Among the 6% of respondents who reported that there was "another reason" for not having tried to switch electricity company, some indicated that the decision was not for them to make (e.g. they have a prepayment meter or are renting accommodation and the landlord settles this).

Figure 94: Reasons for not trying to switch electricity company



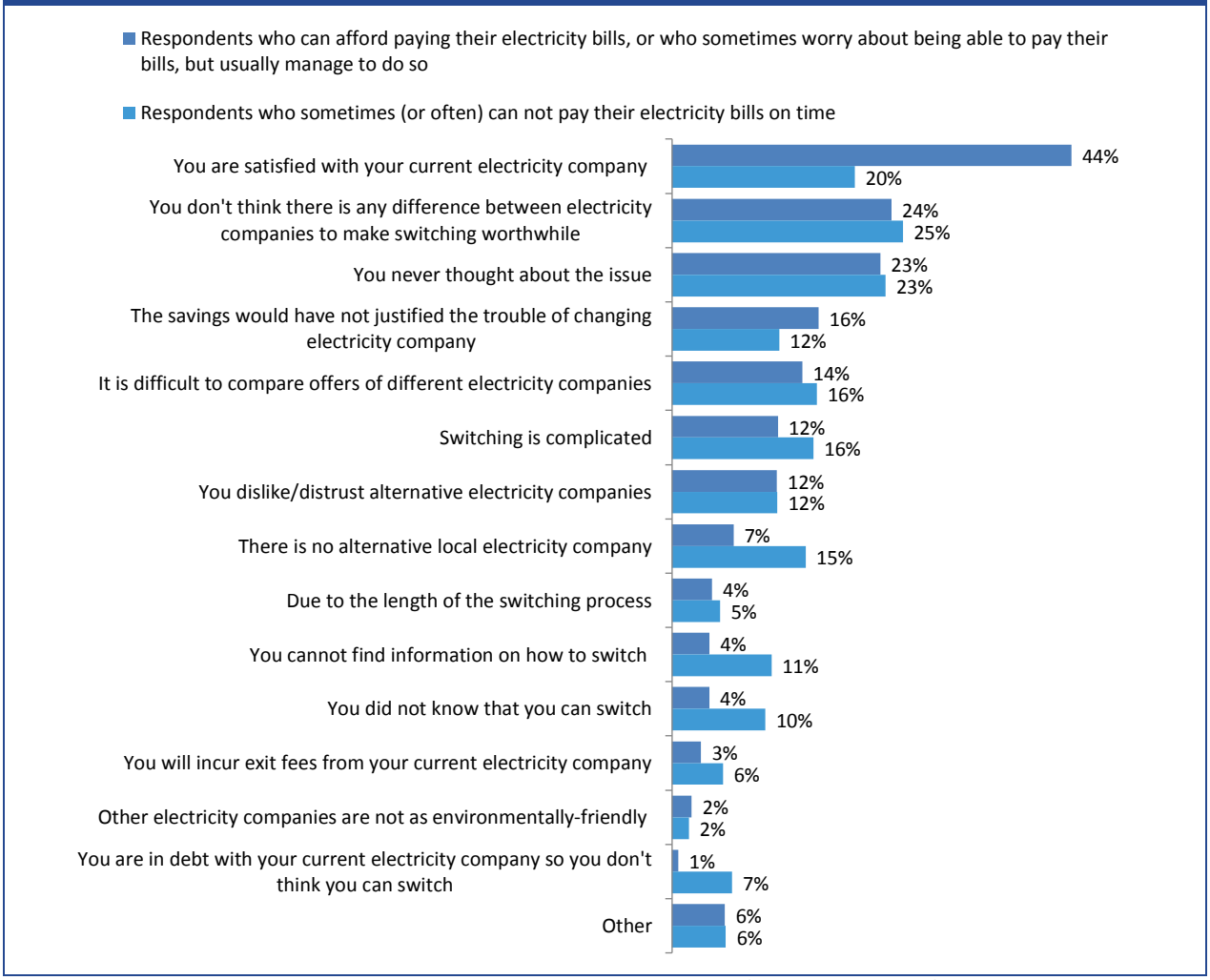
Q32. What are the main reasons for not trying to switch your electricity company? (up to three responses)
%, EU28 (except Cyprus, Latvia and Malta), Base: respondents who have not tried switched electricity company in the last three years
Source: Consumer survey

Results by affordability of electricity bills

Respondents who sometimes or often could not afford paying their electricity bills on time were somewhat more likely to state that they had not tried to switch electricity company because switching would be complicated (16%, compared to 12% respondents who did not have problems to pay their electricity bills on time), because they could not find information about switching (11% vs. 4%, respectively) or because they did not know that they could switch (10% vs. 4%, respectively).

Among respondents who sometimes or often could not afford paying their electricity bills on time, 7% said they had not tried to switch electricity company because they were in debt with their current electricity company (and, as a consequence, they thought that switching would not be allowed).

Figure 95: Reasons for not trying to switch electricity company



Q32. What are the main reasons for not trying to switch your electricity company? (up to three responses)
%, EU28 (except Cyprus, Latvia and Malta), Base: respondents who have not tried switched electricity company in the last three years
Source: Consumer survey

Individual country results

Table 20 (on the next page) presents respondents' reasons for not having tried to switch electricity company in the past three years by country. In this table, it is observed that, for example, among respondents who had not tried to switch, between 5% in Lithuania and 25% in Denmark answered that it was difficult to compare offers from different electricity companies. Lithuania had a very low proportion selecting this response, but this is linked to the fact that a large proportion (39%) of respondents in the country

reported that there was no alternative local electricity company; this reason was also listed by 44% of respondents in Romania and by 51% in Bulgaria.

Table 20: Main reasons for not trying to switch electricity company, by country

	You are satisfied with your current electricity company	You never thought about the issue	You don't think there is any difference between electricity companies to make switching worthwhile	The savings would have not justified the trouble of changing electricity company	It is difficult to compare offers of different electricity companies	Switching is complicated	There is no alternative local electricity company	You dislike/distrust alternative electricity companies	You did not know that you can switch	You cannot find information on how to switch	Due to the length of the switching process	You will incur exit fees from your current electricity company	Other electricity companies are not as environmentally-friendly	You are in debt with your current electricity company so you don't think you can switch	Other reason specified
LU	47%	46%	30%	6%	13%	13%	9%	5%	18%	7%	3%	1%	3%	1%	2%
RO	30%	31%	17%	5%	6%	12%	44%	5%	21%	12%	6%	3%	1%	1%	4%
HR	34%	25%	36%	24%	15%	10%	2%	21%	3%	5%	6%	6%	1%	2%	7%
DK	40%	21%	34%	24%	25%	14%	4%	8%	6%	5%	2%	2%	2%	1%	9%
EE	59%	36%	30%	20%	13%	9%	3%	10%	1%	4%	4%	0%	2%	0%	6%
CZ	50%	36%	34%	16%	13%	11%	2%	16%	1%	1%	6%	3%	1%	1%	3%
HU	33%	36%	23%	12%	9%	12%	21%	3%	16%	13%	7%	2%	1%	2%	4%
IE	46%	18%	32%	25%	18%	16%	1%	7%	1%	4%	6%	5%	2%	4%	7%
SK	54%	31%	28%	16%	13%	11%	2%	16%	2%	3%	5%	2%	2%	1%	2%
PL	25%	33%	35%	16%	13%	14%	9%	13%	6%	7%	5%	5%	1%	1%	3%
FI	54%	19%	31%	27%	14%	9%	5%	5%	1%	3%	2%	2%	3%	0%	11%
AT	56%	23%	22%	13%	20%	9%	4%	7%	4%	3%	3%	2%	4%	1%	10%
BG	9%	23%	23%	5%	6%	10%	51%	5%	25%	15%	3%	3%	0%	1%	2%
LT	20%	40%	12%	3%	5%	7%	39%	2%	27%	15%	3%	1%	1%	1%	1%
IT	44%	21%	20%	16%	18%	13%	2%	19%	1%	2%	9%	7%	3%	0%	2%
FR	43%	30%	24%	15%	18%	15%	2%	17%	2%	4%	1%	1%	1%	0%	4%
EU28	42%	23%	24%	16%	14%	12%	7%	12%	5%	5%	4%	3%	2%	1%	6%
EL	17%	33%	18%	6%	6%	9%	19%	24%	16%	11%	6%	3%	1%	4%	3%
SI	52%	27%	29%	14%	13%	7%	2%	6%	4%	2%	5%	2%	3%	2%	6%
BE	57%	22%	26%	23%	12%	8%	2%	6%	1%	2%	2%	2%	4%	0%	7%
UK	44%	13%	22%	27%	14%	16%	2%	7%	0%	3%	5%	7%	1%	3%	9%
ES	23%	18%	33%	14%	20%	17%	8%	9%	6%	8%	4%	2%	2%	1%	5%
NL	62%	14%	22%	19%	11%	10%	2%	7%	0%	0%	2%	3%	3%	1%	14%
PT	39%	27%	25%	16%	15%	8%	7%	11%	4%	5%	3%	3%	1%	1%	4%
SE	50%	21%	30%	16%	11%	9%	4%	3%	2%	2%	2%	2%	2%	1%	9%
DE	62%	15%	17%	13%	12%	5%	2%	11%	1%	2%	4%	2%	4%	1%	10%
IS	25%	59%	33%	8%	12%	6%	9%	2%	23%	6%	0%	3%	0%	1%	4%
NO	57%	22%	36%	33%	15%	4%	3%	2%	1%	1%	1%	1%	1%	0%	13%

Q32. What are the main reasons for not trying to switch your electricity company? (up to three responses)

%, EU28 (except Cyprus, Latvia and Malta), Base: Those who have not switched electricity company in the last three years (Q27 = code 2)

Source: Consumer survey

4.7.3 Stakeholders' views about problems with switching

Stakeholders who participated in the consultation did not consider that switching tariffs (from current electricity company) would be an issue for consumers. In fact, in only five countries (the Czech Republic, Italy, Poland, Slovakia and Spain), values of three or more were recorded:[45]

- In the Czech Republic, a consumer association assessed switching tariffs while staying with the current provider as a medium problem.
- In Italy, the enforcement authority said that switching tariffs was not problematic; however, both ADRs and consumer associations' representatives disagreed with this view, and considered it as a serious problem.
- In Poland, the energy regulator and the enforcement authority did not share the same opinion; while the regulator considered switching tariffs as not being problematic, the enforcement authority described it as a serious problem.
- In Slovakia, consumer associations considered switching tariffs to be a medium problem while the regulator did not consider it problematic at all.
- In Spain, ADRs considered tariff switching a serious problem in the electricity market while the regulator described it as a medium problem.

When asked whether switching providers could be problematic for consumers, stakeholders' responses were more negative; a finding that is in line with the results of the consumer survey. In 12 countries, values of three or more were recorded:

- In Bulgaria and Spain, the ADR body considered switching providers to be a very serious problem.
- In Cyprus, consumer associations also considered switching providers to be a very serious problem.
- A consumer association in the Czech Republic considered switching providers to be a serious problem.
- In Poland, one of the enforcement authorities rated switching providers as a serious problem, while the regulator described it as a medium level issue.
- In Germany, Italy, Lithuania, Portugal, Romania, Slovakia and Sweden, at least one stakeholder group considered switching providers to be a medium level problem.

Consumers who want to switch providers may face national or regional monopolies; this issue was identified by stakeholders in Cyprus, Malta and Hungary:

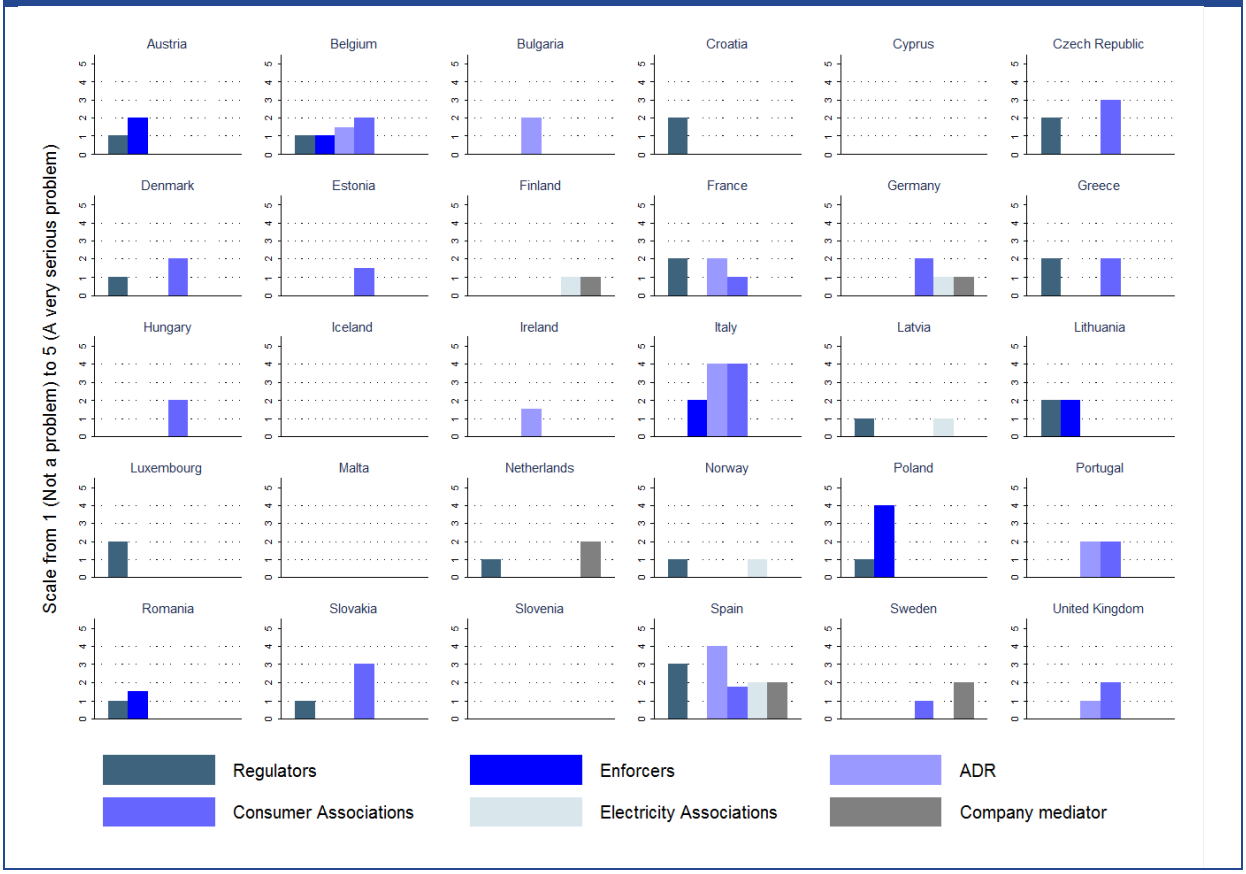
- In Cyprus and Malta, there is only one provider so there is no actual possibility to switch. This despite the fact that, in Cyprus, the right to change provider was introduced.
- In Hungary, there is a regional monopoly due to the "universal supplier licenced entity". This means that for each region there is only one provider for the retail market.

[45] On a scale from 1 to 5 , with 5= a very serious problem and 1= no problem at all. Note: in the questionnaire, an opposite scale was used (1= a very serious problem and 5= no problem at all); this scale was reversed for analysis purposes.

Low economic incentives to switch have been reported by stakeholders in Romania and Greece:

- In Romania, 100% of the households were under regulated prices (see Table 53).
- In Greece, according to CEER's National Indicators Database (2014)[46] and ACER's calculations for household electricity consumers, the average annual saving available (compared to the incumbent standard offer) is only €16. As a result, there are no real monetary incentives in switching between electricity providers.[47]

Figure 96: Severity of problems with switching tariff while staying with the current provider



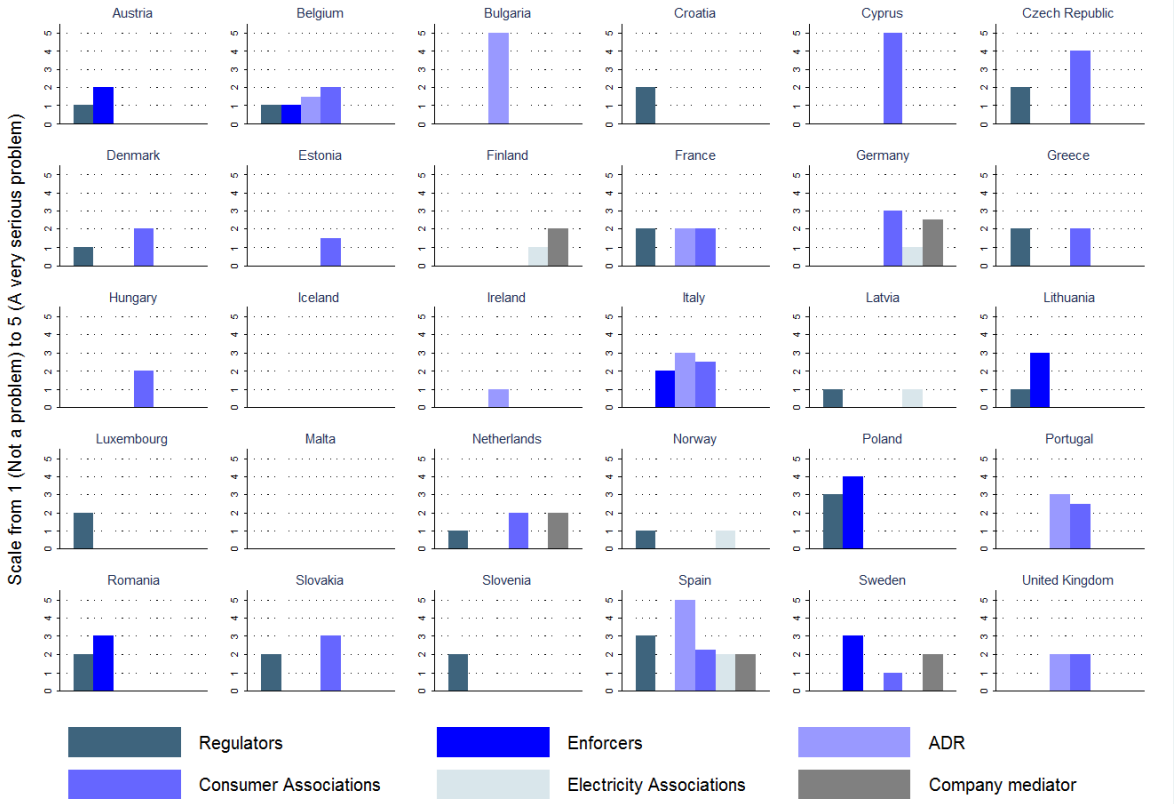
Note: Stakeholders' rating of the extent to which switching tariff with the current supplier could be problematic. (Blank means no response received)

Source: Stakeholder consultation

[46] CEER Database, National Indicators (2014), taken from the 2014 Market Monitoring Report

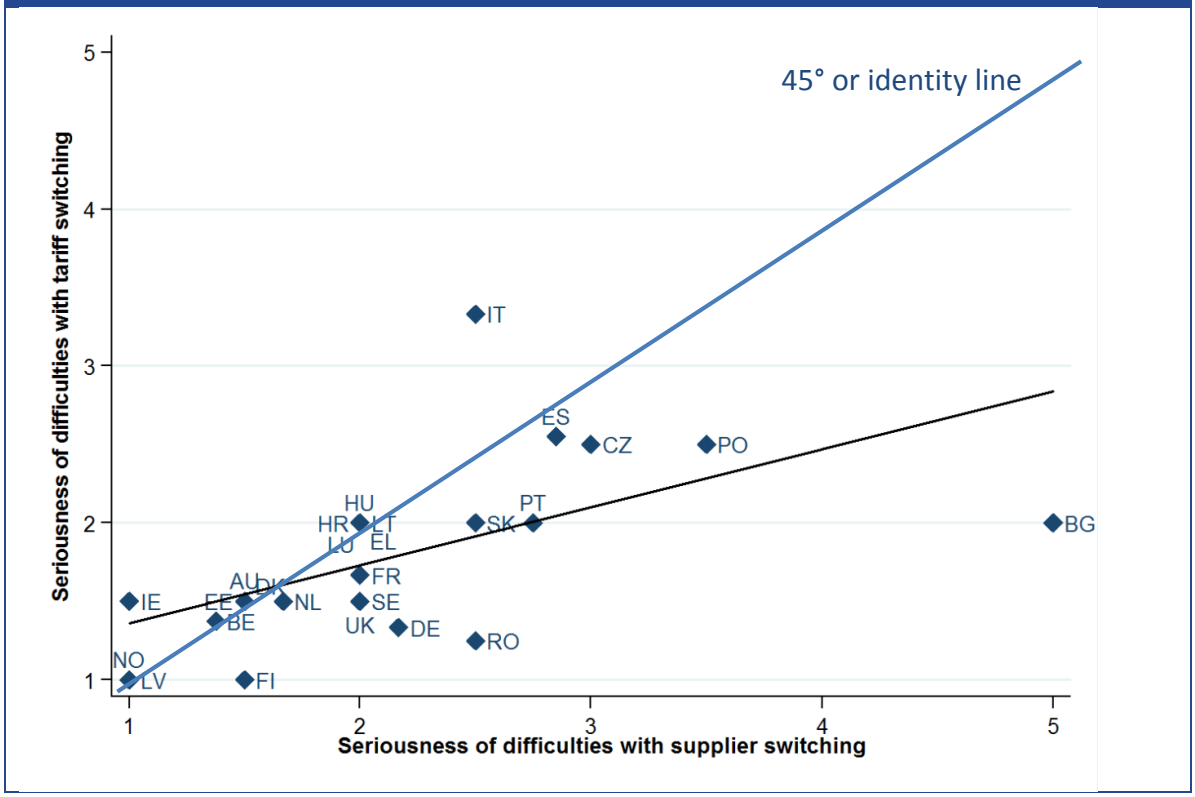
[47] RAE (2013), 'Έκθεση Πεπραγμένων' available at: http://www.rae.gr/site/el_GR/system/docs/ActionReports/2013.csp?viewMode=normal

Figure 97: Severity of problems with switching providers



Note: Stakeholders' rating of the extent to which switching supplier could be problematic (Blank means no response received)
Source: Stakeholder consultation

Figure 98: Severity of problems with provider switching vs. severity of difficulties with tariff switching



Note: Rating of severity of problems related to: 'Difficulty in switching supplier' and 'Difficulty in switching tariff at the current supplier'. Average rating by country.
Source: Stakeholder consultation

4.8 Results of the "stay or switch" experiment

The "stay or switch" experiment is designed to test (1) if the presentation format of consumers' bills impacts their propensity to switch electricity tariffs; and, (2) if the pricing structure used in alternative offers impacts switching behaviour.

Overview of the "stay or switch" experiment

In the "stay or switch" experiment, respondents were shown an electricity bill that represented their "current" electricity deal. The bill shown to each respondent was either a "best practice" bill or the "standard" bill (see the section on treatments below).

The "best practice" bill: the "best practice" bill draws on the Working Group Report on Billing[48], and Personal Data Management[49] as well as the electricity bill model/prototype developed following input received from working group members, which makes suggestions for both the content and format of an electricity bill and encourages the use of a "comparability box".

The "standard bill": the "standard bill" was developed based on the bills collected through desk research on actual providers in Europe. It does not have a comparability box and, although it provides consumers with the same information, the presentation of the information is not as clear (i.e. key information on tariff characteristics are not presented in a box on the first page of the bill).

Price structure: As described in Section 3.3.2, the alternative deals offered to respondents in the experiment had one of three price structures:

- Non-complex pricing had just two components, a unit price per kWh and a standing charge per day. This was the simplest price structure.
- Tiered pricing had three components, one unit price for the first batch of energy (e.g. the first 800 kWh), another unit price for additional energy (e.g. above 800 kWh), and a standing charge per day.
- Tiered with discount pricing had the same components as tiered pricing, and in addition, a percentage discount was applied. This was the most complex price structure.

[48] European Commission (2009) Working Group Report on Billing

[49] European Commission (2013) Working Group Report on e-Billing and Personal Energy Management, Report prepared for the 6th Energy Forum.

Effect of bill type and pricing structure on viewing bills

In the "stay or switch" experiment, respondents had the option of viewing their bills a second time in a pop-up window. **It is important to examine whether respondents looked at their bill, since this may play a role in the overall treatment effect (that is, whether respondents choose the cheapest deal).** Respondents who choose the cheapest deal may also do so because they have been more careful to examine their bills a second time. This should be taken into account when describing the "treatment effect". For example, if it is observed that respondents viewing the "best practice" bill choose the cheapest deal more often, and also view their bills more often, then the "treatment effect" (i.e. any difference in the proportion of respondents choosing the cheapest deal) could also be attributed to these respondents' viewing their bills a second time more often.

As seen in Table 21, the pricing structure has no significant impact on the probability that respondents viewed their bill a second time (69% of respondents viewed their bill a second time in non-complex, tiered and tiered with discount bills). This suggests that any "treatment effect" for the pricing structure is not explained by differences in respondents viewing their bills a second time.

A higher proportion of respondents viewed their bill a second time in the standard bill compared to the best practice bill (71% compared to 67%, significantly different at the 99% significance level). This may be because respondents could extract the information needed from "best practice" bills without needing to view it a second time. As described in Section 5.3.1, respondents found the "best practice" bill easier to understand, and to find information from, compared to the "standard" bill.

Table 21: Share of respondents who viewed their bill a second time in the pop-up window, by treatment

	Bill type		Price structure		
Opened bill a second time	Best practice	Standard	Non-complex	Tiered	Tiered with discount
No	33%	29%	31%	31%	31%
Yes	67%	71%	69%	69%	69%

Note: Weighted base varies by treatment. Country-level results are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total

Source: Behavioural experiment

Effect of bill type on performance in the "stay or switch" task

In total, across all countries and treatments, 60% of respondents chose the cheapest deal; this figure ranged from 52% in Spain to 71% in the UK. **Respondents in the "best practice" treatment were more likely to choose the cheapest deal compared to the "standard" treatment** (61% compared to 59%). However, this impact is small and only marginally statistically significant overall (see Table 23). There are a number of reasons for this small impact: the experiment environment is simplified compared to the real world. In the real world, the impact of the "best practice" bill could have a larger effect compared to the standard bill. In addition, as shown in Table 21, the treatment could be reduced, since more respondents viewed their bills a second time in the "standard practice" treatment compared to the "best practice" treatment.

Table 22: Share of respondents who selected the cheapest deal

	All countries	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI
By bill type:											
Best practice	61%	59%	64%	53%	59%	72%	52%	60%	59%	63%	59%
Standard	59%	59%	61%	51%	55%	70%	55%	58%	53%	57%	58%

Note: Weighted base varies by treatment: Best practice = 5,042; Standard = 5,014
Source: Behavioural experiment

Regression results by country indicate that, in most experiment countries, bill type had no statistically significant impact on the probability of choosing the cheapest deal. In the following table, the dependent variable in the regressions represents whether or not (1 or 0) respondents chose the cheapest deal. The explanatory variables are dummies representing whether respondents saw the best practice bill (rather than the standard bill). Statistically significant coefficients are highlighted (illustrating that the relationships discussed above are statistically significant). Only Poland and Sweden have a statistically significant effect.

Table 23: Regression results: impact of bill type on the likelihood that respondent chose the cheapest deal

	Best Practice		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**2 pp***	0.013	**60%*****	0.007
CZ	-1 pp	0.03	**59%*****	0.02
DE	4 pp	0.03	**63%*****	0.02
ES	1 pp	0.04	**52%*****	0.02
FR	3.6 pp	0.03	**57%*****	0.02
UK	1.5 pp	0.03	**71%*****	0.02
IT	-3 pp	0.04	**54%*****	0.02
LT	2 pp	0.03	**59%*****	0.02
PL	**6 pp***	0.03	**56%*****	0.02
SE	**6 pp***	0.03	**60%*****	0.02
SI	2 pp	0.04	**59%*****	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. The dependent variable in the regressions reported in the table below represents whether or not (1 or 0) respondents chose the cheapest deal. The explanatory variables are dummies representing whether respondents saw the best practice bill (rather than the standard bill). Statistically significant coefficients are highlighted***: significant at 99%; **: significant at 95%; *: significant at 90%.
Source: Behavioural experiment

The impact of socio-demographic characteristics on performance in the "stay or switch" experiment

Table 24 indicates the share of respondents by country who chose the cheapest deal in the "stay or switch" task, by **socio-demographic characteristics**. **Respondents aged 65 years and over were less likely to choose the cheapest deal** (55%, compared to 61% of respondents aged below 65 years). **Economically inactive respondents were less likely than active respondents to choose the cheapest deal** (58%, compared to 62% of economically active respondents), and **low-educated respondents were less likely to choose the cheapest deal** (54% of low-educated respondents, compared to 64% of high-educated respondents).

Table 24: Share of respondents who selected the cheapest deal; by respondent socio-demographic characteristics

	All countries	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI
By respondent age:											
Below 65	61%	60%	64%	54%	58%	73%	53%	59%	57%	60%	59%
65 years and over	55%	53%	55%	43%	52%	64%	57%	62%	49%	59%	45%
By employment status of respondents											
Economically active	62%	59%	66%	56%	57%	71%	55%	58%	57%	62%	61%
Economically inactive	58%	58%	57%	45%	57%	72%	52%	62%	53%	57%	55%
By education level of respondent											
High	64%	62%	69%	56%	64%	75%	53%	58%	59%	65%	62%
Medium	59%	60%	62%	50%	53%	71%	54%	61%	55%	58%	55%
Low	54%	57%	55%	46%	56%	59%	54%	57%	45%	52%	76%
Total	60%	59%	63%	52%	57%	71%	54%	59%	56%	60%	59%

Note: Weighted base varies by category: Below 65 = 8,461; 65 years and over = 1,595; Economically active = 6,058; Economically inactive = 3,998; High education level = 3,463; Medium education level = 4,836; Low education level = 1,736.

Source: Behavioural experiment

Table 25 presents regression results at the overall and country level for the impact of socio-demographic characteristics on respondents' performance in the "stay or switch" experiment. The results illustrate that respondents aged over 64 years and economically inactive respondents chose the cheapest deal significantly less often, while higher-educated respondents chose the cheapest deal significantly more often. In all cases, the result is statistically significant in only a subset of experiment countries. However, this may still be of relevance from a national policy perspective. For example, policies addressing complexity of offers that should aim at facilitating comparison and enable consumers to switch to more advantageous tariffs should also be targeted towards consumers aged over 65 years in Spain, where respondents aged over 65 years were 10 percentage points less likely to choose the cheapest deal, compared to a baseline of 52%.

Table 25: Regression results: impact of respondent age, employment status and employment education level on the likelihood that respondent chose the cheapest deal

	65 years and over		Economically inactive		High education level		Low education level		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**-6 pp*** **	0.02	**-4 pp*** **	0.01	**6 pp*** **	0.01	**-7 pp*** **	0.02	**60%*** **	0.007
CZ	-7 pp	0.05	-1 pp	0.03	3 pp	0.04	-3 pp	0.03	**59%*** **	0.02
DE	**-9 pp* **	0.05	**-8 pp** **	0.04	**8 pp** **	0.04	**-9 pp** **	0.04	**63%*** **	0.02
ES	**-10 pp** **	0.05	**-11pp*** **	0.04	**8 pp** **	0.04	**-8 pp** **	0.04	**52%*** **	0.02
FR	-6 pp	0.05	-0.1 pp	0.04	**10 pp*** **	0.036	-1 pp	0.05	**57%*** **	0.02
UK	**-9 pp* **	0.05	1 pp	0.03	**7 pp** **	0.03	**-14pp*** **	0.05	**71%*** **	0.02
IT	4 pp	0.04	-3 pp	0.04	-0.5 pp	0.04	0.1 pp	0.04	**54%*** **	0.02
LT	3 pp	0.05	-4 pp	0.04	-2 pp	0.03	-3 pp	0.07	**59%*** **	0.02
PL	-8 pp	0.06	-4 pp	0.04	5 pp	0.03	-12 pp	0.09	**56%*** **	0.02
SE	-0.1 pp	0.05	-4 pp	0.04	**8 pp** **	0.03	-8 pp	0.07	**60%*** **	0.02
SI	-15 pp	0.13	-6 pp	0.045	5 pp	0.04	**18 pp** **	0.09	**59%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

Crossing socio-demographic variables with performance in the "stay or switch" task by price structure

From a policy perspective, it may also be of interest to explore whether respondent socio-demographic characteristics affect the impact of price structure on choosing the cheapest deal. Table 26 crosses respondents' age (whether over or below 65 years), economic activity status (whether economically active or inactive) and education level (high, medium or low).

As seen in Table 26, 55% of respondents over 65 years chose the cheapest deal (compared to 60% in the total sample, as seen in Table 25). This is 9 percentage points lower when the pricing structure is tiered, and 10 percentage points lower when the pricing structure is tiered with a discount.

Roughly 6 in 10 (58%) economically inactive respondents chose the cheapest deal (compared to 60% in the total sample). When the pricing structure is tiered, 6 percentage points fewer inactive respondents chose the cheapest deal, and 10

percentage points fewer chose the cheapest deal when the pricing structure is tiered with a discount.

A slim majority (54%) of low-educated respondents chose the cheapest deal (compared to 60% in the total sample). This is 7.5 percentage points lower when the pricing structure is tiered, and 11.3 percentage points lower when the pricing structure is tiered with a discount.

This suggests that a **more complex pricing structure can amplify the effect of respondent socio-demographics**. For example, respondents with low education, on average, perform less well in the "stay or switch" task, and this effect is amplified when the pricing structure is tiered, and especially when the pricing structure is tiered with a discount.

Table 26: Regression results of impact of price structure and respondent age, economic activity status and education level on probability of choosing the cheapest deal

	Tiered price		Tiered price with discount		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
Age: 65 years and over	**-9 pp*** **	0.04	**-10 pp*** **	0.03	**55%*** **	0.02
Economically inactive	**-6 pp** **	0.02	**-10 pp*** **	0.02	**58%*** **	0.01
High education	2 pp	0.02	-1.3 pp	0.02	**64%*** **	0.01
Low education	**-7.5 pp** **	0.03	**-11.3pp*** **	0.03	**54%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.
Source: Behavioural experiment

Performance in the "stay or switch" experiment and trust in electricity companies

Trust in electricity companies may also play a role in whether consumers choose the cheapest deal. As described in Section 8.3, trust in electricity companies' marketing and promotional practices may be related to credulity, a marker of vulnerability as described in the Unfair Commercial Practices Directive[50]. It may be expected that consumers who are more sceptical of promotional offers from electricity companies, may pay more attention in the "stay or switch" task, and may show a higher propensity in choosing the cheapest deal.

This can be tested using the consumer survey, where respondents are asked whether they agree with a number of statements[51] regarding the practices of electricity companies, including whether *Electricity companies make their tariffs appear more attractive than they really are to encourage consumers to switch"*.[52] If scepticism about electricity companies' promotional practices is linked to better performance in the "stay or switch" task, it may be expected that agreeing with this statement is associated with a higher probability of choosing the cheapest deal.

[50] Directive on Unfair Commercial Practices, available at: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2005:149:0022:0039:EN:PDF

[51] On a scale of 0 to 10, with 0 indicating total disagreement and 10 meaning total agreement.

[52] Q5, option 7 in the consumer survey

Table 27 presents regression results for the impact of agreeing with this statement[53] on the probability of choosing the cheapest deal. As seen below, **respondents who agreed that electricity companies make tariffs appear more attractive than they really are - to encourage consumers to switch - tend to choose the cheapest deal more often than respondents who did not agree**. This may suggest that greater scepticism about electricity company promotions may be associated with choosing the best deal more often. However, this impact may be driven by large effects in two countries (Lithuania and the UK).

Table 27: Regression results: impact of scepticism about electricity company promotions on probability of choosing the cheapest deal

	Electricity companies make tariffs appear more attractive than they really are to encourage consumers to switch		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**6 pp*** **	0.02	**60%*** **	0.007
CZ	-3 pp	0.05	**59%*** **	0.02
DE	-2 pp	0.06	**63%*** **	0.02
ES	-3 pp	0.05	**52%*** **	0.02
FR	7.6 pp	0.06	**57%*** **	0.02
UK	**12 pp***	0.07	**71%*** **	0.02
IT	9 pp	0.06	**54%*** **	0.02
LT	**8 pp***	0.05	**59%*** **	0.02
PL	2 pp	0.05	**56%*** **	0.02
SE	2.5 pp	0.05	**60%*** **	0.02
SI	2.5 pp	0.055	**59%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

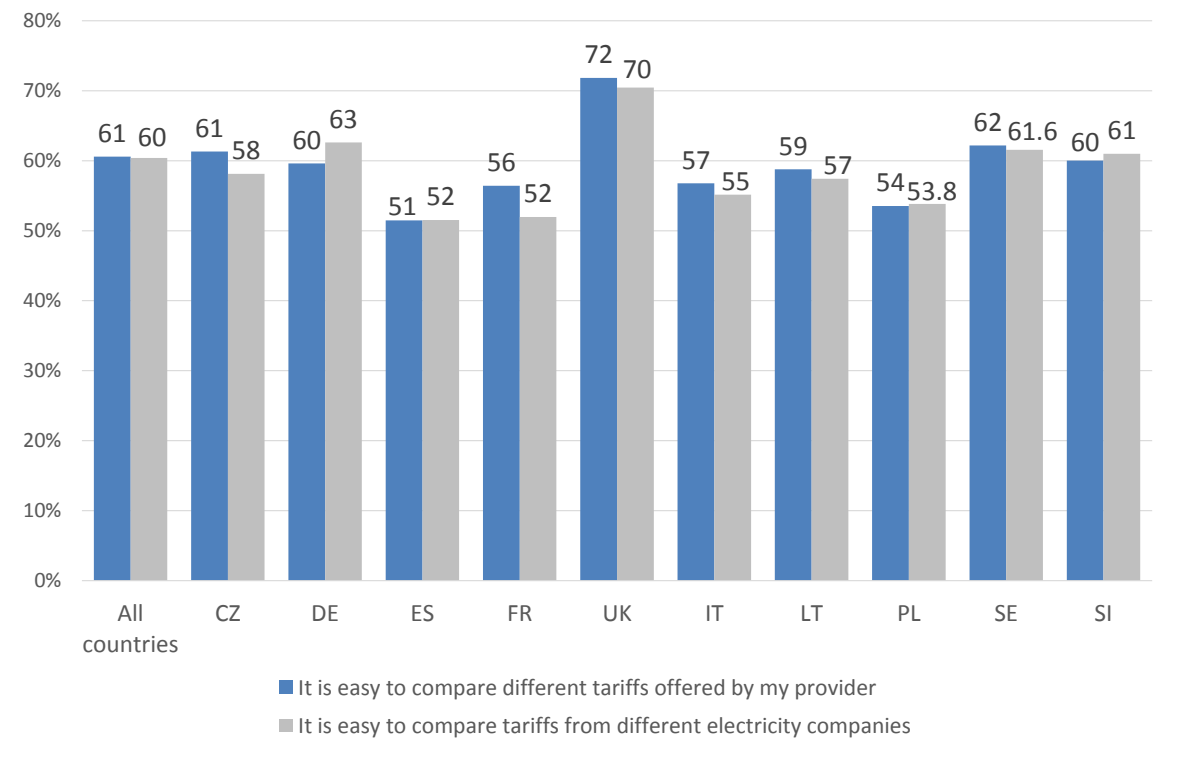
Source: Behavioural experiment

[53] Defined as a score of 6 or higher on a scale of 0 to 10.

Self-reported ease of comparing tariffs and performance in the "stay or switch" task

Figure 99 presents the proportion of respondents that selected the cheapest deal based on whether they reported that it is easy to compare different tariffs from their current provider and/or that it is easy to compare tariffs from different electricity providers[54]. In most countries, there is no substantial difference in the shares of respondents choosing correctly, between respondents who indicated that they found it easy to compare between offers from their own provider, or across electricity companies, and respondents who did not find it easy to compare offers.

Figure 99: Share of respondents who selected the cheapest deal by whether they found it easy to compare offers from their own provider, or different electricity companies (%)



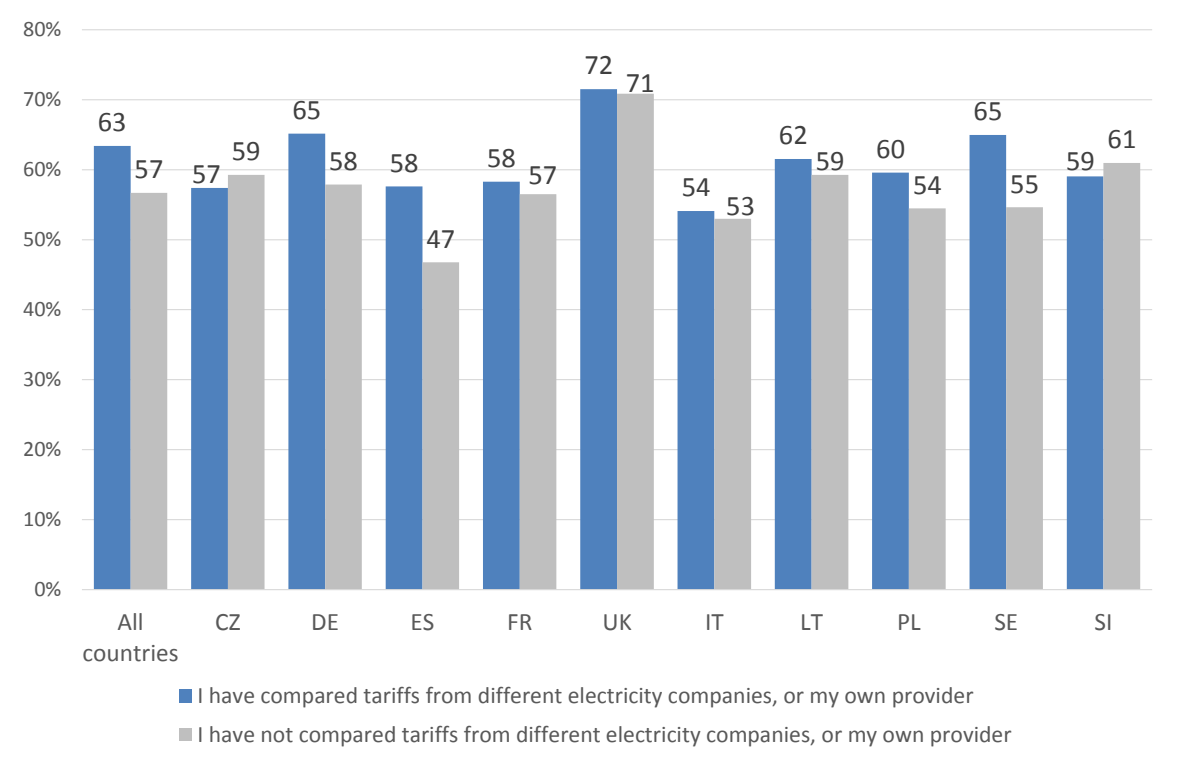
Note: Base varies by group: Respondents saying they find it easy to compare offers from their own provider, or electricity companies =5,072; Respondents saying they do not find it easy to compare offers form their own provider, or electricity companies= 3,456.
Source: Behavioural experiment

[54] Question 17 in the consumer questionnaire

Experience with comparing tariffs and performance in the "stay or switch" task

On the other hand, respondents who have compared offers in the past may find it easier to choose the cheapest deal. Figure 100 presents the proportion of respondents that selected the cheapest deal based on whether they have compared tariffs from their current electricity company and/or from different electricity companies[55]. In this case, on average, **respondents who have compared offers from their own electricity company, or other electricity companies, tended to choose the cheapest deal more often than respondents who did not compare offers**. On average, 63% of respondents who had compared offers chose the cheapest deal, compared to 57% of respondents who had not compared offers. This difference was statistically significant at the 99% significance level.

Figure 100: Share of respondents who selected the cheapest deal, by whether they have compared offers from their own provider, or different electricity companies (%)



Note: Base varies by group: Respondents saying they have compared offers from their own provider, or electricity companies =5,262; Respondents saying they have not compared offers form their own provider, or electricity companies= 3,950.
Source: Behavioural experiment

[55] Question 18 in the consumer questionnaire.

5. Billing

In most Member States, billing is regulated and, in many cases, the regulations aim to make bills more transparent and easy to understand. An overview of the regulatory framework across Member States is presented in Section 5.1. The remaining sections of the chapter focus on: (1) information provided in electricity bills (Section 5.2), and (2) consumers' understanding of electricity bills (Section 5.3).

Box 6: Main findings with regards to "billing"

- **Content of electricity bills.** This study found evidence that electricity companies in the 10 mystery shopping countries are not yet fully complying with the requirements set out in the Electricity Directive and the Energy Efficiency Directive. For example, only 32% of mystery shoppers reported that information about the fuel mix/energy sources was included on their electricity bill and only 28% reported that their bill contained information about the single point of contact where you can obtain information about your energy rights (two requirements set out in the Electricity Directive).
- **Bill comprehension.** Across the EU28, 40% of survey respondents "strongly agreed" that electricity bills of their electricity company were easy and clear to understand. More than 6 out of 10 respondents in Lithuania, Estonia and Cyprus "strongly agreed" with this statement, compared to less than 3 out of 10 respondents in Spain, Bulgaria and Italy. The country ranking observed in 2015 is similar to the one observed in 2010; however, there are two important exceptions: Ireland and Malta. Ireland drops from a top three ranking in 2010 to an average score in 2015; while Malta improved its position from a bottom five rank in 2010 to a top five rank in 2015.
- Behavioural economics recognises that more information does not necessarily help consumers to make better choices. In order to test the effect that framing of bill information has on consumers' understanding, respondents in the behavioural experiment were presented with different bill formats:
  - Respondents considered that the bill that had a comparability box provided improved information on usage and charges compared to the "standard model" bill. Further, the bill with a comparability box was also perceived by respondents to have less complex language, although the actual language used across the two bill types was the same, it was only the presentation that differed.
  - The bill with a comparability box had a significant effect on respondents' performance in the behavioural experiment: on average across all questions, 84% of respondents who saw the best practice bill selected the correct answers, compared to 79% of respondents who saw the standard bill.
  - Finally, presenting historical consumption in a chart on electricity bills as opposed to a table assisted respondents to better understand their past electricity consumption. When referring to their consumption history in a table, only 42% of respondents could correctly answer how much energy they had consumed in the previous year, compared to 58% of respondents when referring to their consumption history in a chart.

5.1 Regulatory framework related to content of electricity bills

Requirements set in the Electricity Directive and the Energy Efficiency Directive

An overview of the requirements set out in the Electricity Directive[56] and Energy Efficiency Directive[57] with regards to the **content of electricity bills** is presented in Box 7 and Box 8.

Box 7: Extract from Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC

Article 3 Paragraph 9. Member States shall ensure that electricity suppliers specify in or with the bills and in promotional materials made available to final customers:

a) the contribution of each energy source to the overall fuel mix of the supplier over the preceding year in a comprehensible and, at a national level, clearly comparable manner;
b) at least the reference to existing reference sources, such as web pages, where information on the environmental impact, in terms of at least CO_2 emissions and the radioactive waste resulting from the electricity produced by the overall fuel mix of the supplier over the preceding year is publicly available;
c) information concerning their rights as regards the means of dispute settlement available to them in the event of a dispute.

As regards points (a) and (b) of the first subparagraph with respect to electricity obtained via an electricity exchange or imported from an undertaking situated outside the Community, aggregate figures provided by the exchange or the undertaking in question over the preceding year may be used.

The regulatory authority or another competent national authority shall take the necessary steps to ensure that the information provided by suppliers to their customers pursuant to this Article is reliable and is provided, at a national level, in a clearly comparable manner.

[56] Directive 2009/72/EC of the European Parliament and the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC (Article 3.9)

[57] Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

Box 8: Extract from Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency, amending Directives 2009/125/EC and 2010/30/EU and repealing Directives 2004/8/EC and 2006/32/EC

ANNEX VII

Minimum requirements for billing and billing information based on actual consumption

1. Minimum requirements for billing

1.1. Billing based on actual consumption

In order to enable final customers to regulate their own energy consumption, billing should take place on the basis of actual consumption at least once a year, and billing information should be made available at least quarterly, on request or where the consumers have opted to receive electronic billing or else twice yearly. Gas used only for cooking purposes may be exempted from this requirement.

1.2. Minimum information contained in the bill

Member States shall ensure that, where appropriate, the following information is made available to final customers in clear and understandable terms in or with their bills, contracts, transactions, and receipts at distribution stations:

(a) current actual prices and actual consumption of energy;

(b) comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form;

(c) contact information for final customers' organisations, energy agencies or similar bodies, including website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and objective technical specifications for energy-using equipment.

In addition, wherever possible and useful, Member States shall ensure that comparisons with an average normalised or benchmarked final customer in the same user category are made available to final customers in clear and understandable terms, in, with or signposted to within, their bills, contracts, transactions, and receipts at distribution stations.

1.3. Advice on energy efficiency accompanying bills and other feedback to final customers

When sending contracts and contract changes, and in the bills customers receive or through websites addressing individual customers, energy distributors, distribution system operators and retail energy sales companies shall inform their customers in a clear and understandable manner of contact information for independent consumer advice centres, energy agencies or similar institutions, including their Internet addresses, where they can obtain advice on available energy efficiency measures, benchmark profiles for their energy consumption and technical specifications of energy using appliances that can serve to reduce the consumption of these appliances.

The regulatory framework per country

The national regulatory frameworks covering billing issues vary across the EU28, Norway and Iceland. In terms of defining the mandatory content of electricity bills, the study identified three broad approaches through desk research:

- Highly prescriptive (HP) approaches relying on legal instruments or resolutions, which request a large amount of detail and/or give very specific instructions on what information to provide in electricity bills.
- Legislation that specifies the main information (MI) that must be included in bills, which is subsequently reinforced by guidance from the regulator (in terms of mandatory information and format, or best practice guidelines).
- Legislation that specifies the main information that is mandatory to be included in bills, but gives the electricity providers broad freedom (BF) to design their own bill format.

In the following table, national billing requirements are being described and categorised according to what are considered to be highly prescriptive approaches (HP), approaches requesting communication of main information (MI) and, approaches that give broad freedom (BF).

Table 28: Overview of billing requirements per country	
Austria (MI)	Article 81 of EIWOG specifies which information should be presented on the electricity bill. These provisions are further detailed by ordinances from the regulator, in which suggestions are given as to how to present the mandatory information, including the energy sources breakdown and the price components.
Belgium (HP)	Law April, 29th 1999 'Loi relative à l'organisation du marché de l'électricite' details the mandatory information to be present in a consumer's bill. The information to be presented in the bill is highly regulated, with 10 mandatory headings and many other mandatory sub-headings, which detail the information to be provided.
Bulgaria (BF)	The Bulgarian Consumer Protection Act (Art. 4, Par. 1) outlines a minimum set of requirements for information to be provided to the customer such as: (1) information on the composition, (2) the supplier's contact details, (3) the trader's complaint handling process, and 4) arrangements for payment.
Croatia (MI)	Articles 49 and 63 of the Act on Electricity Market (Official Gazette, no. 22/13, 95/15 and 102/15) regulate billing. In Croatia, regulations specify that the supplier needs to deliver an electricity bill that contains the following elements: the share of the price that is freely negotiated, the share that is regulated and fees and other charges prescribed by special regulations.
Cyprus (MI)	Article 91 (1)(d)(iv) and Article 93 (1)(j) of the Electricity Law 206(I)/2015 regulate how the consumption of electricity should be communicated to consumers. The tariffs of the main energy provider are regulated by the Cyprus Energy Regulatory Authority (CERA) and they can be found on the website of the Electricity Authority of Cyprus (EAC).
Czech Republic (DF)	Bills for electricity, gas, heat supply and related services are governed by Act nr. 458/2000 Coll. in articles 11a and 98a. Electricity suppliers are to publish the conditions and price of electricity supply for households and residential customers in a way that can be accessed remotely. If increasing the prices for the supply of electricity, the supplier is obliged to notify the consumer in advance. In the case of electricity and gas, outstanding charges are billed at least once a year.
Denmark (MI)	Regulation of billing information is implemented in Executive Order no.486 of 2007 on electricity billing. However, the Danish Energy Regulatory Authority has presented an executive order which gives consumers the possibility to receive a simplified bill. The purpose of this order is to give consumers a better understanding of the price elements and an incentive to be active on the energy market. This order was implemented in Danish law in October 2015.
Estonia (MI)	Electricity Market Act §75 stipulates the following: "the seller shall submit an invoice for the electricity consumed to the customer once a month, unless agreed otherwise with the customer". It is mandatory for suppliers to include information not just on consumption but

Table 28: Overview of billing requirements per country	
	also on emissions and waste (nuclear and oil shale) as well as dispute resolution options.
Finland (MI)	Part III, Ch. 9, 69 § of the Electricity Market Act (588/2013) outlines the legal requirements with regards to billing imposed by the electricity provider. In the bill, the provider is to include details on how the price is broken down, information on the contract's duration and which dispute-solving tools consumers have at their disposal.
France (HP)	Article 4 of the Regulation 18 April 2012 covers electricity or natural gas bills, their payment modalities and reimbursement of overpayment (i.e. bill based on an estimation of the consumption). The bill must include information on over 16 different headings. The website 'Energie info', made available by the National Energy Ombudsman, illustrates and explains this mandatory content to consumers.
Germany (MI)	The right to receive clear information on one's energy contract before signing, and to be informed in advance if any changes are made to the contract, are provided for within German law (article 41 EnWG). The EnWG (section IV art. 40) specifies the content that should be provided to consumers on their electricity bills. The German Institute for Transparency on Energy (DIFET) produces certificates for those suppliers that provide consumer-friendly bills.
Greece (BF)	The new Code of Electricity Supply regulates the tariffs of electricity suppliers. Specifically, this code describes what must be included in the bill and how the bill must be broken down into three different elements: (1) regulated charges; (2) competitive charges or supply charges; and (2) other charges.
Hungary (HP)	*Law 2013. évi CLXXXVIII. törvény az egységes közszolgáltatói számlaképről* regulates the content of bills. The law gives actual examples of the minimal information necessary on each bill and also gives examples as to which elements may be changed or added without infraction. The law includes requirements also with regards to fonts and font sizes and provides in its annexes a detailed example of the respective bill in its actual detail. In addition to the law, the electricity suppliers also regularly provide a dedicated section on how to read the electricity bill.
Iceland (BF)	Regulation 1050/2004, Art. 42 (referred to in Act 65/2003, Art. 20) lists the information that must be shown in the invoice sent to customers. Bills shall show unit prices used for basic account types and quantities of electricity. Charges levied for the transportation, distribution services and electricity must be clearly separated.
Ireland (MI)	Statutory instruments S.I. No. 426/2014 Part 4, Art. 6, Art. 7 and S.I. No. 463/2011, Art. 9, regulate the communication of charges and consumption information to electricity consumers in Ireland. Under Irish law, suppliers must also inform customers of upcoming price changes at least one month before a price change comes into effect.
Italy (MI)	D.Lgs 93/11 Art. 43(2); L 125/07 Art. 1(6) and Art. 1(5) legislate the communication of charges and consumption information. Consumers should be informed of the components relating to supply cost (*servizi di vendita*), network cost (*servizi di rete*), general system charges (*oneri generali di sistema*), and taxes (VAT and consumption tax). The regulator has set up several tools in order to help the consumer understand his bill, most notably a dedicated webpage "Your Bill Explained" (*la bolletta spiegata*) and a consumer help-desk (*lo Sportello per il Consumatore*).
Latvia (MI)	According to Art. 31 3° of Electricity Market Law, the Public Utilities Commission (PUC) shall determine what kind of information and to what extent electricity supplier shall include in their bills and informative materials that are issued to the consumer. The regulations of the PUC determines that a bill shall include at least the electricity amount in kWh supplied in billing period, the amount charged for consumed electricity in euros and the average electricity price in euro per kWh during the billing period and fees for electricity distribution system services, other additional services and the mandatory procurements components and total fees for the billing period for consumers and other end-users to whom shall be issued invoices regarding electricity service supply.
Lithuania (BF)	Law on Energy of the Republic of Lithuania No. IX-884 and Law on Electricity of the Republic of Lithuania No VIII-1881. Article 31 regulate the communication of charges and consumption information to electricity consumers in Lithuania, as well as contractual conditions and changes to contracts. The consumer is entitled to receive information on conditions of service and electricity prices and tariffs, reports on prices, contract terms, conclusion and termination conditions.
Luxembourg	Article 2(5) of the Law of 1 August 2007 regulates the communication of charges and

Table 28: Overview of billing requirements per country	
(BF)	consumption information to electricity consumers in Luxembourg, as well as contractual terms. With respect to billing, the law states that electricity providers must transmit to residential customers transparent information on tariffs and prices.
Malta (MI)	Electricity Market Regulations (S.L. 545.16), Art. 8(3) regulates billing. Bills issued by Enemalta Corporation, Malta's electricity supplier, must include contact details of its subcontractor, ARMS Ltd, which is the company responsible for meter reading, billing, debt collections and customer care services. Households should receive bills calculated on actual consumption at least every six months. For households with a smart meter, these bills based on actual readings are more frequent. All bills show a breakdown of the price calculation, the total electricity consumption for that period as well as the average daily energy consumption, relevant tariffs and CO_2 emissions.
Netherlands (MI)	The Electricity Act, article 95, details the mandatory information to be provided on an energy bill and some associations provide recommendations for data presentation. The breakdown of an energy bill concerns supply costs ("*leveringskosten*"), network costs and metering costs, and then taxes ("*Belasting*"). While using green energy, some taxes are refunded ("*Belastingvermindering*").
Norway (MI)	FOR-1999-03-11-301, chapter 7 §7-2 regulates the communication of charges and consumption information to electricity consumers in Norway. The regulation is detailed, and lays down stipulations for frequency of billing. For e-billing, the bill shall contain a graphical comparison of the annual consumption of each settlement period with the corresponding period during the previous year. For paper invoicing, the company's logo and contact information must appear on the top of the first page. In both cases, "the invoice must be clear and easy to understand".
Poland (MI)	The Energy Law, Art. 5. 6a - 6c. regulates the communication of charges and consumption information to electricity consumers in Poland. Electricity suppliers are to inform consumers about the fuel supply mix used in the previous calendar year and about a place where information is available about the impact of the production of energy on the environment (at a minimum in terms of carbon dioxide emissions and radioactive waste created). Electricity suppliers must also inform consumers about the amount consumed in the previous year and the place where information is available about the average electricity consumption for each connection group of recipients, energy efficiency improvement measures and the technical characteristics of energy-efficient appliances.
Portugal (BF)	Art. 54 d) and Art.55 c) and d) of Decree Law of 15 February 2006 regulate the communication of charges and consumption information to electricity consumers in Portugal. Under the law, consumers are entitled full and adequate information to enable their participation in the electricity market, access information in a transparent and non-discriminatory manner on applicable prices and tariffs, as well as complete and adequate information in order to promote energy efficiency and the rational use of resources.
Romania (HP)	Law 123/2012 (modified in 2014) ART.62 (1) h[9]) and art. 145 (4) p) and Law 123/2012 (modified in 2014) ART. 66 (1),(2) regulate the content of bills. The Energy Authority ANRE has made available to the consumer an explanatory sample of the components that have to be included in the bill. This model has been adopted by electricity suppliers, who can also opt to display the same document at their websites, in order to inform consumers about the contents of their bill.
Slovakia (MI)	The supplier of electricity and gas is, according to the § 17 article 14 of the Law 251/2012, obliged to inform the customer on the invoice or attached material about the particular components of the energy supply including the unit price. Information about the composition of the price component has to include the unit price especially for electricity purchase including the commercial activity of the supplier, distribution, losses during distribution, system services, system operation and taxes.
Slovenia (MI)	Beside standard items that must be included in every invoice issued in Slovenia that are stipulated by the Value Added Tax Act (invoice date, number, invoice issuer's contact details, amounts billed, VAT rate,…), consumers also have to receive certain information in their electricity bills, stipulated within Article 42 of the Energy Act, including the proportion of energy source that supplier used in preceding year in a way comparison between different suppliers can be made, the reference source where publicly available data on environmental impacts, expressed in CO_2 emissions and amounts of radioactive waste resulting from the

Table 28: Overview of billing requirements per country	
	electricity production in the preceding year, and consumers' rights related to dispute resolution.
Spain (HP)	Law 24/2013 establishes the type of information that should be included in an electricity bill. This format is mandatory for the suppliers of last resort. The details of the information are formally listed in the resolution N.5655 of 23 May 2014 of the Ministry for the Industry, Energy and Tourism. The resolution illustrates in its annex a template to be followed when producing electricity bills, showing in explanatory graphs and in detailed tables the mandatory information and its granularity.
Sweden (BF)	The Electricity Act chapter 8, §14-16 specifies that an electricity supplier's billing shall be clear. It shall contain information on the measured consumption and current electricity prices that the billing shall be based on. In addition to the specification in the Electricity Act, the Swedish Energy Markets Inspectorate specifies in detail what shall be contained in electricity bills. The electricity cost consists of two parts: (1) a payment to the grid operator to stay connected and (2) payment for the actual electricity consumption and the electricity cost.
UK (BF)	The consumers' right to accurate consumption information is captured in Condition 31A of the Standard Licence which makes it incumbent on suppliers to provide customers with electricity consumption information in each bill (or, within the space of 30 days from a notice of increase in charges in cases where the latter is issued). In addition, suppliers must send an annual statement to all customers in a pre-defined format. Schedule 2ZB to the Electricity Act stipulates that licence-exempt suppliers must also provide consumption data to customers on an annual basis. Under Condition 12 of the Standard Licence, suppliers must take meter readings at least once every two years. Condition 21B of the Standard Licence allows customers to read their own meters as often as they choose. Suppliers are to reflect that reading in the subsequent bill. The structure of the bill is not fixed by any legislation.

Source: Regulatory review and desk research

5.2 Billing practices/information provided in electricity bills

Information about the items included in electricity bills was collected via a mystery shopping exercise. In the 10 countries included in the mystery shopping, each mystery shopper was asked to study one of their recent electricity bill and check whether specific items, such as a telephone number of a customer service, contact details of the national single point of contact, duration of the contract etc., were included on their bill. In total, 300 mystery shoppers participated in this exercise. The electricity bills of 57 shoppers were subsequently analysed by country experts, and the responses of the mystery shoppers were compared to those of the country experts[58].

Mystery shoppers tended to over report on various topics; for example, mystery shoppers were more likely than the country experts to say that a detailed price breakdown for their tariff was included on their bill. Items that were found to be especially difficult to understand included: how the billing amount was calculated, the switching code or meter identification, the contact details of the national energy regulator and grid operator, and information about the fuel mix. For more details, see Annex A5.2.

In Table 29 and Table 30, the proportion of mystery shoppers who found each specific item on their electricity bill is reported (i.e. in line with the requirements set out in the Electricity Directive and Energy Efficiency Directive). For example, 32% of mystery shoppers answered that information on the fuel mix was included on their electricity bill and 44% reported that their bill contained a historic overview of electricity consumption.

Although caution should be exercised when using the evaluations of the mystery shoppers to assess whether electricity providers comply with EU requirements with

[58] For each of the 57 electricity bills, the expert's evaluation of a bill was compared to the mystery shopper's evaluation of the same bill. An error rate was calculated that looked at the number of discrepancies between the expert's evaluation and the mystery shopper's evaluation.

regards to information that should be included on electricity bills, this study's findings shows that many electricity providers are not yet fully complying with the requirements set in the Electricity Directive; this observation is also correct for requirements set in the Energy Efficiency Directive (although to a lesser extent than for the Electricity Directive).

A closer look at the individual country results shows that the Czech Republic, France and Germany score better than average in terms of complying with the requirements set in the **Electricity Directive**. For example, almost half of mystery shoppers in these three countries replied that information about the fuel mix/energy sources was included on their electricity bill: 45% in Germany, 47% in France and 48% in the Czech Republic, compared to 32% on average. Moreover, in these three countries, 43%-44% of mystery shoppers had found information about the national contact point (i.e. a single point of contact where you can obtain information about consumer rights) on their electricity bill.

In Sweden, 52% of shoppers had found information on the fuel mix on their electricity bill; however, Sweden scores worse than the Czech Republic, France and Germany in terms of providing information about consumer rights: 16% of mystery shoppers had found information about the national contact point and 12% had found the contact details of an energy mediator.

The opposite was observed in the UK: not more than 13% of mystery shoppers in the UK had found information on the fuel mix on their electricity bills, but 53% had found information about the national contact point and 50% had found the contact details of an energy mediator.

Electricity companies in Sweden appear to score strongest in terms of compliance with the requirements set in the **Energy Efficiency Directive** with regards to providing information on actual consumption and current electricity prices (80% or more of shoppers had found such information on their electricity bill). The proportion of mystery shoppers in Sweden who had found information on historical energy consumption or energy saving activities, however, stayed below average. France and Spain are the countries that scored best in terms of providing information about historical consumption (83% and 87%, respectively, of mystery shoppers found such information on their bill). Germany and the UK scored best in terms of providing energy saving tips (48% and 57%, respectively, of mystery shoppers found this information on their bill).

Mystery shoppers were instructed to analyse a monthly, bi-monthly or quarterly electricity bill. In the Czech Republic and Germany, however, a considerable number of mystery shoppers reported that they only receive an annual bill from their electricity company. As such, in the Czech Republic, 88% of shoppers analysed an annual bill; the corresponding figure in German was lower – at 50%. As expected, these annual bills more frequently contained billing information based on actual consumption (86% vs. 63% for monthly, bi-monthly and quarterly bills). However, annual bills also more frequently contained information on various other topics – such as historical energy consumption (51% vs. 43%, respectively) or fuel mix (49% vs. 30%, respectively).

A comparison of the results for paper bills and electronic bills shows, for example, that electronic bills more frequently contained tips to save energy (42% vs. 14% of paper bills). Mystery shoppers analysing an electronic bill (or a paper bill, combined with an online account) also more frequently reported that information about their historical energy consumption was provided (43%/50% vs. 30% for paper bills) and that contact details of an energy mediator were listed (30%/25% vs. 19% for paper bills).

Table 29: Content of electricity bills, compared to requirements set in the Electricity Directive (2009/72/EC)

				Country										*Type of bill*			*Periodicity of bill*	
Legislation source	***Information legally required***	***Item in "billing" evaluation sheet***	***% who found item on their bill (total)***[59]	**CZ**	**DE**	**ES**	**FR**	**IT**	**LT**	**PL**	**SE**	**SI**	**UK**	**Paper bill**	**E-bill**	**Paper bill/online account**	**Annual bills**[60]	**Monthly, bill etc.**
Electricity Directive	The contribution of each energy source to the overall fuel mix of the supplier over the preceding year	13a. Fuel mix/energy sources (e.g. wind power, biomass)	**32%**	48%	45%	20%	47%	43%	0%	18%	52%	40%	13%	35%	27%	40%	49%	30%
Electricity Directive	(Reference to) existing reference sources, such as web pages, where information on the environmental impact, in terms of at least CO_2 emissions and the radioactive waste resulting from the electricity produced by the overall fuel mix of the supplier over the preceding year is publicly available	Not asked as such; however, this could be listed in Q13. Does your bill contain any other extra information? (listed by 3 respondents)	(listed by 3 mystery shoppers)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Electricity Directive	Information concerning the consumer's rights as regards the means of dispute settlement available to them in the event of a dispute	8b. National contact information point (or single point of contact where you can obtain information about your energy rights)	**28%**	44%	43%	33%	43%	30%	4%	3%	16%	12%	53%	27%	32%	15%	40%	26%
		8c. An energy mediator or third-party assistance	***23%***	36%	45%	23%	57%	0%	0%	3%	12%	0%	50%	19%	30%	25%	44%	20%
			Base:	300	25	40	30	30	30	25	40	25	25	30	175	105	20	43	257

[59] A colour code was assigned to the "total" results; a green figure means that mystery shoppers over reported the presence of the item, a red figure means that the presence of the item was underreported by mystery shoppers, and a blue figure in italic means that the shoppers' and experts' evaluations did not match but there was no specific direction for the difference.

[60] Shoppers were instructed to analyse a monthly or quarterly bill. In the Czech Republic and Germany, a considerable number of shoppers reported that they only receive an annual bill from their electricity company. In these countries, 88% (n=22) and 50% (n=20), respectively, of shoppers analysed an annual bill.

Table 30: Content of electricity bills, compared to requirements set in the Energy Efficiency Directive (2012/27/EU)																			
				Country										*Type of bill*			*Periodicity of bill*	
Legislation source	***Information legally required***	***Item in "billing" evaluation sheet***	***% who found item on their bill (total)*** [61]	**CZ**	**DE**	**ES**	**FR**	**IT**	**LT**	**PL**	**SE**	**SI**	**UK**	**Paper bill**	**E-bill**	**Paper bill/online account**	**Annual bills**	**Monthly, bill etc.**
Energy Efficiency Directive	Billing based on actual consumption (at least once a year)	12_1. Billing is based on actual consumption based on meter reading[62]	**66%**	80%	68%	77%	47%	83%	60%	53%	92%	44%	67%	65%	66%	80%	86%	63%
Energy Efficiency Directive	Current actual prices	11b. Base price per kWh of your tariff	***82%***	68%	65%	87%	93%	83%	68%	83%	92%	88%	93%	81%	84%	75%	77%	82%
Energy Efficiency Directive	Actual consumption of energy	12a_4. Details about consumption during billing period (in kWh)	**59%**	76%	45%	73%	47%	83%	44%	50%	80%	40%	63%	58%	58%	75%	74%	57%
Energy Efficiency Directive	Comparisons of the final customer's current energy consumption with consumption for the same period in the previous year, preferably in graphic form	13c. Historical energy consumption (e.g. current energy consumption, compared to consumption for the same period in the previous year)	***44%***	44%	48%	87%	83%	67%	8%	13%	20%	16%	53%	30%	43%	50%	51%	43%

[61] A colour code was assigned to the "total" results; a green figure means that mystery shoppers over reported the presence of the item, a red figure means that the presence of the item was underreported by mystery shoppers, and a blue figure in italic means that the shoppers' and experts' evaluations did not match but there was no specific direction for the difference.

[62] The requirement set in the Electricity Directive is to provide billing based on actual consumption at least once a year; the figures presented in this table are the proportions of shoppers that receive billing information based on actual consumption in their regular bill (monthly, quarterly etc.)

Table 33: Content of electricity bills, compared to requirements set in the Energy Efficiency Directive (2012/27/EU)																			
Energy Efficiency Directive	Contact information for final customers' organisations, energy agencies or similar bodies, incl. website addresses, from which information may be obtained on available energy efficiency improvement measures, comparative end-user profiles and objective technical specifications for energy-using equipment.	13b. Tips on saving energy (e.g. link to a website)	**26%**	8%	48%	17%	23%	20%	36%	8%	24%	20%	57%	14%	42%	20%	28%	24%
		Base:	300	25	40	30	30	30	25	40	25	25	30	175	105	20	43	257

Apart from these legal requirements, the European Commission also provided a non-binding guidance on billing[63]; in Table 31 and Table 32, the most important items that should be included in electricity bills are listed. For each item, the proportion of mystery shoppers that found the item on their bill is presented.

The results presented in Table 31 show a large variation across countries for selected items; for example, information about the period of notice to terminate a contract was not found on bills in Italy, Poland, Slovenia and Spain, while in Germany and France, at least half of shoppers had found such information on their bill (50% and 57%, respectively).

[63] See the Commission's website (now archived; http://ec.europa.eu/consumers/archive/citizen/my_rights/energy_en.htm) for examples of electricity bills that reflect some of the best national practices in Europe and are based on the recommendations for user-friendly energy billing developed together by consumers, industry and energy regulators and endorsed by the Citizens' Energy Forum. The examples of e-bills reflects the content of the report on electronic billing and personal energy data management presented in the 6th Citizens' Energy Forum taking place in London on 16-17th December 2013.

Table 31: Recommendations of the report on electronic billing and personal energy data management for information to be included on an electricity bill, by country												
			Country									
Recommendations E-billing report	***Item in "billing" evaluation sheet***	**% who found item on their bill (total)** [64]	**CZ**	**DE**	**ES**	**FR**	**IT**	**LT**[65]	**PL**	**SE**	**SI**	**UK**
Supplier's name	Provider's name	99%	96%	100%	100%	100%	100%	88%	100%	100%	100%	100%
Contact details (including their helpline and emergency number)	Telephone number of customer service/helpline	96%	92%	100%	100%	100%	100%	80%	93%	100%	100%	97%
	Postal address of provider	94%	92%	100%	97%	100%	100%	60%	100%	96%	100%	83%
	Email address of provider	**69%**	92%	95%	80%	27%	37%	40%	75%	84%	96%	60%
	Emergency number (e.g. to call in the event of an electrical emergency or power outage)	**59%**	68%	8%	97%	87%	93%	28%	35%	64%	40%	87%
The duration of the contract	Duration of the contract (e.g. 24 months)	**22%**	8%	50%	27%	17%	10%	0%	5%	40%	4%	50%
The deadline for informing the supplier about switching to another supplier	The period of notice to terminate your electricity contract (e.g. 30 days before the intended termination date)	***19%***	4%	50%	0%	57%	0%	12%	0%	28%	0%	27%
The tariff name	Tariff name/plan (e.g. Day&Night Fix)	**80%**	84%	65%	57%	87%	93%	60%	93%	80%	76%	100%
(A reference to) a clear price breakdown for the tariff (the base price plus all other charges and taxes)	A detailed price breakdown for your tariff (e.g. division of total price in base price, network charge, etc.)	**79%**	92%	65%	100%	83%	93%	8%	88%	92%	96%	73%
The base price of one energy unit (in kilowatt hours or kWh) for the selected tariff	Base price per kWh of your tariff	***82%***	68%	65%	87%	93%	83%	68%	83%	92%	88%	93%
The switching code	Switching code/meter identification (EAN or MPAN code; a unique code for your electricity meter)	**73%**	96%	58%	87%	87%	67%	44%	78%	76%	72%	67%
The amount to be paid, for which billing period, by when and how	Amount to be paid	97%	100%	100%	97%	97%	100%	72%	100%	100%	100%	97%
	Billing period (e.g. 15 November – 14	**95%**	96%	90%	100%	97%	100%	80%	93%	100%	100%	97%

[64] A colour code was assigned to the "total" results; a green figure means that mystery shoppers over reported the presence of the item, a red figure means that the presence of the item was underreported by mystery shoppers, and a blue figure in italic means that the shoppers' and experts' evaluations did not match but there was no specific direction for the difference.

[65] Lithuania stands out as the country where mystery shoppers were the least likely to find each of the items on their bill. Mystery shoppers in Lithuania (note: all shoppers were clients of Lesto) reported that they do not receive a "traditional" electricity bill; they declare usage themselves online (via www.manoelektra.lt - a site dedicated to Lesto customers) or by means of a paper bill book.

Table 31: Recommendations of the report on electronic billing and personal energy data management for information to be included on an electricity bill, by country												
	December 2014)											
	Payment method (e.g. direct deposit, cheque, bank transfer)	**84%**	88%	100%	87%	87%	87%	64%	65%	92%	64%	100%
Clear information on how this amount has been calculated: is it based on an actual meter reading or estimated only?	*% of shoppers stating that it not clear how the billing amount was calculated*	***5%***	*4%*	*18%*	*3%*	*0%*	*0%*	*8%*	*3%*	*4%*	*4%*	*3%*
For calculations based on actual consumption: meter readings and consumption during the billing period (measured in kilowatt hours or kWh)	Details about consumption during billing period (in kWh)	**89%**	95%	67%	96%	100%	100%	73%	95%	87%	91%	95%
	Value of the meter reading at the end of the billing period	**89%**	90%	93%	96%	86%	88%	73%	95%	87%	82%	95%
	Value of the meter reading at the beginning of the billing period	**88%**	95%	93%	96%	86%	88%	73%	86%	83%	91%	90%
Where does the energy come from, how is it generated, how environment friendly is it ("the fuel mix")	Fuel mix/energy sources (e.g. wind power, biomass)	**32%**	48%	45%	20%	47%	43%	0%	18%	52%	40%	13%
Information on how to get tips on saving energy (e.g. a link to a website)	Tips on saving energy (e.g. link to a website)	**26%**	8%	48%	17%	23%	20%	36%	8%	24%	20%	57%
Information on how to obtain the bill in alternative formats (e.g. in large print) for consumers with disabilities	Information on how to obtain your bill in alternative format (e.g. paper/online, large print)	**24%**	16%	8%	23%	27%	53%	28%	5%	20%	16%	50%
Base *(note: figures in grey are based on a smaller sample):*		300	25	40	30	30	30	25	40	25	25	30

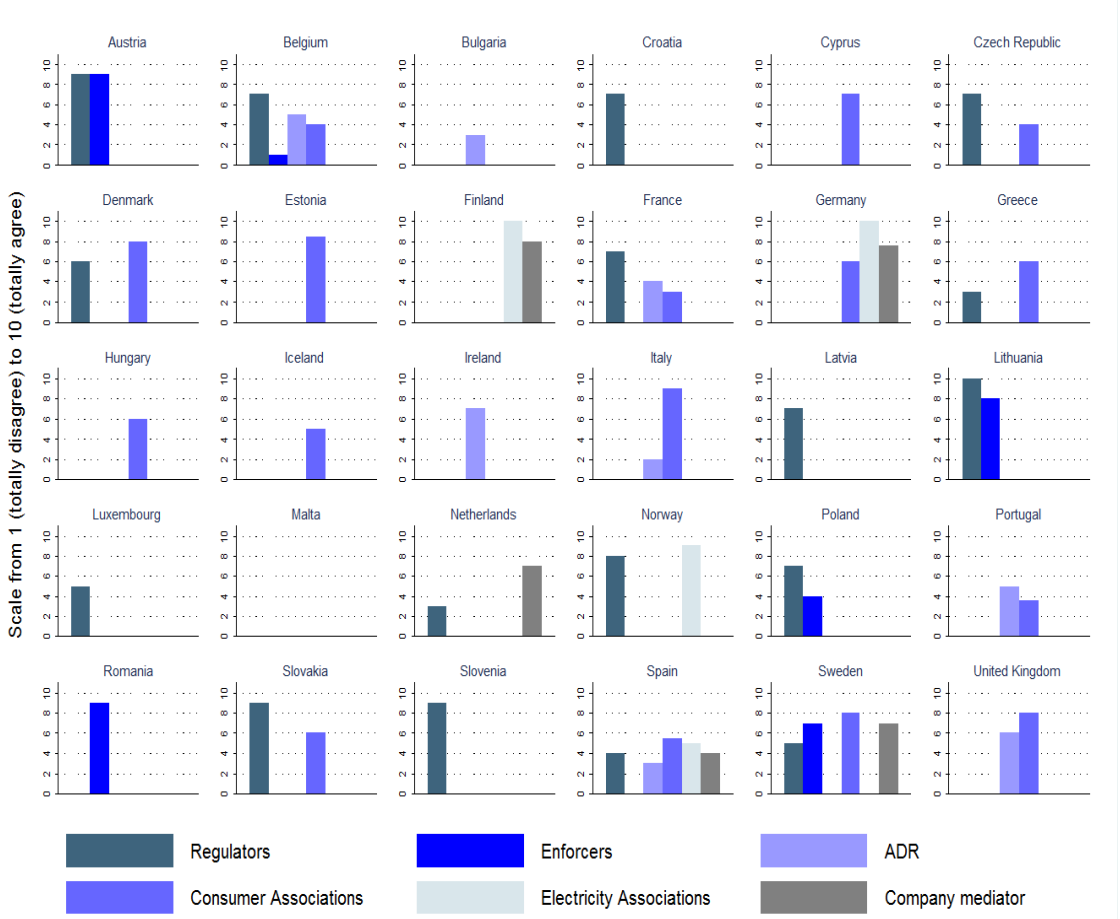
Table 32: Recommendations of the report on electronic billing and personal energy data management for information to be included on an electricity bill, by type of bill and periodicity

			Type of bill			*Periodicity of bill*	
Recommendations E-billing report	***Item in "billing" evaluation sheet***	**% who found item on their bill (total)**	**Paper bill**	**E-bill**	**Paper bill/ online account**	**Annual bills**	**Monthly, bill etc.**
Supplier's name	Provider's name	99%	99%	97%	100%	100%	98%
Contact details (including their helpline and emergency number)	Telephone number of customer service/helpline	96%	98%	94%	95%	98%	96%
	Postal address of provider	94%	96%	90%	90%	98%	93%
	Email address of provider	**69%**	71%	67%	60%	93%	65%
	Emergency number (e.g. to call in the event of an electrical emergency or power outage)	**59%**	61%	54%	65%	47%	61%
The duration of the contract	Duration of the contract (e.g. 24 months)	**22%**	18%	28%	30%	37%	19%
The deadline for informing the supplier about switching to another supplier	The period of notice to terminate your electricity contract (e.g. 30 days before the intended termination date)	***19%***	18%	18%	25%	42%	15%
The tariff name	Tariff name/plan (e.g. Day&Night Fix)	**80%**	81%	80%	70%	88%	78%
(A reference to) a clear price breakdown for the tariff (the base price plus all other charges and taxes)	A detailed price breakdown for your tariff (e.g. division of total price in base price, network charge, etc.)	**79%**	87%	68%	75%	86%	78%
The base price of one energy unit (in kilowatt hours or kWh) for the selected tariff	Base price per kWh of your tariff	***82%***	81%	84%	75%	77%	82%
The switching code	Switching code/meter identification (EAN or MPAN code; a unique code for your electricity meter)	**73%**	77%	68%	65%	91%	70%
The amount to be paid, for which billing period, by when and how	Amount to be paid	97%	98%	94%	95%	100%	96%
	Billing period (e.g. 15 November – 14 December 2014)	95%	96%	95%	85%	98%	95%
	Payment method (e.g. direct deposit, cheque, bank transfer)	84%	81%	90%	80%	93%	82%
Clear information on how this amount has been calculated: is it based on an actual meter reading or estimated only?	*% of shoppers stating that it not clear how the billing amount was calculated*	*5%*	*6%*	*5%*	*0%*	*2%*	*5%*

Table 32: Recommendations of the report on electronic billing and personal energy data management for information to be included on an electricity bill, by type of bill and periodicity							
For calculations based on actual consumption: meter readings and consumption during the billing period (measured in kilowatt hours or kWh)	Details about consumption during billing period (in kWh)	**89%**	58%	88%	94%	86%	90%
	Value of the meter reading at the end of the billing period	**89%**	89%	87%	94%	95%	87%
	Value of the meter reading at the beginning of the billing period	**88%**	91%	87%	88%	79%	89%
Where does the energy come from, how is it generated, how environment friendly is it ("the fuel mix)	Fuel mix/energy sources (e.g. wind power, biomass)	**32%**	35%	27%	40%	49%	30%
Information on how to get tips on saving energy (e.g. a link to a website)	Tips on saving energy (e.g. link to a website)	**26%**	14%	42%	20%	28%	24%
Information on how to obtain the bill in alternative formats (e.g. in large print) for consumers with disabilities	Information on how to obtain your bill in alternative format (e.g. paper/online, large print)	**24%**	24%	26%	10%	12%	26%
Base *(note: figures in grey are based on a smaller sample):*		300	175	105	20	175	105

Figure 101 presents **stakeholders' responses** when being asked whether they thought that electricity bills provided by electricity companies in their country were comprehensive. Although Spain scored relatively well in the mystery shopping exercise, stakeholders in this country were among the least likely to agree that electricity bills are comprehensive; none of the participating stakeholders selected a score above 5 (on a 10-point scale).

Figure 101: Stakeholders' views on whether "electricity bills are comprehensive"



Note: Stakeholder assessment of: 'How comprehensive are electricity bills?' (Blank means no response received)
Source: Stakeholder consultation

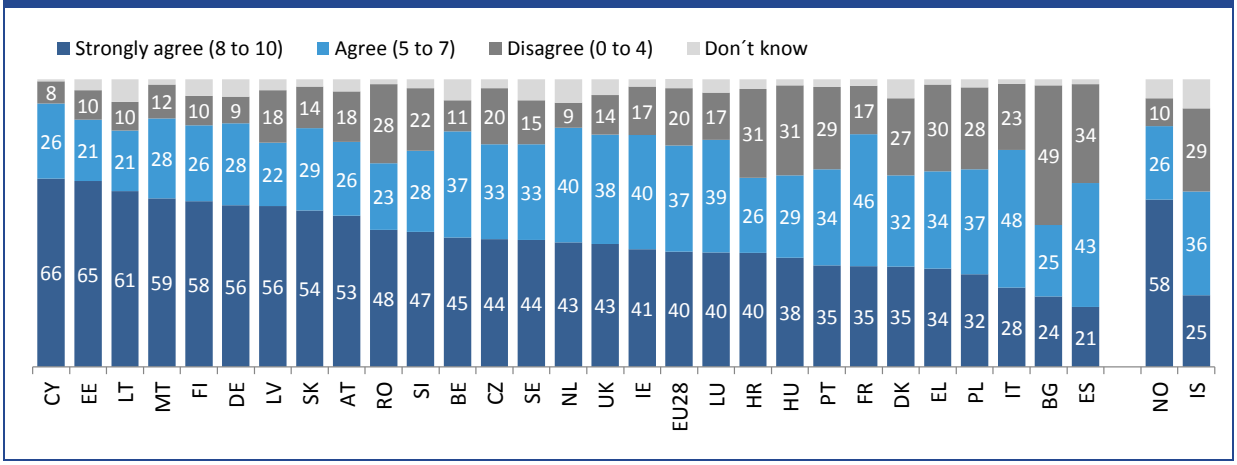
5.3 Consumers' understanding of electricity bills

5.3.1 Consumers' views about their electricity bills – results of the consumer survey

Across the EU28, 40% of survey respondents "strongly agreed" (scores 8 to 10)[66] that the **electricity bills of their electricity company were easy and clear to understand**.[67] A very large variation was observed across Member States: more than 6 out of 10 respondents in Lithuania, Estonia and Cyprus "strongly agreed" that their bills were easy and clear to understand (61%, 65% and 66% respectively), compared to less than 3 out of 10 respondents in Spain, Bulgaria and Italy (21%, 24% and 28%). In Bulgaria, 49% of respondents disagreed (scores 0 to 4) with this statement.

The country ranking observed in 2015 is similar to the one observed in 2010: for example, in 2010, Bulgaria and Spain were also found at the bottom of the ranking, while Lithuania and Estonia were found at the higher end of the ranking. There are two important exceptions: Ireland and Malta. Ireland drops from a top three ranking in 2010 to an average score in 2015; while Malta improved its position from a bottom five rank in 2010 to a top five rank in 2015.

Figure 102: Agreement with the statement: "bills of my electricity company are easy and clear to understand", by country



Q2_7. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": Bills of [PROVIDER] are clear and easy to understand.

%, by country, Base: all respondents

Source: Consumer survey

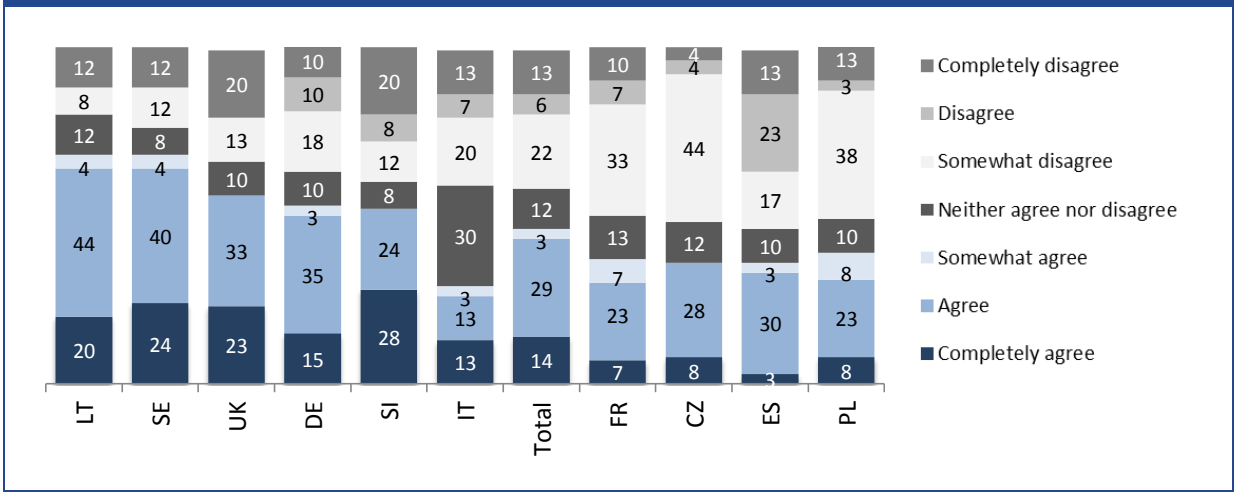
[66] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

5.3.2 Consumers' views about their electricity bills – results of the mystery shopping exercise

Although 40% of consumers surveyed "strongly agreed", and an additional 37% "agreed", that their electricity bills were easy to understand, this seemingly positive result was not substantiated in the mystery shopping exercise. Among mystery shoppers (in 10 countries), 14% *completely agreed* and 29% *agreed* that their electricity bill was easy to understand. This disparity can be explained by the fact that the results in the consumer survey might be influenced by a social desirability bias (i.e. tendency of survey respondents to answer questions in a manner that will be viewed favorably by others). Moreover, respondents in the consumer survey made their evaluation based on memory, while mystery shoppers were instructed to study a recent bill in detail before participating in the exercise.

In line with the results of the consumer survey, the most extreme values were observed in Spain where 13% of mystery shoppers *completely disagreed*, and a further 23% *disagreed*, that their electricity bill was easy to understand; this finding is in line with the results of the consumer survey. In Lithuania and Sweden, on the other hand, 64% of mystery shoppers *completely agreed* or *agreed* that their electricity bill was easy to understand.

Figure 103: Agreement with the statement: "My bill is easy to understand"



Q14. To what extent do you agree with the following statement: "my bill is easy to understand"?
%, Base: all mystery shoppers
Source: Mystery shopping

It is interesting to compare mystery shoppers' evaluations in the Czech Republic, France and Germany. As noted in Section 5.2, electricity companies in these countries were identified as scoring the best in terms of providing information on electricity bills in line with the requirements set out in the Electricity Directive. Electricity companies in Germany, however, appear to be better than those in the Czech Republic and France to present this information in a way that is easy to understand (in Germany, 50% of mystery shoppers *completely agreed* or *agreed* that their bill was easy to understand; the level of agreement, however, dropped to 36% in the Czech Republic and 30% in France).

Moreover, findings presented in Section 5.2 lead to the conclusion that consumers in the Czech Republic, France and Germany were more likely than consumers in Lithuania to receive an electricity bill with content that is in line with the requirements set in the Electricity Directive. Mystery shoppers (and consumers – see Figure 102) in Lithuania, however, were among the most likely to agree that bills of their electricity company were easy to understand – in other words, although electricity bills received by consumers in Lithuania contain limited information, the information that is provided on these bill was considered easy to understand by both mystery shoppers and survey respondents. It is

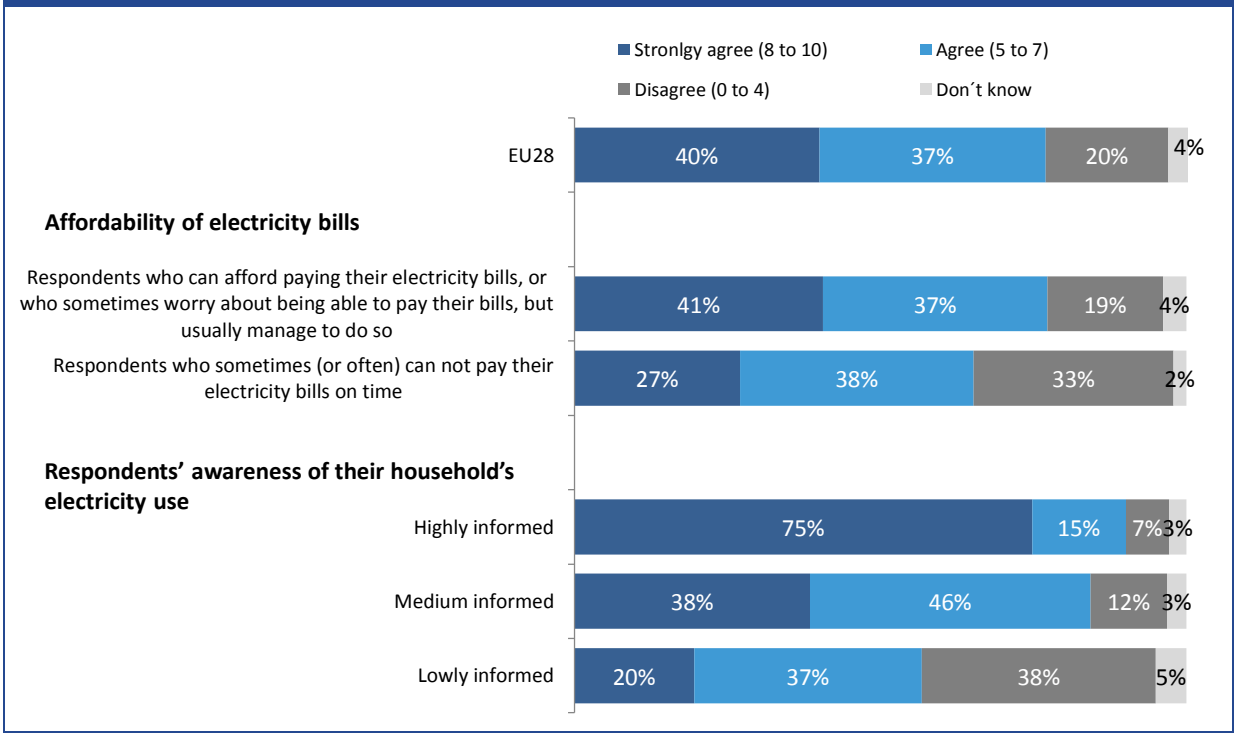
also worth noting that mystery shoppers in Lithuania reported that they do not receive a "traditional" electricity bill; they declare usage themselves online (via www.manoelektra.lt - a site dedicated to Lesto customers) or by means of a paper bill book.

Consumers' views about their electricity bills by affordability of electricity bills and "conscious" electricity use

Consumers surveyed who sometimes (or often) cannot pay their electricity bills on time are less likely to "strongly agree" (27% vs. 41% for respondents without payment difficulties), and more likely to disagree (33% vs. 19%, respectively), that bills provided by their electricity company were easy and clear to understand.

Three-quarters of respondents who use energy in a more conscious way "strongly agreed" that bills provided by their electricity company were easy and clear to understand; this figure, however, drops to 20% for respondents who were the least informed about their household's electricity use. Among the latter group of respondents, 38% of respondents disagreed (scores 0 to 4) that bills provided by their electricity company were easy and clear to understand.

Figure 104: Agreement with statement: "bills of my electricity company are easy and clear to understand", by respondent characteristics



Q2_7. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": Bills of [PROVIDER] are clear and easy to understand.

% EU28, Base: all respondents

Source: Consumer survey

5.3.3 Consumers' evaluation of the electricity bills – results of the behavioural experiment

Overview of bill comprehension test

The bill comprehension test that was part of the behavioural experiment, had two components: first, an "objective" component, in which respondents had to answer a number of questions which had objectively "right" or "wrong" answers (e.g. "How much are you being charged in total?"); and a "subjective" component, in which respondents were asked questions about their perceptions of bills, including how easy it was to understand and find information, whether sufficient information was provided, whether the language was too complicated, and whether they would prefer more charts and less text..

Respondents were shown one of six different bills. These included three variants of a best practice bill (the design of the best practice bill was based on the electricity bill model/prototype developed following input received from members[68] of the Work Group on e-Billing which made suggestions for both the content and format of an electricity bill and encourages the use of a "comparability box"), and three variants of a standard bill:

- best practice;
- best practice with enlarged comparability box (described in more detail in Figure 110);
- best practice with additional (surplus) information;
- standard;
- standard with consumption history in a table (shown in Figure 111); and
- standard with additional (surplus) information (shown in Figure 112).

Respondents were randomly allocated to one of these six bills, and were asked a series of questions with objectively "right" or "wrong" answers (e.g. "What is the duration of the contract?"). The results of this component of the task are described in Section 5.3.5. Respondents were then asked several subjective questions about the bill including whether they found the bill easy to understand and find information from, whether they believed that there was sufficient information provided, whether they believed the language was too complicated, and whether they would prefer more charts and less text. Respondents provided scores from 1 to 5, presented in the figures below, where a higher score for a bill means that respondents, on average, preferred that bill. For example, a higher score for a bill on the 'ease of understanding' question means that respondents, on average, found that bill easier to understand.

Ease of understanding the bill and finding information

On average, respondents who saw the **best practice bill** considered that (1) this bill was easier to understand and (2) it was easier to find information from this bill, compared to respondents who saw the standard bill (as seen in the top panel of Figure 105). On both these measures, the average score of the best practice bill is statistically significantly higher than that the average score of the standard bill (both at 95%).

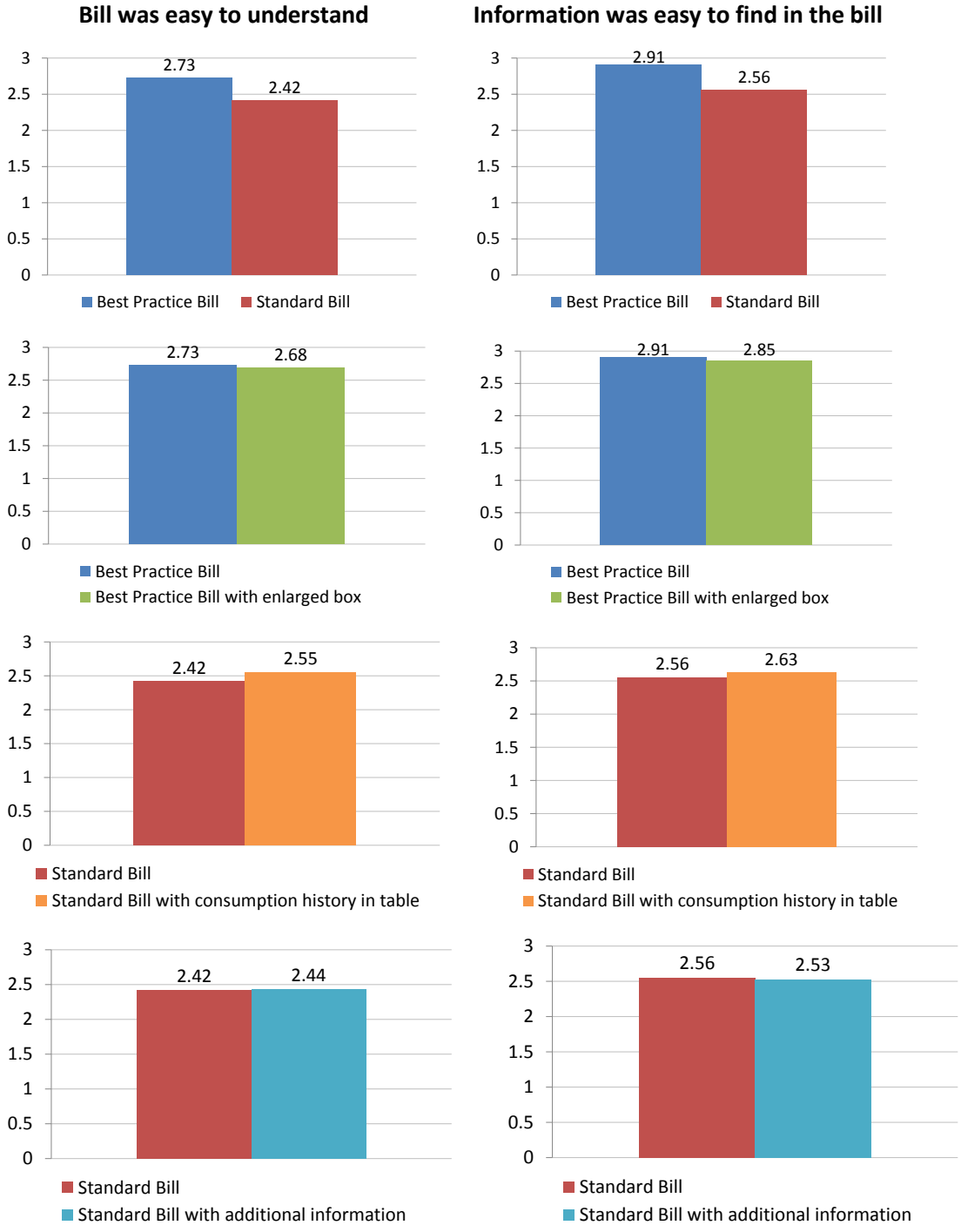
Respondents who were shown the best practice bill with an **enlarged comparability box** (see Figure 110104 second panel) considered this bill marginally less easy to understand and to find information from compared to the best practice bill without an enlarged comparability box, but this difference is very small and not statistically significant.

[68] Working Group Report on Billing and Working Group Report on Billing and Personal Data Management.

Respondents reported that they considered the standard bill with consumption history in a table to be easier to understand and more easy to find information from find than the standard bill. These differences are statistically significant at the 95% level.

No statistically significant difference is observed in the scores provided by respondents on the ease of understanding and ease of finding information between the standard bill with superfluous information and the standard bill without this additional information. The same result was found between the best practice bill with and without additional informational (result not presented).

Figure 105: Respondents' perceptions of ease of understanding the bill and finding information – higher scores imply respondents were more satisfied



Note: Weighted base varies by treatment: Best practice = 1,685; Standard = 1,690; Best practice bill with enlarged comparability box = 1,663; Standard bill with consumption history table = 1,660; Standard bill with additional content = 1,695.

Source: Behavioural experiment

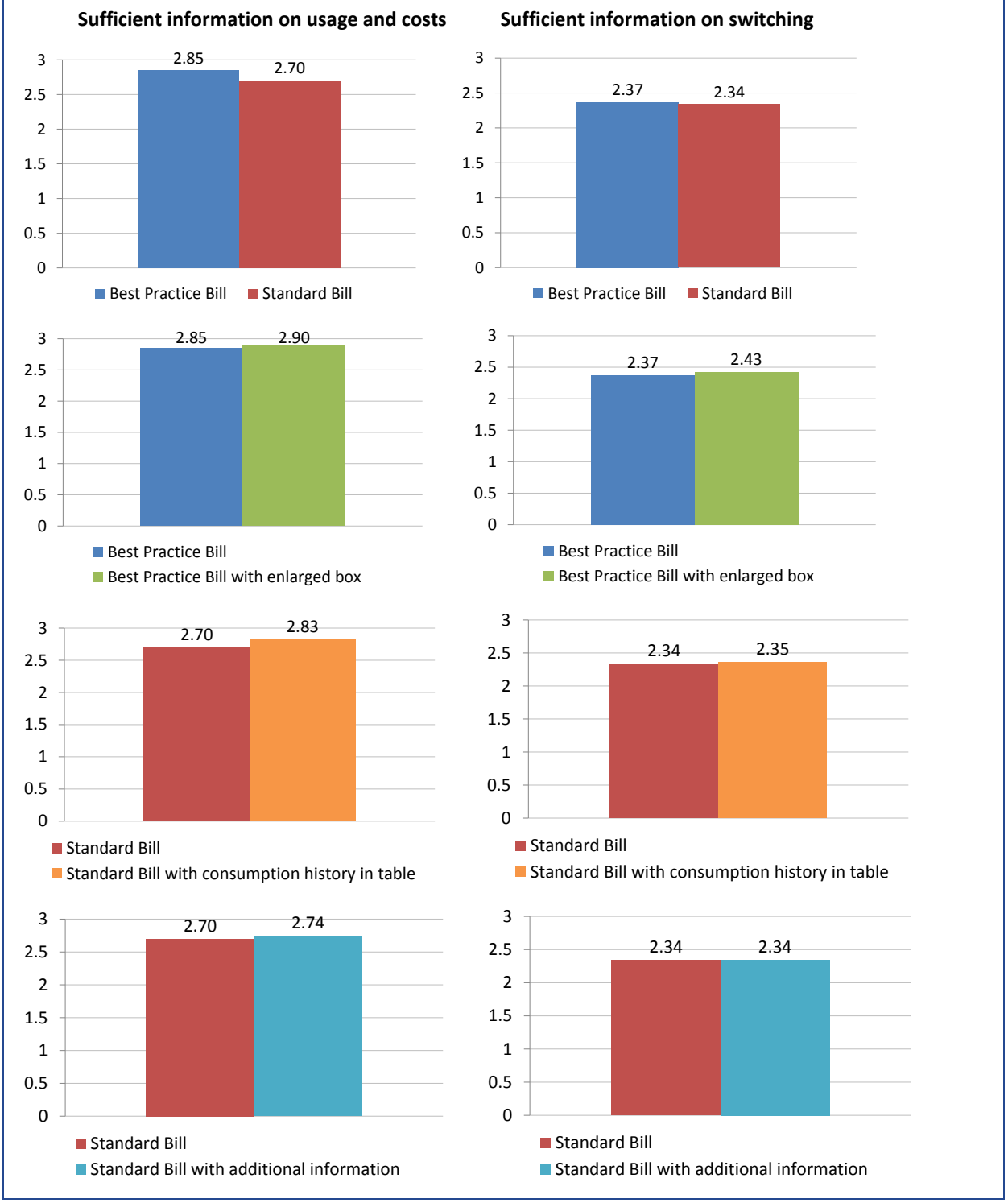
Provision of information on usage, costs, and how to switch

Respondents were also asked to indicate their subjective opinion of whether the information provided in the bills was sufficient for them to assess: (1) electricity usage and costs; and (2) how to change supplier and contract.

On average (see Figure 106), scores for all bill types were higher on the metric of "sufficient information on usage and costs", than on the metric of "sufficient information on how to change supplier and contract". In terms of information on usage and costs, as well as on how to switch, the worst rated bill format was the standard bill. On this measure, the difference in ratings between the best practice bill and the standard bill, and the standard bill with consumption history in a table, were statistically significant at 95%.

All bill formats were rated relatively similarly in terms of information on how to switch.

Figure 106: Respondents' perceptions of provision of sufficient information in the bills – higher scores imply respondents were more satisfied



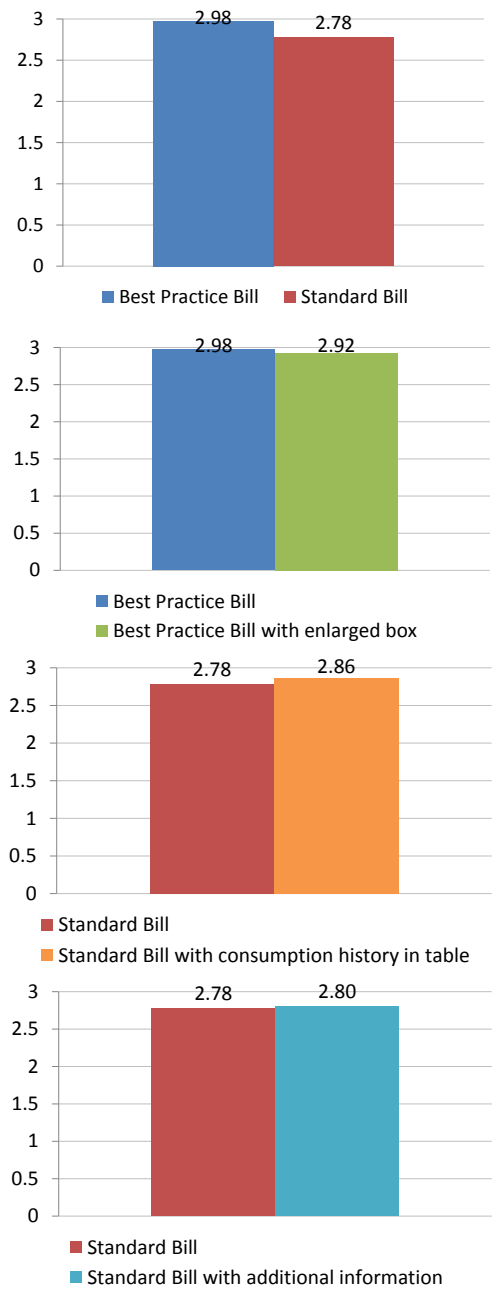
Note: Weighted base varies by treatment: Best practice = 1,685; Standard = 1,690; Best practice bill with enlarged comparability box = 1,663; Standard bill with consumption history table = 1,660; Standard bill with additional content = 1,695

Source: Behavioural experiment

Complexity of language

Overall, across all six different bill types, respondents did not think that the language in the bills was too complicated (only 4% said that language was "too complex" – score 5 – on a scale of 1 to 5). Respondents generally thought that the language was more complex in the standard bill. Again, on this measure the difference in ratings between the best practice bill and the standard bill is statistically significant at 99%. Respondents reported that the bill with the consumption history in a table was more complex than the standard bill (statistically significant at 95%). Respondents thought that the language in the standard bill with additional information was less complex. This may seem surprising, but the impact is small and not statistically significant.

Figure 107: Respondents' perceptions of the complexity of language used in the bills – higher scores imply respondents were more satisfied



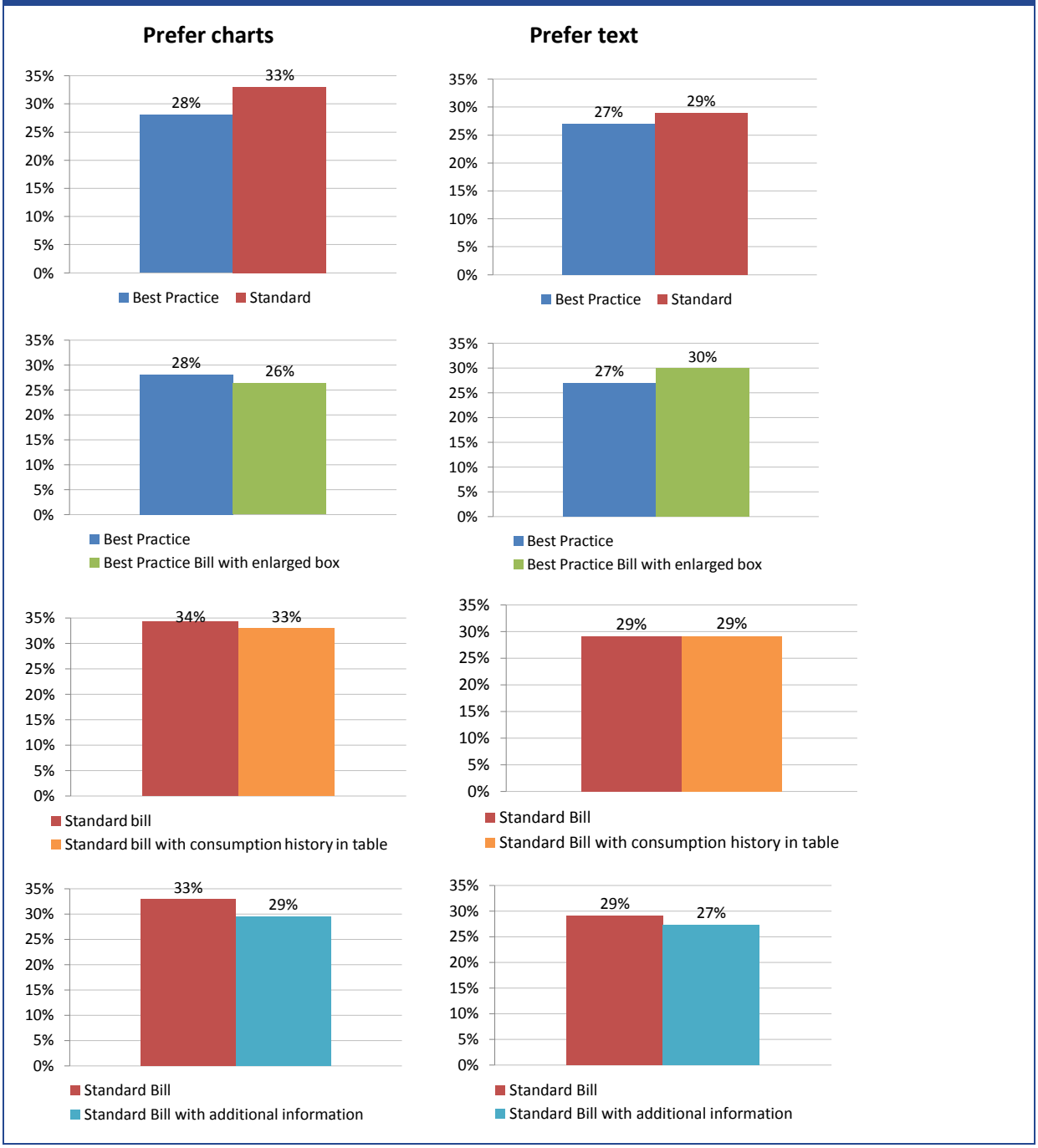
Note: Weighted base varies by treatment: Best practice = 1,685; Standard = 1,690; Best practice bill with enlarged comparability box = 1,663; Standard bill with consumption history table = 1,660; Standard bill with additional content = 1,695

Source: Behavioural experiment

Consumers' preferences for more text versus more charts in the bill

Respondents were also asked whether they would prefer more charts or more text in the bills. For each bill format, in Figure 108, the share of respondents who said they would prefer more charts and the share who said they would prefer more text is presented. For most bill formats, respondents, on average, would prefer more charts rather than more text. However, this preference is not significantly significant across bill formats.

Figure 108: Share of respondents who prefer more charts in the bill and the share who prefer more text



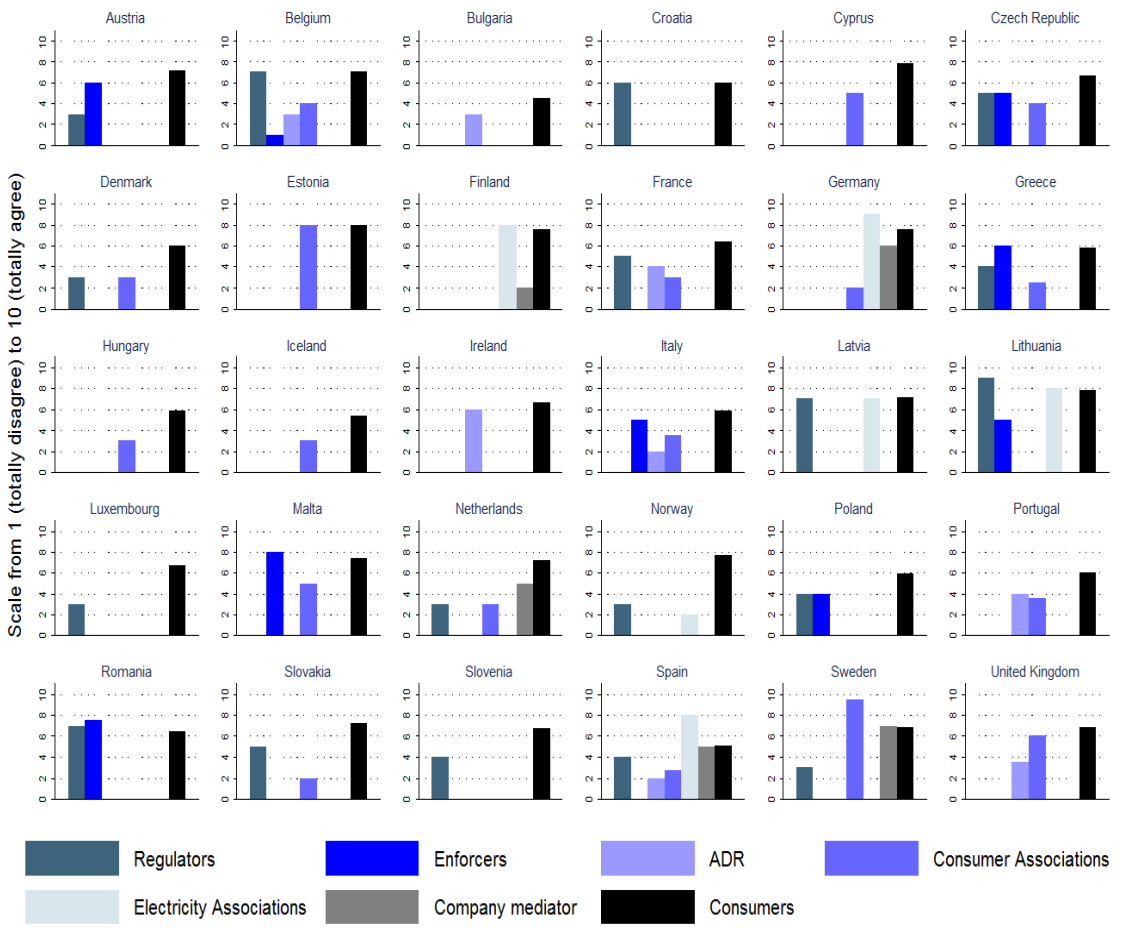
Note: Weighted base varies by treatment: Best practice = 1,685; Standard = 1,690; Best practice bill with enlarged comparability box = 1,663; Standard bill with consumption history table = 1,660; Standard bill with additional content = 1,695

Source: Behavioural experiment

5.3.4 Stakeholders' perceptions of consumers' understanding of electricity bills

Generally speaking, **stakeholders appear to the have less confidence in consumers' ability to understand electricity bills than consumers themselves**. In approximately 20 of the 30 countries surveyed, the ratings provided by stakeholders to question whether they think consumers understand the information provided on their electricity bills were similar or lower than the average score observed in the consumer survey.

Figure 109: Stakeholder views on whether consumers understand electricity bills



Note: Stakeholder agreement with statement: 'Consumers understand the information provided on the electricity bill (e.g. in relation to tariffs, consumption, price and price breakdown, etc.)' (Blank means no response received)
Consumers' response to the statement: Bills of [PROVIDER] are clear and easy to understand.
Source: Stakeholder consultation and consumer survey

5.3.5 Testing consumers' understanding – results from behavioural experiment

This section investigates if bill presentation impacts consumer understanding of the key pieces of information contained in the bill. As noted in Section 5.3.3, the bill comprehension task of the behavioural experiment included an "objective" component, in which respondents' understanding of bills was tested. As previously mentioned, respondents were shown one of six bills. These bills included three variants of the best practice bill and three variants of the standard bill:

- best practice;
- best practice with enlarged comparability box;
- best practice with additional (surplus) information;

- standard;
- standard with consumption history in a table;
- standard with additional (surplus) information; and
- respondents were randomly allocated to one of these six bills.

Respondents were asked eight questions about the information provided in the bill, and could look at the bill next to the questions they had to answer. Each question had a single correct answer. The key results are presented in this section.

Bill comprehension

Generally, **viewing the bill in the best practice format helped respondents pick out the correct answer when compared to the standard bill.** On average across all questions, 84% of respondents who saw the best practice bill selected the correct answers, compared to 79% of respondents who saw the standard bill. This result is statistically significant for all eight questions as illustrated in the table below. This is in line with respondents' evaluations of the different bill types described in Section 5.3.3. As seen in Figure 105, respondents perceived the best practice bill as being easier to understand and find information from, compared to the standard bill. As seen in Figure 107, respondents perceived the best practice bill as having less complex language than the standard bill.

Table 33: Shares of respondents who correctly answered the bill comprehension test questions, by basic bill type

Question	Best practice bill	Standard bill	Difference
What is the name of your tariff?	**90%**	**86%**	**5 pp*** **
How much are you being charged in total?	**90%**	**87%**	**3 pp*** **
How much electricity did you consume?	**91%**	**87%**	**4 pp*** **
What is the total unit cost of energy excl. VAT?	**77%**	**72%**	**6 pp*** **
What is the standing charge incl. taxes and charges?	**82%**	**78%**	**4 pp** **
What is the duration of your contract?	**90%**	**80%**	**10 pp*** **
When does your contract expire?	**90%**	**88%**	**2 pp* **
How much energy did you consume last year?	**60%**	**52%**	**8 pp*** **
Average across all questions	**84%**	**79%**	**5 pp*** **

Note: Weighted base varies by treatment: Best practice = 5,042; Standard = 5,014; ***: significant at 99%; **: significant at 95%; *: significant at 90%. If there is no asterisk, it means that the treatment effect is not statistically significant.
Source: Behavioural experiment

Table 34 (on the next page) examines whether there are any country specific variations in the results discussed above. This is performed using regressions where the dependent variable represents whether or not (1 or 0) respondents selected the correct answer for a particular question. The single explanatory variable represents whether the respondent saw the best practice bill or the standard bill. A positive coefficient implies that viewing the best practice bill increases the likelihood of getting the correct answer. Statistically significant coefficients are highlighted (illustrating that the relationships are statistically significant).

The impact of bill type on correctly identifying the duration of the contract is statistically significant in almost all countries (with the exception of the Czech Republic). However, with other questions, such as "What is the total unit cost of energy excl. VAT?", the impact of bill type on responding correctly seems to be largely driven by the impact of the best practice bill on respondents in Germany. Dropping Germany from the "all country" sample reduces the average impact of bill type on answering this question correctly from 6 percentage points to 3 percentage points.

Table 34: Regression results: impact of bill type on the likelihood that respondents answered the question correctly																						
	All countries		CZ		DE		ES		FR		UK		IT		LT		PL		SE		SI	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
What is the name of your tariff?	**5 pp*** **	0.01	2 pp	0.02	**7 pp*** **	0.02	0.3 pp	0.02	3.5 pp	0.03	1.5 pp	0.02	**12 pp*** **	0.03	3 pp	0.02	**4 pp** **	0.02	-1.7 pp	0.02	**7.8pp*** **	0.03
How much are you being charged in total?	**3 pp*** **	0.01	-1.5 pp	0.02	**7 pp*** **	0.02	-3 pp	0.03	0.8 pp	0.02	**3 pp* **	0.02	**5 pp* **	0.02	7 pp**	0.03	1.7 pp	0.02	-4 pp*	0.02	2 pp	0.03
How much electricity did you consume?	**4 pp*** **	0.01	-1.7 pp	0.02	**14 pp*** **	0.02	0.6 pp	0.03	-1 pp	0.02	2 pp	0.01	2 pp	0.02	4 pp	0.03	4 pp	0.02	-0.02 pp	0.02	3 pp	0.03
What is the total unit cost of energy excl. VAT?	**6 pp*** **	0.01	0.9 pp	0.02	**14 pp*** **	0.02	2.5 pp	0.025	0.9 pp	0.02	2 pp	0.02	0 pp	-	4 pp	0.03	2.4 pp	0.025	0 pp	-	1.7 pp	0.03
What is the standing charge incl. taxes and charges?	**3 pp*** **	0.01	3 pp	0.03	**12 pp*** **	0.03	-2.5 pp	0.03	1.4 pp	0.03	-0.02 pp	0.02	2.6 pp	0.03	5 pp	0.03	3.4 pp	0.03	-1 pp	0.02	3.5 pp	0.03
What is the duration of your contract?	**10 pp*** **	0.01	2 pp	0.02	**13 pp*** **	0.02	**11 pp*** **	0.03	**7 pp*** **	0.03	**7.6pp*** **	0.02	**15 pp*** **	0.03	**13 pp*** **	0.03	**9 pp*** **	0.03	**7 pp*** **	0.02	**14 pp*** **	0.03
When does your contract expire?	**1.5 pp* **	0.01	1.3 pp	0.02	1.6 pp	0.02	**2.4 pp**	0.02	0.7 pp	0.02	1.7 pp	0.01	0.6 pp	0.025	**6 pp** **	0.03	3 pp	0.025	-3 pp	0.02	**9 pp*** **	0.03
How much energy did you consume last year?	**8 pp*** **	0.01	0.9 pp	0.03	5 pp	0.03	**10 pp*** **	0.035	**6 pp* **	0.03	**19 pp*** **	0.03	3 pp	0.04	-0.6 pp	0.035	4 pp	0.03	-2 pp	0.03	**11 pp*** **	0.04

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

Effect of an enlarged comparability box in the best practice bill

In addition to the "original" best practice bill, in another treatment respondents were shown the best practice bill *with an enlarged comparability box*. The enlarged comparability box included three additional elements compared to the original comparability box: (1) the consumer's switching contact number, (2) the consumer's energy consumption for the year, and (3) the consumer's total charges for the year (see Figure 110).

Figure 110: Enlarged comparability box in best practice bill

Comparability box in original best practice bill

The ILD Electricity Company

Reference number: 5546459428
Date of issue: 20 November 2014

REFERENCE NUMBER	SUPPLY ADDRESS	BILLING ADDRESS
5546459428	15 Yourstreet 1250 Yourtown	15 Yourstreet 1250 Yourtown

YOUR ELECTRICITY CONTRACT INFORMATION	
Your Supplier	ILD Electricity Company (Customer service number: 0800 226 565)
Contract Period	2 Years, ends on 20 September 2015
Your Tariff	Standard Deal (see overleaf for details)
Your switching code (EAN)	5146239568574562 To switch, give us a notice of 2 months
Price	Total unit price: [L] [Z]/kWh incl. taxes and charges Standing charge: [M] [AA]/day incl. taxes and charges (see overleaf for details)

Enlarged comparability box

The ILD Electricity Company

Reference number: 5546459428
Date of issue: 20 November 2014

REFERENCE NUMBER	SUPPLY ADDRESS	BILLING ADDRESS
5546459428	15 Yourstreet 1250 Yourtown	15 Yourstreet 1250 Yourtown

YOUR ELECTRICITY CONTRACT INFORMATION	
Your Supplier	ILD Electricity Company (Customer service number: 0800 226 565)
Contract Period	2 Years, ends on 20 September 2015
Your Tariff	Standard Deal (see overleaf for details)
Your switching code (EAN)	5146239568574562 To switch, give us a notice of 2 months
Your switching contact number	0800666898
Price	Total unit price: [L] [Z]/kWh incl. taxes and charges Standing charge: [M] [AA]/day incl. taxes and charges (see overleaf for details)
Your consumption for 15 August – 14 November	[N] kWh
Total Charges for 15 August – 14 November	[AF] [S]

Respondents perceived the best practice bill with the enlarged comparability box as providing more information on usage and costs (as seen in Figure 106Figure 106), but including energy consumption in the enlarged comparability box did not help respondents to correctly answer "How much energy did you consume last year?"[69]; however, a larger share of respondents correctly identified the standing charge (84% compared to 82% for the original comparability box). This finding was statistically significant at the 90% significance level.

Effect of presenting consumption history in a table in the standard bill

A variant of the standard bill that was tested in the experiment presented the consumer's consumption history in a table instead of a chart (a chart was used in the original standard bill), as illustrated in the figure below.

Respondents' perceptions of the standard bill with consumption history in a table were mixed. On one hand, respondents believed, on average, that this bill was easier to understand compared to the standard bill (Figure 105), and contained more information on usage and costs (Figure 106). On the other hand, they also indicated that they believed the original standard bill was less complex (Figure 107). However, in the "objective" component of the bill comprehension task, respondents seeing their consumption history in a chart extracted relevant information significantly more often than respondents seeing consumption history in a table. When referring to their consumption history in a table, only 42% of respondents could correctly answer how much energy they had consumed in the previous year, compared to 58% of respondents when referring to their consumption history in a chart.[70] From a policy perspective, this suggests that presenting certain pieces of information (such as consumption history) in a chart instead of a table may be more helpful to consumers.

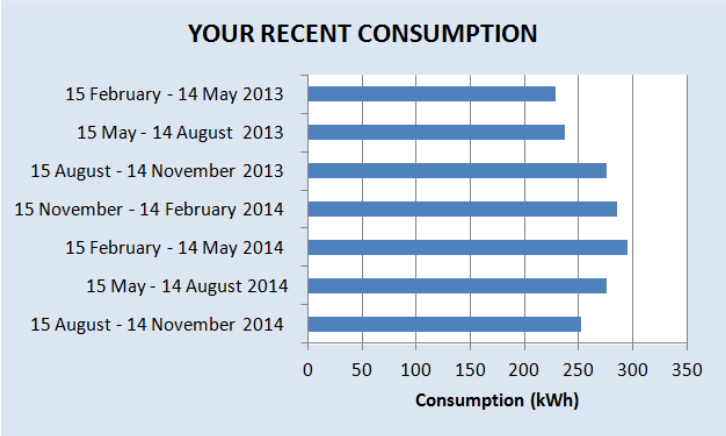
[69] 56.9% of respondents in the best practice treatment correctly answered the question, compared to 57.3% of respondents shown the best practice bill with an enlarged comparability box.

[70] This finding was statistically significant at the 99% significance level (based on a two-tailed difference-in-proportions test).

Figure 111: Consumption history table in standard bill

Consumption history chart in original standard bill

YOUR RECENT CONSUMPTION



Consumption history table

YOUR RECENT CONSUMPTION

DATE	CONSUMPTION
15 February – 14 May 2013	228kWh
15 May – 14 August 2013	238kWh
15 August – 14 November 2013	276kWh
15 November – 14 February 2014	285kWh
15 February – 14 May 2014	276kWh
15 August – 14 November 2014	253kWh

Effect of including additional information in the bill

In two further variants of the bills, additional "superfluous" information was included in both the best practice and standard bill. The aim was to test whether the superfluous information distracted respondents from the information needed to answer the test questions. The superfluous information included a number to call if the consumer was moving home, information on different methods of payment, other customer service hotlines and website links for other services, as shown in Figure 112 . The information was "superfluous", since it did not assist respondents to answer the questions asked in the bill comprehension task.

Figure 112: Additional information in standard bills

Excerpt of standard bill

YOUR TARIFF INFORMATION

TARIFF NAME	STANDARD FIX
Base unit price	[insert currency symbol/amount]/kWh
Standing Charge	[insert currency symbol/amount]/kWh
National levy(the Green Energy Fund)	[insert currency symbol/amount]/kWh
TOTAL UNIT COST WITHOUT VAT	[insert currency symbol/amount]/kWh
+ VAT at 20%	[insert currency symbol/amount]/kWh
TOTAL UNIT COST incl. VAT	[insert currency symbol/amount]/kWh

DATE	GENERAL METER NO 7546 - reading
Previous reading*	32250kWh (a)
15 August	33570kWh (a)
14 November	34100kWh (a)
Your consumption 15 August – 14 November 2014	530 kWh

**Abbreviations: "a": actual, "e": estimate*

Excerpt of standard bill with additional information

YOUR TARIFF INFORMATION

TARIFF NAME	STANDARD FIX
Base unit price	[insert currency symbol/amount]/kWh
Standing Charge	[insert currency symbol/amount]/kWh
National levy(the Green Energy Fund)	[insert currency symbol/amount]/kWh
TOTAL UNIT COST WITHOUT VAT	[insert currency symbol/amount]/kWh
+ VAT at 20%	[insert currency symbol/amount]/kWh
TOTAL UNIT COST incl. VAT	[insert currency symbol/amount]/kWh

Power loss problems?
Call your local supplier branch at
0800 22 65 00

Methods of payment
You have chosen to pay your bills via direct debit. You can also choose to switch to paper billing. Find out more on **www.ILD.eu/billing**

YOUR CONSUMPTION

DATE	GENERAL METER NO 7546 - reading
Previous reading*	32250kWh (a)
15 August	33570kWh (a)
14 November	34100kWh (a)
Your consumption 15 August – 14 November 2014	530 kWh

**Abbreviations: "a": actual, "e": estimate*

We have calculated your usage using up to date meter readings.

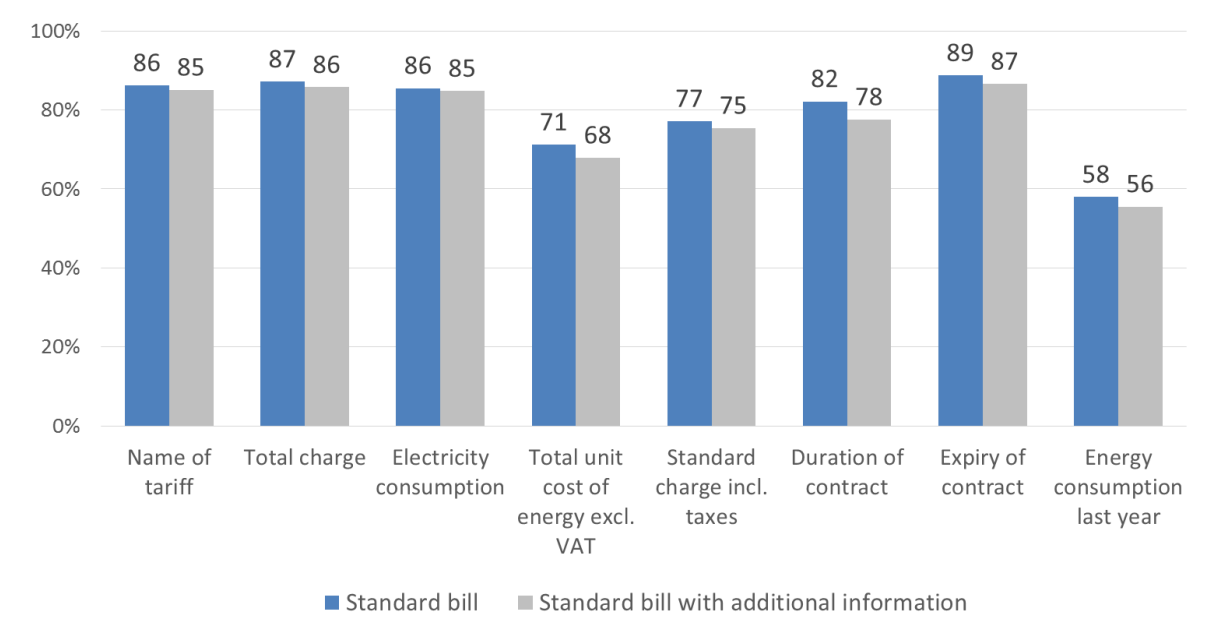
Readings
You can submit a meter reading to us at anytime, simply visit
www.
YourCompany.eu/readin
gs or dial 0800 22 65 65

Moving home? We'll move with you!
Simply call
0800 22 65 62 or visit www.
YourCompany.eu/move

Contact us if you need **LARGE PRINT, talking or Braille** bill, by calling our Customer service:
0800 22 65 65

Respondents' perceptions of the "superfluous" information were usually not statistically significantly different from their perceptions of the standard bill, as seen in Figure 105 to Figure 107. However, in the "objective" component of the bill comprehension task, it was assumed that "superfluous" information may make it difficult for respondents to correctly pick out the information required to answer the questions. The results of the bill comprehension test showed that, for the standard bill type, including additional information reduced respondents' ability to answer certain questions correctly: "What is the total unit cost of energy excl. VAT?" (the proportion of respondents answering this question correctly was 68% when additional information was provided, compared to 71% in the standard bill) and "What is the duration of your contract?" (78% of respondents answered this question correctly when additional information was included, compared to 82% in the standard bill). In both cases, the impact of including additional information was statistically significant at least at the 95% significance level. In the case of the question "How much energy did you consume last year?", 56% of respondents answered this question correctly when including additional information, increasing to 58% for the standard bill. This finding was statistically significant to the 90% significance level.

Figure 113: Performance in bill comprehension task: standard bill vs standard bill with additional information (%)



Note: Base varies by group: Respondents allocated to 'standard bill' treatment: 1,690. Respondents allocated to 'standard bill with additional information' treatment: 1,695.

Source: Behavioural experiment

Crossing bill type with performance in the real effort task of the "stay or switch" experiment

In the "stay or switch" experiment (described in more detail in Section 4.8), respondents had to complete a "real effort task" in order to view the alternative deals that they could switch to. This involved answering up to six questions by finding information from the bill shown. Respondents were randomly allocated to one of two difficulty levels, "high" or "low", and the number of questions they had to answer depended on whether they did the real effort task once (in order to see just one alternative deal) or twice (in order to see both alternative deals), and on the difficulty setting they were allocated to. The table below sets out the pieces of information that respondents were required to provide in the real effort task.

Table 35: Information respondents were required to provide in the real effort task

	High difficulty setting		Low difficulty setting	
Information	**1st iteration**	**2nd iteration**	**1st iteration**	**2nd iteration**
Date of issue of the bill	✓		✓	
Name of electricity company	✓		✓	
Payment method	✓			
Meter number	✓			
Reference number		✓		✓
Customer service number		✓		

The shares of respondents who answered correctly to each question in the real effort task are shown in Table 36. On average across all countries, the share who gave the correct answer ranged from 69% for the meter number and date of issue of the bill to 85% for the payment method. For all real effort task questions, either as many or more respondents in the UK gave the correct answer than in the other countries.

Table 36: Share of respondents who correctly provided information in the real effort task

Information	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI	Total
Date of issue of the bill	76%	72%	62%	74%	81%	78%	58%	63%	66%	63%	69%
Name of electricity company	82%	75%	72%	81%	87%	83%	65%	67%	80%	75%	77%
Payment method	88%	95%	94%	92%	95%	95%	68%	62%	84%	79%	85%
Meter number	76%	66%	65%	74%	78%	63%	56%	63%	72%	75%	69%
Reference number	88%	80%	78%	87%	89%	82%	75%	74%	84%	77%	81%
Customer service number	91%	80%	77%	88%	92%	86%	69%	75%	83%	80%	82%

Note: Weighted base = 10,056. Proportions may not add up to 100% due to rounding. Country-level results are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total.

Source: Behavioural experiment

The type of bill seen by respondents might be expected to impact on their ability to provide information from the bill. However, this is not found to be the case based on the data from this experiment. Differences in respondents' answers in the real effort task depending on the type of bill they saw were small and not statistically significant.

Effect of respondent socio-demographic characteristics

This section describes respondents' average scores in the bill comprehension task, by respondent socio-demographic characteristics. As seen in the table below:

- 82% of all respondents below the age of 65 years responded correctly in the bill comprehension task, compared to 76% of respondents of 65 years and over;
- 82% of economically active respondents respond correctly in the bill comprehension task, compared to 80% of economically inactive respondents; and
- 84% of respondents with a high education level responded correctly in the bill comprehension task, compared to 80% of respondents with a medium level of education and 78% of respondents with a low education level.

Table 37: Share of respondents answering bill comprehension questions correctly (average across all questions); by respondent socio-demographic characteristics

	All countries	CZ	DE	ES	FR	UK	IT	LT	PL	SE	SI
By respondent age											
Below 65	82%	84%	84%	80%	84%	88%	69%	76%	81%	74%	79%
65 years and over	76%	70%	74%	75%	76%	89%	67%	71%	74%	73%	51%
By employment status of respondents											
Economically active	82%	84%	82%	82%	83%	89%	70%	78%	83%	74%	79%
Economically inactive	80%	78%	83%	76%	82%	88%	68%	72%	77%	73%	73%
By education level of respondent											
High	84%	89%	84%	82%	84%	91%	73%	81%	87%	76%	83%
Medium	80%	82%	83%	78%	81%	87%	68%	71%	78%	72%	74%
Low	78%	79%	79%	76%	85%	84%	65%	66%	68%	66%	57%
Total	81%	82%	82%	80%	83%	88%	69%	76%	80%	74%	77%

Note: Weighted base varies by category: Below 65 = 8,461; 65 years and over = 1,595; Economically active = 6,058; Economically inactive = 3,998; High education level = 3,463; Medium education level = 4,836; Low education level = 1,736.

Source: Behavioural experiment

As seen in Table 38, the impact of all these categories is statistically significant, although in the case of economically inactive respondents, the results' statistical significance is largely driven by five Member States (the Czech Republic, Lithuania, Poland, Spain and Sweden). Removing respondents from these Member States from the sample results in the coefficient estimate decreasing in statistical significance (from the 99% level to the 90% level), the magnitude of the coefficient estimate, however, remains at -2 percentage points.

Table 38: Regression results: impact of respondent age, employment status and employment education level on the likelihood that respondent answered correctly (average across all questions)

	65 years and over		Economically inactive		High education level		Low education level		Total	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**-6 pp*** **	0.01	**-2 pp*** **	0.01	**5 pp*** **	0.01	**-4 pp*** **	0.01	**81%*** **	0.003
CZ	**-14 pp*** **	0.02	**-6 pp*** **	0.01	**9 pp*** **	0.02	**-5 pp*** **	0.01	**82%*** **	0.01
DE	**-11 pp*** **	0.03	-0.8 pp	0.02	2 pp	0.02	**-4 pp* **	0.02	**82%*** **	0.01
ES	**-5 pp** **	0.02	**-6 pp*** **	0.02	**5 pp*** **	0.02	**-5 pp** **	0.02	**80%*** **	0.01
FR	**-8 pp*** **	0.03	-2 pp	0.02	3 pp	0.02	2 pp	0.02	**83%*** **	0.01
UK	-0.6 pp	0.02	-0.7 pp	0.01	**5 pp*** **	0.01	**-5 pp** **	0.02	**88%*** **	0.01
IT	-2 pp	0.02	-2 pp	0.015	**6 pp*** **	0.01	**-5 pp*** **	0.02	**69%*** **	0.01
LT	**-6 pp* **	0.03	**-6 pp*** **	0.02	**11 pp*** **	0.02	**-10 pp** **	0.04	**76%*** **	0.01
PL	**-7 pp** **	0.03	**-6 pp*** **	0.02	**10 pp*** **	0.02	**-14 pp*** **	0.05	**80%*** **	0.01
SE	-1 pp	0.02	-1 pp	0.015	**5 pp*** **	0.01	**-8 pp** **	0.04	**74%*** **	0.01
SI	**-27 pp*** **	0.09	**-6 pp** **	0.03	**10 pp*** **	0.02	**-21 pp*** **	0.06	**77%*** **	0.01

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

Effect of trusting in company's accurate billing

Respondents who trust their electricity bills may be expected to perform better in the bill comprehension task, if they understand their bills and have verified their accuracy. On the other hand, respondents who believe their electricity bills accurately reflect their true consumption may perform worse, if they trust their electricity bill without verifying its accuracy. In the consumer survey, respondents were asked whether they agree[71] with a number of statements including the following: *"I believe that my bills accurately reflect my true consumption"*[72].

[71] On a scale of 0 to 10, with 0 being total disagreement and 10 being total agreement.

[72] Question 5, Item 6 in the consumer survey.

Table 39 presents regression results for the impact of agreeing with this statement (measured as marking 6 or higher in the scale of agreement) on the average score (that is, average proportion of correct answers) in the bill comprehension task. As can be seen in the table below, respondents who believed that their bill accurately reflected their consumption scored, on average, four percentage points higher (statistically significant at 99%) in the bill comprehension task. This suggests that **respondents who believed that their bills accurately reflected their true consumption may have verified their consumption and understood how their bill was calculated, which was linked also to better performance in the bill comprehension task**.[73]

Table 39: Regression results: impact of trust in accuracy of electricity bill on average score in bill comprehension task.

	My electricity bill accurately reflects my consumption		Average score in bill comprehension task	
	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**4pp *****	0.01	**81%*****	0.003
CZ	-0.2 pp	0.02	**82%*****	0.01
DE	2 pp	0.02	**82%*****	0.01
ES	-0.2 pp	0.02	**80%*****	0.01
FR	**6 pp*****	0.02	**83%*****	0.01
UK	0.9 pp	0.01	**88%*****	0.01
IT	**4 pp****	0.02	**69%*****	0.01
LT	**7 pp****	0.03	**76%*****	0.01
PL	**5 pp****	0.02	**80%*****	0.01
SE	**11 pp*****	0.02	**74%*****	0.01
SI	**10 pp*****	0.03	**77%*****	0.01

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

[73] When looking at the impact of agreeing with the statement that "bills of [PROVIDER] are easy and clear to understand" on performance in the bill comprehension task, a similar conclusion is reached. Respondents who "strongly agreed" that electricity bills of their electricity company were easy and clear to understand performed somewhat better in the comprehension exercise (83% vs. 79% for respondents who disagreed that bills were easy and clear to understand – statistically significant at 99%).

Crossing performance in the bill comprehension task with performance in the "stay or switch" task by bill type

In addition, it may be expected that respondents who better comprehend a bill, can more easily compare between offers and choose the cheapest deal. Table 40 presents a regression showing the impact of higher average scores in the bill comprehension task on choosing the cheapest deal in the "stay or switch" task. These results are further broken down by bill type, since in the bill comprehension task it was found that respondents in the "best practice" bill performed better than those in the "standard" bill, on average.

Respondents with a higher score in the bill comprehension task also tended to choose the cheapest deal in the "stay or switch" task more often. This positive impact was not significantly different for the standard bill types compared to the best practice bill types. This suggests that, while respondents with higher bill comprehension are more likely to choose the cheapest deal, bill type does not play a significant role. However, it should be cautioned that the behavioural experiment represents a simplification of the real world environment. Therefore, the impact of bill type in a real world environment may be larger.

Table 40: Regression results: impact of bill comprehension on choosing the cheapest deal, by bill type

	Best practice		Standard		Average probability of choosing the cheapest deal	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**7 pp*** **	0.01	**6.6 pp*** **	0.01	**60%*** **	0.007
CZ	**5 pp** **	0.02	**4.5 pp** **	0.02	**59%*** **	0.02
DE	**6 pp*** **	0.02	**10 pp*** **	0.025	**63%*** **	0.02
ES	3 pp	0.03	**4 pp* **	0.025	**52%*** **	0.02
FR	**10 pp*** **	0.025	**5 pp** **	0.02	**57%*** **	0.02
UK	**10 pp*** **	0.02	**8 pp*** **	0.02	**71%*** **	0.02
IT	3 pp	0.02	1.6 pp	0.02	**54%*** **	0.02
LT	1.9 pp	0.03	4.6 pp	0.03	**59%*** **	0.02
PL	-0.35 pp	0.02	1.8 pp	0.02	**56%*** **	0.02
SE	**11 pp*** **	0.02	**5 pp*** **	0.02	**60%*** **	0.02
SI	**7.5 pp** **	0.03	**5.6 pp* **	0.03	**59%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.
Source: Behavioural experiment

5.4 Quality of assistance related to understanding electricity bills

In Section 2.3, it was noted that 14% of survey respondents across the EU28 had contacted their electricity company in the past 12 months to ask questions about their electricity bill. Among these respondents, 42% indicated that the assistance and information they had received had fully lived up to what they had wanted (i.e. they selected scores 8 to 10 on the agreement scale).

Mystery shoppers in this study were instructed to contact their electricity company and ask a set of questions about their electricity bill. Table 41 presents an overview of the various aspects related to billing for which mystery shoppers received *complete and clear information* when contacting their electricity company by phone[74].

In total, 94% of mystery shoppers said they had received complete information about the mode of payment; in Poland, Sweden and Lithuania, all shoppers said they had received complete information on this topic. Overall, a considerably smaller proportion of shoppers (69%) said they had received complete and correct information about the conditions under which the price of electricity can increase/decrease; the lowest proportion was registered in Slovenia (48%).

Table 41: Proportion of mystery shoppers who reported having received complete/correct information about various aspects related to billing (when contacting their electricity company by phone)

	PL	SE	DE	UK	IT	LT	FR	CZ	SI	ES	*Total*
	100	50	100	75	75	50	75	50	50	75	700
The various modes of payment (bank transfer, direct deposit etc.)	100%	100%	98%	90%	87%	100%	93%	96%	84%	87%	***94%***
How to obtain your bill in another format (e.g. large print or online/paper)	95%	100%	95%	90%	93%	96%	90%	84%	88%	87%	***92%***
The characteristics of your tariff (fixed/ variable, green etc.)	90%	92%	93%	87%	87%	64%	93%	88%	80%	73%	***85%***
Where to look for information on complaint handling process	95%	80%	85%	90%	93%	84%	83%	76%	84%	77%	***85%***
How the base price for one energy unit (kwh) is calculated	90%	88%	75%	80%	77%	76%	70%	76%	56%	60%	***75%***
The price breakdown for the tariff (basic price/green energy costs + other charges)	83%	76%	78%	80%	77%	76%	73%	64%	76%	60%	***75%***
The conditions under which the price of electricity can increase / decrease	83%	76%	78%	77%	67%	72%	63%	68%	48%	53%	***69%***

Q17-Q23. How clearly did the customer service explain? % "provided complete/correct information";
Base: all mystery shoppers
Source: Mystery shopping

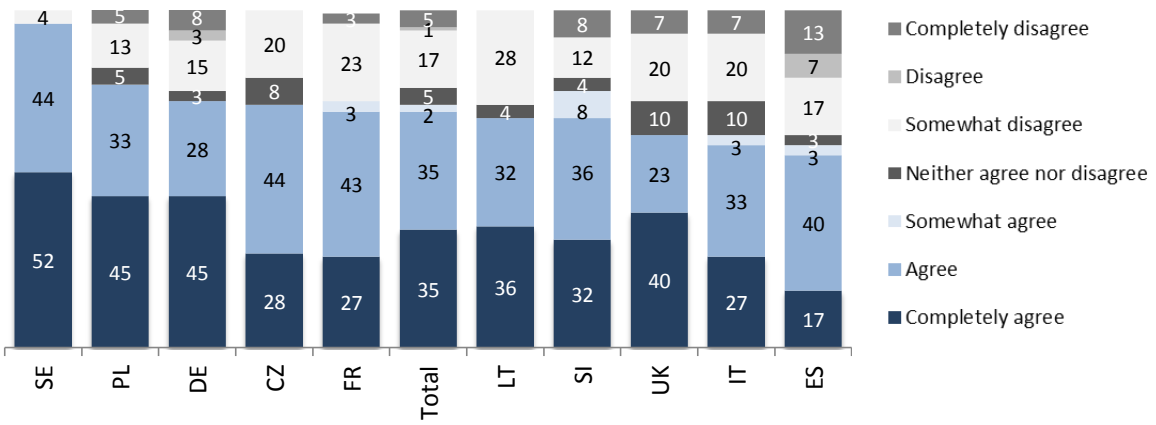
[74] The complete results for these questions can be found in Annex A5.3.

Looking at the variation across countries, it can be seen that all countries scored relatively high on the items linked to mode of payment (figures from 84% to 100%), bills in various formats (from 84% to 100%), characteristics of the tariff (from 64% to 93%) and information on complaint handling (from 76% to 95%). For the remaining three items, however, there is more variation across countries; some countries still score relatively well, while others do not. The biggest difference across countries concerns information on how the base price for one energy unit (kwh) is calculated: 90% of mystery shoppers in Poland said they received complete information on this topic when contacting their electricity company, compared to just 56% of shoppers in Slovenia.

The proportion of mystery shoppers who *completely agreed* that the information provided by the customer service in response to questions about billing was correct and transparent was 35%; a result that is comparable to the 42% of respondents in the consumer survey who indicated that the assistance and information they had received from their electricity company when asking questions about billing had fully lived up to what they had wanted.

The proportion of mystery shoppers who *completely agreed* or *agreed* that the information provided by the customer service to questions about billing was correct and transparent ranged from 57% in Spain to 96% in Sweden (in the latter country, 52% *completely agreed* with this statement). In Spain, 20% of shoppers *completely disagreed* or *disagreed* with this statement, confirming the findings presented in Table 41 (where it can be seen that Spain scored low across all items evaluated).

Figure 114: Agreement with the statement: "The customer service offers correct and transparent information when it comes to questions about my bill and the information provided on my bill"



Q24. To what extent do you agree with the following statement: "The customer service offers correct and transparent information when it comes to questions about my bill and the information provided on my bill"?
%, Base: all mystery shoppers
Source: Mystery shopping

6. Problems, complaints and complaint handling

This chapter focuses on problems experienced by consumers, complaints and complaint handling. In particular, the chapter analyses:

- complaint procedures in place (Section 6.1);
- incidence and type of problems experienced by consumers (Section 6.2);
- consumers' experiences and satisfaction with complaint handling (Section 6.3);
- information provision about complaint procedures (Section 6.4); and
- problems related to unfair commercial practices (Section 6.5).

Box 9: Main findings with regards to "problems, complaints and complaint handling"

- **Complaint procedures.** The national regulations in place for complaint handling procedures are quite diverse across EU Member States; the most common approach is for the consumer to go through their provider as a first point of contact. Countries where consumers can start proceedings directly via a third party are Denmark, Estonia, Hungary, Iceland, Malta, Slovenia and Sweden.
- Among survey respondents who had experienced a problem with their electricity company in the past three years, 40% had filed a complaint (between 18% in Lithuania and 59% in Malta). Respondents who had complained about the problem to their electricity company largely outnumbered those who had contacted a third party – e.g. a consumer organisation, ombudsman or regulator (35% vs. 5%).
- **Satisfaction with complaint handling.** Many complaints filed were resolved within a matter of days: 17% of survey respondents reported that their complaint had been dealt with within one day, and 18% said it had taken between two and four days. At the other extreme, for 20% of respondents, more than a month had passed between the moment they had filed the complaint and the moment a decision had been taken to resolve the problem. Only 22% of respondents, who had filed a complaint, reported being "very satisfied" with the way their complaint had been dealt with; almost twice as many respondents (40%) were not satisfied.
- The most important **reasons for not filing a complaint** were that it was unlikely that a satisfactory solution would be reached (mentioned by 36% of respondents who had experienced a problem, but had not complained), that is was too time consuming to file a complaint (21%), that the sums involved were too small (17%) or that it was too difficult to file a complaint (13%); moreover, 15% had not filed a complaint because they did not know how or where to file a complaint.
- **Informing consumers about complaint procedures.** When mystery shoppers (in 10 countries) contacted the customer service of electricity companies, 65% received complete and correct information about the complaint handling process. One in two mystery shoppers also received the contact details of the national energy regulatory authority and 42% received contact details of an ADR body. A large variation was observed across countries: 80% of shoppers in the UK had received complete and correct information about the complaint handling process, compared to 36% in Lithuania.
- A large variation was also observed in the proportion of mystery shoppers who reported having found information on the electricity company's website about how to file a complaint; while 88% of shoppers in the UK had found such information on the provider's website, this figure decreased to 26% in Poland.
- Overall, 27% of mystery shoppers reported that a complaint could be submitted on the electricity company's website, 22% found a link to the national body in the country in charge of energy regulation and 19% found a link to an ADR body or found information on how to contact an ADR bod on the website.
- **Unfair commercial practices.** Survey respondents in Bulgaria were overall the most likely to state that problems related to unfair commercial practices occurred in their country. In Finland, on the other hand, respondents were overall the least likely to agree that unfair commercial practices occurred in their country; nonetheless, even in Finland, 36% of respondents "strongly agreed" that electricity companies make their tariffs appear more attractive than they really are to encourage customers to switch.

6.1 Complaint procedures

This section about complaint procedures covers the following topics:

- overview of national regulatory framework and other non-binding procedures in place related to complaint handling procedures;
- a standard complaint procedure;
- complaint response times reported by electricity companies;
- overview of complaint resolution bodies; and
- the role of company specific ombudsmen.

Overview of national regulatory framework and other non-binding procedures related to complaint handling procedures

The national regulation in place for complaint handling procedures is presented in Table 42[75]. As it can be seen, practices are quite diverse: in some countries the process itself is set in legislation, while in others the procedures may be determined by the regulator.

A key difference in the complaint handling approach is whether the law establishes that an electricity company should be the first contact point for consumers or not, a step which is optional in many countries. A regulatory or ADR body may simply request that the consumer should first attempt to resolve the issue directly with the electricity provider before taking over the complaint, and the consumer will have to comply (unless intending to begin formal legal procedures).

Table 42: Regulation of suppliers' complaint handling process

	Is the complaint handling procedure of electricity suppliers regulated?
Austria	Since 2015, it is mandatory by law that the largest market players (i.e. with 50+ employees and €10m in transaction sums) have a specialised consumer assistance service. If the consumer is not satisfied with the claim management at that point, the claim can be addressed to the conciliation unit, a service provided by the regulator.
Belgium	Complaints are admitted to the Energy Ombudsman only if the accuser has already tried to solve the dispute directly with the electricity or gas company first. If not admissible, the Ombudsman sends the complaint to the company anyway, and the latter must handle the complaint and send a copy of the answer to the Ombudsman Service.
Bulgaria	In Bulgaria, the regulator deals with complaints and companies are required to respond in writing to both the regulator and the complaining consumer. There is also an Ombudsman which acts as a mediator. Terms and conditions for amicable dispute settlement are regulated by the Energy Act and by Ordinance N°3 on licensing the activities in the energy sector. For disputes that did not achieve an amicable settlement (or when some of the parties rejected an amicable settlement), the regulator will take a decision.
Croatia	In Croatia, the regulator is responsible for dealing with consumer complaints.
Cyprus	Any consumer may submit a written complaint to the Electricity Authority of Cyprus (EAC, the main electricity provider) regarding the alleged breach of obligations, responsibilities and duties of the supplier. The EAC must then examine the complaint within the time limit specified in the performance indicators set down by the Regulator (CERA). A consumer not happy with the response of EAC may submit a written complaint to the CERA who will research and examine the complaint.
Czech Republic	The main responsible body for complaints, complaint handling and enforcement is the regulator. However, clients are requested to contact their energy supplier first, and in case that the issue remains unresolved, the Energy Regulatory Office (ERO) will process the complaint.
Denmark	The Energy Supplies Complaint Board manages all consumer complaints relating to energy, in particular,

[75] Please note that the impact of the new Directive on ADR on these mechanisms (Directive 2013/11/EU of the European Parliament and of the Council of 21 May 2013 on alternative dispute resolution for consumer disputes and amending Regulation (EC) No 2006/2004 and Directive 2009/22/EC) was not known at the time of writing. The salient points of the Directive are that: i) there will need to be an ADR entity dealing with energy in all MS, ii) ADR entities will need to respect quality criteria (independence, impartiality transparency etc.), and iii) traders, including energy providers, will need to inform consumers on ADR.

Table 42: Regulation of suppliers' complaint handling process	
	regarding electricity, heating and gas as well as disputes arising from the contractual relationship between a consumer and an electricity supplier.
Estonia	All market participants, both undertakings and customers, have the right to go to the Competition Authority as an extra-judicial body. A market participant may file a written complaint with the Competition Authority against an action or an omission of any other market participant, which is in conflict with the Electricity Market Act or legislation enacted on its basis.
Finland	When a problem is encountered, the consumer is to consult the electricity provider as a first response. Following the filing of a complaint, the consumer can turn to the Competition and Consumer Authority's consumer counselling service regarding consumer rights, contracts and for example, payments.
France	The authority in charge of managing electricity consumer problems is the Energy Ombudsman. The Energy Ombudsman allows the consumer to start a claim online in cases where the consumer is not satisfied with the outcome of a complaint to the electricity supplier.
Germany	Based on article 111a of the Energy Act, consumers should first refer their problem to their electricity supplier's helpdesk. Based on article 111b, should the complaint refer to a network or energy power issue, consumers can directly contact the *Schlichtungsstelle* ("Conciliation Board").
Greece	Annex III of the Code of Electricity Supply regulates the procedure of handling complaints of consumers. According to the Code, each supplier must establish and publish a Code for handling requests and complaints of the customers and prospective customers. If consumers are not satisfied with the resolution provided by the supplier, they can directly contact the regulator or Ombudsman.
Hungary	The authority in charge of managing electricity consumer problems is the Hungarian Energy and Public Utility Regulatory Authority. The Regulator has signed an agreement of collaboration with the Hungarian National Consumer Protection Authority (NFH) and as a result some complaints by consumers are transferred to the NFH after reception by the regulator.
Iceland	Under Article 22 to 26, 30 of Electricity Act, in case of a complaint regarding any aspect publicly managed (e.g. tariff prices for the grid connection), the National Energy Authority of Iceland (NEA) is the Authority that will respond. Anyone who believes electricity suppliers are violating his/her rights with their decisions, projects or omission can consult the NEA.
Ireland	If a consumer is unable to resolve the problem, following completion of the supplier or network operator's complaints process, the regulator offers an independent complaint resolution service.
Italy	The reconciliation office (*Servizio conciliazione clienti energia*), is the out-of-court dispute settlement office established by the regulator in 2013 and is mainly focused on small claims.
Latvia	In Latvia, the Consumer Rights Protection Centre (CRPC) is the body which deals with electricity complaints for consumers
Lithuania	The Law on Electricity allows the regulator (the National Commission for Energy Control and Prices, or NCC) to hold a preliminary extra-judicial hearing of complaints.
Luxembourg	The regulator can accept consumer complaints, but according to Art.5 of Regulation 11/27/ILR, the regulator reserves the right to reject requests for mediation if the dispute settlement instruments put in place by the electricity provider have not been used or have been completely exhausted.
Malta	In practice, complaints related to billing are submitted to ARMS Ltd. and claims on damages from incidents on the electricity systems and other consumer issues have to be submitted to Enemalta Corporation. Complaints related to billing and claims on damages from incidents and other consumer issues can also be referred to either the Ombudsman and/or the Malta Resources Authority (MRA).
Netherlands	According to the Electricity Act, every energy provider shall inform their client on the process to report a claim, together with contact details. They shall also provide a solution and give a prompt answer to their clients. Consumers can also go to the *Geschillenscommissie* which is an ADR scheme that covers energy related complaints if the complaint is not properly resolved by the supplier.
Norway	The Electricity Appeal Board's mandate includes complaints that stem from contract conditions between energy suppliers (e.g. grid suppliers and end-user suppliers) and consumers. The Board is run by a judge and it also consists of two representatives appointed by the Norwegian Consumer Council and two representatives appointed by electricity suppliers. The Board's secretariat handles complaints and assists consumers in connection with the complaint.
Poland	Under Art. 8.1. of the Energy Law, requests for arbitration may be submitted to the Energy Regulatory Office (ERO) in case of issues with grid connection, contracts of sale, distribution contracts or unjustified suspension of energy supply. The regulator also has a mandate to control customer service quality standards and supply standards and has created the post of Commissioner for Fuel and Energy for this purpose.
Portugal	In Portugal the consumer should first present their complaint to the supplier, and thereafter can bring it to the regulator if unsatisfied.
Romania	According to Art. 2 of Government Ordinance no. 27/2002 regulating the resolution of petitions, the consumer has the right to claim to any public authority and institution when facing an issue with a trader (e.g. electricity supplier). The website of the Regulatory Authority for Energy (ANRE) has a section

Table 42: Regulation of suppliers' complaint handling process	
	for consumers with a contact page for "petitions" where consumers can submit complaints regarding suppliers. According to art. 2.2 of Government Ordinance no. 21/1992 on consumer protection, one of the public authorities to which consumers in Romania can also claim is the National Authority for Consumer Protection (ANCP). The person has to identify him/herself and the issue that raised the claim and proceed with an online submission or a written complaint.
Slovakia	In Slovakia, the regulator investigates consumer complaints directly.
Slovenia	There is no official body (i.e. Ombudsman or similar) present in the Slovak Slovenian energy market that specialises in handling electricity consumer complaints. In disputes between customers and suppliers the electricity supplier shall provide transparent, simple and inexpensive procedures for handling their complaints.. The regulatory authority will investigate complaints submitted to it. The Agency shall be responsible for deciding on disputes concerning the following issues in relations between electricity system users and operators or the electricity market operator
Spain	According to the Spanish legislation, the consumer should file a complaint first with the electricity supplier. If the claim requires the intervention of further bodies, the complaint is forwarded to the competent consumer protection body at the regional level. Complaints relating to issues with specific services of the regulated market are forwarded to the specialised services. For instance, in the case of problems pertaining to the electric network or the technical management of the system, *Red Eléctrica de España* is the contact body, while the *Comisión Nacional de los Mercados y la Competencia* (CNMC) is the contact body for claims relating to the economic management of the system. Additionally, the consumer can address the claim to out-of-court public bodies, namely the regional or national Ombudsmen.
Sweden	Problems and complaints can be directed to either the energy supplier or to the Swedish Consumer Energy Market Bureau, which is an independent bureau providing advice and guidance to consumers free of charge. The Bureau passes on complaints to the Energy Markets Inspectorate, Board for Consumer Disputes and the Consumer Agency.
UK	With regards to consumer complaint handling, the Gas and Electricity (Consumer Complaints Handling Standards) Regulations 2008, made under the Consumers, Estate Agents and Redress Act 2007, introduce particular requirements in relation to the handling of customer complaints specifying that these are to be handled and solved in an "efficient and timely manner". Article 3(9) specifies that disputes may also be referred to the Energy Ombudsman or, in the case of licence-exempt suppliers, the Gas and Electricity Markets Authority (the governing body of Ofgem, the regulator).

Source: Stakeholder consultation and desk research

The most common approach is for the consumer to go through their provider as a first point of contact. This is in place in Austria, Belgium, the Czech Republic, Finland, France, Germany, Ireland, Portugal, Spain and the UK. In Luxembourg, the regulator has the option to refuse to deal with the case unless the consumer has first contacted the provider. This approach has obvious advantages and disadvantages. The advantage is that the cost of dealing with complaints is primarily on the electricity providers in the first instance, which clearly reduces costs for the public sector. However, it can also mean that the consumer may have to wait longer for a response or solution in more contentious matters (e.g. in the case of the UK, the consumer may need to wait up to eight weeks before the claim can progress to the Ombudsman for energy services).[76]

Countries where consumers can start proceedings directly via a third party are Denmark, Estonia, Hungary, Iceland, Malta, Slovenia and Sweden. Many of these countries are smaller markets, so the number of electricity related complaints may not be high and therefore the cost of providing the service may not be that high to the public sector. However, the fact that, in Malta, the energy provider Enemalta received over 50,000 complaints in 2013 shows that the size of a market does not preclude widespread consumer issues.

[76] See the guidance provided to consumers on the process by the UK's Citizen Advice Bureau, (accessed 15th August 2015) https: //www.citizensadvice.org.uk/consumer/energy-supply/complaining-about-energy-companies/how-to-complain-to-your-energy-supplier/

Further notable differences can be seen in Hungary and Cyprus. In Hungary, the regulator has signed an agreement of collaboration with the Hungarian National Consumer Protection Authority (NFH) and, as a result, some complaints by consumers are transferred to the NFH after reception by the regulator. In Cyprus, the regulator sets down key performance indicators which the main electricity provider must adhere to, and if the electricity provider fails to do so, a monetary fine is payable.

Complaint typologies and procedures

In summary, the way the complaint processes unfold did not change compared to the situation of 2010 (and described in the 1st electricity market study); these are:

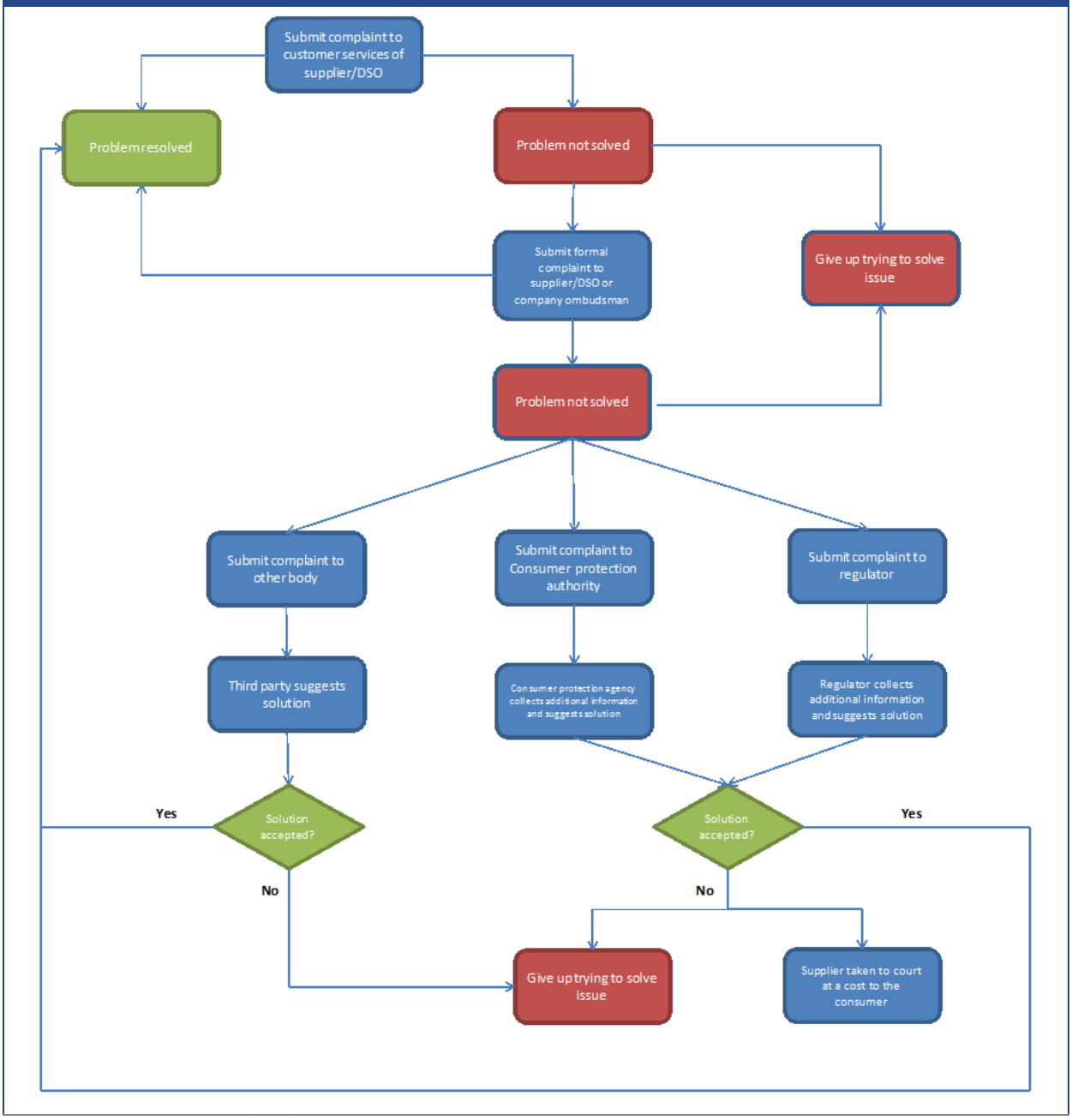
- The consumer must first approach the customer service department of the provider (i.e. this is a mandatory step before approaching any other party.
- The consumer may approach a third party body if they choose. Third parties may include:
    - consumer bodies;
    - ombudsman organisations or specific energy sector ADR body[77]; and
    - the national energy regulator[78].

However, in practice, although a consumer may seek advice from a consumer body, this is typically an intermediate step to a formal body with powers to initiate a dispute resolution process. In keeping with these processes, the previous study proposed a standardised model of complaint procedures, which remains an overall valid model (see Figure 115.

[77] The reason for differentiating between an Ombudsman organisation and a sector specific organisation is that in some countries one Ombudsman may hear complaints on any matter, while for others, a specific energy sector ombudsman maybe established and may be the only body with authority to hear a complaint from an energy consumer. However, they should all be considered as forms of Alternative Dispute Resolution bodies (ADRs)

[78] The national energy regulator may also run its own ADR program to deal with consumer complaints.

Figure 115: Standard model for a complaint procedure



Source: European Commission (2010). The functioning of the retail electricity markets for consumers in the European Union

Complaint response time

Complaint response times, as reported by stakeholders in the consultation, are presented in Table 43. The response time ranges from under one week to as much as nine months. However, it is important to understand the role of the specific actor in the context of the complaint.

- Consumer associations may be a first point of contact, but they are rarely carrying out ADR functions, although they may have a representative who sits on an ADR body.
- ADR activities are usually carried out by either the regulator or an official ombudsman or ADR institution, and more rarely by a consumer protection agency. In some cases, a consumer can approach more than one ADR entity.

- Consumer protection agencies and market authorities (enforcers) appear to have a more market based approach (although their roles may overlap) and may react at the level of the market rather than responding to individual cases.

Therefore, when considering the response time to a complaint, the response time of the entity primarily responsible for dealing with the consumer complaint at the individual level should be taken into consideration. In the table below, this primarily refers to regulators (marked in grey) and Ombudsman/ADR bodies.

Table 43: Response time to a complaint (formal or informal process)

	Regulator	Electricity association	Consumer protection agency/ Market authority/ enforcer	Consumer association	Company specific ombudsman	Ombudsman or ADR
Austria[(1)]	3-4 weeks		1-2 weeks			
Belgium	1-2 weeks					4 months
Bulgaria						3-4 weeks
Croatia	3-4 weeks					
Cyprus	1-2 weeks					
Czech Republic	2-3 weeks					
Denmark	<1 week					
Estonia	:	:	:	:	:	:
Finland	:	:	:	:	:	:
France						1-3 months
Germany						
Greece	2-3 weeks		1-3 months			
Hungary	>6 months			1-3 months		
Iceland				1-3 months		
Ireland	3-6 months					
Italy	1-3 months		9 months	1-3 months		1-3 months
Latvia	2-3 weeks					
Lithuania	3-4 weeks					
Luxembourg	1-3 months					
Malta	1-3 months					
Netherlands	<1 week			1-2 weeks		
Norway						
Poland	3-4 weeks		3-4 weeks			
Portugal	1-3 months			2-3 weeks		3-4 weeks
Romania	3-4 weeks					
Slovakia	1-3 months					
Slovenia	1-3 months					
Spain				*<1 week/1-2 weeks/3-6 months*[(2)]		1-3 weeks
Sweden				<1 week		
UK	3-6 months					
Northern Ireland			1-3 months			

Note: (1) Grey denotes that the regulator in that country is responsible for consumer complaints; (2) three responses were received from consumer associations in Spain.

Source: Stakeholder consultation

Where the institution is not undertaking an ADR activity, the response time usually refers to a referral process by which the consumer's complaint is reviewed for onward transfer to the appropriate authority. This is usually marked by a relatively short response time. Additionally, there is often a three-way division of complaints. The receiving body may record the complaint, inform the consumer of the appropriate way to respond and simultaneously inform the market authority and the ADR body that will deal with the dispute.

When the institution is interested in the case for other reasons (for example, the case may be one of several which suggests a systematic unfair commercial practice, or the case may be suggestive of an anti-competitive practice), the investigative process may take much longer. This is because the institution involved may be considering a market based response. However, this type of investigation would normally run in parallel with any ADR process.

Consider the following examples of responses to consumer complaints from various stakeholders from different countries as illustrations of these processes and interactions.

The response from a regulator that is not primarily responsible for dispute resolution:

> *"Complaints from domestic and micro business consumers are signposted back to the energy company if the complaint has not been made, referred to [a consumer body] if the customer is vulnerable or has been disconnected or has been threatened with disconnection, signposted to the [consumer body] helpline if they need advice with their complaint, and where the requisite time has passed … are signposted to the [ADR body]. For distribution, we encourage consumers to raise their complaints via the [ADR body]. However, if they have done so and are not satisfied, or do not wish to do so, we have a formal process to deal with distribution complaints. We can make determinations on specific types of complaints depending on whether we have the legal power to do so."*

The response of an ADR body responsible for resolving disputes:

> *"The … carries out an ADR procedure established by the NRA [National Regulatory Authority] ... We deal with consumer complaints about electricity and gas supply and distribution. We are a "second" step: consumers may apply to us only if their energy supplier/distributor has not provided a satisfactory response to their complaint"*

The response from a market authority responsible for market level actions:

> *"The organisation does not open an errand on every complaint that is registered. We go through the complaints about once or twice a month and start an errand if we think that it is an important question and if it will be good for the collective of consumers."*

The response from a consumer association:

> *"In case a consumer complaint reaches us, we give advice to the consumer, contact the [regulator] that has the authority to examine and fine. In the case of a [consumer protection agency], that is the general consumer protection authority, we react with publicity. These are informal contacts, but they work very effective, so that we can collect all the information about the actual problems of the sector, and on the other hand, we cooperate with the ministry in words that we can edit and issue proposed amendment to the legislation in effect."*

Who deals with consumer complaints in the electricity market?

To understand how consumer complaints are dealt with in the retail electricity market, it helps first to understand the overall regulatory model and the various actors in place. As it will be seen below, these actors often interact by trading information, and can even have duplicate and parallel roles.

Table 44: Who deals with consumer complaints in the electricity market?

Ministry level	Regulatory level	Consumer level
• Energy • Trade • Competition	• Energy regulator • Competition or Market authority • Alternative Dispute Resolution (ADR)	• Consumer bodies and non-governmental bodies (NGOs)

This division is quite generic, but is broadly accurate in terms of the functions carried out by each level; these levels are:

- The ministerial level, where national and strategic energy policy and legislation are prepared, including the legislation that creates and mandates regulatory bodies.
- The regulatory level, where energy regulators and market regulators and enforcers operate, often with the power to penalise commercial operators. ADR usually occurs at this level, sometimes as a function of a regulatory body, and sometimes via an independent authority. In addition, the ADR mechanism may or may not be specific to energy disputes.
- The consumer level, which has non-governmental bodies (NGOs), such as consumer associations, operating actively.

Countries tend to deviate from this model by the organisation of functions at the regulatory level. For example, in the UK, there are three separate entities at the regulatory level, being Ofgem (the energy market regulator), the Competition and Markets Authority (the competition authority) and an Energy Ombudsman (ADR). In the Netherlands, by contrast, one entity carries out all three functions. ADR, regulation of the general market, as well as regulation of the specific energy market are all carried out by the Authority for Consumer and Markets, although additional ADRs are also in place.

More specifically to dispute resolution, three categories of consumer complaint bodies have been observed in EU retail energy markets; these are:

- the electricity or energy regulator, also running an ADR function;
- a market or competition authority (categorised as the 'enforcer' stakeholder group in this study), which often has wider powers in the overall regulation of competition; and
- a specific ADR entity, such as an Ombudsman; these bodies may or may not be exclusively dedicated to energy sector complaints.

In many cases the consumer can approach one or more of these bodies.

Table 45: Entities handling consumer complaints		
Regulatory authority	**Market authority**	**ADR or Ombudsmen**
Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Greece, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Malta, Portugal, Slovakia, Slovenia, Poland, the UK	Estonia, Finland, Hungary, Latvia	Belgium, Bulgaria, Denmark, France, Germany, Greece, Italy, Malta, the Netherlands Norway, Spain, Sweden, the UK

Company Mediators[79]

Company mediators are another form of ADR that exist in the retail electricity sector. These mediators are located inside a number of electricity companies, they are employees of the firm and they are to act as impartial arbitrators in disputes involving electricity consumers. Unlike other ADR entities mentioned above, however, they are not public institutions.

It is difficult to locate company mediators on a country by country basis due to the fact that they are not normally mandated by law – i.e. a company usually has the choice to assign one or not. Even when legislation specifies that an energy company must have a specialised consumer assistance office, this does not automatically mean that a company mediator must be established, but only that adequate customer services are in place. However, a company could establish internal mediators as an internal corporate policy. This appears to be the case for a least one private sector electricity provider which had established company mediators in several of the countries where it was established[80].

According to the results of our stakeholder consultation, company mediators were in place in the following countries:

- Finland;
- Germany;
- Spain;
- Sweden; and
- the Netherlands

Regarding the activities of the company mediators, a number of respondents in the stakeholder survey detailed how they dealt with consumer complaints:

> *"There is a procedure for the registration, investigation and solving of consumer complaints. This procedure is transparently communicated via web pages of the supply company. The front line attempts to resolve the complaints initially - if failing, the complaint is escalated to a complaint resolution manager, who will coordinate all activity. If the complaint remains unsolved, an internal reviewer assesses the case to reach a final offer. As far as possible, the one-face-to-the-customer approach is … maintained."*

> *"All of our CS [Customer Service] agents are well trained to handle all complaints coming in. We have specific instructions to what point they can take care. When a complaint needs legal opinion, it is transferred to the legal department. We*

[79] Also referred to as "company specific ombudsmen".

[80] Source: stakeholder consultation.

document every contact to the letter - so it is very transparent for us to handle complaints. If one comes from our call centre TM [Telemarketing] sales - we have recordings to listen to."

"The company has a formal process for dealing with claims and complaints. The customer contacts customer service and they have dialogue where they try to find a solution for the customer. If the customer is not satisfied with the response/solution presented by the customer service, the case is being forward to a department that specialises in handling complaints. If the customer is not satisfied, the complaints department lets another person re-examine the case. After that, the customer is being referred to the company mediator which provides an impartial re-examination of the case. The customer is also being informed of the possibility of an external assessment by the court or ADR-functions."

"The Ombudsman addresses and settles at no cost, complaints from customers that have been addressed to the company and who are unhappy with the response received and encourages that the complaints that are filed are settled by way of mediation, i.e. promoting a dialogue between the customer and the company. When an agreement cannot be reached the Ombudsman issues a resolution based on the principles of conciliation, justice and equity. [The responding company] is committed to accept the Ombudsman's resolutions automatically and voluntarily. The Ombudsman promotes and recommends improvements to the company in customer care and presents an annual activity report to the Company's Board of Directors, and main organisations and entities related to the defence of consumers rights".

Regarding governance of the company mediators, from responses received, there appears to be fairly good levels of independence in terms of reporting lines and independence from customer services or sales functions. Most company mediators report to senior management of the company, although in two of six responses in the stakeholder consultation, the reporting line included the management of the sales function. In addition, in most stakeholder responses, the company mediators could deliver decisions binding on their companies. Whether the company mediators are in a separate building is probably not a large determinant of independence as many corporate compliance functions need to be physically located close to the staff they are monitoring as well as access relevant records etc. for the purposes of investigation. However, there were some qualifications. One respondent in the stakeholder consultation stated that *"In most countries, we are active in* [emphasis added by consortium]*: Independent position in the structure of the company, direct reporting to the board, independent budget, free entry to all data in the company."*

Independence from day-to-day business functions and sufficient senior management support (to be able to confidently overrule business generation and sales activities) are a necessary prerequisite to avoid conflicts of interest (not just in the retail electricity sector, but in fact in all corporate compliance and independence functions).

Table 46: Response from company mediators to independence questions						
	Independent of customer relations	**In a separate building**	**Reporting to:**	**Budget determined by:**	**Binding decision**	**Complaints escalated to public ADR**
Germany	Yes	Yes	CEO	CEO	Yes	<1%
Finland	No	Yes	Sales Director, Business Line Director, CEO	Board of Directors	-	-
Netherlands	Yes	No	Report to Director	Director	Yes	-
Germany	Yes	No	Managing Director of Sales	-	Yes	-
Sweden	Yes	No	Legal Department	Group level	Yes	-
Spain	Yes	No	CEO and Board of Directors	CEO	Yes	-

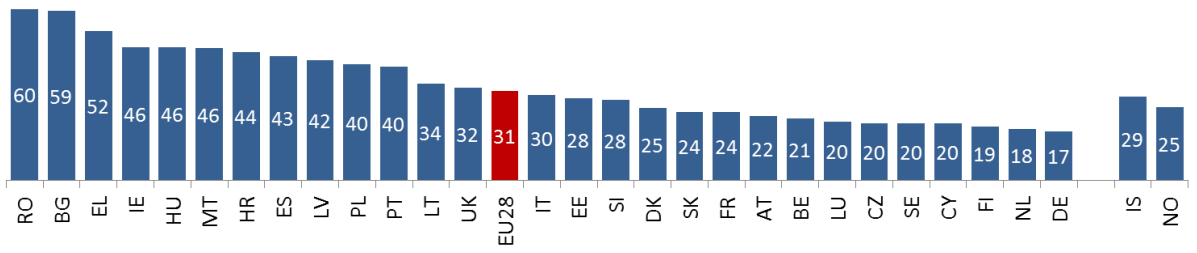
Source: Stakeholder consultation

6.2 Incidence and type of problems experienced by consumers

6.2.1 Incidence of problems

Across the EU28, 31% of survey respondents reported that they had experienced a problem with their electricity company in the past three years. The individual country results show that the proportion of respondents who had experienced a problem ranged from 17% in Germany to 59% in Bulgaria and 60% in Romania.

Figure 116: Proportion of consumers who indicated having experienced at least one problem with their electricity company in the past three years, by country



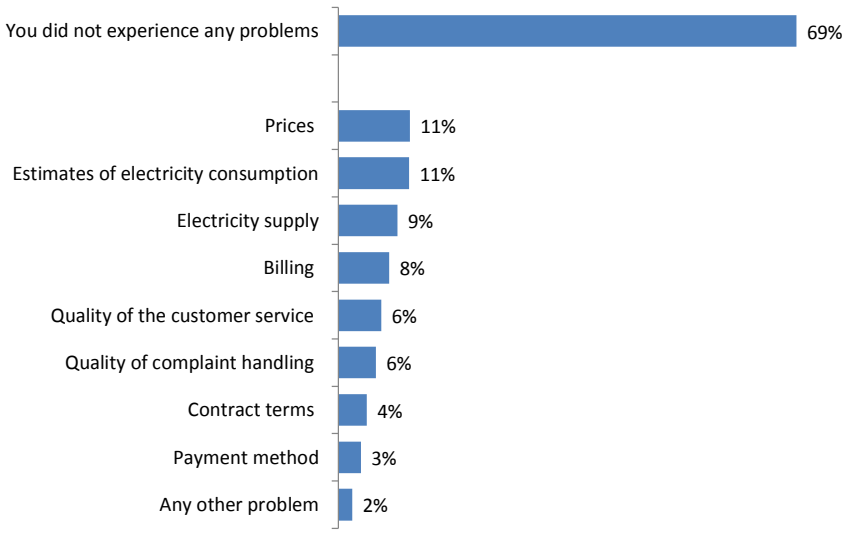
Q6. Have you experienced any of the following problems with [PROVIDER] in the past three years? (multiple response)
%, by country, Base: all respondents
Source: Consumer survey

6.2.2 Types of problems experienced by consumers

Respondents who had experienced a problem, most frequently referred to problems related to billing and pricing; for example, 11% of respondents mentioned problems with prices (e.g. too high or incorrect), 11% had experienced problems with estimates of electricity consumption (e.g. incorrect estimates) and 8% referred to problems with billing (e.g. non-transparent or incorrect billing).

A minority of respondents referred to "other" problems. Examples of such "other" problems[81] include: problems with meter readings, unexpected cost linked to meters, confusion about payment schemes, problems with (access to) online account.

Figure 117: Type of problems experienced with electricity companies in the past three years



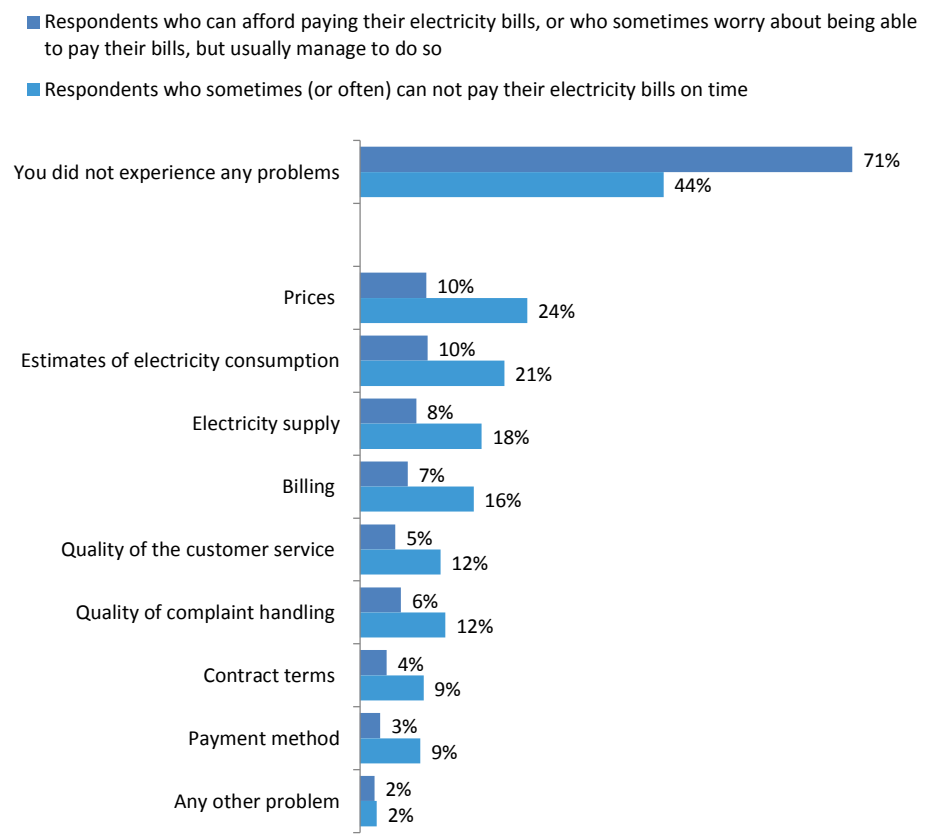
Q6. Have you experienced any of the following problems with [PROVIDER] in the past three years? (multiple response)
%, EU28, Base: all respondents
Source: Consumer survey

[81] Respondents who selected the response "any other problem" were asked to explain what type of problem they had experienced.

Results by affordability of electricity bills

Each of the problems listed in the survey were more frequently experienced by respondents who sometimes or often could not afford paying their electricity bills on time. For example, while 10% of respondents who did not have problems to pay their electricity bills on time mentioned problems with prices (e.g. too high or incorrect); the corresponding figure for respondents with payment difficulties was more than twice as high (24%).

Figure 118: Type of problems experienced with electricity companies in the past three years, by respondent characteristics



Q6. Have you experienced any of the following problems with [PROVIDER] in the past three years? (multiple response)
%, EU28, Base: all respondents
Source: Consumer survey

Individual country results

As mentioned above, across the EU28, respondents who had experienced a problem with their electricity company (in the past three years) most frequently referred to problems related to billing and pricing. Table 47 shows, for example, that roughly 3 in 10 respondents in Bulgaria and Greece had experienced a problem with prices (28% and 31%, respectively). In Bulgaria, however, an even larger share of respondents had experienced problems with the electricity supply (36%). Not only in Bulgaria, but also in Romania (34%), Malta (25%), Lithuania (18%), Poland (16%), Estonia (15%) and Norway (12%), problems with the electricity supply were the most frequently experienced problem.

Table 47: Problems experienced with electricity companies in the past three years, by country									
	Prices (e.g. too high or incorrect)	Estimates of electricity consumption (e.g. incorrect, too high/low)	Electricity supply (e.g. interruptions, absence of notification for interruptions)	Billing (e.g. non-transparent or incorrect, hidden charges)	Quality of the customer service (e.g. poor, no service provided)	Quality of complaint handling (e.g. unsatisfactory, lengthy procedure)	Contract terms (e.g. unclear conditions, not enough information, changes in contract terms)	Payment method (e.g. not having an option among payment methods)	Any other problem experienced
RO	19%	23%	34%	16%	16%	16%	6%	8%	4%
BG	28%	16%	36%	14%	9%	15%	7%	4%	3%
EL	31%	16%	25%	18%	6%	15%	4%	7%	1%
HU	12%	10%	20%	16%	13%	13%	5%	5%	3%
HR	18%	19%	15%	9%	7%	8%	6%	7%	3%
ES	19%	15%	12%	13%	10%	8%	10%	3%	2%
PT	15%	20%	8%	12%	9%	8%	5%	5%	3%
IE	18%	21%	9%	10%	4%	8%	6%	6%	2%
LV	15%	11%	16%	8%	6%	10%	7%	7%	2%
MT	9%	11%	25%	14%	8%	6%	2%	2%	5%
PL	15%	12%	16%	6%	6%	10%	7%	5%	1%
UK	11%	13%	5%	8%	7%	9%	3%	4%	4%
EU28	11%	11%	9%	8%	6%	6%	4%	3%	2%
LT	9%	6%	18%	4%	3%	6%	3%	3%	2%
IT	11%	10%	5%	8%	5%	5%	4%	3%	1%
SI	9%	9%	9%	6%	5%	4%	3%	4%	3%
EE	9%	3%	15%	4%	2%	5%	5%	2%	2%
DK	8%	8%	5%	8%	2%	5%	2%	4%	3%
FR	5%	11%	6%	4%	3%	4%	2%	2%	2%
AT	8%	6%	4%	5%	2%	4%	4%	3%	2%
SK	4%	5%	8%	3%	5%	2%	4%	3%	2%
BE	5%	7%	4%	6%	3%	3%	2%	2%	2%
CZ	5%	3%	6%	4%	2%	2%	3%	3%	2%
LU	4%	7%	5%	5%	1%	3%	2%	2%	1%
SE	6%	3%	6%	3%	3%	3%	3%	2%	1%
DE	5%	5%	3%	4%	4%	3%	3%	2%	1%
FI	5%	3%	6%	5%	1%	2%	2%	2%	2%
NL	4%	4%	3%	3%	2%	3%	2%	2%	3%
CY	11%	2%	7%	2%	1%	0%	0%	2%	0%
IS	10%	14%	7%	8%	3%	3%	2%	2%	2%
NO	5%	5%	12%	6%	2%	3%	3%	2%	2%

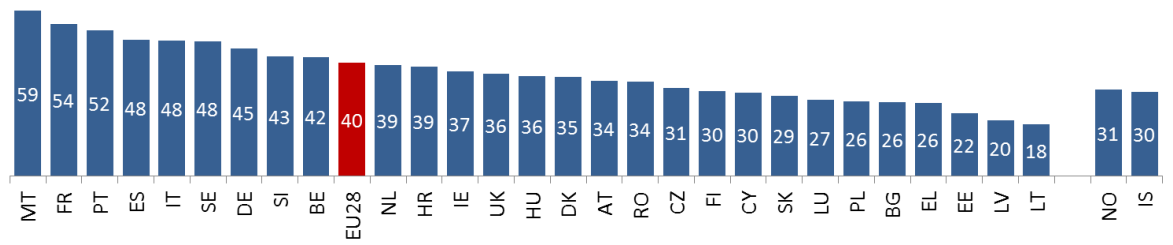
Q6. Have you experienced any of the following problems with [PROVIDER] in the past three years? (multiple response)
%, by country, Base: all respondents
Source: Consumer survey

6.3 Consumers' experiences with complaint handling

6.3.1 Experiences with filing a complaint

In the consumer survey, respondents who had experienced at least one problem with their electricity company in the past three years were also asked whether they had filed a complaint about the most serious problem they had encountered. The proportion of respondents who had filed a complaint ranged from 18% in Lithuania to 59% in Malta.

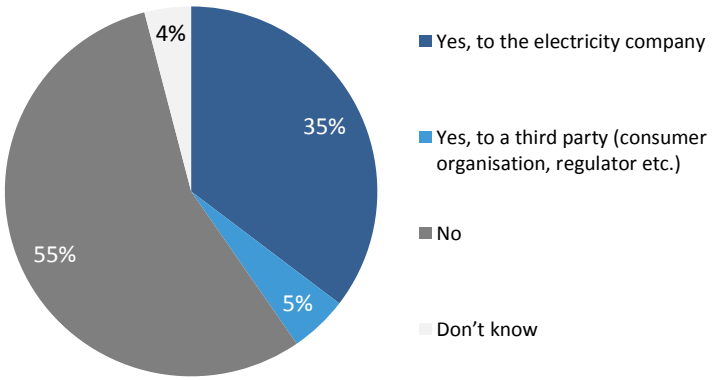
Figure 119: Proportion of consumers who filed a complaint about the most serious problem encountered in the past three years, by country



Q7. Thinking about the most serious problem that you encountered in the past three years, did you file a complaint about this problem?
%, by country, Base: Respondents who have experienced at least one problem
Source: Consumer survey

Of the respondents who had filed a complaint, respondents who had **complained about the problem to their electricity company** largely outnumbered those who said they had contacted a third party – e.g. a consumer organisation, ombudsman or regulator (35% vs. 5%).

Figure 120: Proportion that filed a complaint for the most serious problem



Q7. Thinking about the most serious problem that you encountered in the past three years, did you file a complaint about this problem?
%, EU28, Base: Respondents who have experienced at least one problem
Source: Consumer survey

Across the EU28, survey respondents (who did not file a complaint about the most serious problem they had encountered in the past three years) most frequently said they had not filed a complaint because they thought it was unlikely that a satisfactory solution would be reached (36%). About one in five (21%) said it would have been too time consuming to file a complaint, while 17% indicated that the sums involved were too small and 13% answered that it would have been too difficult to file a complaint. Finally, 15% of respondents had not filed a complaint because they did not know how or where to file a complaint (note: this figure was higher for respondents who had difficulties to pay electricity bills on time – at 21%).

A minority of respondents mentioned "another reason" for not having filed a complaint (i.e. not listed among the response options). Examples of such "other reasons" include[82] the fact that the problem had not been very serious, or that the problem had been resolved before a complaint could be filed.

Figure 121: Reasons for not filing a complaint about the most serious problem encountered in the past three years

Q11. What were your main reasons for not filing a complaint? You can select up to three reasons.
%, EU28, Base: Respondents who did not file a complaint
Source: Consumer survey

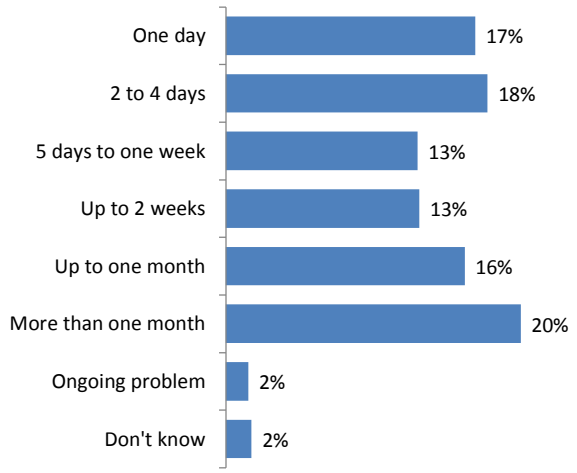
[82] Respondents who selected the response "other reason" were asked to specify this reason.

6.3.2 Outcomes of the complaint process

Time it took to solve the problem

Many complaints filed by respondents (and handled by either the electricity company or a third party) were resolved within a matter of days: 17% of respondents reported that their complaint had been dealt with within one day, and 18% said it had taken been two and four days. At the other extreme, for 20% of respondents, more than a month had passed between the moment they had filed the complaint and the moment a decision had been taken to resolve the problem.

Figure 122: Duration of the complaint handling process (consumer survey)

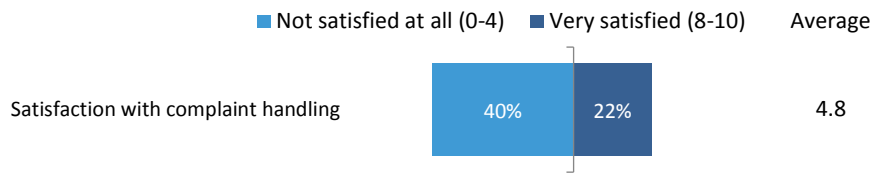


Q8. How long did it take to deal with your complaint (from the moment you made a complaint to the moment a decision was taken)? Please indicate your answer in number of days, number of months
%, EU28, Base: Those who filed a complaint about the most serious problem encountered
Source: Consumer survey

Satisfaction with complaint handling

Only 22% of respondents, who had filed a complaint, reported being "very satisfied" (scores 8 to 10) with the way their complaint had been dealt with by the electricity company or a third party[83]; almost twice as many respondents (40%) were not satisfied (scores 0 to 4). This resulted in an average score of 4.8.

Figure 123: Satisfaction with complaint handling process



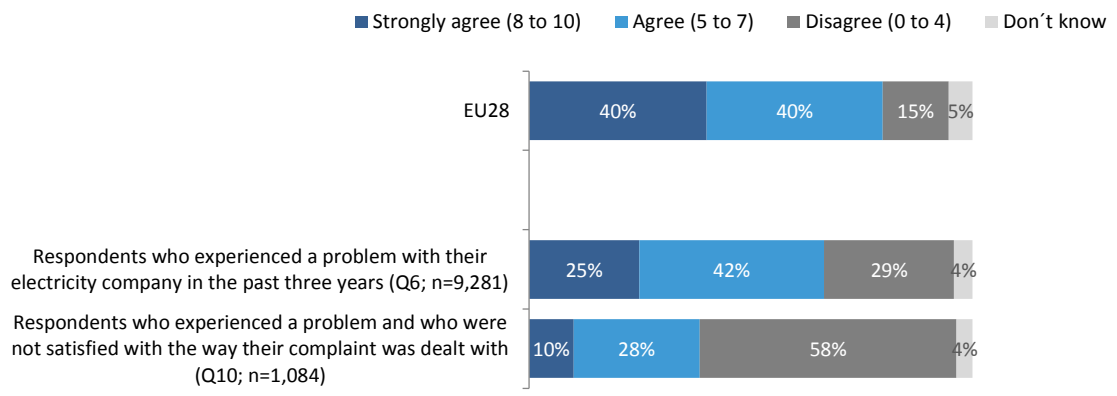
Q9 In general, how satisfied were you with the way your complaint was dealt with? Please use a scale from 0 to 10, where 0 means that you were "not at all satisfied" and 10 means that you were "very satisfied".
%, EU28, Base: Those who files a complaint about the most serious problem encountered

[83] Respondents were presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. For analysis purposes, respondents who selected scores 8 to 10 were labelled as being "very staisfied" and respondents who selected scores 0 to 4 as being "not at all satisfied".

Source: Consumer survey

Respondents who had experienced a problem with their electricity company in the past three years were less likely to "strongly agree" that that they trusted their electricity company to respect the rules and regulations protecting consumers: 25% selected scores 8 to 10, compared to an EU28 average of 40%. The level of trust is even lower among respondents who complained about the problem and who reported being dissatisfied with the way their complaint had been dealt with; among these respondents, only 10% "strongly agree" that that they trusted their electricity company to respect the rules and regulations protecting consumers.

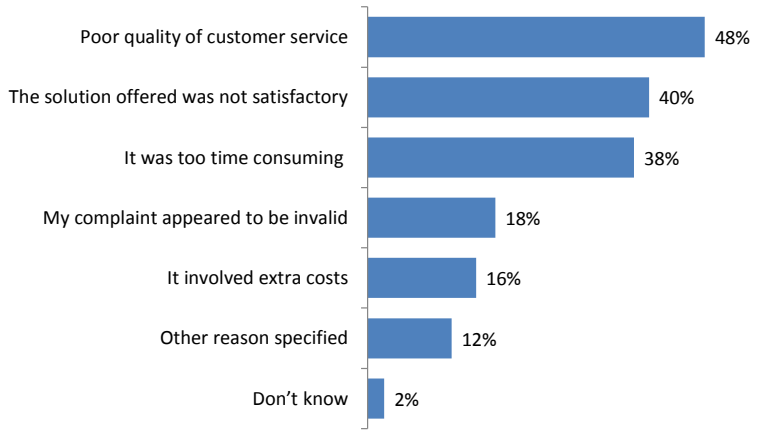
Figure 124: Trust in electricity companies to respect rules and regulations, by experience with complaint handling



Q5_8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I trust [PROVIDER] to respect the rules and regulations protecting consumers
% EU28, Base: all respondents
Source: Consumer survey

When looking at the reasons behind this low level of satisfaction, it was noted that, in almost half of the cases (48%), respondents described the customer service as poor. Furthermore, 4 in 10 respondents indicated that the solution they were offered simply was not satisfactory, followed by 38% who had found the complaint process too time consuming. Among respondents who listed "other reasons", some stated that the electricity company had ignored their complaint or had refused to accept their complaint.

Figure 125: Reasons for not being satisfied with the way complaint was handled



Q10. Why were you not satisfied with the way your complaint was dealt with? You can select up to three reasons.
%, EU28, Base: all respondents

Source: Consumer survey

6.4 Obtaining information about complaint handling

Information found on electricity companies' websites

A large variation was observed in the proportion of mystery shoppers who reported having found information on the electricity company's website about how to file a complaint; while 88% of shoppers in the UK had found such information on the company's website, this figure decreased to 26% in Poland.

Among mystery shoppers who had found information on how to file a complaint, 54% confirmed that a complaint could be submitted on the electricity company's website, 45% found a link to the national body in the country in charge of energy regulation on the website and 39% found a link to an ADR body or found information on how to contact an ADR body.

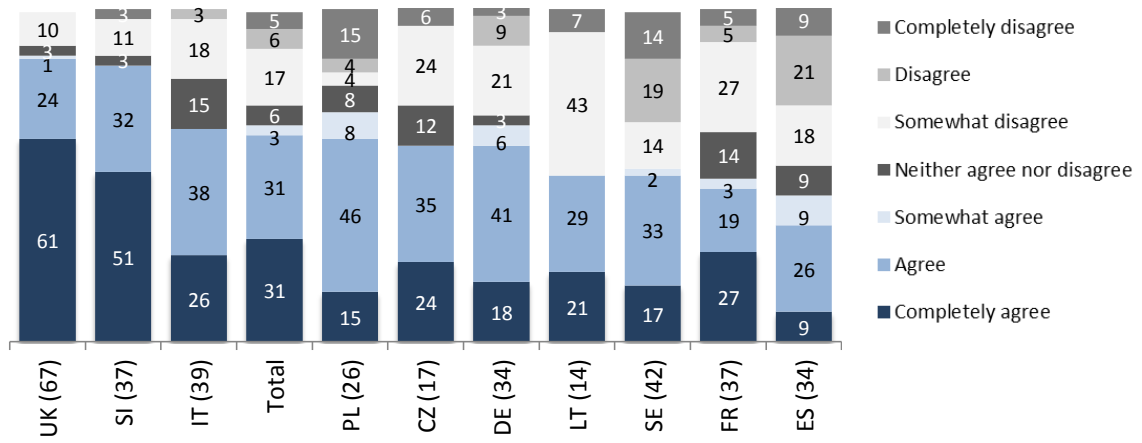
Table 48: Proportion of mystery shoppers who found information about complaint handling on electricity companies' websites

	UK	SE	SI	IT	FR	ES	CZ	DE	LT	PL	Total
Base (all shoppers)	*75*	*50*	*50*	*75*	*75*	*75*	*50*	*100*	*50*	*100*	**700**
Found information about how to file a complaint	88%	84%	74%	53%	49%	45%	34%	34%	28%	26%	**50%**
Base (shoppers who found information about filing a complaint)	*67*	*42*	*37*	*39*	*37*	*34*	*17*	*34*	*14*	*26*	**347**
Could register a complaint on the website itself (online form)	58%	50%	38%	54%	49%	71%	65%	44%	50%	65%	**54%**
Found a link to the national body in charge of energy regulation	78%	67%	32%	18%	32%	9%	6%	53%	71%	46%	**45%**
Found a link to an ADR body or information on how to contact an ADR body	58%	60%	32%	21%	57%	9%	0%	56%	50%	12%	**39%**

Q7. Can you find information on how to file a complaint?
IF YES: *Q7b. Could you register a complaint on the website itself (online form)?; Q7c-7d. Was there a link to [complaint body]?*
Source: Mystery shopping

In Slovenia and the UK, a majority of shoppers *completely agreed* that the complaint process was clearly explained on the electricity company's website (51% and 61%, respectively). Spain and Sweden, on the other hand, had the largest shares of mystery shoppers who *completely disagreed* or *disagreed* that the complaint process was clearly explained (30% and 33%, respectively).

Figure 126: Agreement with the statement: "The complaint process was explained clearly"



Q7a. To what extent do you agree with the following statement: "the complaint process was explained clearly"?
%, Base: mystery shoppers who found information about how to file a complaint (the number of mystery shoppers that answered the question is reported in brackets)
Source: Mystery shopping

Information obtained when contacting electricity companies by phone

Mystery shoppers also contacted the customer service of electricity companies by phone to ask questions about the complaint handling process. In total, 65% of mystery shoppers reported having received complete and correct information about the complaint handling process from the operator responding to their call. One in two mystery shoppers also received the contact details of the national energy regulatory authority and 42% received contact details of an ADR body.

Once again, a large variation was observed across countries; for example, 80% of mystery shoppers in the UK answered that they had received complete and correct information about the complaint handling process, compared to 36% of mystery shoppers in Lithuania.

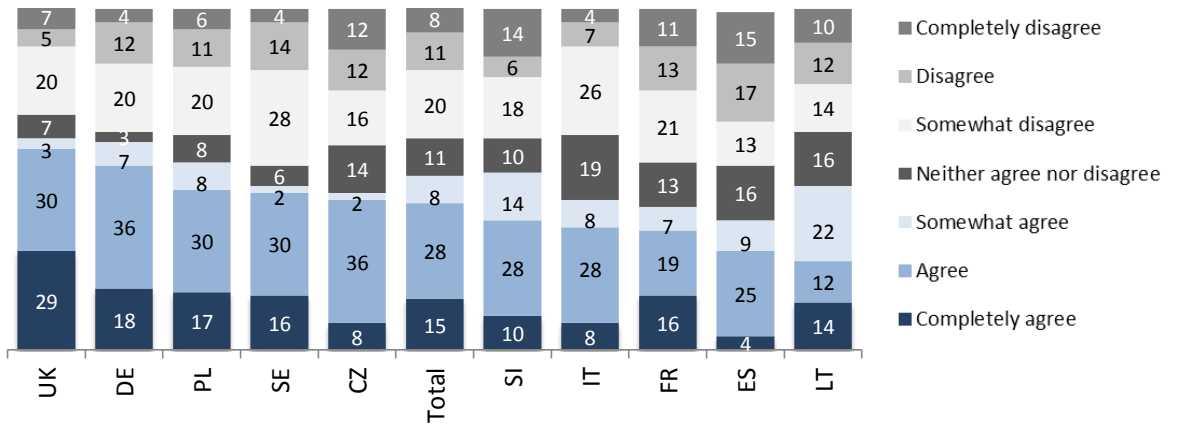
Table 49: Proportion of mystery shoppers who had received information about complaint handling when contacting electricity companies by phone

	UK	SE	IT	DE	PL	SI	CZ	FR	ES	LT	Total
	75	50	75	100	100	50	50	75	75	50	300
Shoppers who reported having received complete/correct information about the complaint process	80%	78%	73%	69%	68%	66%	60%	60%	52%	36%	***65%***
Customer service provided contact details of the national body of energy regulation	75%	56%	36%	54%	59%	36%	60%	27%	40%	48%	***50%***
Customer service provided contact details of an ADR body	46%	56%	24%	56%	44%	26%	50%	47%	37%	30%	***42%***

Q14. How clearly did the customer service explain the complaint process?; Q15/16. After prompting, did the operator give you the contact details for [body]?
Base: all mystery shoppers
Source: Mystery shopping

Germany and the UK were the only countries where more than 50% of mystery shoppers *completely agreed* or *agreed* that the customer service offered correct and transparent information about the complaint procedures (54% and 59%, respectively). In Lithuania and Spain, less than 30% of mystery shoppers agreed with this statement (26% and 29%, respectively).

Figure 127: Agreement with the statement: "The customer service offers correct and transparent information about the complaint handling procedures"



Q17. To what extent do you agree with the following statement: "The customer service offers correct and transparent information about the complaint handling procedures"?
%, Base: all mystery shoppers
Source: Mystery shopping

6.5 Problems related to unfair commercial practices and other market issues

6.5.1 Extent of problems with unfair commercial practices

Consumers' perceptions

In this section, some findings on the incidence of unfair commercial practices, as reported by respondents in the consumer survey, are presented. Incidence is estimated by looking at the proportions of respondents who agreed or disagreed with various statements about unfair commercial practices[84].

When asked about various unfair commercial practices, it was noted that, for five statements, roughly one in seven respondents answered that such practices occurred:

- 18% of respondents disagreed (scores 0 to 4)[85] when asked whether the **information in the contract with their current electricity company was clear, complete and easy to understand**;
- 15% of respondents disagreed when asked whether they thought that their **electricity bills accurately reflected their real consumption**;

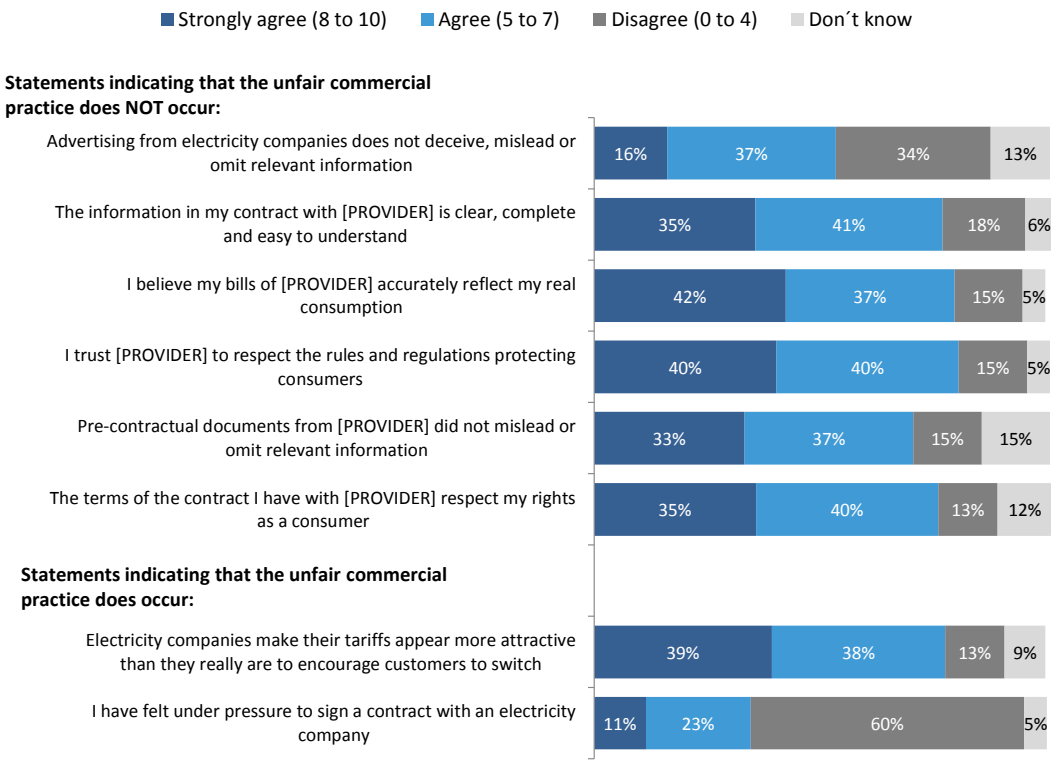
[84] The proportion "(strongly) agreeing" was studied for statements indicating that an unfair commercial practice occurred (e.g. electricity companies make their tariffs appear more attractive than they really are to encourage customers to switch), while the proportion "disagreeing" was studied for statements indicating that an unfair commercial practice did not occur (e.g. advertising from electricity companies does not deceive, mislead or omit relevant information".

[85] Respondents were each time presented with an 11-point scale (from 0 to 10). For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

- 15% disagreed when asked whether they **trust their electricity company to respect the rules and regulations** protecting consumers;
- 15% disagreed when asked whether **pre-contractual documents from their electricity company did not mislead or omit relevant information**; and
- 13% of respondents disagreed when asked whether the **terms of the contract they have with their current electricity company respects their rights as consumer**.

Results from the statements presented above tend to indicate that problems related to unfair commercial practices were relatively rare; a conclusion that was also formulated in the 2010 study. This conclusion, however, does not hold when looking at the two statements about advertising from electricity companies. A third (34%) of respondents disagreed that **advertising from electricity companies does not deceive, mislead or omit relevant information**. Similarly, 39% of respondents "strongly agreed" (scores 8 to 10) and an additional 38% agreed (scores 5 to 7) that **electricity companies made their tariffs appear more attractive than they really were to encourage customers to switch**.

Figure 128: Perceptions about unfair commercial practices



Q5_1 to 8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
%, EU28, Base: All respondents
Source: Consumer survey

Table 50 (on the next page) shows that respondents in Bulgaria were overall the most likely to state that problems related to unfair commercial practices occurred in their country; for example, when asked whether the information in the contract with their electricity company was clear, complete and easy to understand, 45% of respondents in Bulgaria disagreed (scores 0 to 4). In Finland, on the other hand, respondents were overall the least likely to agree that unfair commercial practices occurred in their

country; nonetheless, even in Finland, 36% of respondents "strongly agreed" (scores 8 to 10) that electricity companies made their tariffs appear more attractive than they really are to encourage customers to switch.

Table 50: Perceptions about unfair commercial practices, by country

	% "disagree" (scores 0 to 4)						% "strongly agree" (scores 8 to 10)	
	Advertising from electricity companies does not deceive, mislead or omit relevant information	The information in my contract with [PROVIDER] is clear, complete and easy to understand	I believe my bills of [PROVIDER] accurately reflect my real consumption	I trust [PROVIDER] to respect the rules and regulations protecting consumers	Pre-contractual documents from [PROVIDER] did not mislead or omit relevant information	The terms of the contract I have with [PROVIDER] respect my rights as a consumer	Electricity companies make their tariffs appear more attractive than they really are to encourage customers to switch	I have felt under pressure to sign a contract with an electricity company
BG	52%	45%	53%	55%	43%	46%	30%	17%
ES	51%	34%	33%	28%	30%	26%	36%	9%
EL	36%	26%	33%	27%	19%	27%	33%	6%
HR	38%	25%	26%	27%	25%	20%	47%	14%
PT	44%	23%	29%	20%	19%	15%	41%	13%
RO	29%	22%	22%	24%	20%	18%	33%	23%
PL	30%	22%	20%	18%	17%	17%	35%	13%
IT	34%	20%	16%	13%	16%	14%	43%	14%
SI	34%	18%	15%	17%	14%	14%	42%	12%
EU28	34%	18%	15%	15%	15%	13%	39%	11%
LV	20%	15%	20%	19%	16%	13%		
IE	28%	18%	17%	14%	11%	10%	46%	11%
UK	41%	15%	11%	14%	8%	10%	45%	11%
FR	30%	17%	12%	14%	13%	11%	37%	8%
HU	19%	21%	14%	15%	13%	14%	23%	15%
SE	35%	14%	10%	9%	14%	10%	32%	11%
CZ	31%	15%	9%	10%	14%	10%	47%	11%
LU	26%	19%	11%	14%	11%	8%	21%	8%
DK	27%	19%	11%	10%	11%	8%	28%	8%
CY	19%	13%	12%	12%	13%	13%		
LT	15%	13%	10%	12%	12%	17%	21%	16%
SK	28%	12%	8%	9%	11%	9%	38%	8%
AT	24%	15%	9%	6%	12%	7%	33%	11%
EE	21%	11%	8%	12%	9%	12%	36%	11%
BE	31%	10%	6%	6%	8%	6%	39%	8%
NL	39%	6%	5%	4%	7%	4%	43%	6%
MT	13%	11%	12%	9%	11%	7%		
DE	27%	8%	5%	6%	8%	6%	44%	11%
FI	23%	8%	5%	4%	7%	4%	36%	9%
IS	23%	26%	18%	19%	14%	15%	10%	4%
NO	31%	11%	9%	7%	7%	5%	36%	10%

Q5_1 to 8. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree". *% strongly agree (8-10) or disagree (0 to 4), by country, Base: all respondents*
Source: Consumer survey

Stakeholders' views

As can be seen in Table 51, many stakeholders considered unfair commercial practices by electricity companies to be, overall, "common". While both regulators and consumer protection agencies/enforcers were somewhat more likely to describe unfair commercial practices as "rare" in their countries, ADR and consumer associations relied on this description far less often. It should, however, be noted that, where the value "rare" has been used by regulators and consumer protection agencies/enforcers, a corresponding response is lacking for other stakeholder groups. Only in Greece, diametrically opposed responses were observed, with consumer associations considering unfair commercial practices to be "rare", while the regulator considers them "common". We do not have an explanation for this gap in perception.

Table 51: Assessment on the extent of unfair commercial practices used by electricity suppliers

	Regulator	Consumer protection agency	ADR	Consumer associations
Austria	Rare	Rare		
Belgium		Not very common	Common	Not very common
Bulgaria			Common	
Croatia	Not very common			
Cyprus				Not very common
Czech Republic	Not very common			Common
Denmark	Common			Common
Estonia				Very common
Finland				
France	Common		Common	Common
Germany	Not very common			Common
Greece	Common			Rare
Hungary				Not very common
Iceland				
Ireland			Not very common	
Italy		Common	Common	Common
Latvia	Rare			
Lithuania		Rare		
Luxembourg	Rare			
Malta				
Netherlands	Common			Not very common
Norway	Not very common			
Poland	Common	Common		
Portugal			Common	Common
Romania	Not very common	Rare		
Slovakia	Very common			Not very common
Slovenia	Not very common			
Spain	Common		Not very common	Very common
Sweden		Very common		Common
UK			Rare	Not very common

Note: Assessment on the extent of unfair commercial practices used by electricity suppliers. A Consumer Association in Iceland responded 'NA'. Two consumer associations responded in Italy; their response were 'Very common' and 'Common'. The Lithuanian regulator responded 'NA'. Two consumer protection agencies in Estonia answered; their responses were 'Rare' and 'Common'. In Spain, three consumer associations responded; two replied with 'Common' and one with 'Very common'. Two ADR for the UK (UK and Northern Ireland) answered to this question selecting the 'Rare' and 'Not very common' responses.
Source: Stakeholder consultation

6.5.2 Other unfair commercial practices listed by stakeholders

In addition to the unfair commercial practices offered in pre-coded survey options, specific issues were also volunteered by respondents. We have grouped these practices under the categories given below:

Aggressive sales – Complaints regarding telemarketing, doorstep selling or other sales techniques which may be considered intrusive if occurring persistently.

Misleading advertising - Issues where consumers complain of receiving higher than expected costs or lower than expected savings.

Unfair billing practices/Metering issues – Disputes over meter readings and accusations of manipulation by electricity providers, high or punitive costs (such as late payment fees, connection costs etc.). Some of these practices would go beyond unfairness and would represent a breach of contract if true.

Vulnerable consumers – Complaints regarding treatment of vulnerable consumers.

Targeting of older consumers – Reports of older consumers being targeted for electricity contracts which are subsequently more expensive.

Contractual issues – Issues with the cost or conditions of electricity supply contracts.

Monopoly or market issues – This category concerns abuse of a monopoly or dominant market position, either directly or indirectly, in a way which ultimately impacts consumers.

Table 52: Incidence and category of detrimental practices across countries							
	Aggressive sales	Misleading advertising or sales tactics, fraud	Unfair billing practices /Metering issues	Treatment of vulnerable consumers	Targeting of older consumers	Contractual issues	Monopoly or market position issues
Austria							
Belgium	√	√			√		
Bulgaria							
Croatia							
Cyprus			√				√
Czech Republic	√				√		
Denmark		√		√			
Estonia							
Finland	√						
France			√				
Germany			√			√	
Greece		√	√				√
Hungary			√				
Iceland							
Ireland			√				
Italy			√			√	
Latvia						√	
Lithuania							
Luxembourg							
Malta			√				
Netherlands							
Norway			√				
Poland	√	√				√	√
Portugal							
Romania							
Slovakia	√	√					
Slovenia							
Spain			√				
Sweden						√	
UK							

Source: Stakeholder consultation

In this section, a selection of comments is presented to illustrate the issues that were raised by respondents in the stakeholder consultation or that were highlighted in recent literature on the market in question:

Aggressive sales:

> *"Aggressive and misleading phone marketing (by a few newcomers)."*

> *"Calls to consumers who have not consented to receiving a call. Consumers are told they can save 25% on their bill, but the caller does not know what their current product or consumption is."*

Misleading advertising:

"Many companies have products that change price after a certain period (typically six months) to a higher price than the first period. This is a problem in itself, also the higher price is not indicated in the sales material. Not all intermediaries are de-facto independent of a supplier. This is not made transparent to the consumers."

"Using the name of another company, fraud by signatures, providing false information, bundling, under pressure signing of contracts."

Unfair billing practices/Metering issues:

"Dismounting the meter without any delay payment of the consumer, or without previous notice of it, that causes damages in the property (if it is an only a temporarily used property like a holiday house, the meter is dismounted in winter and the owner only sees that the house was not heated in spring, when he first goes out to see the house) [i.e. due to inadequate heating of the house due to electricity cut-off]*."*

"Unfair bill delay penalties (interest etc.)."

Targeting of older consumers:

"Intermediates do not communicate their identity and also not the electricity suppliers for whom they act - pressure on vulnerable people (old persons)."

"Complaints received by /…/ show that unscrupulous vendors are approaching vulnerable individuals, failing to obey the rules governing identification and contract signatures; not giving information or giving wrong information about their principal, the products they are selling or consumer rights."

"Usually old people are forced to change supplier against their will or without noticing what contract they signed."

Treatment of vulnerable consumers:

"Supply reconnection costs – affects households, and mainly particularly vulnerable consumers."

Contractual issues:

"Some contracts included provision of automatic extension of the contract without giving a notice to consumers about the end of the contract term...provision of penalty to the consumer if the electricity supplier changes the conditions of the contract for the electricity trading period in the first two years...too extensive rights to the electricity supplier unilaterally terminate the contract...provision that limit the consumer to submit a complaint to the electricity supplier about the electricity bill."

Monopoly or market issues:

"Wholesale products that are sold on the basis of electricity do not have volume discounts and therefore alternative energy suppliers purchasing electricity from producers do not receive any deductions. Consequently they cannot pass on savings to consumers via more competitive pricing."

"DSOs hinder the transition of customers to alternative vendors by failing to attain certain actions in time, delaying the transmission of contracts to the new suppliers,

creating errors which cause the need to re-issue invoices and triggering customer complaints."

One important aspect is that verbal or face-to-face sales activities were often cited by stakeholders as unfair commercial activities, but these were not always qualified with subsequent examples, and therefore it is not always clear if stakeholders genuinely differentiated between an unfair commercial practice as opposed to sales practices which might be considered aggressive or intrusive but are not illegal as such.

Sales approaches to consumers by telemarketing or doorstep selling are not unfair as such, and in many cases may be a necessary sales channel for energy companies seeking to establish market share and vigorous competition. Commission based sales (such as door-to-door or telemarketing) may be relatively cheaper as some or all of the marketing expenditure is performance related – i.e. unless a new contract is signed, the sales intermediary is not paid – and this can make it an attractive option for new market entrants.

However, when the remuneration of the salesperson is linked to a new contract, it can of course encourage either aggressive sales tactics where the consumer is falsely or insufficiently advised, and the sales approach is generally intrusive. Consider the following comments from company mediators:

> *"Some suppliers use call centres that do not have high service level requirements. Many face-to-face selling providers cause lots of problems for suppliers and especially for consumers. As consumers have poor knowledge of the contract and prices overall - they are easily "led" into a new contract without knowing if it really a good deal or not."*
>
> *"My company is only contacting potential customers by phone. We seldom receive complaints about distance selling situations …. We do, however, sometimes receive complaints regarding other companies selling in public places. The customers then say that they were taken by surprise and that they did not get all the information or that the information was incorrect."*

7. Tariffs and prices

This chapter investigates **how much choice consumers have in terms of number of different tariffs** available to them according to the price collection exercise (Section 7.3). The chapter also provides information on **a number of price dimensions**, namely:

- Price regulation in place (Section 7.1);
- Cross Member State comparison of price levels (Section 7.4);
- The structure of the price in terms of electricity commodity, the supply margin, transport and distribution tariffs, and taxes and other charges (Section 7.5);
- Determinants of prices (Section 7.6);
- Price trends (Section 7.7); and
- Convergence in prices in the EU (Section 7.8).

In Section 7.2, consumers' views about electricity prices are presented. The final section of the report (Section 7.9) explores whether cheaper tariffs are available for consumers; this section presents the results of the mystery shopping scenario "cheaper tariff".

Box 10: Main findings with regards to "tariffs and prices"

- **Types of tariff available.** On average across countries, there has been an increase in the share of unique price tariffs: in 2010, the share of unique price tariffs was 62%, whereas in 2015, it was 71%. The data collected for the price collection exercise indicates that consumers now have less choice in terms of peak/off-peak tariffs; this means that for some consumers who are able to adjust their electricity consumption between on and off peak periods, fewer tariffs are available that suit their needs.
- "Green" tariffs (electricity from 100% green sources) were offered in 17 EU Member States, and in some of these countries, these tariffs make up a large proportion of the entire range of tariffs on offer.
- **Consumers' perceptions of prices.** Across the EU28, 28% of survey respondents "strongly agreed" that their electricity company offered balanced and reasonable prices (between 8% in Bulgaria and 45% in Germany), while 20% "disagreed" with the statement (between 6% in the Netherlands and 62% in Bulgaria). Additionally, 27% "strongly agreed", and 17% "disagreed", that electricity companies offered competitive tariffs prices (the level of "strong" agreement varied between 10% in Bulgaria and Greece and 48% in Germany).
- **Cross-Member State variation in prices.** Prices compare very differently between Member States depending on whether they are measured in Euros or purchasing power standards (PPS), illustrating the importance of accounting for the general cost of living when comparing electricity prices across the EU. Newer Member States such as Hungary, Slovakia and Poland have among the lowest electricity prices in Euros, but among the highest prices in PPS. Finland has the lowest electricity price in PPS terms, followed by Luxembourg and Sweden.
- Furthermore, the structure of household electricity prices differs considerably across countries. In some countries taxes contribute a large part of the overall price, whereas in others electricity costs and supply margins are more important. On average, the fixed component of electricity prices was 68% higher for low consumption consumers than medium consumers, and 61% higher for medium consumers than high consumers.
- **Determinants of prices.** Cross-Member State variation in household electricity prices is driven by the share of fossil fuels in net electricity generation. In particular, the analysis showed that an increase in the share of electricity generated from combustible fuels is correlated with an increase in the average price (excluding taxes and network costs).
- **Price trends.** Over the 10 years from 2004 to 2014, prices in PPS (both including and excluding taxes) rose in most Member States (25 out of 27 Member States). However, the price changes during this

Box 10: Main findings with regards to "tariffs and prices"

period vary across Member States (average annual price changes ranged from minus 0.6% in the Netherlands to 10.5% in Greece for prices in PPS including taxes). Usually (and especially in Germany), prices including taxes increased more in percentage terms than prices without taxes, although there are a number of exceptions where prices without taxes have increased substantially faster than prices including taxes (Denmark, the Netherlands and Sweden). In Belgium, Bulgaria, Hungary, Ireland, Malta, Poland and the UK, prices with and without taxes have changed at very similar rates.

- **Availability of cheaper tariffs.** In total (across the 10 mystery shopping countries), 86% of shoppers had been able to find a cheaper tariff: 14% reported that the cheapest tariff was offered by their own provider, 11% found the cheapest offer on another provider's website or when contacting the provider by phone and 61% had found the cheapest offer or tariff via a price comparison website.
- When using a comparison tool, shoppers gained access to the offers of a larger number of providers and, as such, found a larger number of cheaper offers. For example, when shoppers in Italy contacted three to five alternative providers, they found on average 4.2 cheaper offers; however, when using one or two comparison tools, they found on average 12.3 cheaper offers.
- Across most countries (the exceptions being France and Lithuania), more than 40% of mystery shoppers *completely agreed* or *agreed* that it was easy to find a cheaper tariff. In France and Lithuania, mystery shoppers had been less successful in finding a cheaper offer (respectively, 23% and 56% had not been able to find a cheaper tariff). However, this is explained by the fact that France and Lithuania still have regulated prices, and retail energy markets for household consumers have not yet been liberalised to encourage competition.
- Although shoppers in most countries tended to agree that it was easy to find a cheaper tariff, when asked to estimate the savings on an annual base from switching to the cheapest tariff, 25% answered that they were not able to estimate the savings – in other words, shoppers experienced difficulties to assess the benefits related to the choice of tariffs on offer.
- The proportion of shoppers who reported that the conditions of the cheapest tariff/offer they had found were different than those for their current tariff ranged from 14% in Poland to 63% in Italy.

7.1 Price regulation in place

Price regulation has been tracked by CEER over the course of their market monitoring reports[86] and the organisation has noted that, according to its survey of regulators:

> *"…during 2013, end-user price regulation for electricity households was removed in two MSs (Estonia and Greece). Moreover, according to the Italian NRA, household end-user prices for electricity and gas in Italy should no longer be considered as regulated. Therefore, as of 31 December 2013, household end-user price regulation existed in 15 countries (out of 29) for electricity[87]."*

Based on the data from both reports, plus desk research undertaken by this consortium, the regulated and unregulated electricity markets are summarised in Table 53 (on the next page).

[86] ACER/CEER (2013), Market Monitoring Report 2012; ACER/CEER (2014), Market Monitoring Report 2013; ACER (2015), Market Monitoring Report 2014.

[87] ACER/CEER (2013), Market Monitoring Report 2012 and ACER/CEER (2014), Market Monitoring Report 2013 – Please note that the monitoring report considers Northern Ireland as one of the markets, and that Iceland and Norway are not counted, therefore the 29 countries come from the EU28 plus Northern Ireland.

Table 53: Price Regulation by country in 2012, 2013 and 2014			
Member State	**Price regulation in place (2012)**	**Price regulation in place (2013)**	**Price regulation in place (2014)**
Austria	N	N	N
Belgium	Y	N[1]	N
Bulgaria	Y	Y	Y
Croatia	:	Y	Y
Cyprus	Y	Y	Y
Czech Republic	N	N	N
Denmark	Y	Y[2]	Y
Estonia	Y	N	N
Finland	N	N	N
France	Y	Y	Y
Germany	N	N	N
Greece	Y	N	N[3]
Hungary	Y	Y	Y
Iceland	:	N	N
Ireland	N	N	N
Italy	Y	N	N
Latvia	Y	Y	Y
Lithuania	Y	Y[4]	Y
Luxembourg	N	N	N
Malta	Y	Y	Y
Netherlands	N	N	N
Norway	N	N	N
Poland	Y	Y	Y
Portugal	Y	Y	Y
Romania	Y	Y	Y
Slovakia	Y	Y	Y
Slovenia	N	N	N
Spain	Y	Y	Y
Sweden	N	N	N
UK	N	N	N
Northern Ireland	*Y*	*Y*	*:*

Note: ": " indicates that data is not available for this Member State for this period.

1. Belgium was listed as being a regulated market by ACER, but less than 10% of households were on the regulated tariff – see ACER market monitoring report 2012.

2. 80% of households on regulated price in 2012 according to ACER (see ACER market monitoring report 2012), while the European Commission regards the country as 'partly regulated' (see https: //ec.europa.eu/energy/en/topics/markets-and-consumers/single-market-progress-report).

3. There is no proportion of households with regulated electricity prices provided in ACER Market Monitoring Report 2015. In communication with ACER, it was confirmed that Greece did not have regulated electricity prices for households.

4. Full liberalisation of the market for retail consumers began in 2015
– see https://ec.europa.eu/energy/sites/ener/files/documents/2014_countryreports_lithuania.pdf

Source: ACER/CEER Market Monitoring Report 2015, ACER/CEER Market Monitoring Report 2013, ACER/CEER Market Monitoring Report 2012, authors' desk research

In most Member States where price regulation still exists, the regulator sets the level or methodology of the regulated price, but in Belgium, France, Hungary and Spain, these are set by the government, while the regulator only gives an opinion.[88]

Table 54: Price setting authorities (Member States/region with regulated prices)

	Price setter	Role of regulator if not price setter
Belgium	Ministry	Gives opinion
Bulgaria	Regulator	n.a.
Cyprus	Regulator	n.a.
Denmark	Regulator	n.a.
France	Ministry	Gives opinion
Hungary	Ministry	Gives opinion
Latvia	Regulator	n.a.
Lithuania	Regulator	n.a.
Malta	Regulator	n.a.
Northern Ireland	Regulator	n.a.
Poland	Regulator	n.a.
Portugal	Regulator	n.a.
Romania	Regulator	n.a.
Slovakia	Regulator	n.a.
Spain	Ministry	Gives opinion

Source: ACER/CEER Market Monitoring Report 2013, authors' desk research

According to CEER, special regulated prices for vulnerable consumers aimed at protecting low-income consumers who spend a large proportion of their incomes on energy exist in several countries but the percentages of consumers paying these special tariffs are relatively low.[89] This study has identified eight such countries (see Section 8.5).

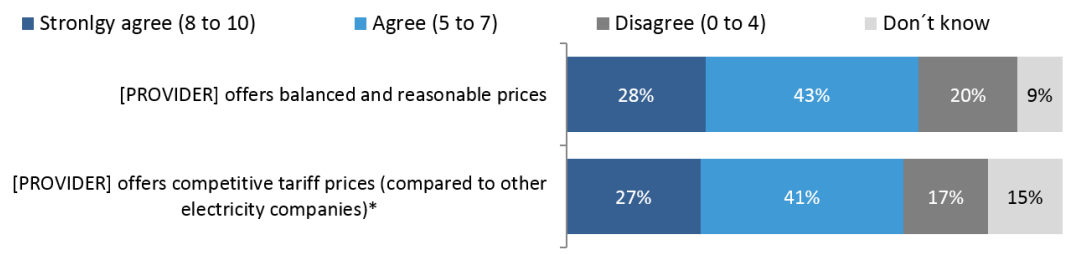
[88] ACER/CEER (2014), Market Monitoring Report 2013

[89] ACER/CEER (2014), Market Monitoring Report 2013

7.2 Consumers' views on prices

Across the EU28, 28% of survey respondents "strongly agreed" (scores 8 to 10)[90], compared to 20% who "disagreed" (scores 0 to 4), that their **electricity company offered balanced and reasonable prices**; the average score for this statement was 6.0. A very similar result was observed for the statement whether **electricity companies offered competitive tariffs prices** (compared to other electricity companies): 27% of respondents "strongly agreed" and 17% "disagreed"; the average score was 6.1.

Figure 129: Agreement with statements about electricity prices



Q17_3/6. Let's move on to choice and comparability. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] offers balanced and reasonable prices.

** Item not asked in Cyprus, Latvia and Malta*

% EU28, Base: All respondents

Source: Consumer survey

Results by affordability of electricity bills

Respondents who sometimes (or often) could not pay their electricity bills on time were less likely to "strongly agree" that that their electricity company offered balanced and reasonable prices (16% vs. 29% for respondents who felt more comfortable about paying their electricity bills on time) and that electricity companies offered competitive tariffs prices (16% vs. 30%, respectively).

Individual country results

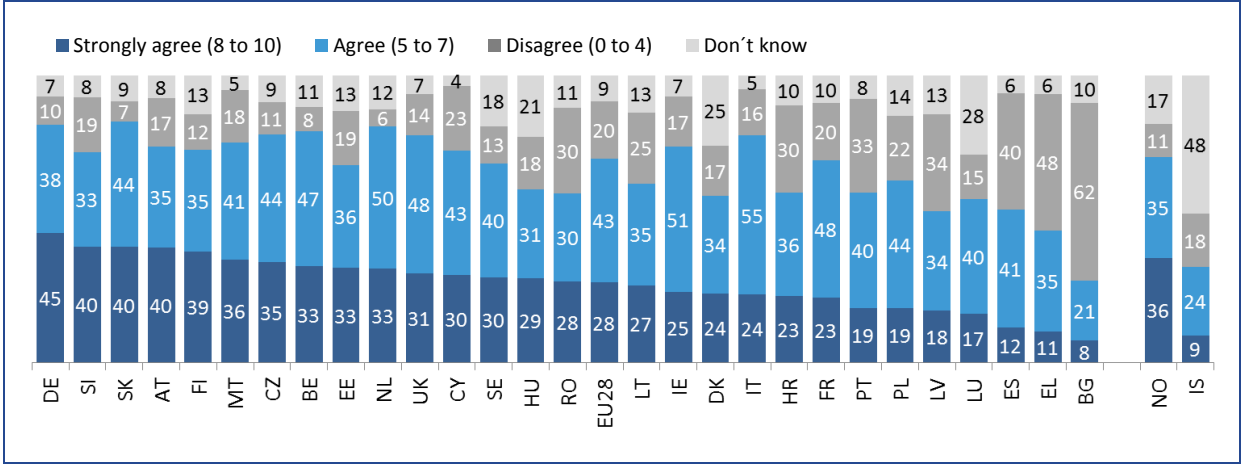
When respondents were asked if **their current electricity company offered balanced and reasonable prices**, the results showed a large variation across countries: while 8% of respondents in Bulgaria "strongly agreed" (scores 8 to 10) with this statement, this figure increased to 45% in Germany. In Germany, 10% of respondents selected the lowest scores on the scale (scores 0 to 4); however, in Bulgaria, these scores were selected by 62% of respondents.

In the 2010 market study, consumers in Bulgaria, Malta, Greece and Spain were the least likely to believe that electricity prices were fair and reasonable. Although Bulgaria, Spain and Greece are still found at the bottom of the country ranking in 2015, Malta

[90] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. Figure 129 presents the results across the EU28; the numbers in the right-hand column of the figure show the average scores on the scale, while the percentages give more information about the distribution of respondents across the scale values. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

now scores better – with 36% of respondents who "strongly agreed" (scores 8 to 10) that their electricity company offered balanced and reasonable prices.

Figure 130: Agreement with the statement: "[PROVIDER] offers balanced and reasonable prices", by country



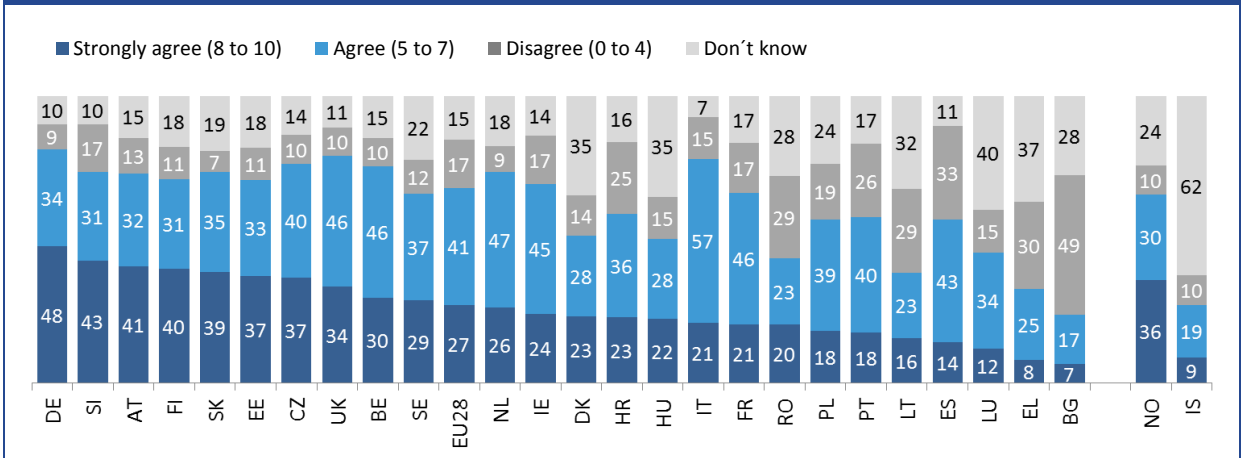
Q17_3. Let's move on to choice and comparability. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] offers balanced and reasonable prices.

%, by country, Base: All respondents

Source: Consumer survey

The country ranking for the statement that respondents' **electricity companies offered competitive tariffs prices** was similar to the statement about balanced and reasonable prices. Bulgaria and Greece closed the rankings with less than 10% of respondents who "strongly agreed" (scores 8 to 10) that their electricity company offered competitive prices (7% and 8%, respectively), while Austria, Slovenia and Germany were find at the higher end of the country ranking, with more than 40% of respondents who "strongly agreed" with the statement (41%, 43% and 48%, respectively).

Figure 131: Agreement with the statement: "[PROVIDER] offers competitive tariff prices", by country



Q17_6. Let's move on to choice and comparability. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] offers competitive tariff prices.

%, by country, Base: All respondents; *Question not asked in Cyprus, Latvia and Cyprus.*

Source: Consumer survey

7.3 Types of tariff available

The method for collecting retail electricity tariff dimension information is detailed in Annex 2. The key definitions used are presented below:

- **Tariff**: Term used to denote the electricity contract[91];
- **Price**: The price paid by consumers per unit of electricity;
- **Fixed or variable rates:** A fixed rate tariff is defined as a tariff under which unit rates stay the same for the duration of the contract. A variable rate tariff is defined as a tariff under which unit rates may change during the contract period;
- **Contract duration:** Refers to the time period of the electricity contract. Contract duration does not take into account "lock-in" periods during which the consumer would need to pay a penalty for leaving the contract or other switching barriers. The duration can take one of three categories: consumers can have a contract of an unspecified duration, of one year, or two years or more;
- **Unique or peak/off-peak prices:** This refers to whether a single unit rate is charged throughout the day or whether there are separate peak and off-peak rates;
- **Regulated tariffs:** Tariffs for which the price is set by the regulator;
- **Green tariffs:** This refers to tariffs for which 100% of electricity production is from renewable sources (e.g. solar, wind, hydro).[92]

A number of these dimensions are of particular interest from a consumer perspective for the following reasons:

- **Fixed versus variable prices**: If consumers are on variable price tariffs, then increases in the unit costs can increase their electricity bills substantially. If they are not prepared for these changes, or do not budget for them, they can risk going into arrears. On the other hand, consumers can also benefit from variable prices. When unit costs go down (i.e. when production costs decrease) consumers' expenditure on electricity consumption also decreases.
- **Unique versus Peak/Off-peak tariffs**: Consumers may choose between peak and off-peak tariffs. Depending on the tariff structure, if consumers can predictably time and adapt their electricity consumption accordingly, they can make savings to their electricity bills.

In addition, in this section, tariff availability and prices by consumption profile are presented. These consumption profiles (or bands) are the same as those used by EUROSTAT in electricity prices for domestic consumers (nrg_pc_204):

- **Low consumption**: this refers to electricity consumption up to 1,000kWh/year (EUROSTAT band DA).
- **Medium consumption**: this refers to electricity consumption between 1,000kWh/year and 3,500kWh/year (EUROSTAT band DC).

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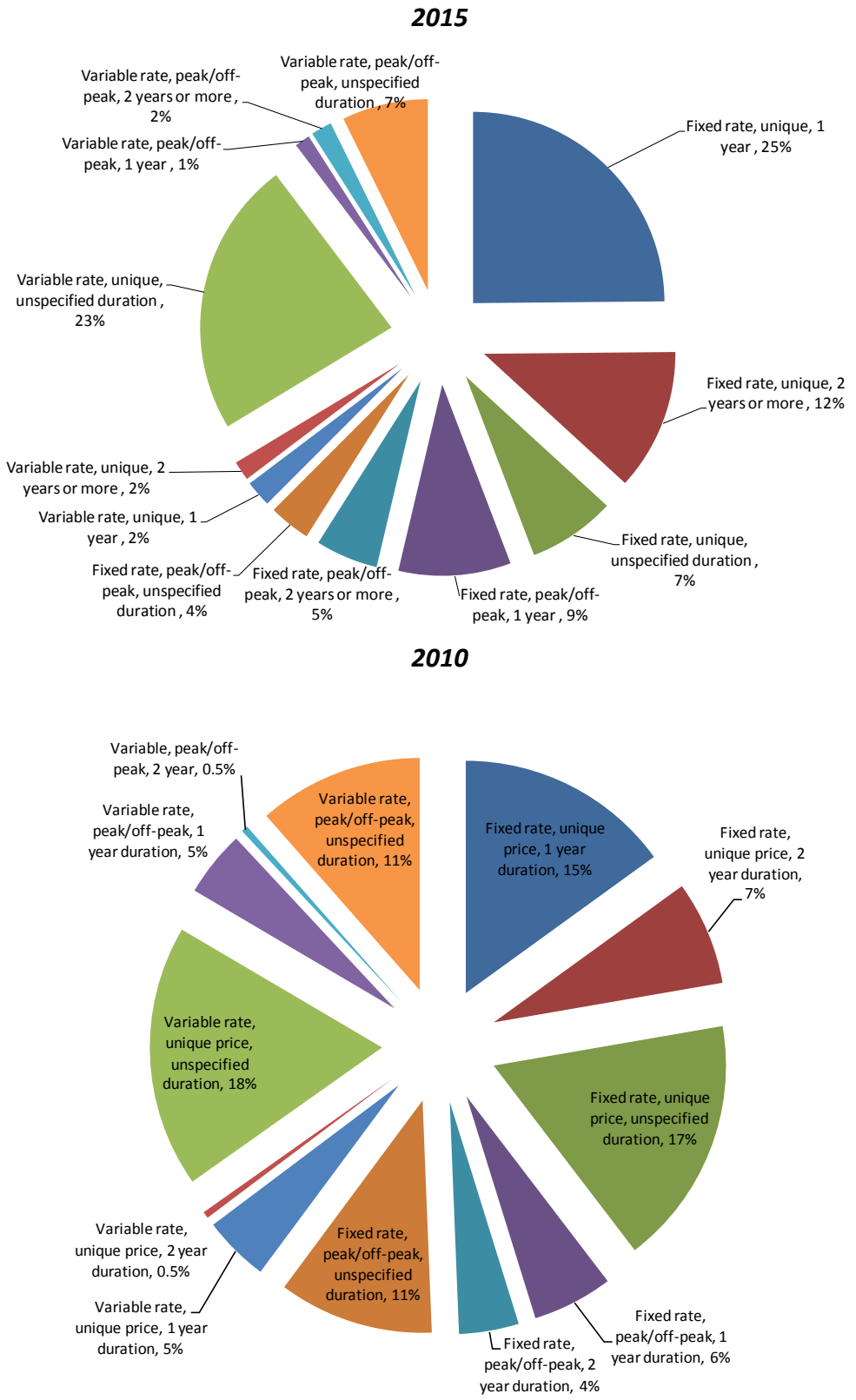
[91] The terms price and tariff are often used interchangeably in the English language when referring to retail electricity prices and contracts. However, suppliers in the UK tend to use the term tariff when referring to the electricity contract (i.e. the total 'plan' the customer is on), and price when referring to the cost to the consumer. The same approach is used in this report.

[92] This definition is consistent, but more strict, than that used in the 2010 market study. The definition used in the 2010 study was a tariff for which at least 50% of electricity production is from renewable sources .

- **High consumption**: this refers to electricity consumption between 3,500kWh/year and 10,000kWh/year (EUROSTAT band DE).

The figure below presents a breakdown of tariff types found in the price collection exercise in 2010 and 2015 in the countries examined in the study. It is important to note that contract duration refers to the time period of the contract between provider and consumer, it does not relate to any lock-in period. Therefore, consumers in many countries may be able to change contract and provider at short notice.

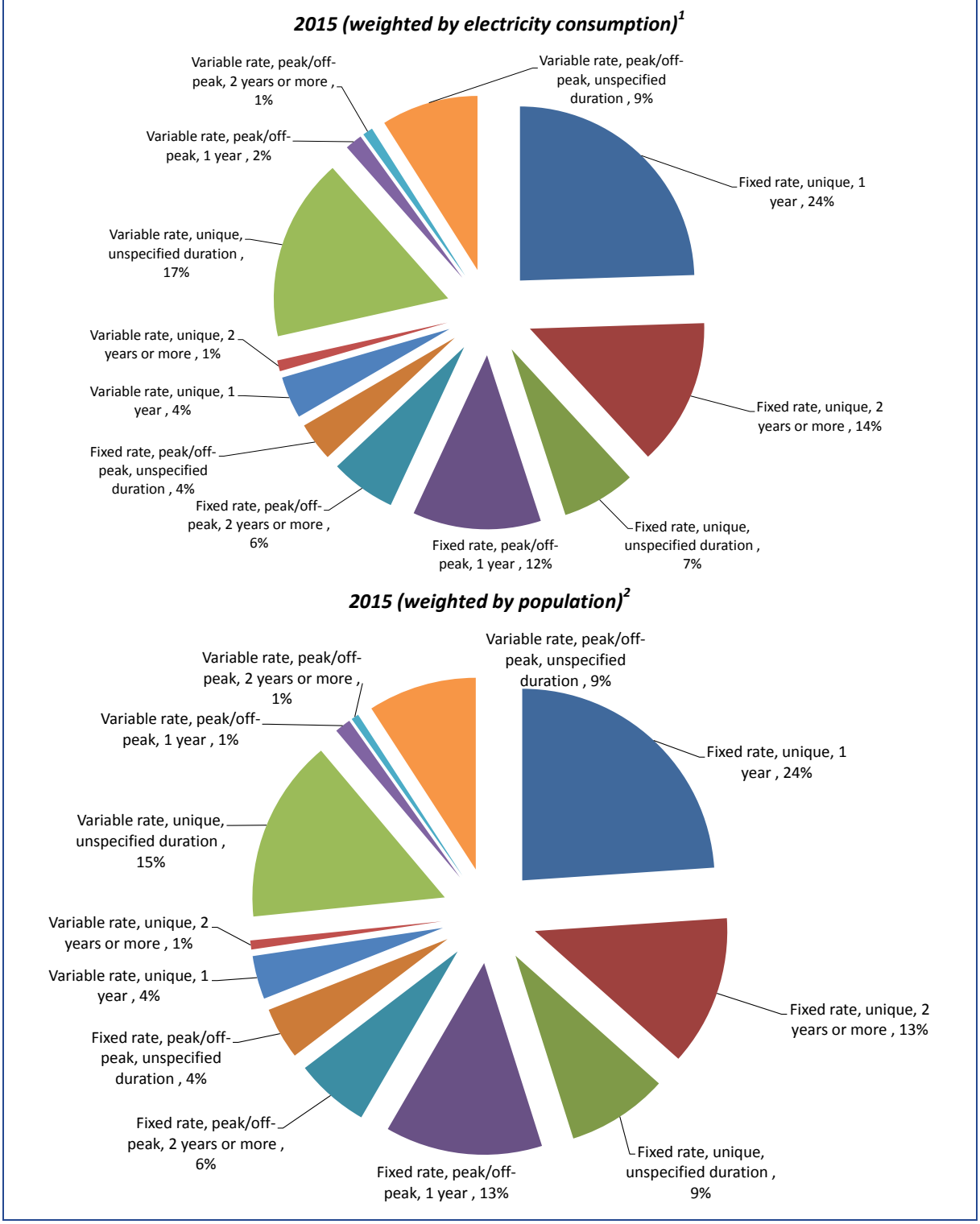
Figure 132: Tariff types available across the EU in 2015 and 2010



Note: The price collection exercise found only two tariffs in HR, CY, EL, LT , and one tariff in MT. Further, the price collection exercise found that BE, SE, NO and the UK have 3 year contracts. In BE, two 5 year contracts were found and, in Denmark, one 6 year contract was found.

Source: Price collection exercise

Figure 133: Tariff types available across the EU in 2015 (weighted by electricity consumption and population)



Note: The price collection exercise found only two tariffs in HR, CY, EL, LT , and one tariff in MT. Further, the price collection exercise found that BE, SE, NO and the UK have 3 year contracts. In BE, two 5 year contracts were found and, in Denmark, one 6 year contract was found.

1. Weights (top panel): All shares have been weighted by electricity consumption in 2013 (the most recent available data), taken from Eurostat's 'Supply, transformation and consumption of electricity – annual data' (nrg_105a).

2. Weights (bottom panel): Shares have been weighted by population in Member State in 2014 (the most recent available data), taken from Eurostat's 'Population change – Demographic balance and crude rates at national level' (demo__gind)

Source: Price collection exercise

The most common tariff type found in the price collection exercise in 2015 was the one of fixed rate, unique price, with a contract duration of one year, accounting for 25% of available tariffs, followed by variable rate, unique price tariffs of unspecified duration, accounting for 23% of available tariffs. In 2010 the latter was the most common tariff type, at 18% of available tariffs, closely followed by fixed rate, unique price tariffs of unspecified duration, at 17% of available tariffs. The greatest increase in proportion was in fixed rate, unique price tariffs of one year duration (increasing by 10 percentage points in share of available tariffs between 2010 and 2015); the greatest decrease in share was in fixed rate, unique price tariffs of unspecified duration (decreasing by 10 percentage points).

The price collection exercise found that there has been a slight increase in the share of fixed rate tariffs (from 60% in 2010 to 62% in 2015). Among fixed rate tariffs, the relative shares of contracts of specified duration have increased compared to contracts of unspecified duration.

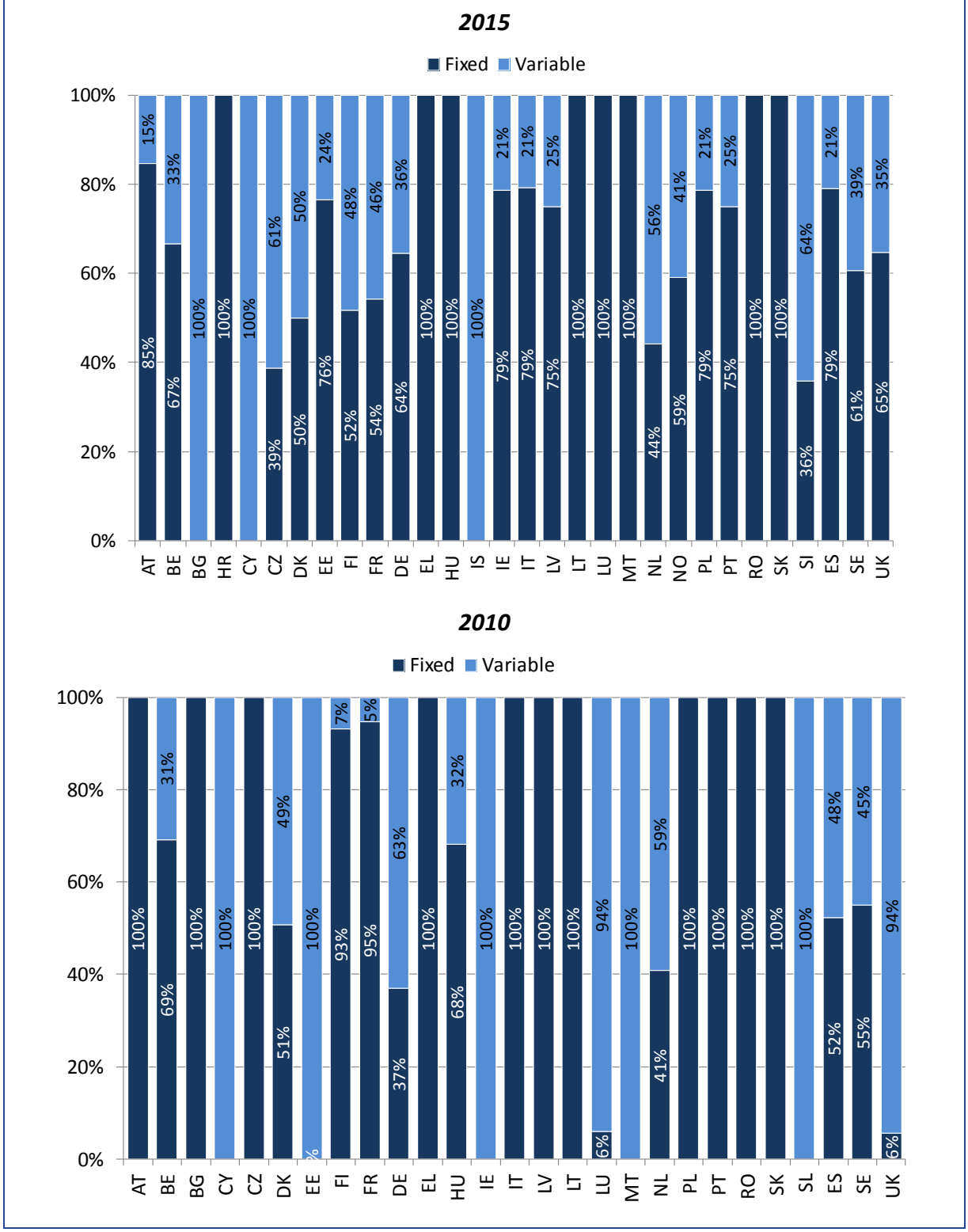
The next three figures present a country-level breakdown of the shares of different tariffs found in the price collection exercise:

- Fixed rate (that is, tariffs where costs are independent of household electricity consumption) versus variable rate (that is, tariffs where costs depend on household electricity consumption);
- Unique (that is, a single rate at all times of the day) versus peak/off-peak; and
- Tariffs of unspecified duration versus tariffs of one year, and two or more years.[93]

The following figure presents a breakdown of tariff types (fixed and variable) found in the price collection exercise in 2015 and 2010.

[93] In reality, durations may be shorter than they appear on paper, since consumers may be able to exit contracts with high flexibility before the contract nominally expires. However, in the price collection exercise information was not collected on the 'lock-in period' of contracts- that is, information was not collected on when consumers can exit contracts. The information presented is, therefore, regarding nominal contract period.

Figure 134: Breakdown of tariff types (fixed rate and variable rate) in 2015 and 2010



Note: The price collection exercise found only two tariffs in HR, CY, EL, LT and one tariff in MT in 2015.
Source: Price collection exercise

Of prices collected in 2015, fixed rate tariffs were the most common type of tariff in all countries, with the exception of Bulgaria, Cyprus, the Czech Republic, Iceland, the Netherlands and Slovenia. While the overall share of fixed rate tariffs was found to have remained stable between 2010 and 2015 (60% in 2010 compared to 62% in

2015, as seen in Figure 132), changes have been found in the relative share of fixed rate tariffs at individual country level.

In the following countries the share of fixed rate tariffs between 2010 and 2015 was found to have increased:

- Estonia, in 2010 had 100% variable rate tariffs, while in 2015, almost 80% were fixed rate tariffs;
- Ireland had 100% variable price tariffs in 2010 in 2015, almost 80% of tariffs were fixed price;
- In Luxembourg in 2010, 95% of tariffs were variable price; in 2015, they were all fixed price;
- In Slovenia, all tariffs were variable price in 2010, while in 2015 only a little under 65% of tariffs were variable price;
- In Spain, in 2010 roughly 50% of tariffs were fixed rate, while in 2015, this figure was almost 80%; and,
- In the UK, almost 95% of tariffs were variable price in 2010, while 65% were fixed price tariffs in 2015.

In the following countries the share of variable rate tariffs between 2010 and 2015 was found to increase:

- In Bulgaria, in 2010 all tariffs were fixed rate tariffs, while in 2015, they were all variable rate tariffs;
- The Czech Republic had 100% share of fixed rate tariffs in 2010 less than 40% in 2015;
- In Finland, in 2010 almost all tariffs were fixed price tariffs; in 2015, there was an almost even split between fixed rate and variable rate tariffs;
- In France, almost all tariffs were fixed price in 2010 in 2015, there was an almost even split between fixed rate and variable rate tariffs.

In the case of the Czech Republic, Finland, France and Luxembourg, the regulator presents tariffs as fixed rate, but subject to changes in Transmission Systems Operator (TSO)/Distribution Systems Operator (DSO), rates can change. The tariffs are defined as fixed rate, as this is the definition used by the regulators contacted as part of this study. This could explain why tariffs may be defined as variable rate in one period, and fixed-rate in another. In the case of Bulgaria, "According to Decision № Ц-12/30.06.2014, item 13 from section "Electricity distribution companies and end suppliers", the State Electricity and Water Regulatory Commission (SEWRC) has defined a maximum permissible volume of deviation from the hourly forecast, sent daily, which can be included in the end price of the end suppliers and the distribution companies, as follows: for the special balancing groups of the end suppliers - up to 1.5 %".[94] Thus, tariffs have been defined as "variable rate".

Figure 135 presents a breakdown of tariff types (unique versus peak/off-peak) in 2015 and 2010. Unique price contracts were found in the price collection exercise to account for half or more tariffs in 2015. In addition, there has been, on average, an increase in the share of unique tariffs overall: the overall share of unique tariffs in 2010 was 62%, whereas in 2015, it was 71%. This change has been dramatic in some cases – such as the case of Greece, where the composition of tariffs shifted from all peak/off-peak to a split between unique and peak/off peak tariffs.[95]

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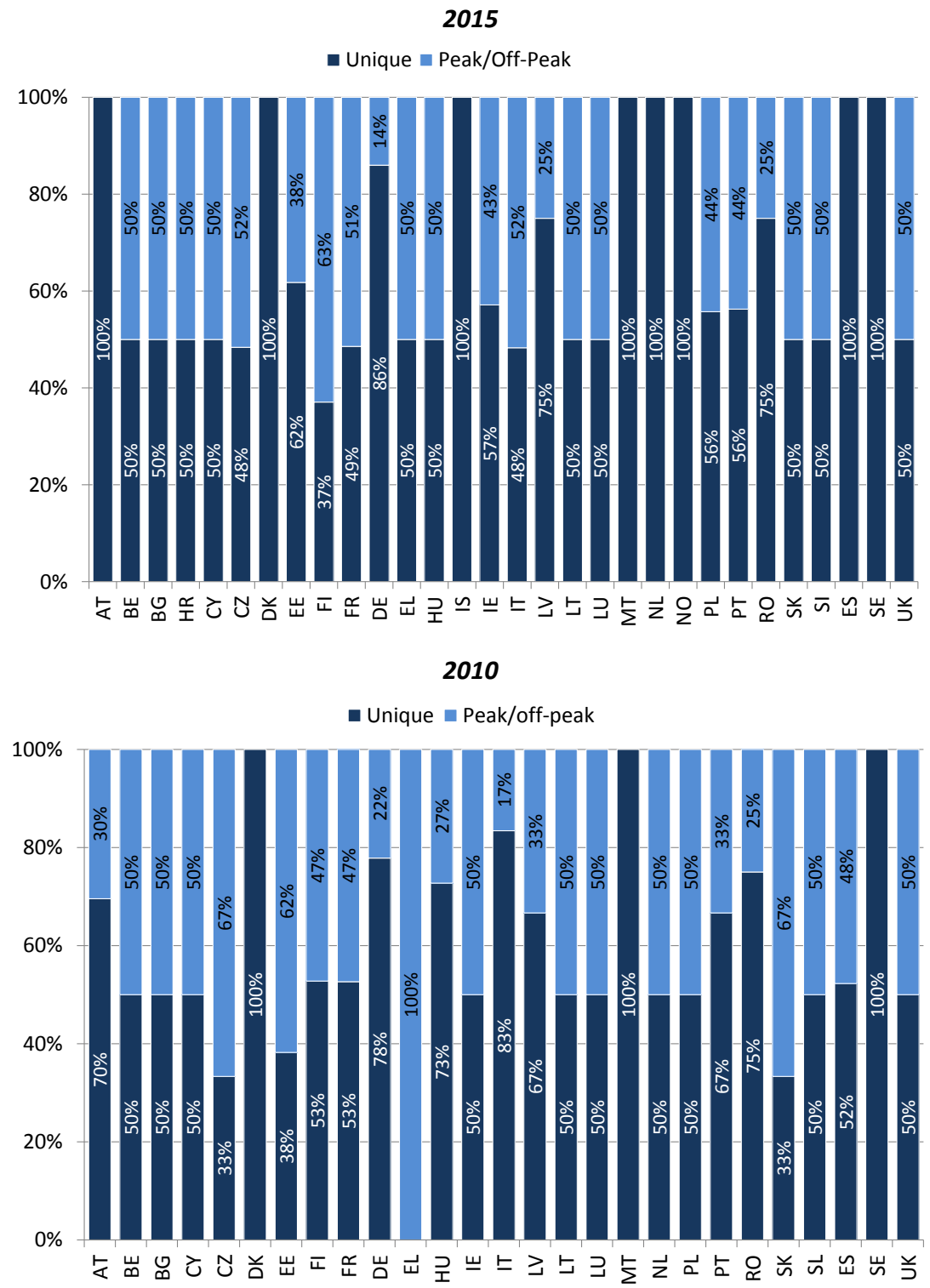
[94] Source: CEZ Bulgaria http: //www.cez.bg/en/home.html

[95] In 2015, Greece only had 2 tariffs.

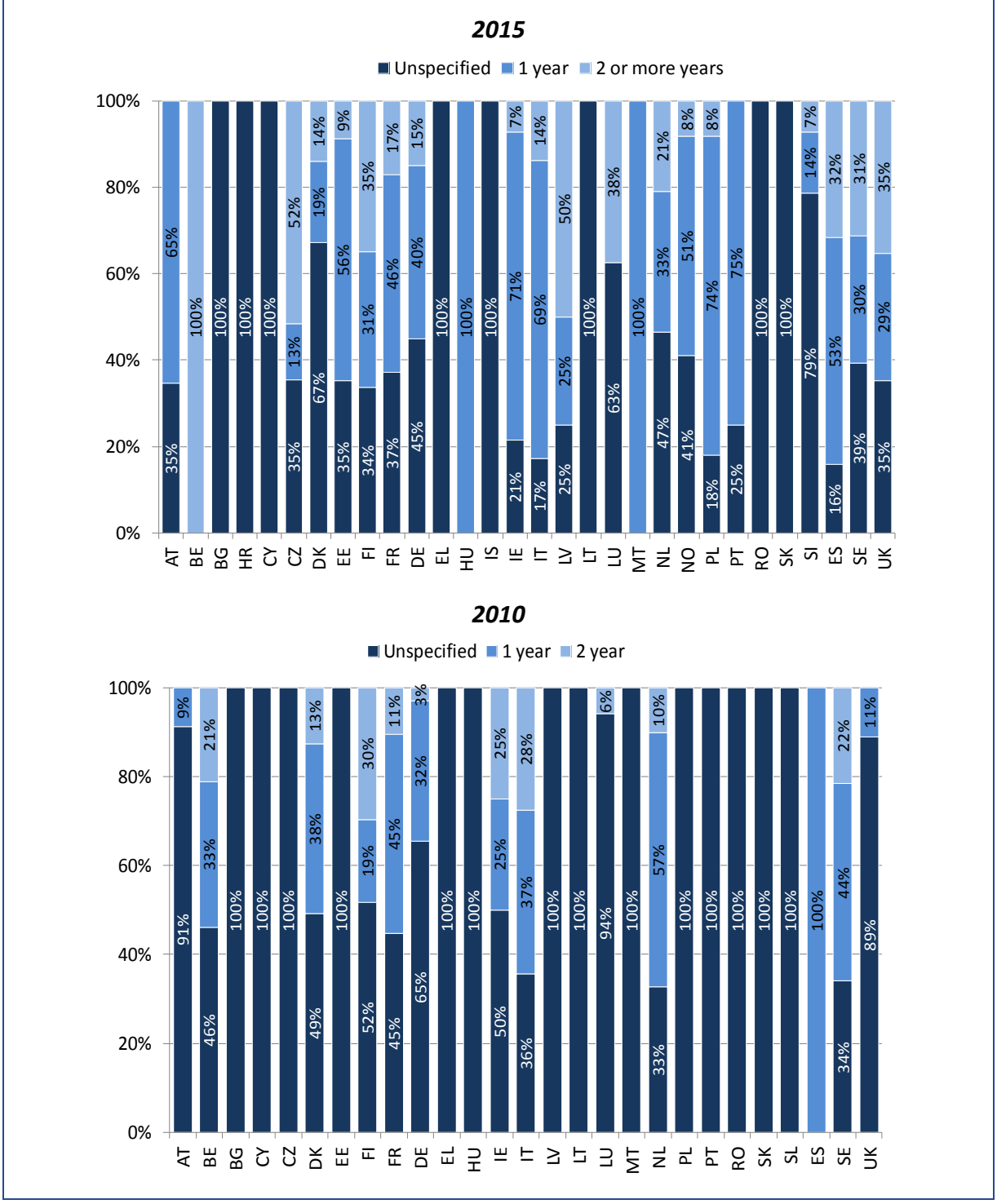
Figure 135: Breakdown of tariff types (unique versus peak/off-peak) in 2015 and 2010



Note: The price collection exercise found only two tariffs in HR, CY, EL, LT and one tariff in MT in 2015.
Source: Price collection exercise

The figure below presents a breakdown of tariff durations for prices collected (1 year, 2 years or more and unspecified) in 2015 and 2010.

Figure 136: Breakdown of tariff durations (1 year, 2 years or more and unspecified length) in 2015 and 2010



Note: The price collection exercise found only two tariffs in HR, CY, EL, LT , and one tariff in MT. Further, the price collection exercise found that BE, SE, NO and the UK have 3 year contracts. In BE, two 5 year contracts were found and, in Denmark, one 6 year contract was found.

Source: Price collection exercise

As seen in Figure 132, and Figure 136, contract duration changes account for much of the change in the relative shares of tariff types, both across countries and for individual countries. As Figure 136 illustrates, contract duration showed great variation across countries in both 2010 and 2015. In 12 out of 28 countries, tariffs of unspecified duration account for at least half of available tariffs. However, tariffs of one or more years in duration have increased in share (compared to contracts of unspecified duration) between 2010 and 2015 (especially for fixed rate tariffs, as seen in Figure 132). Overall, the share of unspecified duration contracts was 57% in 2010, compared to 41% in 2015, as seen in Figure 132. The list below indicates the most salient differences between 2010 and 2015.

The following countries reported increases in the share of contracts of specified duration between 2010 and 2015:

- Austria (going from <10% 1-year contracts in 2010 to roughly 65% 1-year contracts in 2015);
- Belgium (going from a situation with contracts of unspecified duration, 1-year contracts and 2-year contracts in 2010, to 100% contracts of 2-plus years in 2015);[96]
- The Czech Republic (going from 100% unspecified duration in 2010 to 52% 1-year duration contracts in 2015, followed by 35% unspecified duration contracts and 13% 2-plus year contracts.);
- Estonia (going from 100% tariffs of unspecified length in 2010 to 35% unspecified in 2015, roughly 55% 1 year and 10% 2-plus years);
- Ireland (going from 50% tariffs of unspecified length and about 25% tariffs of 1 year in 2010 to roughly 20% tariffs of unspecified length and about 70% tariffs of 1 year);
- Latvia (going from 100% unspecified duration contracts in 2010 to 25% unspecified duration in 2015);
- Poland (going from 100% contracts of unspecified duration in 2010 to 18% unspecified-duration contracts in 2015);
- Portugal (going from 100% unspecified-duration contracts in 2010 to 25% unspecified-duration in 2015); and
- The UK (going from 90% unspecified-duration contracts in 2010 to a roughly equal split between 1-year, 2-years and unspecified-duration contracts in 2015).
- On the other hand, Spain went from 100% 1-year contracts in 2010 to 53% 1-year contracts in 2015.

In some cases, changes in the relative shares of contracts of different durations reflect the trend away from contracts of unspecified duration (as in Austria, Belgium, Ireland, Portugal and the UK). Some of the differences over time can be accounted for by liberalisation associated with a greater variety of tariffs (as in the Czech Republic, Estonia, Latvia and Poland), as can be seen in the top panel of Figure 137.

[96] As noted before: in reality, durations may be shorter than they appear on paper, since consumers may be able to exit contracts with high flexibility before the contract nominally expires. However, in the price collection exercise information was not collected on the 'lock-in period' of contracts- that is, information was not collected on when consumers can exit contracts. The information presented is, therefore, regarding nominal contract period.

7.3.1 Tariff availability and prices by consumption profile

This section discusses the availability of tariffs, and prices, by consumption profile. There are three levels of consumption considered in this section: low consumption (maximum 1,000 kWh per year); medium consumption (between 1,000 kWh and 3,500 kWh per year) and high consumption (between 3,500 kWh and 10,000 kWh per year). The following two tables present a summary of the number of tariffs by consumption band and shares of different tariff types in 2015 and 2010.

Table 55: Number of tariffs by consumption band and shares of different tariff types (2015)															
	Total number of tariffs			Shares of different tariff types											
				Fixed						Variable					
				Unique price			Peak/Off-Peak			Unique price			Peak/Off-Peak		
	Low consumption	Med. consumption	High. consumption	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified
AT	26	26	26	54%	-	31%	-	-	-	12%	-	4%	-	-	-
BE[1]	24	24	23	-	33%	-	-	33%	-	-	17%	-	-	17%	-
BG[2]	6	6	6	-	-	-	-	-	-	-	-	50%	-	-	50%
HR[2]	2	2	2	-	-	50%	-	-	50%	-	-	-	-	-	-
CY[2]	2	2	2	-	-	-	-	-	-	-	-	50%	-	-	50%
CZ[2]	31	31	31	3%	16%	-	3%	16%	-	3%	10%	16%	3%	10%	19%
DK	64	64	64	17%	13%	20%	-	-	-	2%	2%	47%	-	-	-
EE[2]	34	34	34	29%	3%	6%	26%	6%	6%	-	-	24%	-	-	-
FI[2]	55	55	63	8%	8%	4%	13%	13%	4%	3%	4%	9%	7%	9%	16%
FR[2]	35	35	35	14%	9%	3%	20%	9%	-	6%	-	17%	6%	-	17%
DE[2]	104	105	105	37%	15%	6%	2%	-	5%	1%	-	27%	-	-	7%
EL[2]	2	2	2	-	-	50%	-	-	50%	-	-	-	-	-	-
HU[2]	8	8	8	50%	-	-	50%	-	-	-	-	-	-	-	-
IS	4	4	4	-	-	-	-	-	-	-	-	100%	-	-	-
IE[1]	9	14	13	36%	7%	-	36%	-	-	-	-	14%	-	-	7%
IT[3]	25	29	25	31%	7%	-	31%	7%	3%	3%	-	7%	3%	-	7%
LV[2]	3	3	3	25%	25%	-	-	25%	-	-	-	25%	-	-	-
LT[2]	2	2	2	-	-	50%	-	-	50%	-	-	-	-	-	-
LU[1]	16	16	16	-	19%	31%	-	19%	31%	-	-	-	-	-	-
MT	1	1	1	100%	-	-	-	-	-	-	-	-	-	-	-
NL[4]	79	77	35	15%	9%	-	13%	6%	-	3%	3%	25%	3%	1%	24%
NO	61	61	61	51%	8%	-	-	-	-	-	-	41%	-	-	-
PL[2]	61	61	61	38%	5%	-	33%	3%	-	2%	-	11%	2%	-	7%
PT[2]	16	16	16	44%	-	-	31%	-	-	-	-	13%	-	-	13%
RO[2]	16	16	16	-	-	75%	-	-	25%	-	-	-	-	-	-
SK[2]	8	8	8	-	-	50%	-	-	50%	-	-	-	-	-	-
SL[2]	28	28	28	7%	4%	7%	7%	4%	7%	-	-	32%	-	-	32%
ES[2]	20	20	20	25%	35%	15%	5%	-	-	20%	-	-	-	-	-
SE	61	61	61	30%	31%	-	-	-	-	-	-	39%	-	-	-
UK[2]	34	34	34	15%	18%	-	15%	18%	-	-	-	18%	-	-	18%

Note: When calculating average prices for peak/off-peak tariffs, information providers made assumptions regarding the division of consumption between peak hours and off-peak hours. These assumptions are provided below:

1. Off-peak: 60% of consumption in band; Peak: 40% of consumption in band
2. Peak and off-peak: 50% of consumption in band
3. Off-peak: 45% of consumption in band; Peak: 55% of consumption in band
4. Off-peak: 40% of consumption in band: Peak: 60% of consumption in band

Source: Price collection exercise

Table 56: Number of tariffs by consumption band and shares of different tariff types (2010)															
	Total number of tariffs[1]			Shares of different tariff types[2]											
				Fixed						Variable					
				Unique price			Peak/Off-Peak			Unique price			Peak/Off-Peak		
	Low consumption	Med. consumption	High consumption	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified	1 year	2 years or more	Unspecified
AT	23	23	23	9%	-	61%	-	-	30%	-	-	-	-	-	-
BE	104	104	104	11%	8%	16%	11%	8%	16%	6%	3%	7%	6%	3%	7%
BG	6	6	6	-	-	50%	-	-	50%	-	-	-	-	-	-
CZ	3	3	3	-	-	33%	-	-	67%	-	-	-	-	-	-
DK	45	44	45	38%	13%	-	-	-	-	-	-	49%	-	-	-
EE	24	27	17	-	-	-	-	-	-	-	-	38%	-	-	62%
FI	97	97	96	9%	15%	24%	9%	15%	21%	-	-	5%	-	-	2%
FR	38	38	38	24%	5%	21%	21%	5%	18%	-	-	3%	-	-	3%
DE	101	98	99	14%	3%	17%	2%	-	1%	12%	-	32%	4%	-	16%
EL	2	2	2	-	-	-	-	-	100%	-	-	-	-	-	-
HU	15	15	14	-	-	41%	-	-	27%	-	-	32%	-	-	-
IE	8	8	8	-	-	-	-	-	-	13%	13%	25%	13%	13%	25%
IT	68	66	65	32%	19%	33%	5%	9%	3%	-	-	-	-	-	-
LT	4	4	4	-	-	50%	-	-	50%	-	-	-	-	-	-
LU	34	34	34	-	3%	-	-	3%	-	-	-	47%	-	-	47%
MT	2	2	1	-	-	-	-	-	-	-	-	100%	-	-	-
NL	98	98	98	15%	5%	-	15%	5%	-	13%	-	16%	13%	-	16%
PL	28	28	28	-	-	50%	-	-	50%	-	-	-	-	-	-
PT	18	18	18	-	-	67%	-	-	33%	-	-	-	-	-	-
SK	3	3	3	-	-	33%	-	-	67%	-	-	-	-	-	-
SL	20	20	18	-	-	-	-	-	-	-	-	50%	-	-	50%
ES	30	29	29	52%	-	-	-	-	-	-	-	-	48%	-	-
SE	52	51	50	33%	22%	-	-[3]	-[3]	-	11%	-	34%	-	-	-
UK	36	36	36	-	-	3%	-	-	3%	6%	-	42%	6%	-	42%

Note: Excluding social tariffs.

1. The total number of tariffs for each consumption band is given by counting separately tariffs from different providers which differ in terms of: fixed or variable prices; 1-year, 2-year or unspecified duration; unique or peak/off-peak prices; and whether the electricity is produced from green or grey sources.

2. The share of each type of tariff refers to the share of each type in the total for any consumption band, including green and grey tariffs. A green tariff is defined as one for which at least 50% of electricity production is from green sources. If less than 50% of electricity production is from green sources then the tariff is classified as grey.

3. Although the price collection exercise did not identify any peak/off-peak tariffs for Sweden, additional desk research found that one provider does offer a peak/off-peak during the winter only (from November to March).

Source: ECME Consortium analysis of data from price collection exercise (2010)

As seen in the tables above, prices collected indicate that most countries have observed a shift towards fixed rate tariffs over variable rate tariffs. In addition, there has been an overall shift towards fixed rate tariffs of specified length (as also shown in Figure 132). Finally, there has been a shift in the rank order of countries with the greatest number of tariffs, with some countries reporting reductions in the number of tariffs offered for each level of consumption (e.g. Belgium, Finland, Italy, Luxembourg and the

Netherlands). In the case of countries such as Poland, with increasing liberalisation, more tariffs have been offered, more than doubling the 2010 figure. The following list presents some of the notable differences in the number of tariffs offered between 2015 and 2010. Prices collected show the following countries experienced an increase in the number of tariffs between 2010 and 2015:

- The number of tariffs offered in the Czech Republic has increased tenfold from three for each level of consumption in 2010 to 31 in 2015; and
- In Poland, the number of tariffs increased from 28 in 2010 to 61 in 2015.

The number of tariffs decreased in the following countries between 2010 and 2015:

- The number of tariffs offered in Belgium has reduced to a little over a fifth between 2010 and 2015, from over 100 for each level of consumption in 2010 to a little over 20 for all levels of consumption in 2015;
- In Finland, the number of tariffs reduced from 97 in 2010 to 55 in 2015 for the low-consumption band, and from 96 in 2010 to 63 in 2015 for the high consumption band[97];
- In Hungary, the number of tariffs halved from 15 in 2010 to 8 in 2015;
- In Italy, the number of tariffs decreased by more than half at each level of consumption from 2010 to 2015. For example, for low consumption, the number of tariffs decreased from 66 in 2010 to 29 in 2015;
- In Luxembourg, the number of tariffs fell by more than half from 34 tariffs in 2010 to 16 in 2015; and
- In the Netherlands, the number of tariffs has reduced by almost one third for low and medium consumption, from 98 in 2010 to between 77 (medium consumption) and 79 (low consumption) in 2015. In the case of high consumption, the number of tariffs has reduced by almost two thirds, from 98 in 2010, to 35 in 2015.

In some cases, the number of tariffs has increased with liberalisation (as in the cases of the Czech Republic and Poland).

On the other hand, in some countries fewer tariffs were found in the price collection exercise (as seen in Table 55 and Table 56), or fewer tariff types were offered (as can be seen in Table 57 and Table 58). In the case of Italy, the number of tariffs found reduced across all consumption levels, but the variety of tariffs increased from six to nine. In countries such as Poland, liberalisation has been associated with more complex tariffs, whereas for countries such as Belgium, fewer tariffs and a smaller range of tariffs have been offered in 2015 compared to 2010. These patterns are repeated in Table 57 and Table 58, which present a summary of tariff availability by consumption profile for 2015 and 2010.

Part of the explanation for these differences comes from liberalisation. As can be seen in Figure 137, there is a slight positive link between the number of years since full liberalisation of the electricity market and the number of tariffs offered. However, it should be cautioned that this link may be driven by the large number of countries liberalising in 2007 (including Belgium, Bulgaria, France and Greece).

Another part of the explanation could come from market concentration, as measured by the market share of the three largest providers in the market. As seen in the second panel of Figure 137, there is a negative association between the number of tariffs offered in a Member State and the market share of the three largest providers.

[97] No data was available for the medium consumption band for Finland in 2015.

Figure 138 presents a scatter plot between the difference in the number of tariffs collected 2010 and 2015 and market concentration (as measured by the difference in the market share of the largest provider) between 2010 and 2013.[98] As seen in the top panel of Figure 138, there was a slight positive link between countries with an increase in the market share of the largest provider and countries with an increase in the number of tariffs, suggesting that an increase in market concentration may be linked with an increase in the number of tariffs.[99] However, the relationship may be non-linear: as seen in the middle panel of Figure 138, in countries with below 70 tariffs in total in 2010,[100] the link between the difference in the number of tariffs and the difference in market share of the largest provider was negative.[101] However, in countries with more than 70 tariffs in 2010, the link between the difference in the number of tariffs and the difference in the market share of the main provider was positive.[102] It should be cautioned that the sample size is small: Member States for which market share and population data was available was 21 out of 28. Still, the correlations presented below may suggest that when there are relatively few tariffs offered, an increase in market concentration may be linked with a further reduction in the number of tariffs offered. However, when there are relatively more tariffs available, an increase in market concentration may be associated with more tariffs being offered.

It is important to note that these measures of market concentration, however, do not account for situations where there may be a large number of providers in a given country but consumers only have a choice from a small number of regional providers.

[98] The market share of the largest supplier is the only measure for which data was available for a large enough number of Member States. 2013 is the most recent data available from Eurostat (nrg_ind_331a).

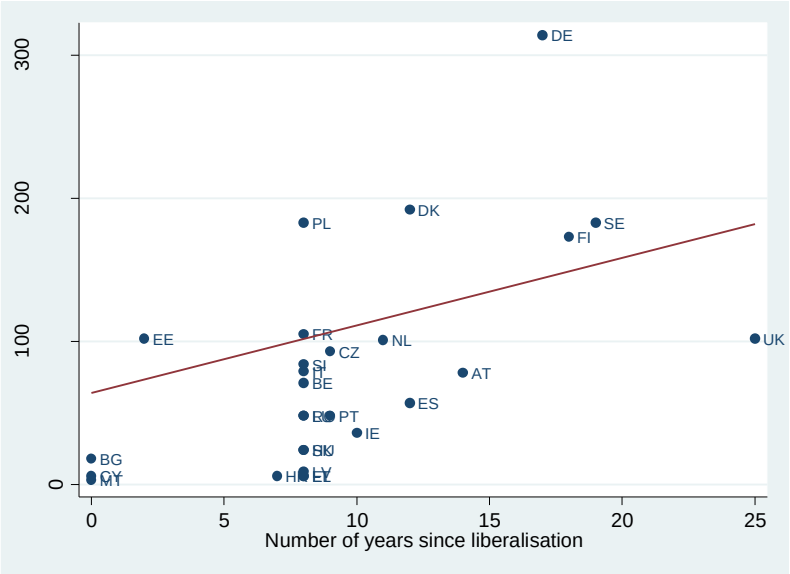
[99] The correlation coefficient is 0.18 (statistically insignificant).

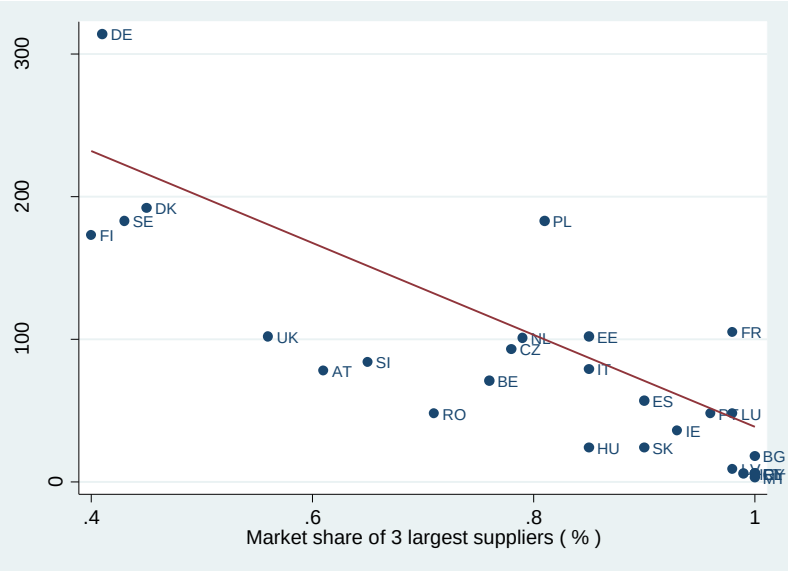
[100] The number 70 was chosen in order to split the sample roughly in half: 11 Member States offered more than 70 tariffs in 2010, and 10 offered 70 tariffs or fewer in 2010.

[101] The correlation coefficient was -0.49 (statistically insignificant).

[102] The correlation coefficient was 0.40 (statistically insignificant).

Figure 137: Number of tariffs compared to number of years since liberalisation and market share of three main suppliers

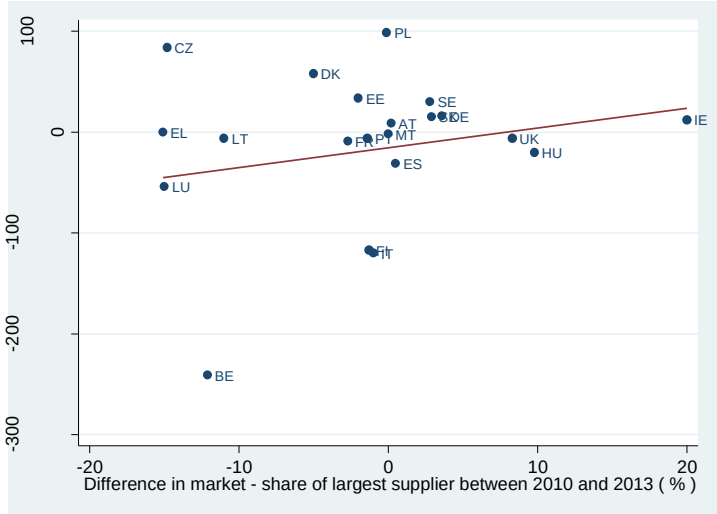




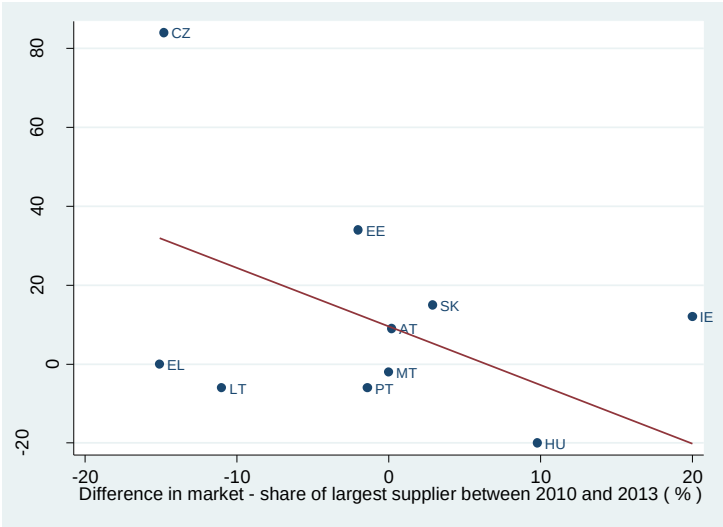
Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.
In some cases, country labels may overlap.
The term "years since liberalisation" refers to the number of years since full liberalisation of the electricity market. The term "total number of tariffs" refers to the total number of tariffs across all levels of consumption.
Lines have been fitted in both panels, weighting by Member State population in 2014 (the most recently available data from Eurostat).
Correlation coefficient between the number of tariffs and number of years since liberalisation (weighted by Member State population): 0.34 (R^2 = 0.11), statistically insignificant. Correlation coefficient between the number of tariffs and market share of 3 largest suppliers = -0.74 (R^2 = 0.54) , statistically significant at 95%. Correlation coefficient between the number of tariffs and market share of largest supplier = -0.25 (statistically insignificant).
Source: Price collection exercise. Years since liberalisation taken from 'The functioning of retail electricity markets in the European Union', European Commission, 2010. Liberalisation date for Bulgaria, Cyprus and Malta taken from ACER Market Monitoring Report, 2015. Market share of three largest suppliers taken from ACER Market Monitoring Report, 2015. Population weights are taken from Eurostat's 'Population change – Demographic balance and crude rates at national level' (demo__gind). Population data is from 2014, the most recently available year for a large number of Member States.

Figure 138: Difference in number of tariffs collected between 2010 and 2015 compared to the difference in the market share of largest supplier between 2010 and 2013 (all countries, countries with below 70 tariffs in 2010, and countries with above 70 tariffs in 2010)

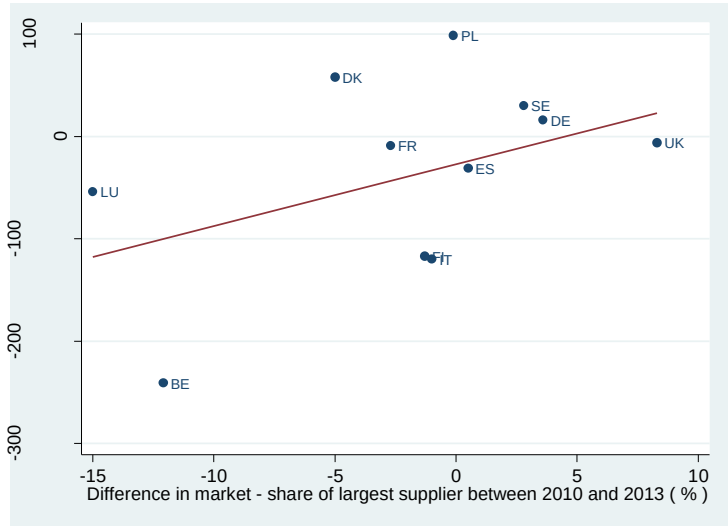
All countries



Countries with below 70 tariffs in total in 2010



Countries with above 70 tariffs in total in 2010



Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.
In some cases, country labels may overlap.
Lines have been fitted in both panels, weighting by Member State population in 2014 (the most recently available data from Eurostat).
Correlation coefficient between the difference in the number of tariffs and the difference in market share of the largest supplier between 2010 and 2013: 0.18 (statistically insignificant). Correlation coefficient between the difference in the number of tariffs and the difference in market share of the largest supplier (number of tariffs <=70): -0.49 (statistically insignificant). Correlation coefficient between the difference in the number of tariffs and the difference in market share of the largest supplier (number of tariffs>70): 0.4 (statistically insignificant).
Source: Price collection exercise. Number of tariffs offered across Member States in 2010 taken from Figure 4: 'Number of tariffs on offer vs. Years since liberalisation and market share of main suppliers', from 'The functioning of retail electricity markets in the European Union', ECME Consortium, 2010. Market share of largest supplier (2010 and 2013) taken from Eurostat's Market share of the largest generator in the electricity market – annual data' (nrg_ind_331a). Population weights are taken from Eurostat's 'Population change – Demographic balance and crude rates at national level' (demo__gind). Population data is from 2014, the most recently available year for a large number of Member States.

Table 57: Tariff availablility by consumption profile (2015)																																				
	Low consumption (1000kWh)												Medium consumption (3500kWh)												High consumption (10000kWh)											
	Fixed rate						Variable rate						Fixed rate						Variable rate						Fixed rate						Variable rate					
	1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified	
	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak
AT	√				√		√				√		√				√		√				√		√				√		√				√	
BE			√	√					√	√					√	√					√	√					√	√					√	√		
BG											√	√											√	√											√	√
HR					√	√											√	√											√	√						
CY											√	√											√	√											√	√
CZ	√	√	√	√			√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√
DK	√		√		√		√		√		√		√		√		√		√		√		√		√		√		√		√		√		√	
EE	√	√	√	√	√	√					√		√	√	√	√	√	√					√		√	√	√	√	√	√					√	
FI	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
FR	√	√	√	√	√		√	√			√	√	√	√	√	√	√		√	√			√	√	√	√	√	√	√		√	√			√	√
DE	√	√	√		√	√	√				√	√	√	√	√		√	√	√				√	√	√	√	√		√	√	√				√	√
EL					√	√											√	√											√	√						
HU	√	√											√	√											√	√										
IS											√												√												√	
IE	√	√	√								√	√	√	√	√								√	√	√	√	√								√	√
IT	√	√	√	√		√	√	√			√	√	√	√	√	√		√	√	√			√	√	√	√	√	√		√	√	√			√	√
LV	√		√								√				√	√							√				√	√							√	
LT					√	√											√	√											√	√						

Table 57: Tariff availablility by consumption profile (2015)

	Low consumption (1000kWh)												Medium consumption (3500kWh)												High consumption (10000kWh)											
	Fixed rate						Variable rate						Fixed rate						Variable rate						Fixed rate						Variable rate					
	1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified		1 year		2 years or longer		Unspe-cified	
	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak	Unique	Peak/Off-Peak
LU			√	√	√	√									√	√	√	√									√	√	√	√						
MT	√												√												√											
NL	√	√	√	√			√	√	√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√					√	√	√	√	√	√
NO	√		√								√		√		√								√		√		√								√	
PL	√	√	√	√			√	√			√	√	√	√	√	√			√	√			√	√	√	√	√	√			√	√			√	√
PT	√	√									√	√	√	√									√	√	√	√									√	√
RO					√	√											√	√											√	√						
SK					√	√											√	√											√	√						
SI	√	√	√	√	√	√					√	√	√	√	√	√	√	√					√	√	√	√	√	√	√	√					√	√
ES	√	√	√		√		√						√	√	√		√		√						√	√	√		√		√					
SE	√		√								√		√		√								√		√		√								√	
UK	√	√	√	√							√	√	√	√	√	√							√	√	√	√	√	√							√	√

Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.

Source: Price collection exercise

Table 58: Tariff availablility by consumption profile (2010)																																				
	Low consumption (1000kWh)												Medium consumption (3500kWh)												High consumption (10000kWh)											
	Fixed rate						Variable rate						Fixed rate						Variable rate						Fixed rate						Variable rate					
	1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.	
	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak
AT	✓				✓	✓							✓				✓	✓							✓				✓	✓						
BE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
BG					✓	✓											✓	✓											✓	✓						
CY											✓	✓											✓	✓											✓	✓
CZ					✓													✓												✓						
DK	✓		✓								✓		✓		✓								✓		✓		✓								✓	
EE											✓	✓											✓	✓											✓	✓
FI	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓					✓	✓
FR	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓					✓	✓	✓	✓	✓	✓	✓	✓					✓	✓
DE	✓	✓	✓		✓		✓	✓			✓	✓	✓	✓	✓		✓		✓	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓			✓	✓
EL						✓												✓												✓						
HU					✓	✓					✓						✓	✓					✓						✓	✓					✓	
IE							✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓
IT	✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓							✓	✓	✓	✓	✓	✓						
LV					✓	✓											✓	✓											✓	✓						
LT					✓	✓											✓	✓											✓	✓						
LU			✓	✓							✓	✓			✓	✓							✓	✓			✓	✓							✓	✓
MT											✓												✓												✓	
NL	✓	✓	✓	✓			✓	✓			✓	✓	✓	✓	✓	✓			✓	✓			✓	✓	✓	✓	✓	✓			✓	✓			✓	✓

Table 58: Tariff availablility by consumption profile (2010)

	Low consumption (1000kWh)												Medium consumption (3500kWh)												High consumption (10000kWh)											
	Fixed rate						Variable rate						Fixed rate						Variable rate						Fixed rate						Variable rate					
	1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.		1 year		2 year		Unspec.	
	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak	Unique	Peak/off-peak
PL					✓	✓											✓	✓											✓	✓						
PT					✓	✓											✓	✓											✓	✓						
RO					✓												✓												✓	✓						
SK					✓													✓												✓						
SL											✓	✓											✓	✓											✓	✓
ES	✓							✓					✓							✓					✓							✓				
SE	✓		✓				✓				✓		✓		✓				✓				✓		✓		✓				✓				✓	
UK					✓	✓	✓	✓			✓	✓					✓	✓	✓	✓			✓	✓					✓	✓	✓	✓			✓	✓

Source: ECME Consortium analysis of data from price collection exercise

Table 55 and Table 57 present a summary of the availability of tariffs collected in the price collection exercise, by consumption profile. Prices may differ across consumption bands because electricity prices typically have two elements:

- A fixed element, that does not change with electricity consumption; and
- A variable element, that changes with electricity consumption.

If the fixed element is a large proportion of the total electricity price, then total price per unit of electricity consumed may fall as consumption rises. In this case, a high proportion of the electricity prices is due to a fixed element and consumers cannot substantially change their electricity expenditure, even if they reduce their electricity consumption.[103]

As seen in Table 59, Figure 139 and Figure 140, the average price for low consumption across the EU28 Member States was 12% higher than medium consumption, while the average price for medium consumption was 1% higher than for high consumption.[104] This difference is largely accounted for by the higher fixed charges paid by low consumption consumers compared to medium consumption consumers, and by medium consumers compared to those in high consumption range. On average, the fixed component of electricity prices was 68% higher for low consumption consumers than medium consumers, and 61% higher for medium consumers than high consumers.

On the other hand, the variable component of electricity prices is usually either similar across consumption profiles or increasing with consumption. On average, across the EU28 Member States, the variable component of electricity prices was 8% lower for consumers at low levels of consumption compared to medium levels of consumption, and 6% lower for consumers at medium levels of consumption compared to consumers at high levels of consumption.

This is in line with electricity price differences across consumption volumes in 2010, as seen in Table 60. The data presented in Table 59 is reproduced in Figure 139 and Figure 139.

[103] Prices for non-euro countries have been converted into euro. Therefore, in these countries prices will be influenced by changes in the exchange

[104] This is consistent with the higher prices paid by low users of electricity as compared to medium users of electricity across Member States using data collected from Eurostat (Figure 147), and higher prices paid by medium users of electricity as compared to high users of electricity (Figure 148).

Table 59: Average difference between prices per kWh for low, medium and high consumers (2015)

	Low vs. Medium (Positive figure signifies low price > medium price)			Medium vs. High (Positive figure signifies medium price > high price)		
	Total price difference	Fixed element price difference	Variable element price difference	Total price difference	Fixed element price difference	Variable element price difference
	1	2	3	4	5	6
AT	29%	38%	0.3%	12%	19%	-1%
BE	26%	35%	0.04%	9%	15%	-0.2%
BG	-12%	:	-12%	-7%	:	-7%
HR	23%	71%	0%	15%	68%	8%
CY	23%	74%	-7%	11%	74%	-1%
CZ	15%	53%	3%	11%	52%	5%
DK	17%	71%	0%	5%	65%	0%
EE	-6%	:	-6%	-3%	:	-3%
FI	45%	71%	-	22%	65%	-
FR	27%	70%	0.04%	12%	61%	0.1%
DE	16%	68%	2%	5%	65%	0%
EL	11%	71%	0%	-5%	63%	-9%
HU	2%	71%	-1%	1%	65%	0%
IS	40%	71%	-5%	15%	65%	-5%
IE	45%	71%	2%	21%	65%	1%
IT	-20%	70%	-60%[1]	-40%	61%	-49%
LV	-67%	:	-16%[2]	0.4%	8%	-5%
LT	9%	71%	0.2%	3%	65%	0.1%
LU	28%	:	28.4%	10%	:	10.5%
MT	13%	71%	-24%	-13%	65%	-24%
NL	6%	71%	0.1%	9%	65%	-0.03%
NO	-21%	71%	-145%[3]	-42%	65%	-59%
PL	5%	72%	2%	1%	65%	1%
PT	25%	72%	5%	7%	64%	0.003%
RO	5%	71%	0.1%	-10%	60%	-12%
SK	29%	52%	10%	12%	65%	0%
SI	7%	67%	0.3%	2%	65%	0.003%
ES	4%	66%	-17%	9%	66%	4%
SE	48%	71%	1%	24%	65%	0%
UK	26%	71%	0%	10%	65%	0%
EU28	13%	67%	-8%	2%	60%	-6%

Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years. ": " means that there is insufficient data to make the calculation. Low vs. Medium calculated as: (low price – medium price)/low price. Medium vs. High calculated as: (medium price – high price)/ medium price. EU – 28 average is weighted by the population of each EU Member State.

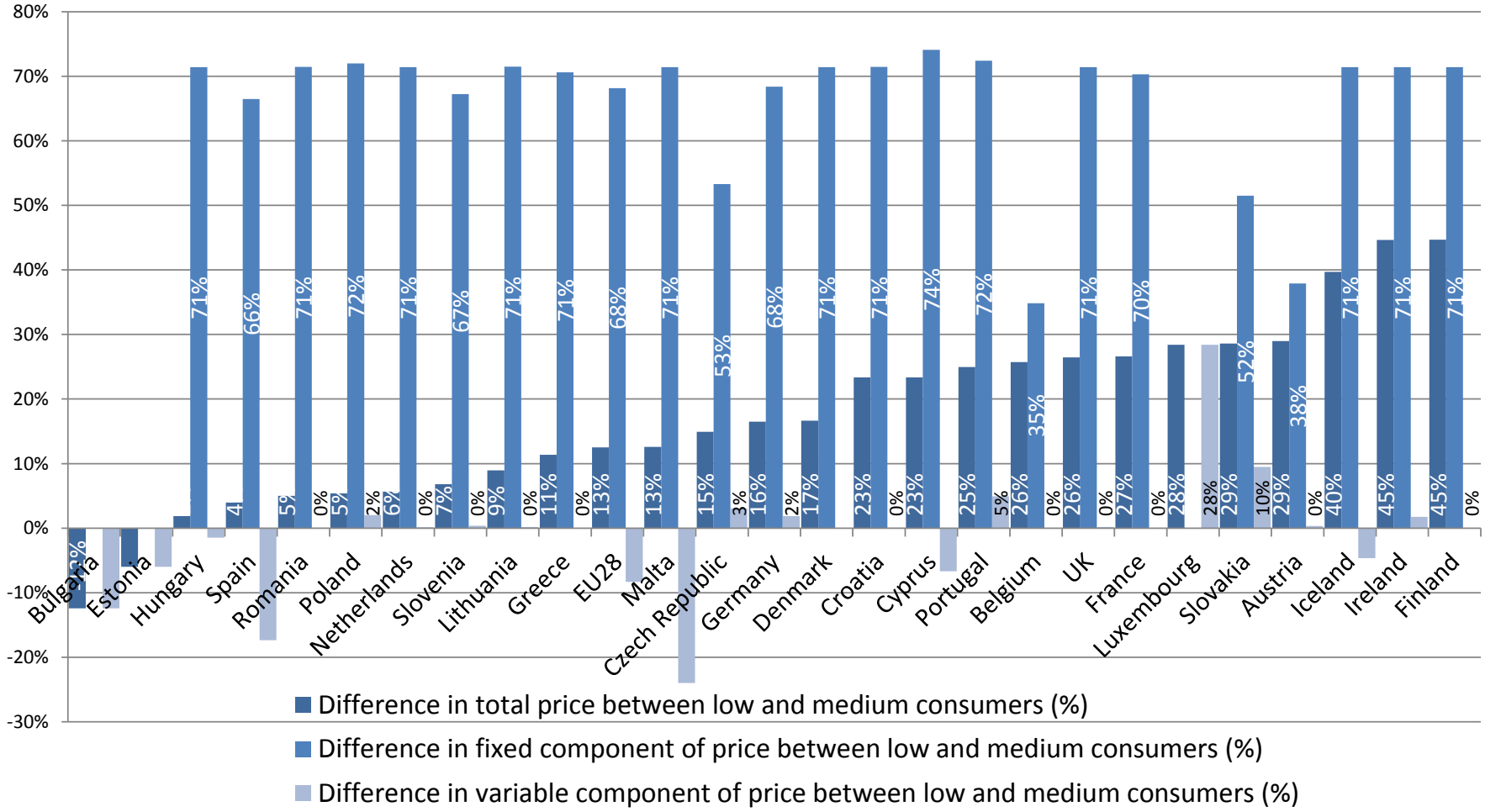
1. The large difference in the variable cost component is largely due to the sharp increase in the per-kWh taxes between consumers at low and medium levels of consumption (this can be an almost two-fold increase, from 0.04186 €/kWh for consumers at low levels of consumption compared to 0.07 €/kWh at medium levels of consumption). The increase in this component of electricity prices from medium to high levels of consumption is smaller: 0.0979€/kWh at high levels of consumption, compared to 0.07€/kWh at medium levels of consumption. This contributes to a large difference in the variable cost component between low and medium levels of consumption, and a somewhat smaller difference in the variable cost component between medium and high levels of consumption.

2. Insufficient data is available to compare the fixed element of low vs medium consumption. In the two cases where tariffs were offered for low and medium consumers, the fixed element of price was 0 for low consumers. Therefore, a proportionate difference cannot be calculated.

3. The per-kWh component of Transmission, distribution and network costs rises very sharply between low and medium levels of consumption, and less sharply between medium and high levels of consumption (0.401€/kWh at low levels of consumption, compared to 1.401 €/kWh at medium levels of consumption and 2.401€/kWh at high levels of consumption). This contributes to a large difference in the variable element of electricity prices between consumers at low versus medium levels of consumption, and a smaller difference in the variable element of electricity prices between consumers at medium versus high levels of consumption.

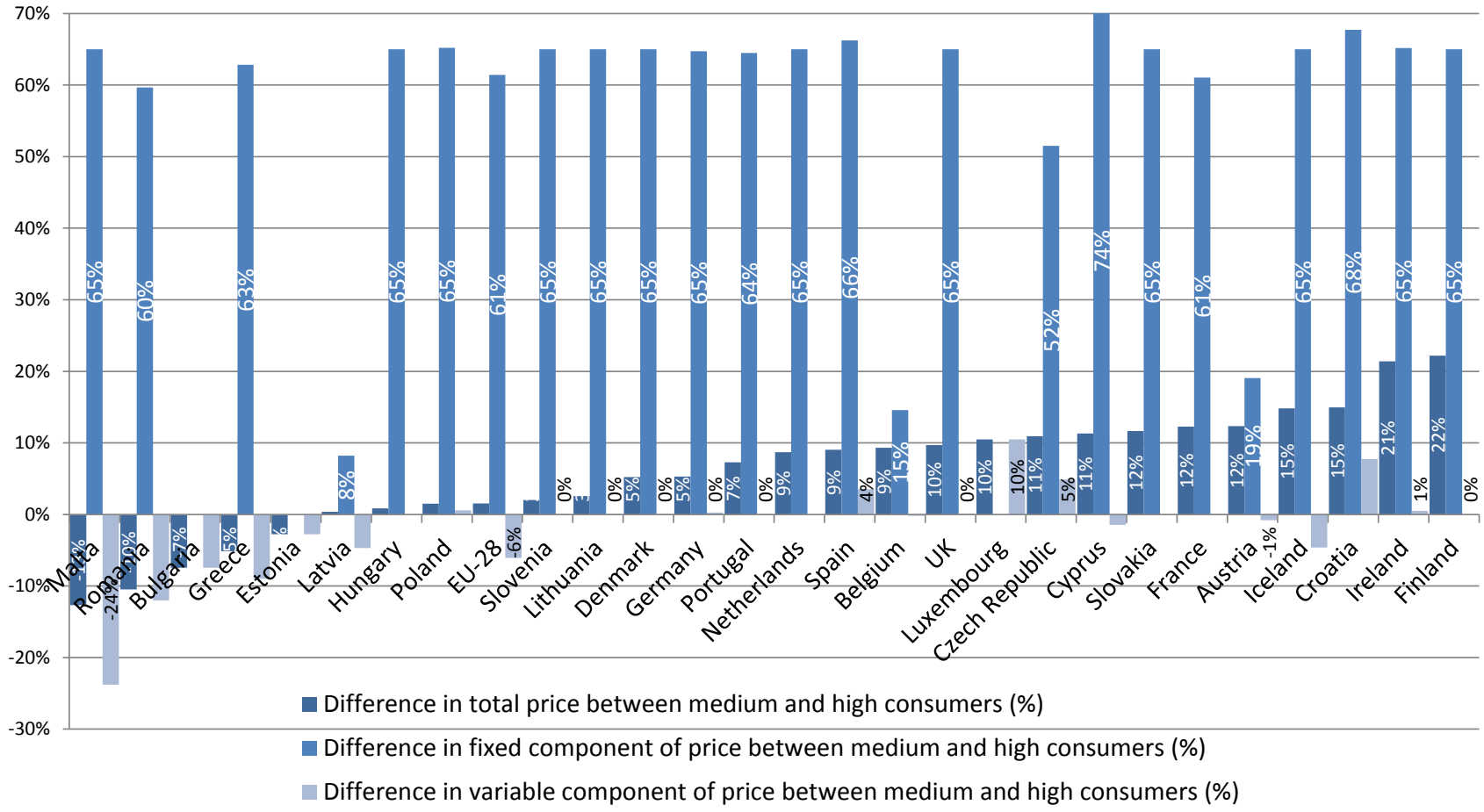
Source: Price collection exercise

Figure 139: Difference between total, fixed component and variable component of prices between low and medium consumers (2015)



Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.
In the case of the Netherlands and Spain, very high fixed charges for peak/off-peak green tariffs for low consumers drive the high differences.
Prices have been converted to euro (Purchasing Power Standard – EU28=1). Conversion rates are taken from Eurostat prc_ppp_ind
Source: Price collection exercise

Figure 140: Difference between total, fixed component and variable component of prices between medium and high consumers (2015)



Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years
In the case of the Netherlands and Spain, very high fixed charges for peak/off-peak green tariffs for low consumers drive the high differences.
Prices have been converted to euro (Purchasing Power Standard – EU28=1). Conversion rates are taken from Eurostat prc_ppp_ind
Source: Price collection exercise

Table 60: Average difference between prices per kWh for low, medium and high consumers (2010)						
	Low vs. Medium (Positive figure signifies low price > medium price)			Medium vs. High (Positive figure signifies medium price > high price)		
	Total price difference	Fixed element price difference	Variable element price difference	Total price difference	Fixed element price difference	Variable element price difference
	1	2	3	4	5	6
AT	25.8%	67.5%	0.3%	9%	54.2%	0.1%
BE	23.1%	71.1%	0.5%	8.1%	67%	-0.4%
BG	0%	:	0%	0%	:	0%
CY	4.3%	50%	-2.3%	1.3%	61.3%	-1.8%
CZ	:	:	:	18.9%	3.2%	22.9%
DK	23.3%	33.4%	0%	8%	13.2%	0%
EE	2.6%	:	8.5%	17%	65%	8.8%
FI	40.2%	71.4%	0.4%	20.1%	65%	1.6%
FR	30.4%	69%	-0.2%	2.4%	19.9%	-1.6%
DE	19.9%	67.8%	1.8%	7.1%	62.8%	0.2%
EL	2.2%	37.6%	-2.5%	-34.3%	-178.6%[1]	-32.1%
HU	-0.8%	20.6%	-0.9%	-0.5%	16.9%	-0.6%
IE	34.1%	71.4%	0%	7.2%	65%	0%
IT	-1.7%	68.4%	-50.7%[2]	-24.6%	62.2%	-59.8%
LV	18.8%	71.4%	0%	7.2%	65%	0%
LT	0%	:	:	0%	:	:
LU	28.5%	67.6%	1.7%	10.6%	59.5%	0.5%
MT	14.5%	70.8%	-4.6%	0.5%	65%	-5%
NL	35.6%	71.4%	0%	14.4%	65%	0%
PL	8.3%	53.5%	0%	4.9%	65%	0%
PT	43.9%	71.4%	0%	20.6%	65%	0%
RO	10.5%	71.4%	0%	3.1%	65%	0%
SK	:	:	:	-30.4%	63.6%	-59.5%
SI	-0.1%	0%	-9.5%	-31.9%	-6.4%	-47.5%
ES	31.3%	71.4%	0%	11.9%	65%	0%
SE	30%	70.3%	0.1%	11.3%	61.5%	0.5%
UK	18%	:	:	6%	:	:
EU27	19%	65%	-7%[3]	2%	52%	-10%

Note: ":" signifies that there are insufficient data to make the calculation. Low vs. Medium calculated as: (low price – medium price)/low price. Medium vs. High calculated as: (medium price – high price)/ medium price. The EU figure is calculated as a weighted average using population as the weighting factor. Excludes social tariffs.

1. This figure is large because for one peak/off-peak tariff from one supplier the fixed component of the peak rate is zero for medium consumption consumers. As a result, the overall fixed component of this tariff is much lower for medium consumption consumers than for high consumption consumers, which pushes up the average difference.

2. For Italy, the average difference in the variable component is influenced by one especially large observation (i.e. for one supplier, the variable component for a certain tariff is much higher for medium consumption consumers than for low consumption consumers). If this observation is omitted then the figure is -30.3%.

3. Italy is an exceptional case (see note 2 above). When Italy is excluded this figure is 0%.

Source: ECME Consortium analysis of data from price collection exercise

7.3.2 Tariff availability and prices by energy used in electricity generation (whether renewable or otherwise)

It is also of interest to examine the availability of "green" tariffs, as well as whether and why consumers may pay a premium for these tariffs. In this study, green tariffs are defined as tariffs for which 100% of electricity comes from renewable sources (e.g. solar, wind, hydro)[105]; the following measures are used:

- The number of "green" tariffs;
- The share of green tariffs compared to "grey" tariffs. Grey tariffs are all tariffs that do not have 100% of electricity generated from renewable sources, and therefore can include a mix of fossil and renewables.
- The average price premium for "like-for-like" tariffs from the same provider. These are tariffs which are comparable along the dimensions of duration, fixed/variable rate, unique versus peak/off-peak etc. This comparison has the advantage of comparing otherwise identical tariffs (as they will be the same along the dimensions of fixed versus variable rate, unique versus peak/off-peak, or duration). However, restricting the comparison group to otherwise identical tariffs has the disadvantage of reducing the number of observations available to make a comparison. This means that there is a greater risk that the average price premium may be influenced by outliers- a small number of observations with very low or very high prices; and
- The average price premium for green tariffs. That is, the average price for green tariffs compared to the average price for "grey" tariffs.

As can be seen in Table 61, the price collection found that 17 out of 30 countries offer tariffs with electricity provided from 100% renewable sources. In some countries, the average price premium for green tariffs was found to be large: on average, green tariffs in Spain were found to be 28% more expensive than grey tariffs. In Portugal, green tariffs were found to charge, on average, 21% more than grey tariffs, and green tariffs were found to cost 25% more than grey tariffs from the same provider.

Some countries, such as Portugal and Romania, were found not to offer tariffs with 100% green electricity, even though a majority of consumers in these countries indicated being environmentally conscious, and that it was important for them to save energy for environmental reasons (for more details, see Section 9.1.1).

The availability of green tariffs was found to be relatively stable in most countries between 2010 and 2015, as can be seen in Table 62. In some countries (including Austria, Denmark, France, Italy, Portugal and Sweden), the share of green tariffs among all available tariffs has reduced, while in other countries, the share of green tariffs among all available tariffs has remained stable or risen (including Belgium, Estonia, Finland, Germany, Ireland, Luxembourg, the Netherlands, Poland, Slovenia and Spain).

Some of the change in the number of green tariffs over time may be due to EU-wide initiatives such as the Renewable Energy Directive requiring the EU to "fulfil at least 20% of its total energy needs from renewables by 2020"[106]. Some of the differences in the number of green tariffs may be due to national initiatives stemming from the Directive[107], investing in green power generation, such as systems to guarantee the

[105] A stricter definition of green tariffs was used in this study compared to the 2010 study. In 2010 the definition was at least 50% of electricity production had to come from green sources.

[106] https://ec.europa.eu/energy/en/topics/renewable-energy/renewable-energy-directive

[107] https://ec.europa.eu/energy/node/71

origin of renewable energy (for example, in Germany[108]), or green energy investment subsidy schemes (for example, in the Netherlands)[109]. Policies such as subsidies may also be linked to the lower prices consumers of green tariffs pay in these countries. For example, if producers receive subsidies for using renewable sources to generate energy, the lower generation costs may translate to lower prices paid by consumers.

The table below indicates the share of green tariffs and average price premium for green tariffs, by country, from the price collection exercise of 2015. For example, if in country A data was collected for 100 tariffs, and for 30 of these tariffs electricity was generated by 100% renewable sources, the share of green tariffs is 30%. Two values for the green price premium are presented:

- A "like-for-like" comparison, where tariffs are included if it is possible to find tariffs from the same provider, of the same duration, and comparable along other dimensions (fixed rate versus variable rate; or unique versus peak/off-peak). The green price premium for each of these comparisons is calculated, and then the average by country presented. For example, consider a fixed rate, unique tariff of unspecified duration in country A. If three providers offer both green and grey tariffs of fixed rate, unique and of unspecified duration, then the procedure is as follows: calculate the green premium for each provider, defined as the (green tariff price- grey tariff price)/grey tariff price. Next, compute the average green premium across the three providers. This average will be the "like-for-like" average green premium for country A.
- Average of green tariffs versus average of grey tariffs: this is computed as follows: calculate the average price of green tariffs in country A, as well as the average price of grey tariffs in country A. The green premium is calculated as (average price of green tariffs – average price of grey tariffs)/average price of grey tariffs.

[108] https://ec.europa.eu/energy/sites/ener/files/documents/dir_2009_0028_action_plan_germany.zip,

[109] https://ec.europa.eu/energy/sites/ener/files/documents/dir_2009_0028_action_plan_netherlands.zip

Table 61: Number of green tariffs and premium for green tariffs (2015)				
	Green tariffs		Average price premium for green tariffs	
	Number	Share (Number of green tariffs as a proportion of all tariffs for which data was collected)	Like-for-like tariffs from the same provider	Average of green tariffs vs. average of grey tariffs
AT	51	65%	3%	3%
BE	53	75%	1%	0.5%
BG	0	-	-	-
HR	0	-	-	-
CY	0	-	-	-
CZ	0	-	-	-
DK	51	27%	3%	2%
EE	12	12%	-3%	-1%
FI	97	56%	7%	-3%
FR	39	37%	1%	1%
DE	143	46%	-9%	-6%
EL	0	-	-	-
HU	0	-	-	-
IS	12	100%	:	:
IE	4	11%	2%	1%
IT	14	15%	5%	19%
LV	0	-	-	-
LT	0	-	-	-
LU	48	100%	:	:
MT	0	-	-	-
NL	75	74%	-1.4%	7%
NO	0[2]	-	-	-
PL	45	25%	-11%	-7%
PT	6	13%	25%	21%
RO	0	-	-	-
SK	0	-	-	-
SI	42	50%	3%	3%
ES	21	37%	-5%	28%
SE	81	44%	-8%	-10%
UK	0	-	-	-

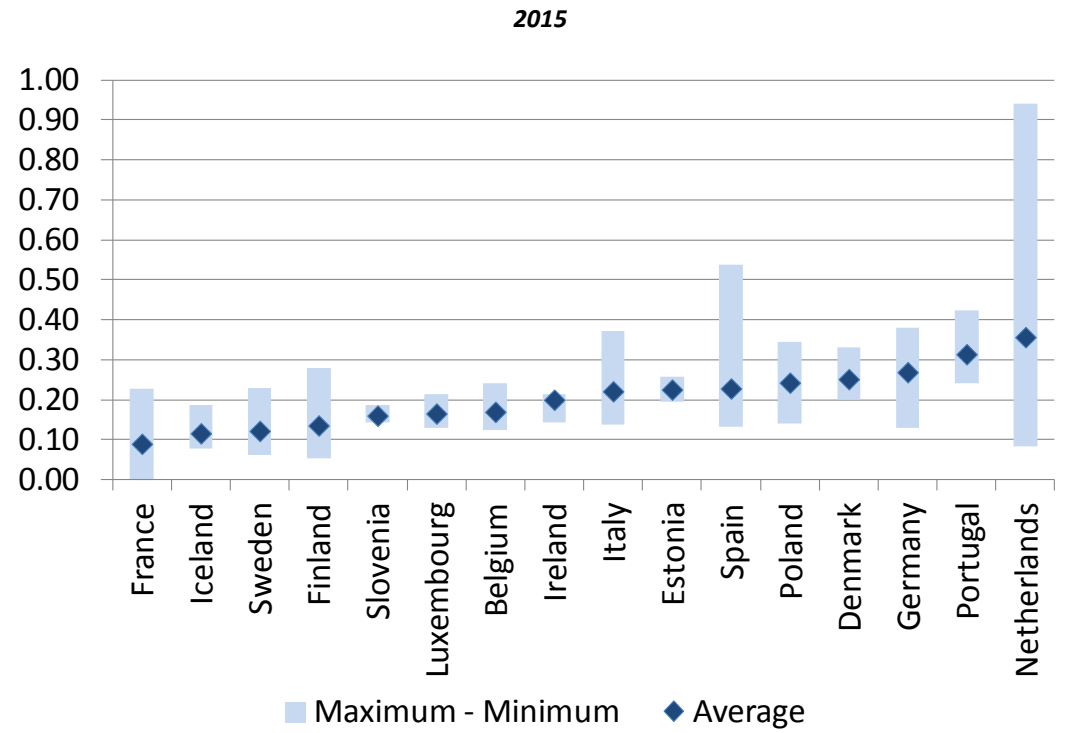
Note: "-" means no data is available because no provider that offers a green tariff also offers a like-for-like grey energy tariff. Like-for-like tariffs are the same in terms of whether they are fixed or variable price, whether or not they are peak/off-peak, and duration.
1. A positive number indicates that, on average, green tariffs are more expensive; the price premium is calculated as (green tariff price-grey tariff price)/grey tariff price).
2. This was clarified with the regulator in NO. The regulator reported that it was not possible to disaggregate green tariffs in their data set.
3. In the UK, the large providers, included in the price collection, do not offer tariffs with electricity from 100% green sources. Price data was obtained from a price comparison tool certified by the regulator.
Source: Price collection exercise (methodology described in Annex 2)

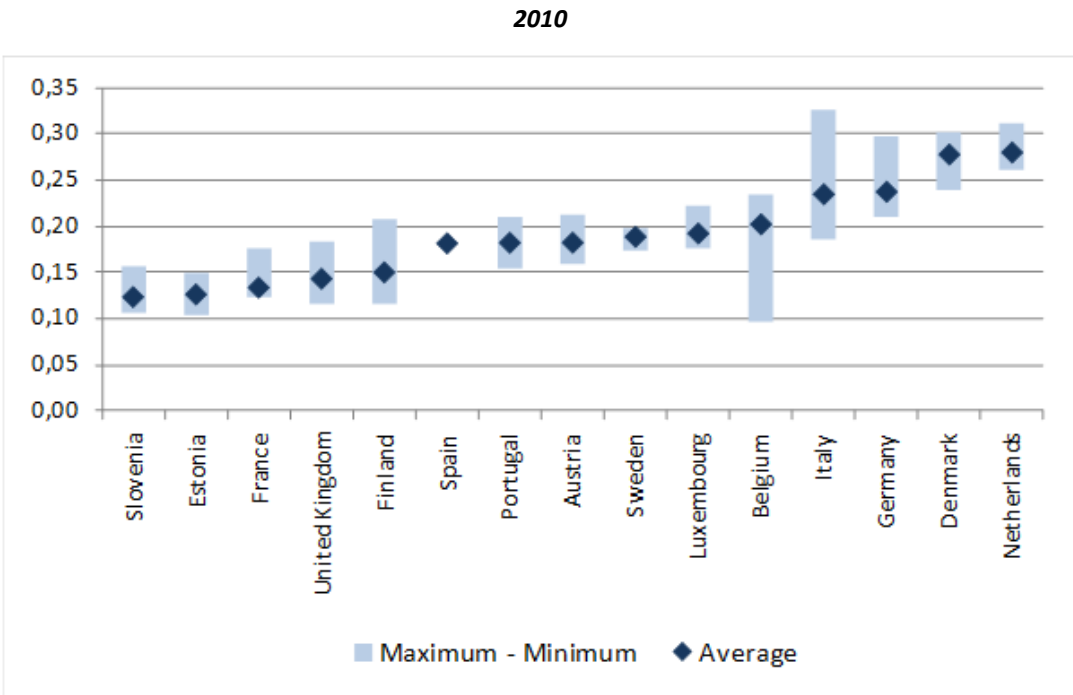
Table 62: Number of green tariffs and premium for green tariffs (2010)				
	Green tariffs		Average price premium for green tariffs	
	Number	Share	Like-for-like tariffs from the same provider	Average of green tariffs vs. average of grey tariffs
AT	57	83%	:	2.3%
BE	204	65%	7.3%	-5%
BG	0	-	-	-
CY	0	-	-	-
CZ	0	-	-	-
DK	56	42%	2.5%	2%
EE	5	7%	11%	17.3%
FI	125	43%	0%	1.1%
FR	57	50%	7.3%	6%
DE	132	44%	4%	4.6%
EL	0	0	-	-
HU	0	-	-	-
IE	0	-	-	-
IT	43	22%	15.6%	9.5%
LV	0	-	-	-
LT	0	-	-	-
LU	60	59%	-1.8%	-4.7%
MT	0	-	-	-
NL	168	57%	0.5%	0%
PL	0	-	-	-
PT	18	33%	:	-1.4%
RO	0	-	-	-
SK	0	-	-	-
SI	22	38%	1.4%	3.1%
ES	3	3%	-3.5%	10%
SE	74	48%	1.2%	0.5%
UK	48	44%	-2.5%	-3%

Note: "-" means no data is available because no provider that offers a green tariff also offers a like-for like grey energy tariff. Like-for-like tariffs are the same in terms of whether they are fixed or variable price, whether or not they are peak/off-peak, and duration.
1. A positive number indicates that, on average, green tariffs are more expensive; the price premium is calculated as (green tariff - grey tariff)/grey tariff.
Source: ECME Consortium analysis of data from price collection exercise

There is substantial variation in prices among green tariffs in some countries. Figure 141 presents the difference between the minimum and maximum price paid for green tariffs for countries where green tariffs are offered. As seen in Figure 141, prices for green tariffs collected can be close to €0.10/kWh in Sweden and France - lower than prices for many grey tariffs. Mean prices for green tariffs collected have remained relatively stable between 2010 and 2015. In both years, average green tariff prices remained between €0.10/kWh and €0.30/kWh in most countries. However, variation is higher in 2015. The lowest average price for green tariffs is a little under €0.1/kWh in France, compared to a little over €0.10/kWh in Slovenia in 2010. The highest average price in 2015 is €0.35/kWh in the Netherlands, compared to a little under €0.25/kWh in 2010, for the same country.

Figure 141: Range of prices for green tariffs (€/kWh)





Note: Prices have been converted to euro (Purchasing Power Standard – EU28=1). Conversion rates are taken from Eurostat "Purchasing power parities (PPPs), price level indices and real expenditures for ESA 2010 aggregates" (prc_ppp_ind)

Source: Price collection exercise

7.3.3 Price dispersion

It is also of interest to examine price dispersion within consumption profiles, in order to test whether respondents may benefit by switching to lower-priced tariffs for their profile. The following tables present measures of price dispersion for low, medium and high consumption profiles. These measures include the mean, maximum and minimum prices for each consumption profile, as well as a measure of dispersion controlling for the variation between tariffs for a consumption profile. This is the coefficient of variation, defined as the standard deviation of prices divided by the mean. This measure identifies whether there is larger-than-average variation between prices for a consumption profile in a country. In countries in which there are a large number of tariffs we would expect the coefficient of variation (in prices) to be larger. Dispersion across countries is substantial:

- For low consumption, variation ranges from a minimum of 0.02 in Luxembourg (in which 16 low consumption tariffs were found) to 0.65 in the Netherlands (in which 42 low consumption tariffs were found);[110]
- For medium consumption, variation ranges from a minimum of 0.02 in Luxembourg (16 tariffs found) to a maximum of 0.46 in Spain (19 tariffs found) and Latvia (9 tariffs found);[111] and
- For high consumption, variation ranges from a minimum of 0.03 in Denmark, Hungary, Luxembourg and Slovakia (64, 8, 16 and 8 tariffs found respectively) to a maximum of 0.38 (34 tariffs found) in Estonia.

It should be noted that some tariffs offered in countries may only be offered at a regional level (for example, in Denmark). Therefore, lower price tariffs may not always be accessible to all consumers in a country.

As seen in Table 63 and Table 64 (as well as Figure 142), dispersion within countries for medium consumers has remained relatively stable between 2010 and 2015 for most countries – between 0 and 0.25. Some exceptions include the Netherlands, going from a coefficient of variation between 0.03 in 2010, to a coefficient of variation of 0.43 (in the case of the Netherlands). Some of this difference may be accounted for by the significant variation in green tariffs – as seen in Figure 141, in the case of countries such as the Netherlands, large fixed charges operate for peak/off-peak green tariffs, introducing a significant difference between the lowest and highest prices. These countries also have a significant share of green tariffs, as seen in Table 61. In the case of Spain (going from a coefficient of variation of 0.08 in 2010 to 0.46 in 2015), some providers have a high variable cost component particularly for medium consumers, leading to a high coefficient of variation particularly for the middle consumption profile.

[110] Excluding countries with fewer than two tariffs

[111] Excluding countries with fewer than two tariffs

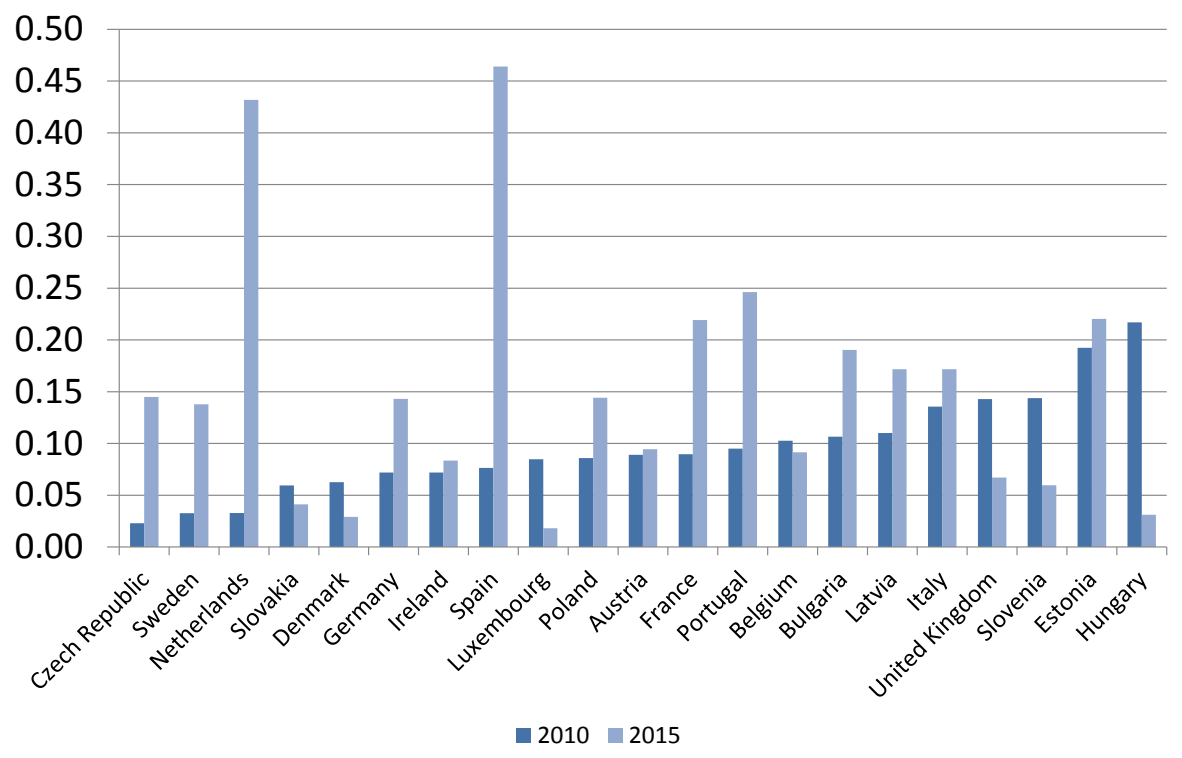
Table 63: Tariff price dispersion within countries by consumption band (2015)															
	Low consumption					Medium consumption					High consumption				
	Count[1]	Average	Coeff. of variation	Maximum	Minimum	Count	Average	Coeff. of variation	Maximum	Minimum	Count	Average	Coeff. of variation	Maximum	Minimum
AT	26	0.25	0.11	0.30	0.17	26	0.18	0.09	0.20	0.14	26	0.15	0.11	0.18	0.12
BE	24	0.21	0.09	0.24	0.18	24	0.16	0.09	0.19	0.14	23	0.14	0.10	0.18	0.12
BG	6	0.19	0.14	0.22	0.16	6	0.21	0.19	0.27	0.16	6	0.23	0.34	0.38	0.16
HR	2	*0.10*	0.13	*0.11*	0.08	2	*0.07*	0.16	*0.09*	0.06	2	*0.06*	0.27	*0.08*	0.05
CY	2	0.69	0.27	0.89	0.53	2	0.55	0.41	0.79	0.35	2	0.49	0.44	0.72	0.30
CZ	31	0.30	0.15	0.40	0.22	31	0.26	0.14	0.32	0.20	31	0.23	0.13	0.30	0.19
DK	64	0.28	0.04	0.33	0.25	64	0.24	0.03	0.26	0.21	64	0.22	0.03	0.24	0.20
EE	34	0.22	0.15	0.26	0.18	34	0.23	0.22	0.40	0.18	34	0.24	**0.38**	0.62	0.18
FI	55	0.24	0.27	0.43	0.09	55	0.13	0.14	0.17	0.06	63	0.10	0.10	0.11	0.05
FR	35	0.19	0.24	0.28	*0.00*	35	0.14	0.22	0.17	*0.00*	35	0.13	0.22	0.15	0.00
DE	**104**	0.33	0.12	0.52	0.20	**105**	0.27	0.14	0.51	0.14	**105**	0.26	0.15	0.51	0.13
EL	2	0.19	0.03	0.20	0.19	2	0.17	0.04	0.18	0.16	2	0.18	0.03	0.18	0.17
HU	8	0.23	*0.02*	0.24	0.22	8	0.23	0.03	0.23	0.21	8	0.22	0.03	0.23	0.21
IS	4	0.17	0.10	0.19	0.14	4	0.10	0.03	0.10	0.10	4	0.08	0.05	0.09	0.08
IE	9	0.35	0.08	0.37	0.28	14	0.20	0.08	0.23	0.17	13	0.15	0.12	0.18	0.13
IT	29	0.17	0.07	0.18	0.14	33	0.20	0.17	0.37	0.17	29	0.28	0.05	0.30	0.25
LV	3	0.24	0.03	0.25	0.23	3	0.33	**0.46**	0.54	0.20	3	0.31	0.35	0.46	0.22
LT	2	0.56	*0.01*	0.56	**0.56**	2	0.51	0.01	0.51	0.51	2	0.50	*0.01*	0.50	0.49
LU	16	0.21	*0.02*	0.21	0.20	16	0.15	*0.02*	0.16	0.15	16	0.14	0.03	0.14	0.13
MT	*1*	0.21	0.00	0.21	0.21	*1*	0.19	0.00	0.19	0.19	*1*	0.21	0.00	0.21	0.21
NL	42	**0.57**	**0.65**	**0.94**	0.08	41	0.37	0.43	0.57	0.16	18	0.32	0.32	0.41	0.19
NO	61	0.18	0.22	0.33	0.14	61	0.22	0.23	0.41	0.19	61	0.31	0.23	0.59	0.28
PL	61	0.27	0.14	0.35	0.16	61	0.25	0.14	0.32	0.14	61	0.25	0.15	0.31	0.14
PT	16	0.33	0.13	0.42	0.26	16	0.25	0.25	0.30	*0.00*	16	0.23	0.25	0.27	*0.00*
RO	16	**0.57**	0.04	0.61	0.54	16	**0.54**	0.04	**0.58**	**0.52**	16	**0.60**	0.14	**0.73**	**0.52**
SK	8	0.32	0.13	0.36	0.27	8	0.22	0.04	0.24	0.21	8	0.20	0.03	0.21	0.19
SI	28	0.17	0.08	0.19	0.14	28	0.15	0.06	0.17	0.13	28	0.15	0.06	0.17	0.13
ES	19	0.24	0.14	0.38	0.18	19	0.23	**0.46**	0.55	0.14	19	0.20	0.27	0.34	0.13
SE	61	0.20	0.13	0.26	0.14	61	0.11	0.14	0.14	0.08	61	0.08	0.18	0.12	0.06
UK	34	0.21	0.10	0.26	0.18	34	0.15	0.07	0.18	0.14	34	0.14	0.09	0.18	0.11

Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.
Averages, maximums and minimums are in Euro/kWh. Coefficient of variation is given by the standard deviation over the mean.
Low consumption is defined as below 1,000kWh/year. Medium consumption is defined as between 1,000kWh/year and 3,500 kWh/year. High consumption is defined as between 3,500kWh/year and 10,000kWh/year. Prices including taxes.
Count refers to the total number of tariffs found on offer to consumers with the relevant consumption profile. This is given by counting separately tariffs from different providers which differ in terms of: fixed or variable prices; 1-year, 2-year or unspecified duration; unique or peak/off-peak prices; and whether the electricity is produced from green or grey sources.
Average is the mean price in Euro/kWh of all tariffs found on offer to consumers with the relevant consumption profile.
Source: Price collection exercise

Table 64: Tariff price dispersion within countries by consumption band (2010)															
	Low consumption					Medium consumption					High consumption				
	Count	Average	Coeff. of variation	Maximum	Minimum	Count	Average	Coeff. of variation	Maximum	Minimum	Count	Average	Coeff. of variation	Maximum	Minimum
AT	23	0.24	0.08	0.30	0.22	23	0.18	0.09	0.21	0.16	23	0.17	0.10	0.20	0.14
BE	**104**	0.27	0.12	0.32	0.16	**104**	0.21	0.10	0.24	0.10	**104**	0.19	0.11	0.22	0.08
BG	6	*0.08*	0.11	*0.09*	0.07	6	0.08	0.11	0.09	0.07	6	0.08	0.11	0.09	0.07
CY	*2*	0.18	0.00	0.18	0.18	*2*	0.17	0.09	0.19	0.16	2	0.17	0.12	0.19	0.16
CZ	3	0.22	0.03	0.22	0.21	3	0.14	0.02	0.15	0.14	3	0.12	0.02	0.12	0.12
DK	45	0.36	0.08	**0.43**	0.29	44	**0.28**	0.06	0.30	0.24	45	0.25	0.06	0.28	0.22
EE	24	0.10	0.07	0.11	0.08	27	0.11	0.19	0.15	0.08	17	0.09	0.11	0.11	0.07
FI	97	0.26	0.31	0.45	0.08	97	0.15	0.17	0.21	0.09	96	0.12	0.12	0.16	0.09
FR	38	0.19	0.09	0.24	0.15	38	0.13	0.09	0.18	0.10	38	0.13	0.09	0.17	0.10
DE	101	0.29	0.10	0.37	0.21	98	0.23	0.07	0.30	0.18	99	0.21	0.08	0.28	0.17
EL	*2*	0.11	0.07	0.11	0.10	*2*	0.10	0.09	0.11	0.10	2	0.14	0.06	0.14	0.13
HU	15	0.13	0.21	0.17	0.10	15	0.13	**0.22**	0.17	0.10	14	0.14	0.22	0.17	0.10
IE	8	0.26	0.03	0.27	0.25	8	0.17	0.07	0.19	0.16	8	0.15	0.11	0.17	0.13
IT	68	0.23	0.31	0.34	0.14	66	0.22	0.14	**0.33**	0.17	65	**0.26**	0.10	**0.41**	0.20
LV	3	*0.08*	**0.35**	0.10	*0.05*	3	*0.06*	0.11	*0.07*	*0.05*	3	*0.05*	*0.02*	*0.06*	*0.05*
LT	4	0.13	0.03	0.13	0.12	4	0.13	0.03	0.13	0.12	4	0.13	0.03	0.13	0.12
LU	34	0.28	0.08	0.32	0.23	34	0.20	0.08	0.24	0.18	34	0.18	0.11	0.24	0.16
MT	*2*	0.25	0.13	0.27	0.23	*2*	0.22	0.12	0.23	0.20	*1*	0.23	-	0.23	**0.23**
NL	98	**0.44**	0.03	0.50	**0.42**	98	**0.28**	0.03	0.31	**0.26**	98	0.24	0.04	0.27	0.21
PL	28	0.14	0.07	0.16	0.12	28	0.13	0.09	0.15	0.11	28	0.12	0.09	0.14	0.10
PT	18	0.33	0.15	0.40	0.26	18	0.18	0.10	0.21	0.15	18	0.15	0.08	0.16	0.13
RO	7	0.11	*0.00*	0.11	0.11	7	0.10	*0.00*	0.10	0.10	14	0.10	0.03	0.10	0.09
SK	3	0.21	0.16	0.25	0.19	3	0.17	0.06	0.18	0.16	3	0.23	**0.43**	0.30	0.12
SL	20	0.12	0.12	0.16	0.10	20	0.12	0.14	0.16	0.10	18	0.16	0.18	0.20	0.11
ES	30	0.24	0.06	0.27	0.22	29	0.16	0.08	0.19	0.15	29	0.14	0.09	0.17	0.13
SE	52	0.27	0.07	0.30	0.18	51	0.19	0.03	0.20	0.17	50	0.17	0.03	0.18	0.16
UK	36	0.18	0.23	0.29	0.12	36	0.14	0.14	0.18	0.12	36	0.14	0.14	0.18	0.11

Note: "-" means that no tariffs in the country are offered for both low and medium consumers, or for medium and high consumers.
Averages, maximums and minimums are in Euro/kWh. Coefficient of variation is given by the standard deviation over the mean.
Low consumption is defined as below 1,000kWh/year. Medium consumption is defined as between 1,000kWh/year and 3,500 kWh/year.
High consumption is defined as between 3,500kWh/year and 10,000kWh/year. . Prices including taxes.
Count refers to the total number of tariffs found on offer to consumers with the relevant consumption profile. This is given by counting separately tariffs from different providers which differ in terms of: fixed or variable prices; 1-year, 2-year or unspecified duration; unique or peak/off-peak prices; and whether the electricity is produced from green or grey sources.
Average is the mean price in Euro/kWh of all tariffs found on offer to consumers with the relevant consumption profile.
Source: Price collection exercise

Figure 142: Coefficient of variation in tariff prices for medium consumers (2015 and 2010)



Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. Therefore, these countries have been removed from the chart.
Source: Price collection exercise

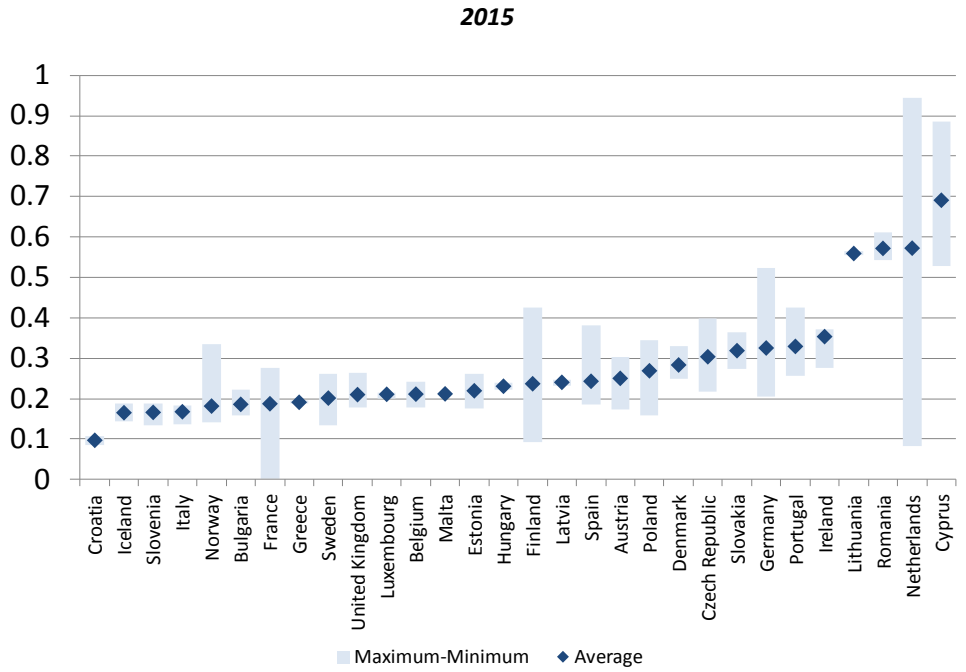
In addition, there is considerable variation between countries within a consumption profile. Figure 143, Figure 144 and Figure 145 present the average price, as well as the difference between the maximum and minimum price, for low, medium and high consumption (respectively).

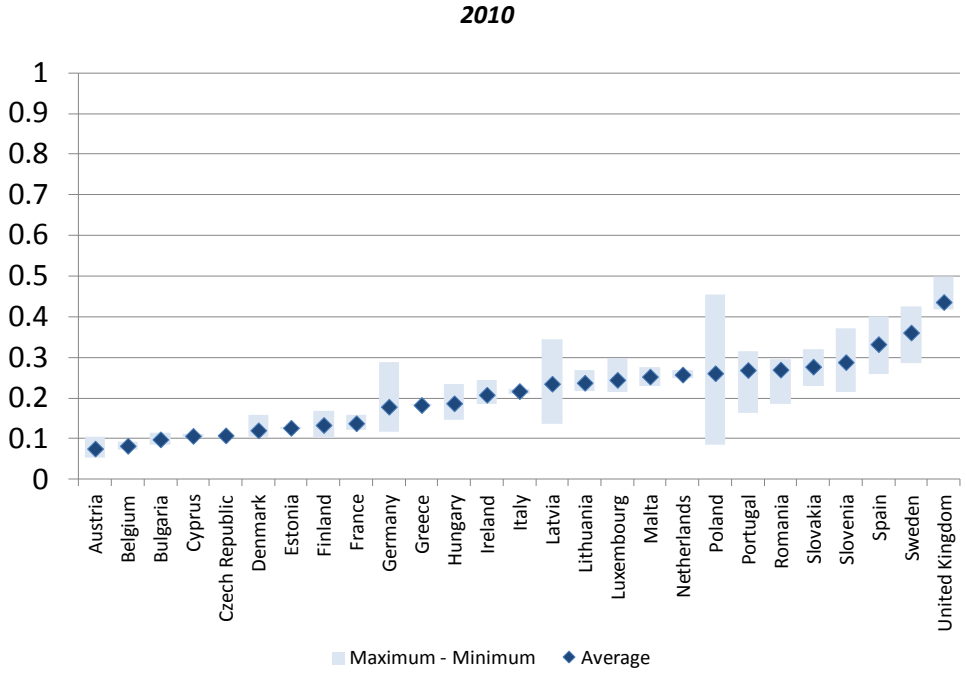
As seen in these figures, there have been changes in the prices of tariffs found at each level of consumption. For example, the UK was found to have among the highest average electricity prices in 2010 at each level of consumption. However, tariffs collected in 2015 found that the UK is among the 10 Member States with the lowest electricity prices at each level of consumption.[112] In some cases, policy may intervene to reduce the variety or complexity of tariffs on offer, which may in turn reduce the price dispersion at each level of consumption. For example, in the UK, the Office of Gas and Electricity Markets (Ofgem) conducted a Retail Market Review starting from 2010. The outcome of this review was that in the UK the number of tariffs choices available was decreased.[113]

[112] As previously mentioned it is important to be aware that the difference in methodology between this study and the 2010 study may be the cause of these observed changes.

[113]https: //www.ofgem.gov.uk/sites/default/files/docs/2013/08/the_retail_market_review_-_implementation_of_simpler_tariff_choices_and_clearer_information_0.pdf

Figure 143: Range of tariffs for low consumption consumers (€/kWh) (PPS) (2015 and 2010)

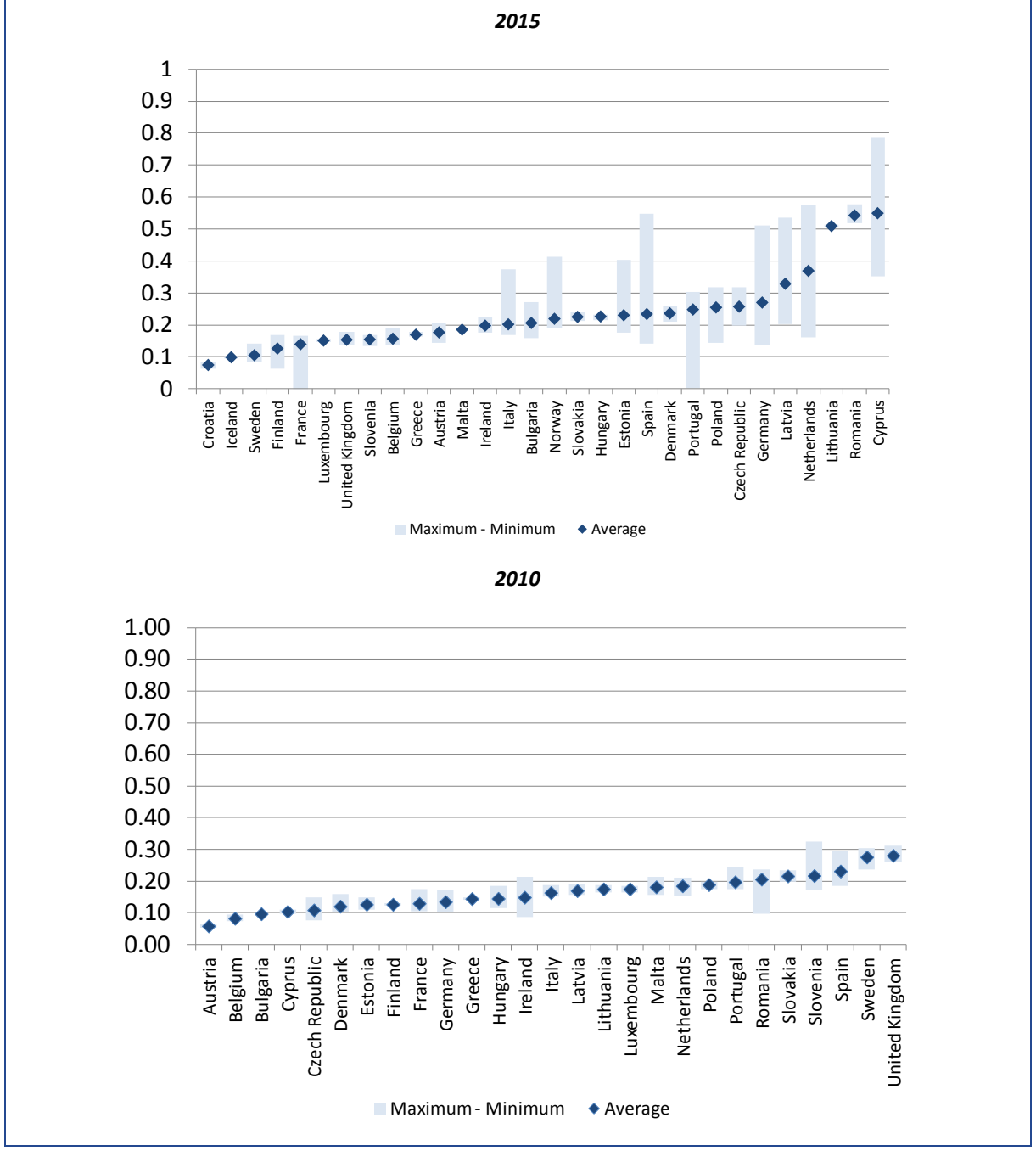




Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.

Source: Price collection exercise

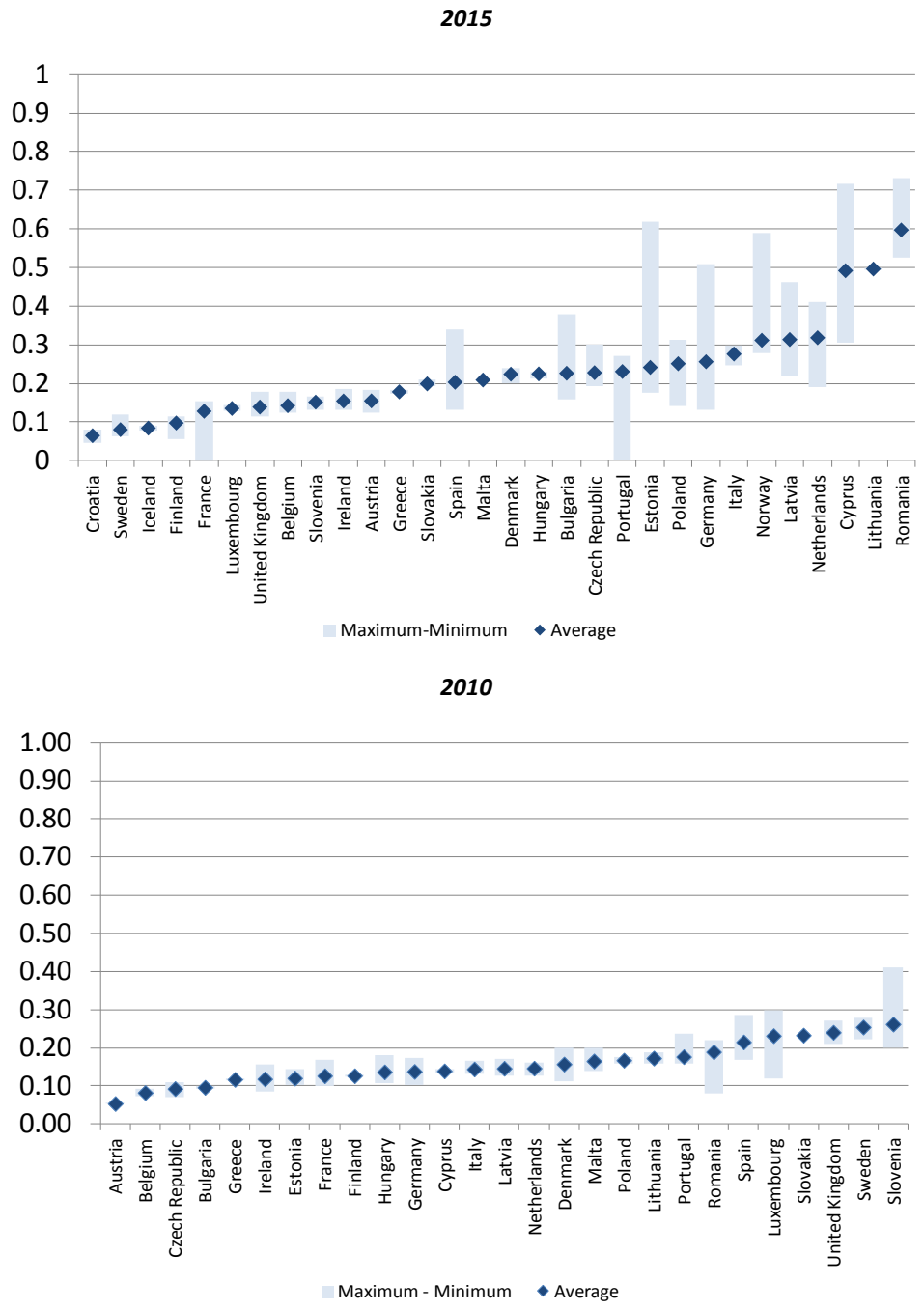
Figure 144: Range of tariffs for medium consumers (€/kWh) (PPS) (2015 and 2010)



Note: HR, CY, EL, LT only have two tariffs in 2015; MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.

Source: Price collection exercise

Figure 145: Range of tariffs for high consumers (€/kWh) (PPS) (2015 and 2010)



Note: HR, CY, EL, LT only have two tariffs in 2015: MT only has one. In 2015, BE, SE, NO and the UK have 3-year contracts; BE has two 5-year contracts and Denmark offers one contract for 6 years.

Source: Price collection exercise

7.4 Cross Member State comparison of price levels

This section presents comparisons of price levels across EU Member States. This is done to explore the functioning of markets in individual Member States compared to the average across all Member States. This section discusses:

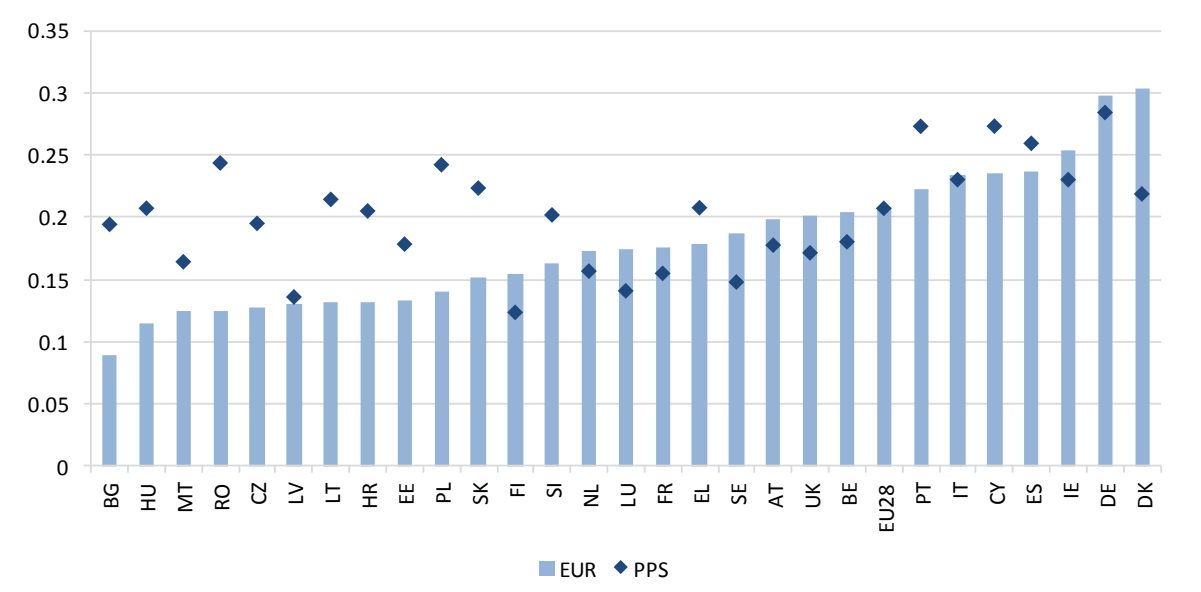
- Differences in average prices for medium consumers across Member States;
- Differences in prices between low consumption households compared to medium consumption households; and
- Differences in prices between medium consumption households compared to high consumption households.

7.4.1 Differences in average prices for medium consumers across Member States

Figure 146 presents electricity prices for medium consumers (defined in Eurostat as between 2,500 kWh per year and 5,000 kWh per year), for the second semester of 2014[114], using two measures: euro and Purchasing Power Standard (PPS). It is valuable to examine both measures, because using PPS in addition to the euro enables us to control for the impact of differences in the cost of living, or general price level, across Member States.

As seen in Figure 146, newer Member States such as Hungary, Slovakia and Poland have among the lowest electricity prices in euro terms, but among the highest prices in PPS terms. Finland has the lowest electricity price in PPS terms, followed by Luxembourg and Sweden. These patterns are consistent with price differences across Member States in 2009.[115]

Figure 146: Household electricity prices including all taxes for 2nd semester 2014 (per kWh)



Note: Prices for households with annual consumption of 2,500 to 5,000 kWh/year
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

[114] The most recent years for which data were available for the present study.

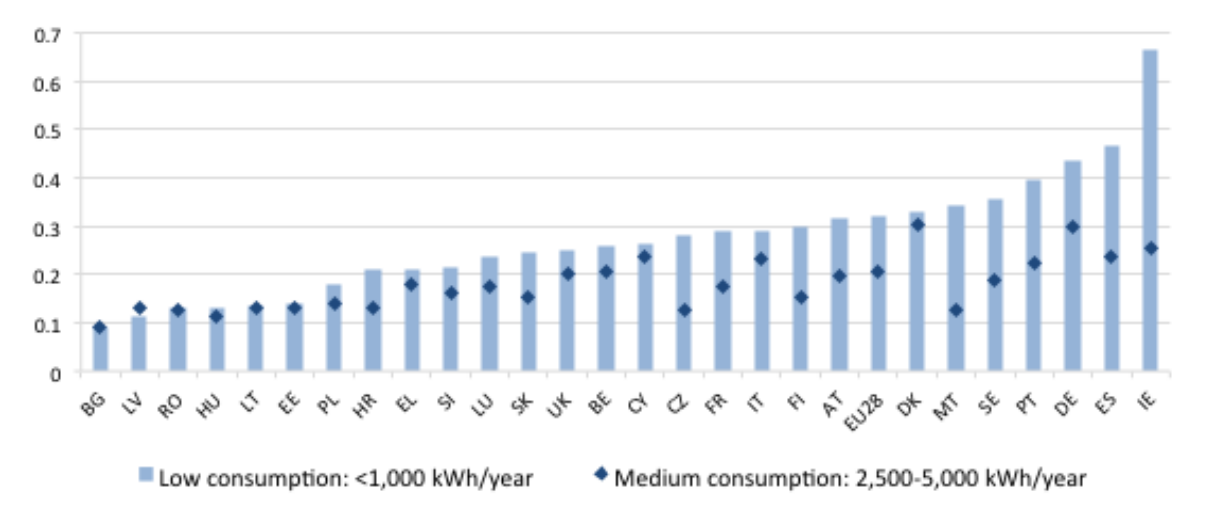
[115] These figures are not reproduced in the interest of economy of space.

7.4.2 Differences in prices between low, medium and high consumption households

It may also be of interest to examine the prices paid by households at different levels of consumption, especially if there is a link between low income households and low use of electricity.[116] If there are significant differences across Member States, between unit prices for electricity between low and medium users of electricity, or between medium and high users of electricity, this may mean that the retail electricity market functions less well for some Member States compared to the EU28 average.

The following figures present the differences in prices between low and medium consumption households. As seen below, low-consumption households almost always pay a higher unit price compared to medium-consumption households, and similarly high-consumption households almost always pay lower prices than medium-consumption households. This may reflect the high proportion of the fixed component in electricity prices (which must be paid irrespective of the amount of electricity consumed). This is consistent with the findings of the price collection exercise (Table 59).

Figure 147: Prices for low-consumption compared to medium-consumption households (€/kWh) (2nd semester 2014)

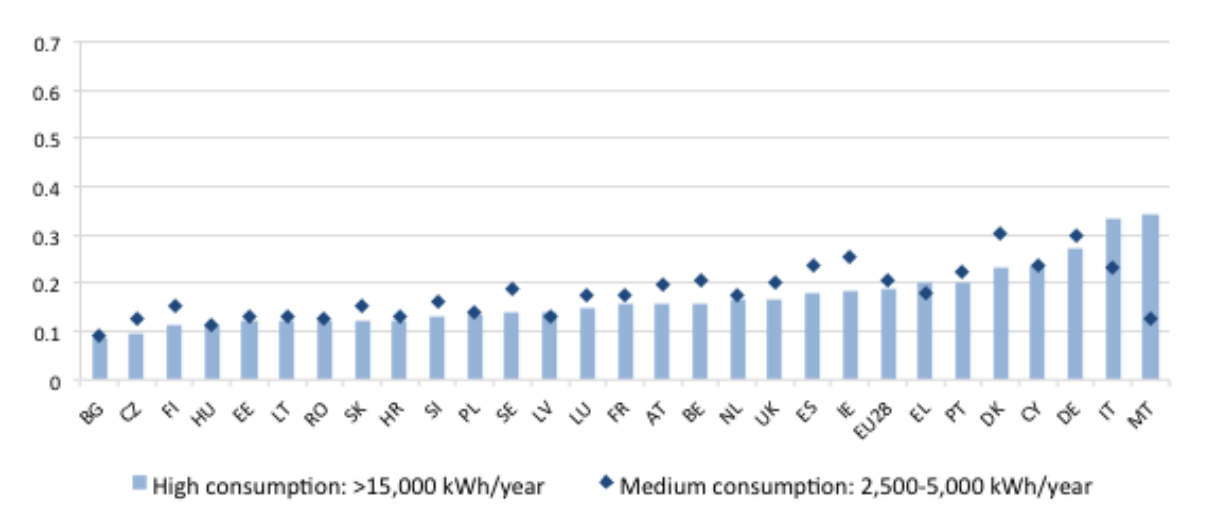


Note: Prices in euros including taxes. Data for 2014, semester 2. No figure is given for the Netherlands for households with consumption less than 1,000kWh.

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

[116] In the behavioural experiment, respondents are allocated to different consumption profiles. Overall, 14% of low consumption respondents were aged 65 years and over, compared to 5% of high consumption respondents and 20% of medium consumption respondents. 32% of low consumption respondents were economically inactive, compared to 45% of medium consumption respondents and 36.5% of high consumption respondents. Low and medium consumption respondents were significantly more likely to be aged 65 years and over, compared to high consumption respondents. However, low consumption respondents were significantly less likely to be economically inactive compared to medium and high consumption respondents. However, there were no significant differences across education levels: Approximately 37% of low and high consumption respondents had high education, compared to 32.5% of medium consumption respondents. Approximately 15% of low and high consumption respondents had low education, compared to 19% of medium consumption respondents.

Figure 148: Prices for high-consumption compared to medium-consumption households (€/kWh) (2nd semester 2014)



Note: Prices in euros including taxes. Data for 2014, semester 2.
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

7.5 Price structure

This section describes differences between components of retail electricity prices across Member States. The retail electricity price paid by consumers includes the following:

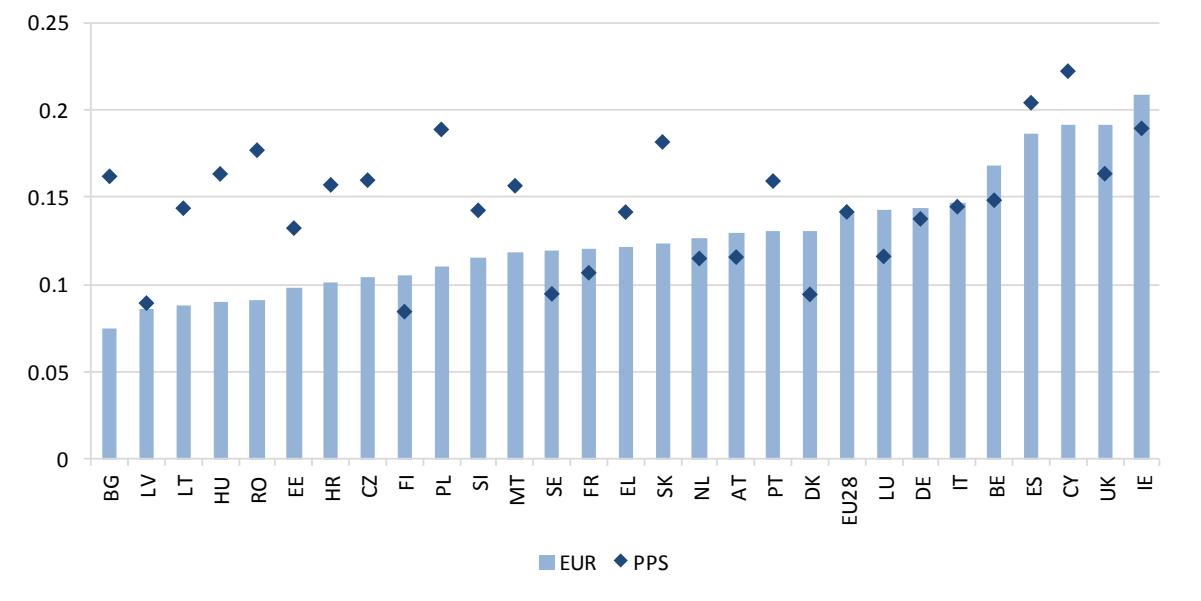
- Commodity price: the cost of generating electricity;
- Transport cost: the cost of transmitting electricity from one geographic area to another (through the high voltage network);
- Distribution cost: the cost of distributing electricity within a geographic area (through the low voltage network);
- Supply cost: the cost of interactions with consumers (billing etc.) and administrative costs, plus provider profits and other costs of running the business; and
- Taxes and levies.

In general, the following components are reported: supply cost (sometimes reported in aggregate with the commodity price); transport and distribution costs (aggregated), and taxes. The prices are presented in both euro and PPS.

Figure 149 examines the impact of excluding taxes from retail electricity prices paid by consumers. When excluding taxes, Denmark and Germany no longer have the highest prices (comparing Figure 146 and Figure 149), with Denmark moving to below the EU28 average. On the other hand, low-tax Member States like the UK and Malta move up the ranks when excluding taxes.[117]

[117] These patterns – and patterns for Figure 150 to Figure 155– are consistent with findings in the 2010 retail electricity study. These 2010 figures are not reproduced in the interest of economy of space.

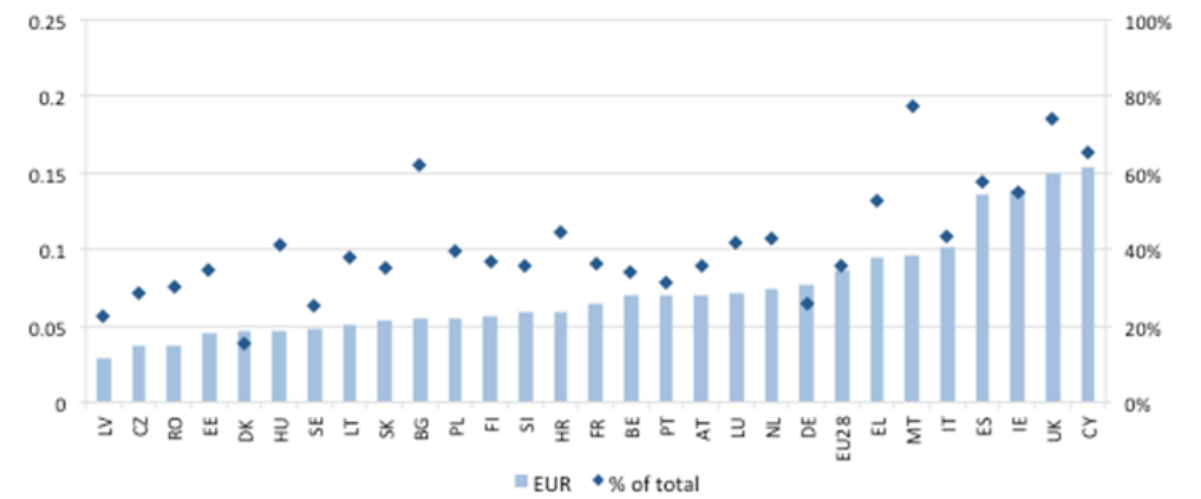
Figure 149: Household electricity prices excluding taxes for 2nd semester 2014 (per kWh) (2nd semester 2014)



Note: Prices for households with annual consumption of 2,500 to 5,000kWh/year.
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

Figure 150 provides a further breakdown of retail electricity prices for each Member State: the part of the price attributable to energy and supply (energy here is the commodity price). For the second half of 2014, the contribution of energy and supply to the total price was highest in the UK, Ireland and Cyprus, and lowest in Latvia, Romania and the Czech Republic.

Figure 150: Energy and supply component of the price for 2nd semester 2014 (€/kWh) (2nd semester 2014)



Note: Data for households with annual consumption between 2,500 and 5,000kWh. EU28 average calculated using population as weighting factors.
Source: Eurostat - Electricity prices components for domestic consumers (nrg_pc_204_c)

The comparison between Figure 149 and Figure 150, and any differences observed, is also driven by transport and distribution costs.

It is also possible to examine the share of the energy and supply components in prices exclusive of taxes. The following figures (Figure 151 and Figure 152) present:

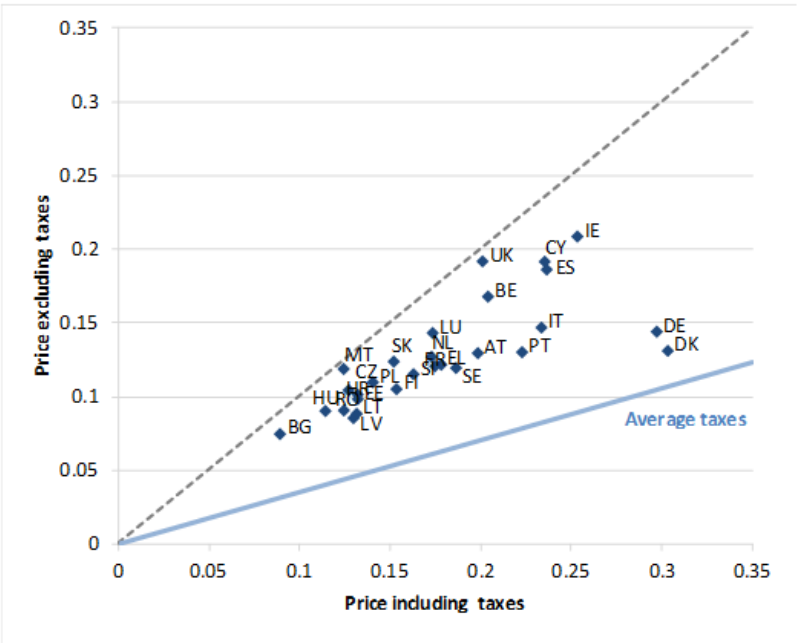
- The share of taxes in retail electricity price (Figure 151); and
- The share of energy and supply component in the price exclusive of taxes (Figure 152).

Both figures contain a 45^0 reference line, which can be used to examine the share of taxes or energy and supply component in tax-exclusive prices, for each of the Member States. If taxation is low in a Member State, its marker will be positioned very close to the 45^0 line. For example, in Figure 151, the markers for Malta and the UK lie very close to the line. If, however, a marker lies far from the 45^0 line, this indicates that taxation is high for the Member State, as with Denmark and Germany.

Similarly, if energy and supply costs make up a high proportion of the without-tax price (because network costs are low), the marker would be positioned close to the 45^0 line (Figure 152). This is the case with, for example, Cyprus, Malta and the UK. If network costs are high, meaning that energy and supply costs make a small proportion of the without-tax price, then the marker lies far from the line. This is the case with Belgium and Latvia.

The figure also includes an average tax line or an average energy and supply line; these averages are weighted by country size.

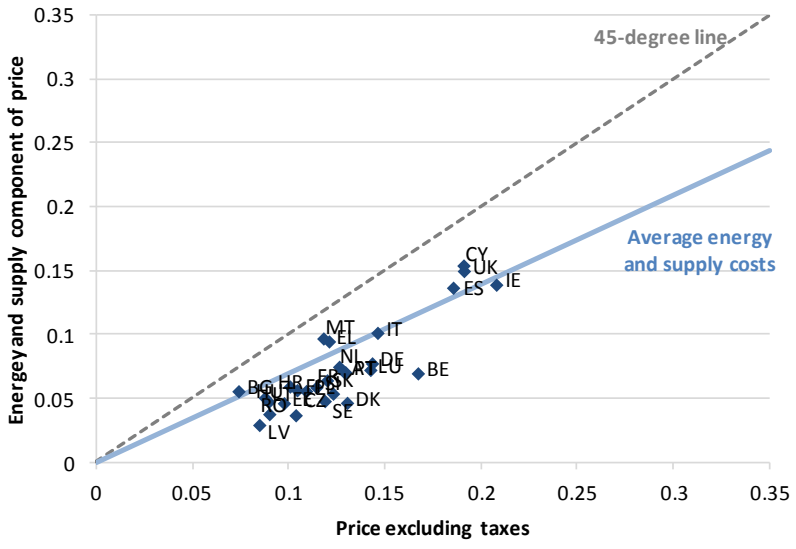
Figure 151: Relationship between price including taxes and price excluding taxes (€/kWh) (2nd semester 2014)



Note: Prices for households with annual consumption between 2,500 and 5,000kWh. Data for 2014, semester 2.

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204) and Electricity prices components for domestic consumers (nrg_pc_204_c)

Figure 152: Relationship between price excluding taxes and the energy and supply component of prices (€/kWh) (2nd semester 2014)

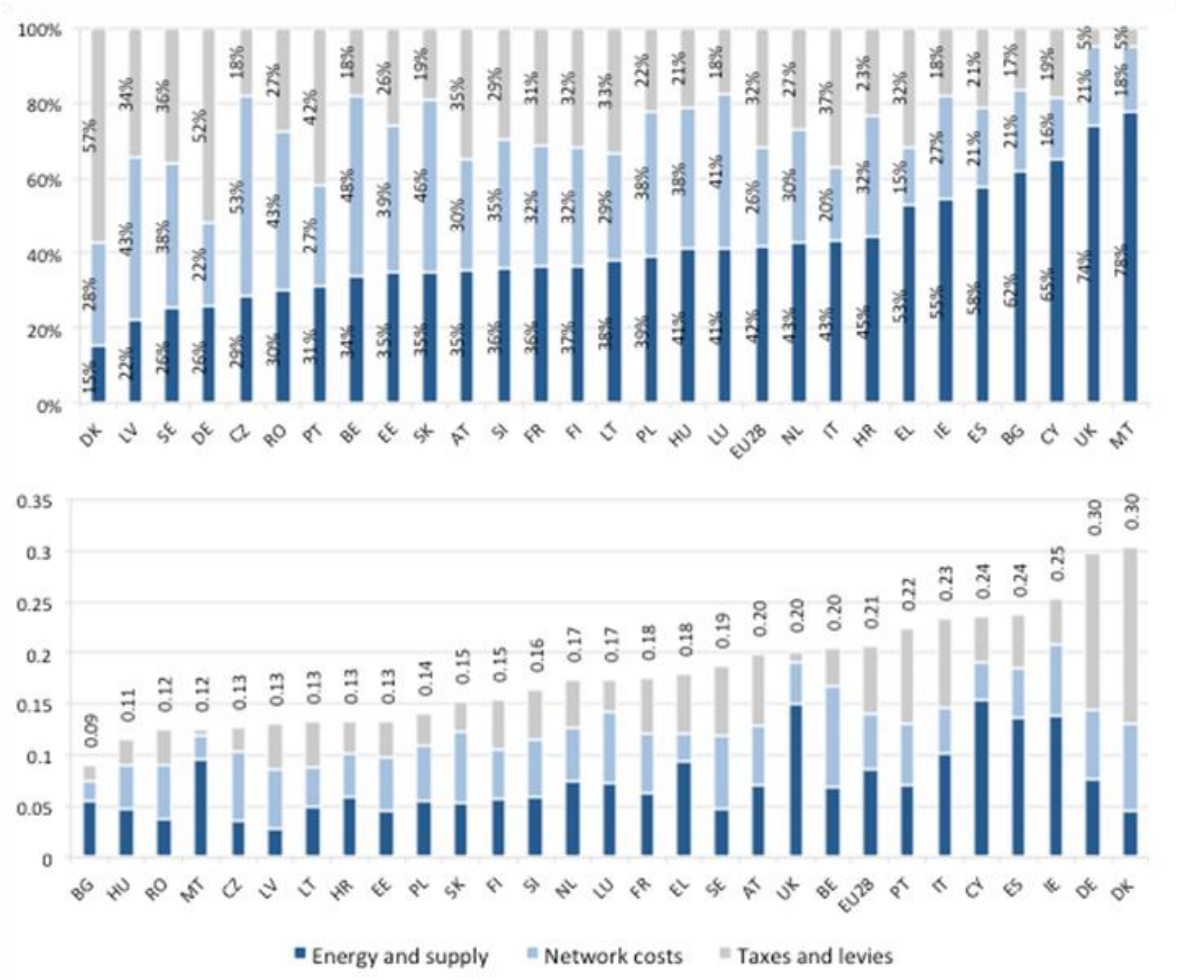


Note: Prices for households with annual consumption between 2,500 and 5,000kWh. Data for 2014, semester 2.

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204) and Electricity prices components for domestic consumers (nrg_pc_204_c)

Figure 153 presents the breakdown of electricity prices for household consumers by energy and supply, network costs and taxes and levies. There is substantial variation between Member States: taxes account for 5% (and energy and supply costs make-up 78%) of the retail electricity price in Malta, compared to 57% in Denmark (where energy and supply costs account for 15% of the retail electricity price).

Figure 153: Breakdown of electricity prices to household consumers (2nd semester 2014)

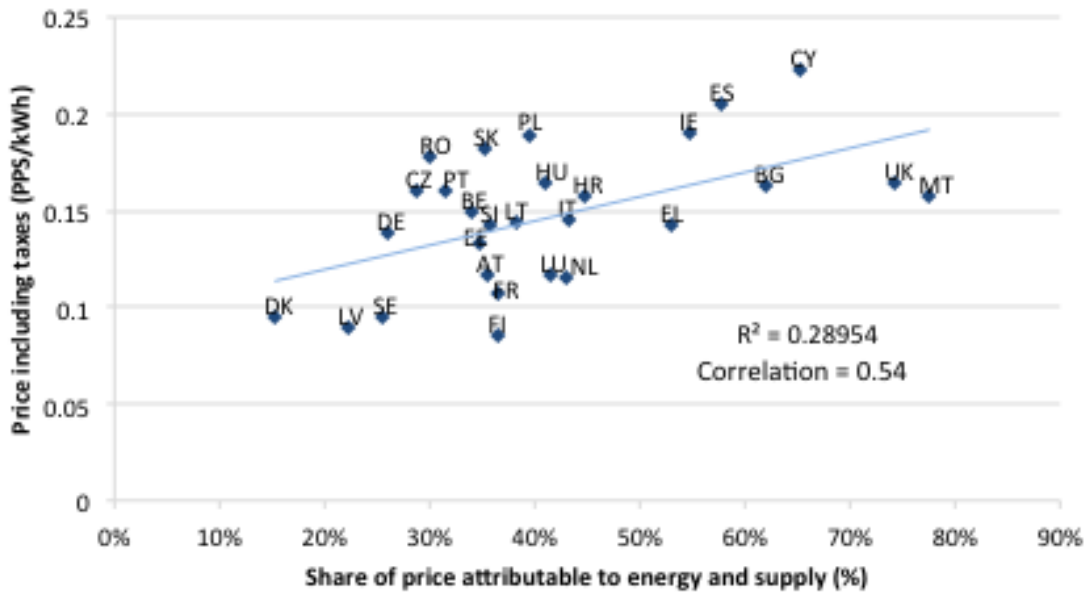


Note: Shares for households with annual consumption between 2,500 and 5,000kWh. Data refers to 2nd semester 2014. EU-28 average calculated using population as weighting factors.

Source: Eurostat - Electricity prices components for domestic consumers (nrg_pc_204_c)

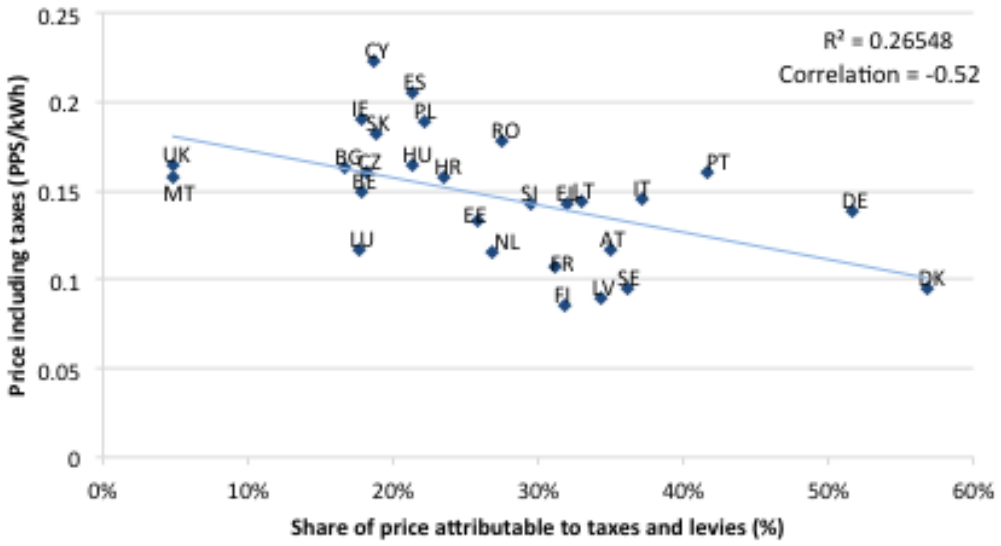
The relationship between energy and supply costs and the retail electricity price paid; and, taxes and levies and retail prices is not strong with a correlation coefficient of 0.54 for the former and -0.52 for the latter.

Figure 154: Price including taxes (PPS/kWh) vs. share of price attributable to energy and supply (2nd semester 2014)



Note: Prices and shares refer to consumers with consumption between 2,500kWh and 5,000kWh per year. Data for 2014, semester 2.
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204) and Electricity prices components for domestic consumers (nrg_pc_204_c)

Figure 155: Price including taxes (PPS/kWh) vs. share of price attributable to taxes and levies (2nd semester 2014)



Note: Prices and shares refer to consumers with consumption between 2,500kWh and 5,000kWh per year. Data for 2014, semester 2.
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204) and Electricity prices components for domestic consumers (nrg_pc_204_c)

7.6 Determinants of prices

This section contains an empirical analysis of the determinants of prices. It examines whether household electricity prices can be explained by key drivers such as the mix of electricity generation, market structure and price regulation. This sub-section largely replicates the analysis conducted in the 2010 market study. The first sub-section outlines the approach to the empirical analysis; followed by a discussion of the selection of explanatory variables and a discussion of methodological notes and concerns- specifically, identification of causal impacts of price determinants. Next, regressions are presented, examining the impact of price determinants on prices for a given period of time (cross-section regressions) followed by an analysis of price determinants across countries and over a period of time (panel regressions). Section 7.6.1 concludes with a discussion of the results.

7.6.1 Empirical analysis of the determinants of prices

This section provides an analysis of how electricity prices are linked to a number of factors, including the fuel mix of electricity generation, market structure and competition, and institutional factors, such as regulation of electricity prices. This is done by examining the correlation between these variables and retail electricity prices.

With few exceptions, the empirical approach closely follows the 2010 market study[118]. First, the approach taken to the empirical analysis is explained including the variables used and the modelling procedure. Second, the regression analysis is presented. The last part discusses the results.

Approach to the empirical analysis

In order to conduct this analysis, cross-sectional regressions are run assessing the impact of a combination of explanatory variables on retail electricity prices excluding taxes and network costs, for 2014. These regressions examine how differences in prices across Member States can be explained by differences in the fuel mix of electricity generation, price regulation, liberalisation and measures of competition. Then, a panel regression is run to examine how differences within a Member State can be explained by differences in these explanatory variables over time.

Dependent variables

Household electricity price data from Eurostat are used as the dependent variables. These are average household electricity prices in PPS, excluding taxes and network costs, for the second semester of 2014, for households in five different consumption bands: less than 1,000kWh/year; 1,000 to 2,500kWh/year; 2,500 to 5,000kWh/year; 5,000 to 15,000kWh/year; and, exceeding 15,000kWh/year.

The dependent variable chosen is prices excluding taxes and network costs, as these reflect market conditions without the confounding factors of policy conditions. Since taxes and network costs vary considerably across Member States, variables relating to the fuel mix of electricity generation or market structure may not adequately explain them. Even panel regressions allowing for time-invariant country fixed effects may not

[118] Some of the variables used in the earlier study are no longer available on Eurostat. In such instances, the closest available variable available was used instead. For instance, share of net electricity generation by main input now groups all combustibles together (i.e. oil, coal, natural gases, lignite, etc.), since Eurostat no longer provides figures for the different types of combustibles. Because Eurostat provides new sources of net electricity generation (i.e. solar, geothermal, pumped hydro power), we include them in the analysis. Average market share of main generators is no longer available, so we use market share of the greatest generator instead. There is no close substitute for average market share of main suppliers, so it is dropped.

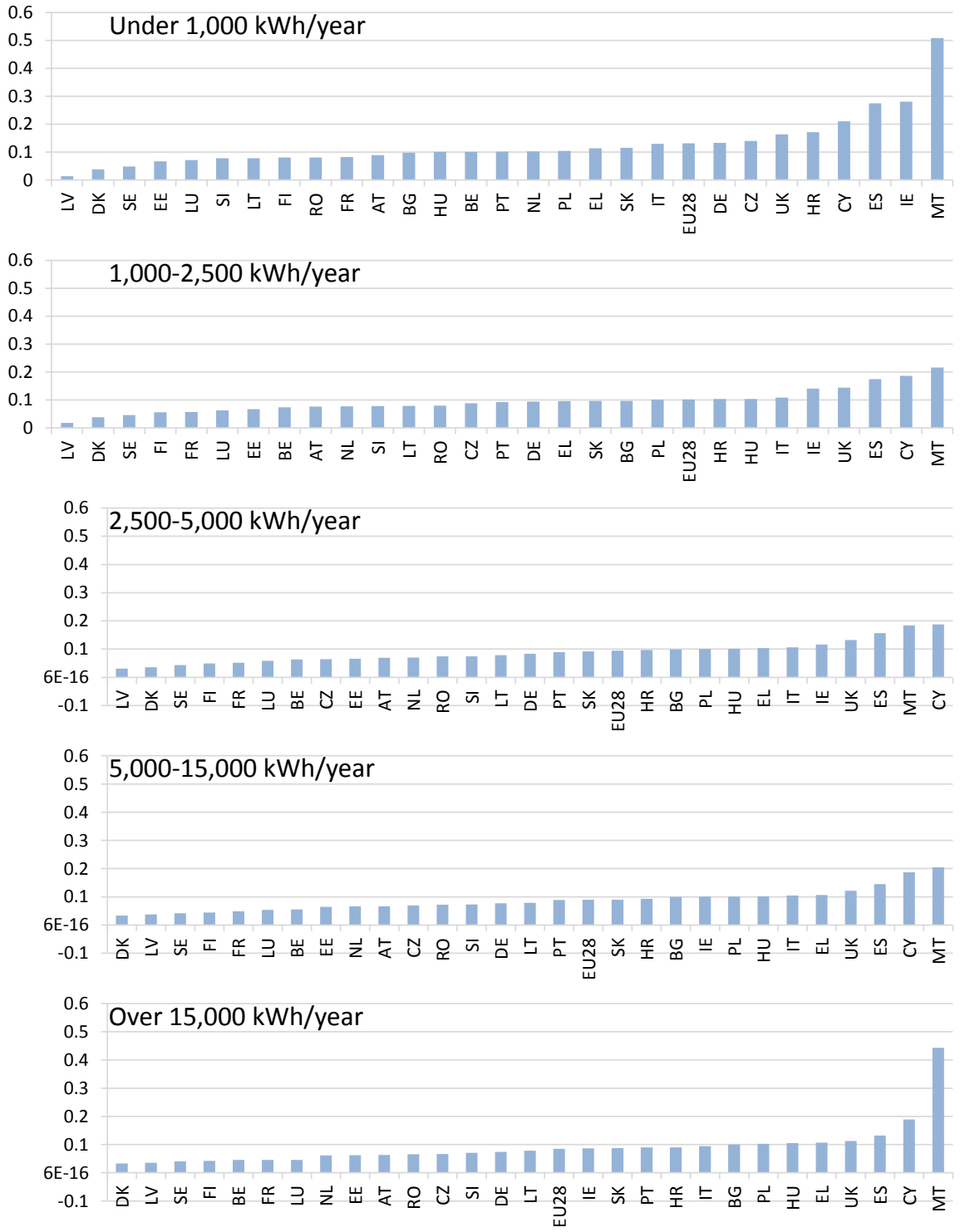
explain variation in prices inclusive of taxes and network costs, if these policy measures vary within a Member State over time. Therefore, the dependent variable selected is the one which can be plausibly explained by generation costs or market conditions- that is, the supply and commodity component of retail electricity prices.

The data from Eurostat are average prices representative for the whole country, using the market shares of providers as weighting factors. Prices are analysed in PPS, since this accounts for cross-Member State differences in general price levels.

It is interesting to examine whether the factors that influence prices are the same across all household consumption levels.[119] Hence, the analysis covers all five consumption bands for which data are available from Eurostat. The cross-Member State variation in prices excluding taxes and network costs for each consumption band is presented in Figure 156.

[119] Elsewhere, in the price collection analysis, price differences across consumption bands are studied in order to assess the relative shares of the fixed versus the variable part of retail electricity prices at low, medium and high consumption bands.

Figure 156: Prices excluding taxes and network costs by consumption band (PPS/kWh) (2nd semester 2013)



Note: Data for 2013, semester 2. EU-28 average calculated using population as weighting factors.

Source: Eurostat - Electricity prices components for domestic consumers (nrg_pc_204_c)

Explanatory variables

As in the 2010 market study, evidence from the literature is the basis for the selection of explanatory variables in the empirical analysis of the determinants of household electricity prices. The potential explanatory variables investigated in the empirical analysis are presented in Table 65.[120]

The literature suggests that the shares of different inputs of production in total electricity generation (variables 1-9) influence household electricity prices. These may proxy for differences between Member States in terms of variable costs of generation, by accounting for the variable costs associated with different input factors. Although the actual prices of inputs of production were also identified as relevant by the literature review, these are not included in the analysis directly, since data are not available for every Member State.

According to the literature, total and per capita generation and consumption (variables 10-13) may also be relevant for household electricity prices. Some papers (e.g. Florio 2003) find an inverse relationship between household prices and consumption per capita, which is attributed to economies of scale.

The literature also suggests that the degree of market concentration of generators and providers have an effect on household electricity prices (variables 15-19). Higher prices may be observed in highly concentrated markets as companies may exploit market power. However, in many Member States where there are only a few large providers the prices of these companies are regulated, so this must also be accounted for in the model (variable 14).

The literature further indicates that regulations aimed at reducing switching costs, ensuring fair contractual terms and providing consumer information also influence household prices. Good regulation in this area may be expected to lead lower prices since it may allow consumers to search for the best offers more effectively and so encourage providers to compete by lowering prices. In order to proxy for the quality of such regulations, the switching rate is used from the consumer survey (variable 20). A high switching rate can be expected to be linked to lower prices if it indicates that consumers are actively searching for the best deals, thereby putting downward pressure on prices. However, causality may run in the opposite direction if consumers become discontented with high prices and therefore try to switch provider.

Finally, the literature supports the notion that the length of the period over which the retail market has been liberalised[121] (variable 21) may have an effect on household electricity prices. One study by Bellantuono (2007) finds that household prices are lower in Member States where the retail market has been liberalised.

All the variables, including dependent and explanatory variables, are presented along with their respective sources in Annex 3. This section also presents the correlations between each variable and summary statistics of each variable (mean, standard deviation, maximum and minimum).

[120] A similar table including the dependent and explanatory variables and the source for each variable is presented in Annex 3.

[121] A market is defined as liberalised if 50% or more of consumers can choose their supplier.

Table 65: Potential explanatory variables		
Variable	**Description**	**Coverage**
Variables related to the fuel mix of electricity generation		
1	Share of total net electricity generation using combustible fuels as main input factor	2007-2013
2	Share of total net electricity generation using nuclear power as main input factor	2007-2013
3	Share of total net electricity generation using hydro power as main input factor	2007-2013
4	Share of total net electricity generation using wind power as main input factor	
5	Share of total net electricity generation using solar power as main input factor	2007-2013
6	Share of total net electricity generation using pumped hydro power as main input factor	2007-2013
7	Share of total net electricity generation using geothermal power as main input factor	2007-2013
8	Share of total net electricity generation using tides/waves/ocean as main input factor	2007-2013
9	Share of total net electricity generation using renewable energy as main input factor	2007-2013
Variables related to quantity of electricity supplied/demanded		
10	Total net electricity generation	2007-2013
11	Total net electricity generation per capita	2007-2013
12	Final energy consumption of households	2007-2013
13	Final energy consumption of households per capita	2007-2013
Variables related to price regulation		
14	Dummy variable for whether retail electricity prices are regulated or not	2010, 2015
Variables related to competition (market concentration or consumer information)		
15	Number of main generators (with share >5%)	2007-2013
16	Average market share of main generators (with share >5%)	2013
17	Cumulative market share of main providers to households (with share >5%)	2013
18	Average market share of main providers to industry and households (with share >5%)	2013
19	Herfindahl-Hirschman index of providers to households	2015
20	Switching rate for the three years to 2015 (% of consumers who switched)	2015
Variables related to liberalisation of retail electricity markets		
21	Years since liberalisation	2007-2014

Selection of explanatory variables

A large number of explanatory variables have been identified in the literature review. It is problematic to use all of these variables in the same multivariate regression. One reason is multicollinearity: many explanatory variables may be highly correlated with each other (for example, total net electricity generation and total net electricity generation per capita). In this case, it is difficult to assess which explanatory variable has greater explanatory power for the dependent variable. Another reason is that, with limited data (a maximum of 28 data points in the cross-sectional regressions) and a large number of explanatory variables (21 in Table 65), there may not be sufficient power to detect statistically significant relationships between explanatory variables and dependent variables.

Therefore, the following procedure is used: first, explanatory variables are classified into the following categories: variables related to the fuel mix of electricity generation; variables related to the quantity of electricity supplied or demanded; variables related to price regulation of electricity markets; variables related to competition (market structure or consumer information); and variables related to liberalisation of electricity markets. Next, correlations are run between the variables in Table 65 and electricity prices excluding taxes and network costs. Thirdly, variables with the highest correlation coefficients in their respective categories are selected, and the rest discarded.[122] Fourthly, it is determined whether any of the selected variables are, by definition, highly correlated with each other: for example, the share of net electricity generation from combustible fuels is, by variable construction, highly correlated with total net electricity generation. Where explanatory variables are highly correlated, alternative multivariate specifications are conducted (for example, see Models 1 and 2 below).

Reference period

While for many of the explanatory variables Eurostat provides a full time series covering seven years 2007-2013 (across most if not all Member States), only static/individual year measures are available for consumer switching behaviour, information availability and market concentration. Moreover, for certain Member States, there are significant gaps in the coverage of the price data[123]. For this reason, the primary focus of this empirical analysis is a cross-sectional estimation. This approach has a number of limitations, chiefly that the power of estimations is low with 27 observations and 6 explanatory variables. However, the data that does lend itself to panel estimation, is used as further robustness check.

In the cross-sectional model, the price data refer to the second semester of 2014 (the latest available data from Eurostat). For the explanatory variables, the data refer to the closest available period to the reference period for the price data.

Regression analysis

In order to identify variables that have a statistically significant relationship with electricity prices excluding taxes and network costs (in PPS), first the results for a number of regressions each including a single explanatory variable (and a constant) are presented in Annex 3. Following this, variables that are identified as having a statistically significant effect on prices are combined in price models.

Correlations and concerns with identification of causal impacts

It should be noted that these regressions measure conditional correlations between retail electricity prices and variables of interest, rather than causal relationships. This is because in several cases it is difficult to determine the direction of causality (or "**reverse causality**"): for example, countries with a high incidence of switching of providers may also have higher electricity prices. This is because high prices may prompt consumers to switch providers more often. A related issue is that of **endogeneity**: as the supply of electricity rises, retail electricity prices may be expected to fall. However, the supply of electricity to the retail market would adjust depending on retail electricity prices, or providers' expectation of retail electricity prices. Similarly, the consumption of electricity may adjust according to prices (or how consumers expect prices to move).

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[122] A Principal Factor Analysis was also conducted. This approach yielded the same broad groupings of variables. The Principal Factor Analysis is presented in Annex 3.

[123] Most notably, France and Ireland (for which there are only 3 data points) but also Cyprus, Netherlands and UK.

In addition, there is a concern of **omitted variable bias**: that is, that there may be impacts incorrectly attributed to a certain explanatory variable because a correlated variable is not included in the regression specification. This may be because a correlated explanatory variable has not been identified in the list above, or because the selection of variables described above is designed so as to choose the variables in each category that are most highly-correlated with the dependent variable. This is done so as to conserve the estimation power: in the static cross-section regressions, there are 27 observations, so including a large number of regressors reduces the power of estimations. One way of identifying the issue is to run regressions with alternative specifications (as done in Model 1 and 2 below), so as to help to ensure that explanatory variables that are highly correlated with the dependent variable are accounted for.

It is possible to address some of these concerns by presenting regressions with lagged explanatory variables (that is, explanatory variables for the period before the dependent variable). However, it should be noted that the results presented should be interpreted with caution, particularly regarding the direction of causality (as described above).

Regressions including multiple explanatory variables

Variables found to be highly correlated with electricity prices (in PPS excluding taxes and network costs) in more than one consumption band in the previous analysis (see Annex 3 for details) are entered together as explanatory variables in price regressions in order to examine whether they remain statistically significant and to what extent they collectively explain the observed variation in prices. These variables are listed below:

- Variables relating to the fuel mix of electricity generation:
  - share of total net electricity generation using combustible fuels as the main input factor ;
  - share of total net electricity generation using nuclear energy as the main input factor;
  - share of total net electricity generation using renewable energy as the main input factor;
- Variables relating to the quantity of electricity supplied:
  - per capita total net electricity generation in GWh;
- Variables relating to price regulation:
  - dummy variable for countries in which electricity prices are regulated ;
- Variables relating to competition
  - average market share of main generators in a Member State; and
- Variables relating to liberalisation of retail electricity markets:
  - number of years since liberalisation.

Two models are estimated: one that includes a specification with the share of net electricity generation of combustible fuels, nuclear energy and renewable energy, and uses the price regulation dummy, number of main generators and years since liberalisation (Model 1); and one with per capita net electricity generation in place of variables measuring the fuel mix of electricity generation (Model 2). This is done because, while both the fuel mix of net electricity generation, and per capita net electricity generation, have explanatory power for retail electricity prices, there are concerns of multicollinearity in a regression that includes both variables. This is because the share of any energy source in net electricity generation is expressed as (*net electricity generation from [energy type] as a main source/total net electricity generation*), with total net electricity generation in the denominator. Per capita total net electricity generation is expressed as (*Total net electricity generation/Total population*), with total net electricity generation in the denominator. This indicates that these two

variables are highly correlated, which reduces the ability to determine which of these individual variables has greater explanatory power over retail electricity prices.

Model 1: $price_{i,j} = c_j + \beta_{i,1}(generation\ combustible)_j + \beta_{i,2}(generation\ nuclear)_j + \beta_{i,3}(generation\ renewables)_j + \beta_{i,4}(regulation\ dummy)_j + \beta_{i,5}(average\ market\ share\ of\ main\ generators)_j + \beta_{i,6}(years\ since\ liberalisation)_j + \varepsilon_{i,j}$

Model 2: $price_{i,j} = c_j + \beta_{i,1}(generation\ per\ capita)_j + \beta_{i,2}(regulation\ dummy)_j + \beta_{i,3}(average\ market\ share\ of\ main\ generators)_j + \beta_{i,4}(years\ since\ liberalisation)_j + \varepsilon_{i,j}$

where $price_{i,j}$ is the average household electricity price excluding taxes and network costs in PPS/kWh for households in consumption band (i) in Member State (j), and the explanatory variables are:

- share of total net electricity generation using combustible fuels as the main input factor (generation combustibles);
- share of total net electricity generation using nuclear energy as the main input factor (generation nuclear);
- share of total net electricity generation using renewable energy as the main input factor (generation renewables);
- per capita total net electricity generation in GWh (generation per capita);
- dummy variable for countries in which electricity prices are regulated (regulation dummy);
- average market share of main generators in a Member State (average market share of main generators); and
- number of years since liberalisation (years since liberalisation).

The results show that when these explanatory variables are included together (Model 1), the share of combustible fuels in net electricity generation is significant at all consumption bands, and the price regulation dummy is significant but only at the two highest consumption bands - when the share of combustible fuels in electricity generation is higher, prices (net of taxes and network component) are also higher. The share of nuclear fuels and renewable energy in electricity prices excluding taxes and network costs are both insignificant. In addition, the average market share of main generators is not statistically significantly correlated with prices excluding taxes and network costs.

In contrast, when using per capita total net electricity generation as the explanatory variable in Model 2, all impacts (including the price regulation dummy) become insignificant.

Model 1 explains more of the cross-Member State variation in prices (Table 66), and is used in the panel regressions of Table 68.

These regressions are also robust to dropping Malta; including Malta may be a concern since Malta is an outlier regarding electricity prices excluding taxes and network costs.[124]

[124] The regression results are not presented here to avoid duplication of text. However the magnitude, the sign and statistical significance of results without Malta are similar for both models: for example, in Model 1 the coefficient on the share of combustible fuels in net electricity generation (consumption band 1000-2500kWh/year) is 0.096 without Malta compared to 0.095 with Malta. In Model 2 the coefficient on the number of years since liberalisation is -0.0032 without Malta compared to -0.0037 with Malta.

Table 66: Model 1 – Multivariate cross-sectional regression (fuel mix of net electricity generation)					
	(1) Under 1,000 kWh/year	(2) 1,000-2,500 kWh/year	(3) 2,500-5,000 kWh/year	(4) 5,000-15,000 kWh/year	(5) Over 15,000 kWh/year
Net electricity generation – Combustible fuels (%)	0.208** (0.0578)	0.0961*** (0.0239)	0.0752** (0.0216)	0.0789*** (0.0198)	0.166** (0.0456)
Net electricity generation – Nuclear energy (%)	0.0318 (0.0712)	0.00262 (0.0294)	-0.0117 (0.0267)	-0.0224 (0.0244)	-0.0409 (0.0562)
Net electricity generation – Renewable energy (%)	0.139 (0.275)	0.0607 (0.114)	0.0652 (0.103)	0.0202 (0.0943)	-0.239 (0.217)
Price regulation dummy	0.0629 (0.0360)	0.0310 (0.0149)	0.0274 (0.0135)	0.0318* (0.0123)	0.0681* (0.0284)
Average market share of Main Generators (%)	-0.0222 (0.0732)	-0.0446 (0.0302)	-0.0320 (0.0274)	-0.0241 (0.0251)	-0.0172 (0.0577)
Years since Liberalisation	0.00138 (0.00390)	-0.000741 (0.00161)	-0.00110 (0.00146)	-0.000989 (0.00134)	0.0000679 (0.00308)
Constant	0.0167 (0.0691)	0.0672* (0.0286)	0.0692* (0.0259)	0.0653* (0.0237)	0.0388 (0.0545)
Observations	25	25	25	25	25
R^2	0.5574	0.6522	0.6440	0.7072	0.6261
Adjusted R^2	0.4099	0.5362	0.5253	0.6096	0.5014
F (p-value)	3.78 (0.0130)	5.62 (0.0019)	5.43 (0.0023)	7.25 (0.0005)	5.02 (0.0035)

Note: Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Authors analysis

Table 67: Model 2 – Multivariate cross-sectional regression (per capita total net electricity generation)					
	(1) Under 1,000 kWh/year	(2) 1,000-2,500 kWh/year	(3) 2,500-5,000 kWh/year	(4) 5,000-15,000 kWh/year	(5) Over 15,000 kWh/year
Per capita net electricity generation (GWh)	0.0513 (7.492)	-1.588 (3.280)	-2.176 (2.826)	-2.264 (2.742)	-0.956 (5.638)
Price regulation dummy	0.00509 (0.0428)	0.00114 (0.0188)	0.00226 (0.0162)	0.00407 (0.0157)	0.0117 (0.0322)
Average market share of Main Generators (%)	-0.0137 (0.0726)	-0.0367 (0.0318)	-0.0264 (0.0274)	-0.00994 (0.0266)	0.0508 (0.0546)
Years since Liberalisation	-0.00553 (0.00486)	-0.00368 (0.00213)	-0.00335 (0.00183)	-0.00329 (0.00178)	-0.00472 (0.00365)
Constant	0.179* (0.0772)	0.148*** (0.0338)	0.138*** (0.0291)	0.129*** (0.0282)	0.114 (0.0581)
Observations	26	26	26	26	26
R^2	0.1011	0.1998	0.2587	0.3140	0.3008
Adjusted R^2	-0.0701	0.0474	0.1175	0.1833	0.1677
F (p-value)	0.59 (0.6731)	1.31 (0.2982)	1.83 (0.1603)	2.40 (0.0822)	2.26 (0.0971)

Note: Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Authors analysis

Panel regression

In addition to the static models presented above, Model 1 is adapted to two panel specifications – a fixed effects model (Model 3) and a random effects model (Model 4). The average share of main electricity generators data is not available over time, so is dropped from both specifications. Time-invariant explanatory factors (i.e. the price regulation dummy and the number of years since liberalisation when controlling for time trends) are by construction undefined in fixed effects models, and are so dropped from this specification. They are however, retained in the random effects model. The specifications are as follows:

Model 3: $price_{i,j,t} = c_j + T_i + \beta_{i,1}(generation\ combustible)_j + \beta_{i,2}(generation\ nuclear)_j + \beta_{i,3}(generation\ renewables)_j + \ + \ \varepsilon_{i,j,t}$

Model 4: $price_{i,j,t} = c_j + T_i + \beta_{i,1}(generation\ combustible)_j + \beta_{i,2}(generation\ nuclear)_j + \beta_{i,3}(generation\ renewables)_j + \beta_{i,4}(regulation\ dummy)_j + + \beta_{i,5}(years\ since\ liberalisation)_j + v_{i,j} + \varepsilon_{i,j,t}$

where $price_{i,j}$ is the average household electricity price excluding taxes and network costs in PPS/kWh for households in consumption band (i) in Member State (j) at time (t), deflated by the Harmonised Index of Consumer Prices for electricity, and the explanatory variables are as before. Electricity prices are deflated so as to allow comparison of prices for the same Member State at different periods of time. Here c_j captures the country fixed effect, while $v_{i,j}$ is the country-specific error component of the random effects model. A time trend is included to account for any time-varying macroeconomic factors that may drive prices. For comparability with the static model, and to insure that there is no simultaneity, the explanatory variables are lagged[125].

As shown below, the panel models produce results of similar direction to the cross-sectional models in Table 66, although the magnitude of impacts is smaller, and the correlation of the share of combustible fuels with net electricity generation is no longer statistically significant. It should also be noted that the fixed effects model uses within-country fixed effects. If there is little change in the fuel mix of electricity generation within a country, the coefficient for the share of renewable energy in net electricity generation may be expected to be smaller in the FE model than in the cross-sectional model, as well as in the random effects model.

The fixed effects and random effects models produce similar results, suggesting that the country-specific effects in the specifications are random and are not correlated to other unobservable determinants of price, and that the RE model is thereby unbiased.

However, it should be cautioned that while the panel estimation approach allows for more observations (which increases the power of estimation), including fixed effects also increases the number of regressors (which reduces the power of estimation). Therefore, the panel estimation approach may also share the same concern of low power with the static cross-sectional approach.

[125] In fact, in the static models prices were measured in 2014 while all other variables were measured in 2013.

Table 68: Model 3 – Panel regression, Fixed Effects					
	(1) Under 1,000 kWh/year	(2) 1,000-2,500 kWh/year	(3) 2,500-5,000 kWh/year	(4) 5,000-15,000 kWh/year	(5) Over 15,000 kWh/year
Year	0.000527 (0.000994)	-0.00176*** (0.000412)	-0.00216*** (0.000358)	-0.00210*** (0.000348)	-0.000210 (0.000639)
Net electricity generation – Combustible fuels (%)	0.0302 (0.0211)	-0.000551 (0.00875)	-0.00642 (0.00762)	-0.00674 (0.00740)	0.000391 (0.0132)
Net electricity generation – Nuclear energy (%)	0.0779 (0.0934)	0.0334 (0.0387)	0.0193 (0.0337)	0.0169 (0.0327)	-0.000510 (0.0578)
Net electricity generation – Renewable energy (%)	-0.100 (0.0668)	0.0138 (0.0277)	0.0213 (0.0241)	0.0168 (0.0234)	-0.0846* (0.0419)
Constant	-0.993 (1.999)	3.604*** (0.828)	4.400*** (0.721)	4.284*** (0.700)	0.487 (1.285)
Observations	183	183	183	183	180
Within R^2	0.0442	0.187	0.284	0.291	0.0671
Between R^2	0.0188	0.0807	0.282	0.341	0.0268
p-value	0.0149	1.02e-20	2.94e-32	5.00e-33	0.0000461

Note: Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001
Source: Authors analysis

Table 69: Model 4 – Panel regression, Random Effects					
	(1) Under 1,000 kWh/year	(2) 1,000-2,500 kWh/year	(3) 2,500-5,000 kWh/year	(4) 5,000-15,000 kWh/year	(5) Over 15,000 kWh/year
Year	0.000920 (0.00185)	-0.000366 (0.000907)	-0.000431 (0.000817)	-0.0000421 (0.000793)	0.00231 (0.00124)
Net electricity generation – Combustible fuels (%)	0.0558** (0.0177)	0.0111 (0.00776)	0.00396 (0.00684)	0.00348 (0.00666)	0.0196 (0.0114)
Net electricity generation – Nuclear energy (%)	0.00864 (0.0355)	-0.00319 (0.0173)	-0.0120 (0.0155)	-0.0158 (0.0151)	-0.0260 (0.0237)
Net electricity generation – Renewable energy (%)	-0.0575 (0.0594)	0.0154 (0.0257)	0.0189 (0.0226)	0.0118 (0.0220)	-0.0844* (0.0380)
Price regulation dummy	0.0145 (0.0173)	0.00302 (0.00861)	0.00259 (0.00777)	0.00267 (0.00755)	0.0146 (0.0117)
Years since Liberalisation	-0.000362 (0.00180)	-0.00121 (0.000893)	-0.00152 (0.000805)	-0.00183* (0.000782)	-0.00218 (0.00121)
Constant	-1.790 (3.704)	0.801 (1.817)	0.933 (1.637)	0.151 (1.590)	-4.572 (2.487)
Observations	183	183	183	183	180
Within R^2	0.0324	0.171	0.270	0.276	0.0546
Between R^2	0.356	0.276	0.273	0.344	0.470
p-value	0.0130	0.000000423	4.23e-12	2.75e-13	0.0000245

Note: Standard errors in parentheses. * p < 0.05, ** p < 0.01, *** p < 0.001
Source: Authors analysis

Discussion of results

The cross-country analysis (in the static cross-sectional analysis in Model 1) has found that the cross Member State variation in household electricity prices (excluding taxes and network costs) is driven by the share of combustible fuels in net electricity generation.

In particular, the regressions show that an increase in the share of electricity generated from combustible fuels is correlated with an increase in the average price excluding taxes and network costs. This suggests that differences between the variable costs associated with these input factors compared with variable costs associated with alternative energy sources account for part of the observed cross-Member State price variation.

Price regulation has a positive though small association with prices at the two top consumption bands in Model 1, although this finding was not robust to alternative specifications (becoming statistically insignificant in the cross-sectional analysis in Model 2, dropping the fuel mix of electricity generation and replacing it with the per capita net generation of electricity).

7.6.2 Impact of transposition of Third Energy Package into national legislation

This section explores whether transposition of the Third Energy Package (TEP) into national legislation is linked with a difference in electricity price components. The TEP was put into place to resolve structural problems in the internal energy market and to improve its functioning.

This sub-section examines the impact of the transposition of the TEP on the supply component of the retail electricity price. This component is chosen because the TEP covers the unbundling of energy providers from network operators. Therefore, one possible channel through which the TEP may affect the prices paid by consumers is the supply component of electricity prices.

Another alternative is to examine the impact of transposition of the TEP on the total retail electricity price. However, it should be cautioned that it is difficult to quantify the impact of the TEP on the price paid by consumers. This is because the final price paid by consumers is inclusive of taxes, which vary considerably across Member States. This variation adds to the measurement error of regressions, and makes it difficult to isolate the impact of transposition of the TEP. Therefore, as stated previously the supply component is used.

To present the results, the following procedure is adopted. First, the method and main specification is discussed. Next, a description of the transposition of the TEP is provided. Third, regression results are presented for all EU Member States. Fourth, a discussion is presented, of factors that may make it difficult to identify the impact of the TEP on electricity price components.

Method and main specification

The approach followed is Difference-in-Differences regressions of the correlation between the supply components of retail electricity prices (PPS) and transposition of the TEP into national legislation.

The Difference-in-Differences approach is a frequently-used technique in the micro-econometrics literature to explore the impacts of policies on outcomes. It estimates:

- Whether groups applying the policy (the transposition of the TEP) observed a difference in outcomes (prices excluding taxes and network costs) after applying the policy;
- Whether groups that did not apply the policy observed a difference in outcomes; and
- Whether there is a 'difference in differences': that is, whether Member States who transposed the TEP into national legislation have, on average, a

significantly different change in prices (exclusive of taxes and network costs), compared to Member States who did not transpose the TEP.

This requires information on:

- Whether a Member State transposes the TEP into national legislation; and
- The time period at which the transposition occurs

The equations to be estimated take the form of:

$$price_{i,j,t} = c_j + T_i + \beta_{i,1}(POST)_t + \beta_{i,2}(TRANSPOSE)_j + \beta_{i,3}(TRANSPOSE*POST)_{j,t} + \beta_{i,4}(controls)_{j,t-1} + v_{i,j} + \varepsilon_{i,j,t}$$

where

- $price_{i,j}$ is the average household electricity price excluding taxes and network costs in PPS/kWh for households in consumption band (i) in Member State (j) at time (t) (deflated by the Harmonised Index of Consumer Prices (HICP) for electricity)[126],
- $POST_t$ is a dummy (=1 in time periods after transposition of the TEP into national legislation, 0 before),
- $TRANSPOSE_j$ is a country-level dummy (=1 for countries that fully transpose the TEP into national legislation, 0 for countries that do not),
- $TRANSPOSE_j*POST_{j,t}$ is an interaction term between $TRANSPOSE_j$ and $POST_t$ (=1 for countries that fully transpose the TEP into national legislation, after they transpose the TEP, 0 otherwise), and
- controls include the share of combustible fuels, renewable energy and nuclear energy in net generation, the years since liberalisation and the price regulation dummy (the controls used in the cross-sectional and panel regressions in Table 67, Table 68 and Table 69).

As before, c_j captures the country fixed effect, while $v_{i,j}$ is the country-specific error component of the random effects model.[127] A time trend is included to account for any time-varying macroeconomic factors that may drive prices.

The table below illustrates how variables are coded, for an example with two Member States (A and B), where A transposed the TEP into national legislation in 2012, and B did not transpose the TEP into national legislation. In the illustration below, the variable TRANS takes the value 1 for Member State A, and not for Member State B, which did not transpose the TEP into national legislation. However, the variables TRANS takes the value 1 for all observations for Member State A, even before transposition of the TEP. This is done to capture the time-invariant characteristics of the Member States that may have an impact on prices.

Similarly, the variable POST would not take the value 1 except in 2012 and after. However, POST takes the value 1 for years 2012 and after for both Member States A and B, even though Member State B did not transpose the TEP into national legislation.

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[126] As noted earlier, the HICP is used as a deflator in order to help to ensure comparability between Member States at different periods of time.

[127] A fixed effects model would imply that time invariant explanatory factors, such as whether a country transposes the TEP into national legislation at a particular time period, or the number of years since liberalisation (when controlling for time trends), would be undefined. They are retained in a random effects model.

This is done to capture whether there were other factors in or after 2012 that would have an impact on prices in either Member State, apart from the TEP.

Finally, the variable TRANS*POST would only take value 1 for observations in Member State A, in or after 2012.

Table 70: Illustration of dummy variables used in Difference-in-Differences specifications

Year	Member State	$TRANS_j$	$POST_t$	$TRANS*POST_{j,t}$
2009	A	1	0	0
2010	A	1	0	0
2011	A	1	0	0
2012	A	1	1	1
2013	A	1	1	1
2009	B	0	0	0
2010	B	0	0	0
2011	B	0	0	0
2012	B	0	1	0
2013	B	0	1	0

Note: Illustrative
Source: London Economics

The above equation describes the 'basic' specification, assuming that:

- Member States either transposed the TEP, or did not; and
- All member States who transposed the TEP, did so at the same time period.

The basic specification described above is modified, depending on when a Member State transposed the TEP into national legislation, as described in more detail in the following section.

The regressions estimate the correlation between the average difference in supply components of electricity prices before and after the transposition of the TEP into national legislation, between Member States who have transposed the TEP, and Member States who have not. This approach is undertaken to separate the impacts of transposing the TEP into national legislation, from impacts due to:

- Unobserved variables in Member States that would be correlated with lower prices; and
- Unobserved variables in particular time periods that would be correlated with lower prices.

For example, if prices in Member State A are generally lower than the EU average then there would be a concern that the impact on prices would be incorrectly attributed to the TEP, rather than to other factors that may lead to low prices. Similarly, if the TEP was transposed at a time just before a decrease in electricity prices (due to other factors), then there may be a concern that the impact would be incorrectly attributed to the TEP, rather than other factors that occurred at the same time.

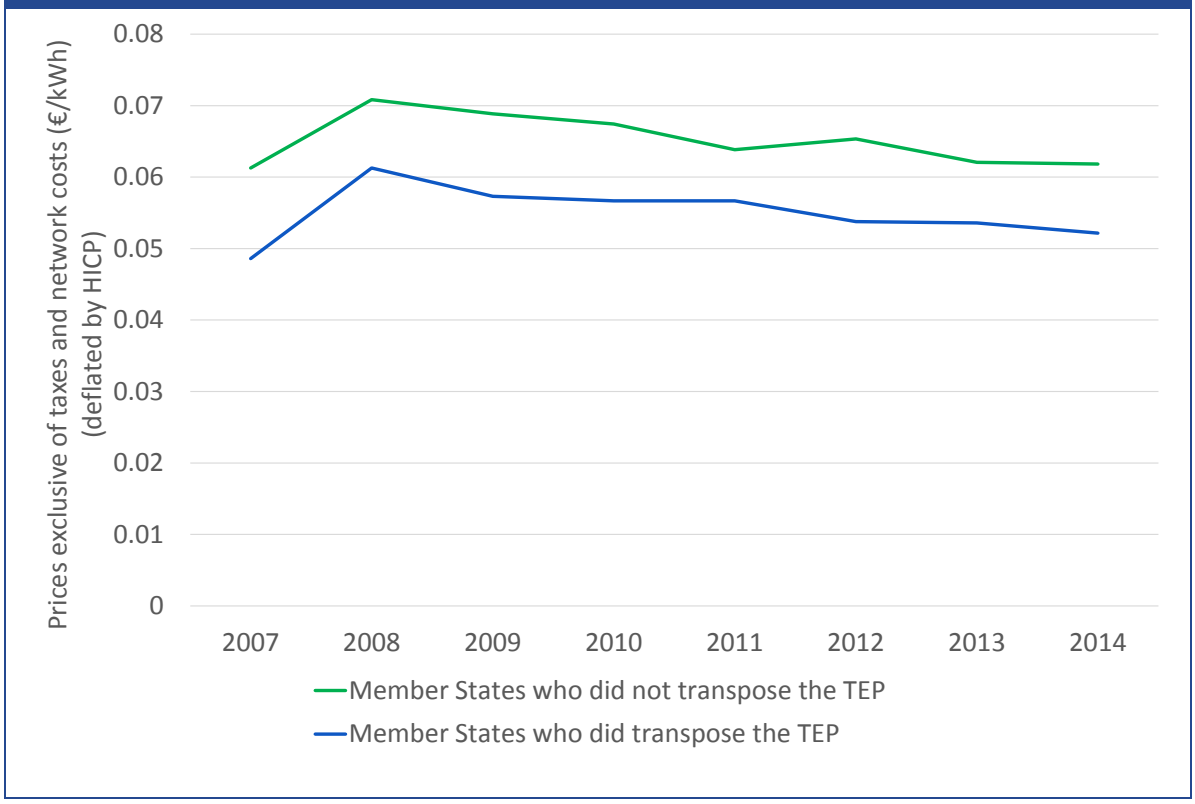
It should be cautioned, however, that the approach makes the identifying assumption of **parallel trends**: that is, it assumes that, if there were no TEP, prices in Member States who transposed the TEP would have followed a parallel trajectory compared to prices in Member States who did not transpose the TEP.

One way to verify this assumption is to check whether the trends of Member States who transposed the TEP are, on average, parallel with Member States who have not. If, before transposing the TEP, Member States who transposed the TEP were on parallel trends compared to Member States who did not, and their price trends diverge after transposition, then it is likelier that this divergence is associated with the transposition of the TEP. Note that this assumption does not require Member States who transposed the TEP to have had the *same* average prices compared to Member States who did not transpose the TEP (since the Difference-in-Difference compares *changes* in price levels between groups, and so average price levels between groups do not have to be the same). It merely requires them to have *parallel* trajectories.

As seen in the figure below, prices exclusive of network taxes and costs are on roughly parallel paths before the TEP came into force in 2009, in Member States who have fully transposed the TEP into national legislation, compared to those who have not. Member States did not begin fully transposing the TEP into national legislation before 2010. After the TEP was introduced, Member States transposed it into national legislation at different times; the timing of transposition for Member States is presented in Annex 7.

It can be seen that there is a slight divergence in trajectory especially in 2012, by which time 11 Member States had fully transposed the TEP into national legislation. However, on average the price trends are roughly parallel between Member States who transposed the TEP and those who did not.

Figure 157: Price trends among Member States who transposed the TEP and Member States who did not



Note: [Member States transposed the TEP into national legislation at different periods. 1 country in 2010; 4 countries in 2011; 6 countries in 2012; 1 country in 2013; and 3 countries in 2014. Before 2007, prices exclusive of taxes and network costs are not available by consumption band by Member State.

Source: London Economics price collection exercise

Time period of transposition of the Third Energy Package into national legislation

The Third Energy Package (TEP) entered into force in September 2009. As stated above, however, Member States transposed the TEP into national legislation at different time periods. Member States transposed the TEP into national legislation at the following time periods:

- 1 country in 2010;
- 4 countries in 2011;
- 6 countries in 2012;
- 1 country in 2013; and
- 3 countries in 2014.

Given this profile of the timing of national transposition, there are two ways of examining the impact of transposition:

- Regressions examining the impact of transposing the TEP into national legislation in 2010, 2011, 2012, 2013, 2014 or not doing so; and
- Regressions examining the impact of transposing the TEP into national legislation by 2014, versus not doing so.

The first option would modify the main specification (detailed above) as follows:

$$price_{i,j,t} = c_j + T_i + \beta_{i,1}(POST2010)_t + \beta_{i,2}(TRANSPOSE2010)_j + \beta_{i,3}(TRANSPOSE2010*POST2010)_{j,t} + \beta_{i,4}(POST2011)_t + \beta_{i,5}(TRANSPOSE2011)_j + \beta_{i,6}(TRANSPOSE2011*POST2011)_{j,t} + \beta_{i,7}(POST2012)_t + \beta_{i,8}(TRANSPOSE2012)_j + \beta_{i,9}(TRANSPOSE2012*POST2012)_{j,t} + \beta_{i,10}(POST2013)_t + \beta_{i,11}(TRANSPOSE2013)_j + \beta_{i,12}(TRANSPOSE2013*POST2013)_{j,t} + \beta_{i,13}(POST2014)_t + \beta_{i,14}(TRANSPOSE2014)_j + \beta_{i,15}(TRANSPOSE2014*POST2014)_{j,t} + \beta_{i,16}(controls)_{j,t-1} + v_{i,j} + \varepsilon_{i,j,t}$$

where $POST2010_t$ is a dummy (=1 for periods after 2010, 0 otherwise). $TRANSPOSE2010_j$ is a dummy (=1 for Member States transposing the TEP into national legislation in 2010, 0 otherwise). $TRANSPOSE2010*POST2010_{j,t}$ is an interaction term (=1 for Member States transposing the TEP into national legislation, after 2010, 0 otherwise), and similarly for 2011, 2012, 2013 and 2014. Controls, country fixed effect, country-specific error term and time trends are as before.

Table 71 presents results for the specification described above. As seen below, the supply component of electricity prices for the consumption bands between 1,000 and 15,000kWh/year is usually lower for Member States that transpose the TEP into national legislation (as seen by the negative and significant coefficients for TRANSPOSE2010, TRANSPOSE2011, TRANSPOSE2013 AND TRANSPOSE2014). However, there does not seem to be a systematic relationship between the supply component of electricity prices and the TRANSPOSE*POST variable for any year. This suggests that countries transposing the TEP into national legislation may have lower supply components for electricity prices, but not specifically after transposition.

Table 71: Impact of transposing the TEP into national legislation – Panel regression, Random Effects					
	(1)	(2)	(3)	(4)	(5)
	Under 1,000 kWh/year	1,000-2,500 kWh/year	2,500-5,000 kWh/year	5,000-15,000 kWh/year	Over 15,000 kWh/year
POST2010	0.000739 (0.00887)	-0.000895 (0.00362)	-0.000175 (0.00315)	0.000443 (0.00307)	0.00531 (0.00557)
TRANSPOSE2010	-0.0200 (0.0269)	-0.0235* (0.0110)	-0.0241* (0.00956)	-0.0212* (0.00932)	-0.0406* (0.0166)
POST2010*TRANSPOSE2010	0.0106 (0.0154)	0.0109 (0.00630)	0.0100 (0.00548)	0.00845 (0.00535)	0.000797 (0.00951)
POST2011	0.00130 (0.00739)	0.000723 (0.00302)	0.00137 (0.00262)	0.00187 (0.00256)	0.000480 (0.00463)
TRANSPOSE2011	0.00256 (0.0231)	-0.0337*** (0.00944)	-0.0320*** (0.00822)	-0.0186* (0.00801)	0.0372** (0.0143)
POST2011*TRANSPOSE2011	0.000275 (0.00803)	0.00122 (0.00328)	0.000562 (0.00285)	-0.00261 (0.00278)	-0.0124* (0.00496)
POST2012	0.00716 (0.00729)	0.00274 (0.00297)	0.00231 (0.00259)	0.00215 (0.00252)	0.00570 (0.00453)
TRANSPOSE2012	0.0270 (0.0256)	-0.00894 (0.0105)	-0.0133 (0.00910)	-0.0164 (0.00888)	-0.000682 (0.0158)
POST2012*TRANSPOSE2012	-0.0129 (0.00684)	-0.00413 (0.00279)	-0.00179 (0.00243)	-0.000644 (0.00237)	-0.00510 (0.00423)
POST2013	0.00235 (0.00711)	0.000857 (0.00290)	0.00153 (0.00252)	0.00184 (0.00246)	0.00271 (0.00442)
TRANSPOSE2013	0.00296 (0.0168)	-0.0349*** (0.00684)	-0.0352*** (0.00595)	-0.0268*** (0.00581)	0.00635 (0.0103)
POST2013*TRANSPOSE2013	-0.00897 (0.0158)	0.000602 (0.00644)	0.00151 (0.00560)	0.00133 (0.00546)	-0.00364 (0.00972)
POST2014	0.00480 (0.00723)	0.00155 (0.00295)	0.00190 (0.00257)	0.00201 (0.00250)	0.00501 (0.00450)
TRANSPOSE2014	-0.133** (0.0503)	-0.0578** (0.0205)	-0.0482** (0.0179)	-0.0527** (0.0174)	-0.127*** (0.0311)
POST2014*TRANSPOSE2014	0.00332 (0.0128)	0.00418 (0.00521)	0.00394 (0.00453)	0.00252 (0.00442)	-0.00365 (0.00785)
Constant	4.552 (10.39)	5.568 (4.238)	7.238* (3.688)	7.611* (3.597)	7.176 (6.523)
Observations	183	183	183	183	180
Within R^2	0.0768	0.238	0.329	0.331	0.112
Between R^2	1	1	1.000	1	1.000
p-value	9.75e-185	2.13e-299	0	0	0

Note: Standard errors in parentheses. All regressions include a time trend, lagged share of net generation of combustible fuels, renewable energy and nuclear energy in net electricity generation, a country fixed effect, the number of years since liberalisation, a dummy for whether retail electricity prices for households are regulated or not, and a dummy controlling for whether a country has transposed the TEP into national legislation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Source: Authors analysis.

However, it should be cautioned that there may be insufficient data to examine the impact of transposing the TEP into national legislation in 2010 and 2013 (since only one country did so in either year), or the impact of transposing the TEP into national legislation in 2014 (since data is only available up to 2014, so there is no data on price components after transposition of the TEP into national legislation).

Therefore, the following specification is run:

$$price_{i,j,t} = c_j + T_i + \beta_{i,1}(POST2011)_t + \beta_{i,2}(TRANSPOSE2011)_j + \beta_{i,3}(TRANSPOSE2011*POST2011)_{j,t} + \beta_{i,4}(POST2012)_t + \beta_{i,5}(TRANSPOSE2012)_j + \beta_{i,6}(TRANSPOSE2012*POST2012)_{j,t} + \beta_{i,7}(POST2013to2014)_t + \beta_{i,8}(TRANSPOSE)_j + \beta_{i,9}(controls)_{j,t-1} + v_{i,j} + \varepsilon_{i,j,t}$$

where $price_{i,j}$ is the average household electricity price excluding taxes and network costs in PPS/kWh for households in consumption band (i) in Member State (j) at time (t), $POST2011_t$ is a dummy (=1 in time periods after 2011, 0 before), $TRANSPOSE2011_j$ is a country-level dummy (=1 for countries that fully transposed the TEP into national legislation in 2011, 0 for countries that did not), $TRANSPOSE2011*POST2011_{j,t}$ is an interaction term (=1 for countries that fully transpose the TEP into national legislation in 2011, after they transpose the TEP, 0 otherwise), and similarly for 2012. $TRANSPOSE_j$ refers to a dummy (=1 for countries that transpose the TEP into national legislation, 0 otherwise). This dummy is added to capture Member States that transpose the TEP into national legislation in 2010, 2013 or 2014. Controls, country fixed effect, country-specific error term and time trends are as before.

Regression results for the specification above are presented below. As before, there does not seem to be a systematic impact of transposing the TEP into national legislation on prices exclusive of taxes and network costs, except for the highest consumption band in the case of transposing in 2011, and the lowest consumption band in the case of 2012.

Table 72: Impact of transposing the TEP into national legislation in 2011 and 2012 – Panel regression, Random Effects

	(1)	(2)	(3)	(4)	(5)
	Under 1,000 kWh/year	1,000-2,500 kWh/year	2,500-5,000 kWh/year	5,000-15,000 kWh/year	Over 15,000 kWh/year
POST2011	-0.00221 (0.00549)	-0.000797 (0.00227)	-0.000569 (0.00198)	-0.000113 (0.00192)	-0.00237 (0.00341)
TRANSPOSE2011	-0.0674 (0.0696)	-0.0434 (0.0287)	-0.0320 (0.0251)	-0.0277 (0.0244)	0.00436 (0.0428)
POST2011*TRANSPOSE2011	-0.000229 (0.00786)	0.000562 (0.00324)	-0.0000553 (0.00283)	-0.00307 (0.00275)	-0.0120* (0.00485)
POST2012	0.00577 (0.00554)	0.00270 (0.00229)	0.00199 (0.00200)	0.00162 (0.00194)	0.00257 (0.00342)
TRANSPOSE2012	-0.0176 (0.0352)	-0.0125 (0.0145)	-0.0103 (0.0127)	-0.0186 (0.0123)	-0.00381 (0.0217)
POST2012*TRANSPOSE2012	-0.0134* (0.00667)	-0.00474 (0.00275)	-0.00239 (0.00241)	-0.00111 (0.00234)	-0.00489 (0.00412)
TRANSPOSE	0.0204 (0.0325)	-0.00521 (0.0134)	-0.00986 (0.0117)	-0.00535 (0.0114)	-0.0116 (0.0200)
Constant	0.119 (3.726)	4.208** (1.538)	5.034*** (1.344)	4.977*** (1.304)	0.645 (2.318)
Observations	183	183	183	183	180
Within R^2	0.0658	0.211	0.300	0.309	0.101
Between R^2	1.000	1.000	1	1.000	1
p-value	4.24e-195	1.58e-305	0	0	0

Note: Standard errors in parentheses. All regressions include a time trend, lagged share of net generation of combustible fuels, renewable energy and nuclear energy in net electricity generation, a country fixed effect, the number of years since liberalisation, a dummy for whether retail electricity prices for households are regulated or not, and a dummy controlling for whether a country has transposed the TEP into national legislation. * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Authors analysis.

As previously mentioned there is limited data available to assess the impact of transposition. Therefore, another specification is implemented.

$$price_{i,j,t} = c_i + T_i + \beta_{i,1}(POST2009)_t + \beta_{i,2}(TRANSPOSE)_j + \beta_{i,3}(TRANSPOSE*POST2009)_{j,t} + \beta_{i,4}(YEARS\ SINCE\ TRANSPOSITION)_j + \beta_{i,9}(controls)_{j,t-1} + v_{i,j} + \varepsilon_{i,j,t}$$

where $POST2009_t$ refers to a dummy (=1 for the period after the TEP, 0 before). $TRANSPOSE_j$ refers to a dummy (=1 if the Member State transposes the TEP fully into national legislation, 0 otherwise). $TRANSPOSE*POST2009_{j,t}$ is an interaction term (=1 for Member States that transpose the TEP, after the imposition of the TEP). $YEARS\ SINCE\ TRANSPOSITION_j$ refers to the number of years since the Member State transposed the TEP into national legislation (0 if the State has not fully transposed the TEP into national legislation). Controls, country fixed effect, country-specific error term and time trends are as before.

Table 73 presents regression results for the specification above. As seen in the table below, Member States that transposed the TEP into national legislation tended to have statistically significantly lower supply components of electricity prices after 2009, but only for low consumption levels (below 2,500kWh/year).

Table 73: Impact of transposing the TEP into national legislation after TEP Directive– Panel regression, Random Effects

	(1) Under 1,000 kWh/year	(2) 1,000-2,500 kWh/year	(3) 2,500-5,000 kWh/year	(4) 5,000-15,000 kWh/year	(5) Over 15,000 kWh/year
POST2009	0.00827 (0.00640)	0.00191 (0.00266)	-0.000518 (0.00233)	-0.00112 (0.00227)	0.00236 (0.00422)
TRANSPOSE	-0.0468 (0.0740)	-0.0593 (0.0308)	-0.0551* (0.0270)	-0.0499 (0.0263)	-0.0148 (0.0472)
POST2009*TRANSPOSE	-0.0236** (0.00792)	-0.00754* (0.00329)	-0.00352 (0.00289)	-0.00234 (0.00281)	-0.00922 (0.00514)
Years since transposition	0.0137 (0.0156)	0.00965 (0.00649)	0.00784 (0.00569)	0.00760 (0.00554)	0.00222 (0.00992)
Constant	-0.477 (2.247)	3.582*** (0.935)	4.238*** (0.819)	4.128*** (0.798)	1.088 (1.466)
Observations	183	183	183	183	180
Within R^2	0.0951	0.223	0.307	0.311	0.0725
Between R^2	1	1	1	1	1.000
p-value	8.96e-208	1.92e-317	0	0	0

Note: Standard errors in parentheses. All regressions include a time trend, lagged share of net generation of combustible fuels, renewable energy and nuclear energy in net electricity generation, a country fixed effect, the number of years since liberalisation, a dummy for whether retail electricity prices for households are regulated or not, and a dummy controlling for whether a country has transposed the TEP into national legislation. * p < 0.05, ** p < 0.01, *** p < 0.001

Source: Authors analysis.

As seen in the regressions above, the transposition of the TEP into national legislation is not found to be associated with systematically significant differences in the supply and commodity component of retail electricity prices. However, it should be noted that it is difficult (at this time) to isolate the impact of transposing the TEP into national legislation from other related yet unobservable factors (such as institutional variables). With a longer time series, the effects of transposing the TEP into national legislation at later periods (such as 2013 or 2014) can be assessed across a larger number of Member States. In addition, the impact of transposing the TEP into national legislation may not always be immediate. Over time and with more data, it will be possible to more clearly identify the impacts of the TEP.

7.7 Price trends

In order to compare household price trends between Member States this section examines the evolution of the average price for each Member State, both with and without taxes.

Before 2007 prices were collected using an alternative methodology. A main difference between the methodologies used pre- and post- 2007 are the standard consumption bands to which prices refer. To examine price trends over a 10 to 15 year time period, data for households in the medium consumption band under each methodology are compared:

- Pre-2007 (inclusive): households with consumption of 3,500kWh/year.
- Post-2007: households with consumption of between 2,500 and 5,000kWh/year.

Details of the data collection methodologies used by Eurostat are provided in the metadata documentation available at the Eurostat website.[128] In addition, for a number of Member States the time series of prices do not extend to the full 10 or 15 years.[129]

There are three important observations from the data (see for longer time trends; Figure 158 and Figure 159 for price trends and aggregate difference using the post-2007 methodology):

- Over the 10 years from 2004 to 2014, prices in PPS (both including and excluding taxes) rose in most Member States (25 out of 27 Member States for which there are data). However, the price changes during this period vary between Member States (average annual price changes ranged from minus 0.6% in in the Netherlands to 10.5% in Greece for prices in PPS including taxes).
- Over the 15 years from 1999 to 2014, prices increased in all Member States (out of 18 Member States for which there are data), although in the majority of these countries (15 out of 18) the average annual price change was close to or lower over this period than during the 10 years to 2014. Again, there is significant variation between Member States (the average annual change in prices including taxes ranged from 0.3% in Italy to 8.2% in Cyprus).

Usually (and especially in Germany), prices including taxes increased more in percentage terms than prices without taxes, although there are a number of exceptions where prices without taxes have increased substantially faster than prices including taxes (namely Denmark, the Netherlands and Sweden). In some cases (namely Belgium, Bulgaria, Hungary, Ireland, Malta, Poland and the UK), prices with and without taxes have changed at very similar rates, for example because of low tax rates (as with Malta and the UK, as seen in Figure 153).

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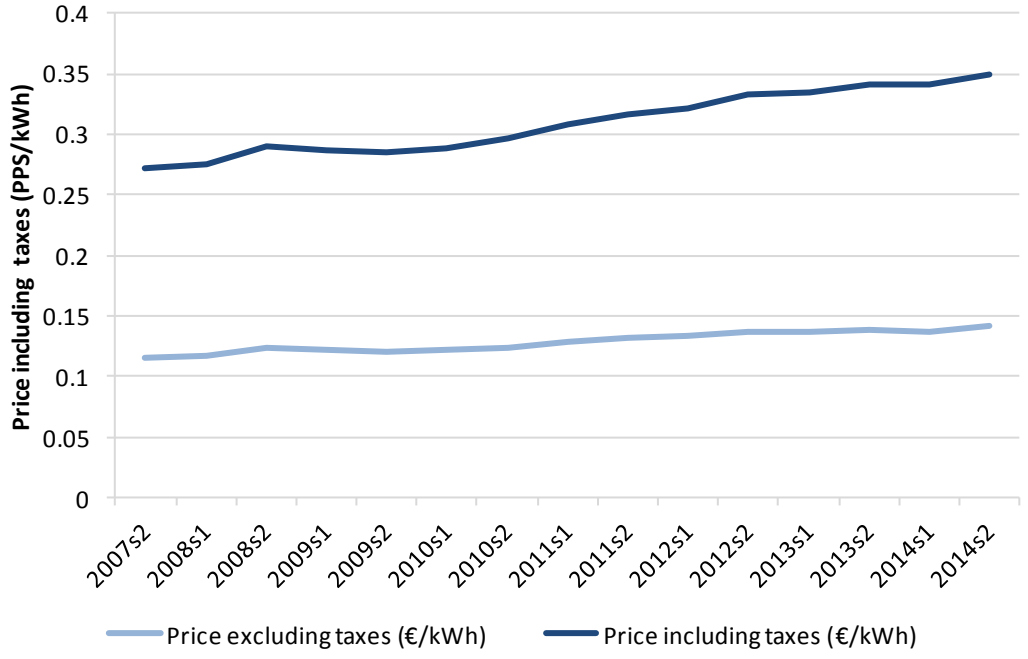
[128] Old methodology: http: //epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/nrg_pc_h_esms.htm.New methodology: http: //epp.eurostat.ec.europa.eu/cache/ITY_SDDS/en/nrg_pc_esms.htm.

[129] Figures for Cyprus refer to 1st semester of 1999-2001. Figures for Estonia refer to 1st semester of 2002-2003. Figures for Spain and Portugal refer to 1st semester of 2004. Figures for Croatia and Romania refer to the period beginning 2005 semester 1. No data for prices excluding taxes in Italy in 2008 and 2009.

Figure 158: Recent price trend for the EU-28 (PPS/kWh)



Note: Prices for households with annual consumption between 2,500 and 5,000kWh. Data refers to 2nd semester 2014. Prices are in nominal terms.

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

Figure 159: Average annual change in prices in PPS for medium consumption households from 2007/semester 2 to 2014/semester 2

Note: Prices for households with annual consumption between 2,500 and 5,000kWh. Data refers to 2nd semester 2014.

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

Table 74: Change in prices in PPS for medium consumption households: total percentage change and average annual change over 10 and 15 year periods[1]								
	10 year trend (2004s2 – 2014s2)				15 year trend (1999s2 – 2014s2)			
	Excluding taxes		Including taxes		Excluding taxes		Excluding taxes	
	Total	Yearly	Total	Yearly	Total	Yearly	Total	Yearly
AT	21.8%	2.3%	28.6%	2.7%	26.2%	1.8%	50.5%	2.9%
BE	33.2%	3.4%	28.9%	3.1%	35.8%	2.4%	35.1%	2.4%
BG	10.6%	1.2%	10.6%	1.2%	:	:	:	:
CY	25.8%	4.8%	31.7%	5.3%	105.6%	7.3%	132.8%	8.2%
CZ	24.5%	2.4%	28.2%	2.7%	:	:	:	:
DE	14.5%	1.5%	75.7%	5.9%	22.5%	1.4%	102.0%	4.9%
DK	39.7%	4.0%	30.4%	2.9%	80.4%	4.5%	48.3%	2.8%
EE	31.5%	3.1%	50.5%	4.5%	:	:	:	:
EL	88.2%	7.0%	155.7%	10.5%	86.7%	4.7%	153.8%	7.0%
ES	107.3%	7.8%	116.3%	8.2%	87.7%	4.5%	95.6%	4.8%
FI	23.4%	2.2%	35.4%	3.2%	47.5%	2.7%	59.6%	3.3%
FR	28.7%	2.7%	41.8%	3.7%	22.4%	1.5%	40.1%	2.4%
HR	36.0%	3.4%	47.1%	4.2%	:	:	:	:
HU	14.9%	2.0%	16.7%	2.1%	25.0%	1.9%	41.8%	2.8%
IE	112.4%	8.3%	117.1%	8.5%	151.9%	6.7%	172.1%	7.3%
IT	4.8%	:	22.4%	2.3%	-15.0%	:	1.6%	0.3%
LT	27.6%	3.2%	61.5%	5.5%	:	:	:	:
LU	4.3%	0.7%	12.8%	1.4%	22.1%	1.5%	39.8%	2.4%
LV	-24.1%	-0.7%	-1.7%	1.6%	:	:	:	:
MT	-29.1%	2.5%	-29.1%	2.5%	-25.4%	2.1%	-21.6%	2.4%
NL	18.0%	1.9%	-8.9%	-0.6%	49.4%	3.3%	43.2%	3.1%
PL	25.9%	2.6%	24.8%	2.5%	:	:	:	:
PT	4.4%	1.3%	70.1%	5.6%	-1.3%	0.5%	60.9%	3.4%
RO	17.7%	1.9%	36.3%	3.4%	:	:	:	:
SE	34.0%	3.3%	28.8%	2.8%	85.9%	4.6%	84.4%	4.4%
SI	19.8%	1.9%	41.5%	3.6%	20.4%	1.3%	43.4%	2.5%
SK	-11.0%	-0.7%	-7.9%	-0.4%	:	:	:	:
UK	114.8%	8.5%	114.9%	8.5%	82.7%	4.6%	82.7%	4.6%

Note: Data for 2007 and earlier refers to households with consumption of around 3,500kWh per year. Data for post 2007 refer to households with consumption of between 2,500 and 5,000kWh. In the case of Cyprus, 1999-2001 data is for the 1st semester only and then all semester up to the 2nd semester of 2014. In the case of Estonia, the series starts in the 1st semester of 2002 data is only available for the 1st semester in 2002 and 2003 data is then complete up to the 2nd semester of 2014. In the case of Portugal and Spain, the series runs from 1st semester of 2004 to 2nd semester of 2014. In the case of Croatia and Romania, the series runs from the period beginning 2005 semester 1 to 2nd semester 2014. No data for prices excluding taxes in Italy in 2008 and 2009. .

Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204)

7.8 Price convergence

This section takes the analysis of price evolution a step further and examines whether prices have converged among Member States over time. The section has two parts:

- Analysis of change in dispersion of prices over time.
- Estimation of convergence models.

7.8.1 Change in dispersion of prices over time

Price convergence means that Member States with higher starting prices experience lower price growth in subsequent periods, compared to those with lower initial prices. This means that the overall dispersion of prices across Member States decreases over time. Therefore, examining changes in the variation of price changes over time can give an initial indication of whether there has been price convergence. The standard deviation of electricity prices in EU Member States is used as a measure of price dispersion in a given year.

In addition, the previous section showed that price trends over the last 10 to 15 years are different depending on whether prices are measured with or without taxes. As a result, there may have been convergence in, for example, prices without taxes but not in prices including taxes. Hence, the analysis for this section covers both cases.

Due to the change in the methodology used by Eurostat to collect electricity price data from 2007, the period under consideration is from 2007 onwards.

The main observation from the analysis is that there is no strong trend in the standard deviation of prices (the relevant figures are presented in Annex 4). Until 2011 price dispersion in the EU28 appears to be rising moderately, while in 2011 it begins to reduce. For the EU15, dispersion of prices net of taxes remains relatively stable, while standard deviation of prices in PPS inclusive of taxes rises substantially.

Overall, these initial results suggest that there has not been strong convergence of average household electricity prices in the EU during recent years. This finding is tested more formally in the following sub-section where standard convergence models are estimated.

7.8.2 Convergence models

In order to make a more rigorous assessment of price convergence, in this sub-section two standard convergence models are estimated:

- **The beta convergence model** estimates the relationship between initial price differences among Member States and price differences among the same Member States in subsequent periods. If large initial price differences are linked to smaller price differences in subsequent periods then there is said to be beta convergence.
- **The sigma convergence model** tests formally whether there is a negative time trend in price dispersion across Member States. If the price dispersion falls over time then there is said to be sigma convergence.

Sigma convergence is a more direct measure of decreasing price dispersion than beta convergence.[130] In addition, it should be noted that sigma convergence is a stronger

[130] Quah (1993) and Friedman (1992) therefore both argue in favour of using the sigma convergence measure although scholars traditionally have focused on beta convergence.

convergence concept than beta convergence, and, hence, it is possible to find beta convergence although there is no sigma convergence but it is not possible to find sigma convergence without beta convergence.[131] Therefore, if we find sigma convergence this will be a strong indication of convergence whereas if we only find beta convergence this will be a weak indication of convergence.

The convergence models are estimated for prices in PPS with and without taxes, for the EU28 and for the EU15. Details of the equation that is estimated for the beta convergence model and the estimation method are provided in Annex 4. Details of the sigma convergence model are also provided in Annex 4.

Beta convergence

The results of the beta convergence model show beta price convergence for the EU28 and the EU15 (whether prices include or exclude taxes, see Table 75).[132] In each case, the results are statistically significant (see Annex 4 for coefficients and Robust standard errors).

For prices including taxes, the speed of convergence is higher for the EU28 as a whole. For prices excluding taxes, it is equally high for EU28 and EU15. These conclusions are also illustrated by the half-life, which indicates how long it would take to halve the price differences at the estimated speed of convergence. The longest half-life is estimated for the EU15 for prices excluding taxes because this group was estimated to have the lowest rate of convergence.

Table 75: Beta convergence (prices in PPS including and excluding taxes)

Price	Convergence measure	EU28	EU15
Prices including taxes	Speed of convergence	17%	10%
	Half-life	4.2	6.8
Prices excluding taxes	Speed of convergence	15%	15%
	Half-life	4.7	4.7

Source: Calculations using Eurostat data.

Sigma convergence

The sigma convergence model is a regression of price dispersion on a linear time trend (see Annex 4). Sigma convergence is identified by the sign and significance of the slope coefficient. A significant, negative slope coefficient implies sigma convergence i.e. that price dispersion decreases over time.

For the EU28 and the EU15, two measures of price dispersion are calculated: the standard deviation of prices (in PPS) and the coefficient of variation of prices (in PPS). These are both measures of variation from the average price level and the measures are closely related. However, the standard deviation is the most commonly used measure for statistical analysis. As a robustness check, separate models are estimated regressing each of these measures against a time trend.

The results (see Table 76) do not show significant evidence of sigma convergence of prices for the EU28. Where the coefficients are negative, they are not statistically significant, and when taxes are included in prices the dispersion increases over time.

[131] As shown by Young *et al* (2004).

[132] The formulae for calculating the speed of convergence and the half-life are presented in Annex 4.

However, when the model is estimated for the EU15 only, the results show that for price in PPS net of taxes there has been significant sigma convergence for this group (while again for price including taxes dispersion increased).

Table 77: Sigma convergence of prices.

Group	Prices including taxes (in PPS):		Prices excluding taxes (in PPS):	
	Standard deviation	Coefficient of variation	Standard deviation	Coefficient of variation
EU28	0.0006*	-0.0208	-0.0208	-0.0045
EU15	0.0009***	-0.0923**	-0.0923**	-0.0761***

Note: "*"denotes significance at the 10% level; "**" denotes significance at the 5% level; "***"denotes significance at the 1% level.
Source: Authors calculations using Eurostat data.

Overall, the analysis indicates that there is low convergence for the EU28 (as there is only evidence of beta convergence) but significant convergence for the EU15. This implies that the level of prices is converging to some extent in the EU15, but less so in the wider EU. Moreover, variations in taxes imply that the after-tax price faced by consumers is very different across Member States, and increasingly so.

It should also be noted that convergence may only occur over long time periods and the full extent of convergence may not be reflected in the short time period over which the analysis is undertaken.

7.9 Availability of cheaper tariffs

7.9.1 Do consumers find cheaper tariffs?

Mystery shopping scenario 2 "Cheaper tariff" consisted of three parts; mystery shoppers were instructed to:

- try to find a cheaper tariff from their own provider (via phone or online);
- try to find cheaper offers from various other providers (via phone, online or using comparison tools) and
- answer a set of questions about the overall cheapest tariff found (from their own provider or another provider).

In part 1 of scenario 2 "Cheaper tariff", mystery shoppers were instructed to find out whether their current provider has cheaper tariffs on offer for them. Mystery shoppers could decide which methods they used to find out if their current provider offers cheaper tariffs. A majority of mystery shoppers relied on online enquiries. In the UK, for example, 97% of mystery shoppers visited their provider's website to find a cheaper tariff. In France, on the other hand, 57% visited their provider's website, 20% contacted their provider by phone and 23% used both methods (they visited the website and contacted by phone).

In a second part of the exercise, mystery shoppers were asked to check whether they could find cheaper offers from other providers. Mystery shoppers were instructed to spend about 40 minutes on this part of the exercise.

Across all countries, mystery shoppers searched for cheaper offers by checking offers from three to five alternative providers; the exception being Lithuania, where a minority of shoppers contacted less than three providers. Shoppers searched for cheaper offers by visiting providers' websites or by contacting them by phone. All mystery shoppers also searched for alternative offers via one or two comparison tools;

the exception being Lithuania where none of the mystery shoppers had found a comparison tool.

In the next sections, an overview of the results of this exercise is provided. For each part of the exercise, the number of shoppers who found alternative tariffs/offers is presented and this value is compared to the proportion of shoppers that found at least one cheaper tariff/offer. The mean number of tariffs/offers found and the mean number of cheaper tariffs/offers found were also calculated. The results are presented by country.

Many shoppers in Lithuania reported issues when completing the "Cheaper tariff" scenario; for example, when visiting the website of a provider, mystery shoppers found information that the provider offers electricity to households; however, when contacting the provider by phone to find out detailed tariff prices, they were informed that tariffs for households were not yet available. Another issue that occurred was linked to the fact that, when different mystery shoppers contacted the same provider by phone, they did not necessarily receive the same information about the availability of tariffs (e.g. some were informed that household tariffs would be available in the near future, while others were told that no electricity was offered to households). As such, the results of the "Cheaper tariff" scenario for Lithuania need to be interpreted with caution.

Finding a cheaper tariff from current provider

In the UK, 93% of mystery shoppers reported that their provider offered more than one tariff; this proportion decreased to 63% in Italy.

Among shoppers who found alternative tariffs with their current provider, 55% answered that there was a tariff available that was cheaper than their current one; the mean number of cheaper tariffs found was 2.6. In summary, among all mystery shoppers, 42% found a better deal with their current provider, compared to 58% who reported that their current provider offered only one tariff or that no cheaper tariff was available.

The individual country results show that mystery shoppers in France were the least likely to have found a better deal with their current provider (25% among shoppers who found alternative tariffs with their current provider, or 16% of all shoppers). Also in the 2010 study, mystery shoppers in France were among the least likely to have been offered a cheaper deal by their current provider.

Table 78: Cheaper tariffs offered by mystery shopper's own provider

	CZ	SI	IT	PL	SE	DE	LT	ES	UK	FR	Total
Base	*25*	*25*	*30*	*40*	*25*	*40*	*25*	*30*	*30*	*30*	***300***
% of shoppers who reported that their current provider offers more than one tariff	88%	76%	63%	73%	64%	85%	72%	80%	93%	67%	**76%**
Number of tariffs found (mean)	3.3	3.7	2.8	2.5	4.4	3.4	4.1	3.5	3.9	3	**3.5**
Base (shoppers that found more than one tariff)	*22*	*19*	*19*	*29*	*16*	*34*	*18*	*24*	*28*	*20*	***229***
% of shoppers that found at least one cheaper tariff	86%	79%	68%	59%	56%	50%	44%	46%	43%	25%	**55%**
Number of cheaper tariffs found (mean)	2.8	4.3	1.6	1.9	5.4	2.3	2.3	1.6	2	1.6	**2.6**

Q12a. Number of tariffs offered: Q12b. Number of tariffs offered that are cheaper than your current tariff:
Base: all mystery shoppers
Source: Mystery shopping exercise

Finding a cheaper tariff from another provider

Contacting providers (online and phone enquiries)

Across all countries, the exception being Lithuania (see further), virtually all mystery shoppers found alternative offers (i.e. offers for any type of tariff – e.g. variable/fixed, green or grey etc.) from other providers, and at least 70% of shoppers indicated that some of the alternative offers they found were cheaper than their current tariff (from 70% in France to 96% in the Czech Republic). The mean number of cheaper offers found varied between 3.2 in France and 12.7 in Sweden.

In Lithuania, many shoppers had problems to find alternative (and cheaper) offers. Firstly, 40% of shoppers in Lithuania indicated that they could not find any alternative offers from other providers than Lesto. Secondly, among mystery shoppers that indicated that they had found at least one alternative offer, many added a remark in the "comment" box included in the evaluation sheet that, although they found an alternative offer, they were unsure (1) if they would qualify for the offer (e.g. an offer that only applies for a small business owner, who would receive a combined electricity bill), (2) if the offer is currently available or only at a later stage, and (3) if the offer would actually be cheaper than their current tariff.

Table 79: Cheaper offers from other providers (online and phone enquiries)

	CZ	DE	IT	PL	UK	SI	ES	SE	FR	LT[133]	Total
Base	*25*	*40*	*30*	*40*	*30*	*25*	*30*	*25*	*30*	*25*	*300*
% of shoppers that found at least one alternative offer	100%	100%	100%	100%	100%	100%	97%	100%	100%	60%	**96%**
Number of offers found (mean)	6.8	10.8	9.3	10.5	9.3	17.1	7.8	18.3	7.3	3.5	**10.1**
Base (shoppers that found at least one offer)	*25*	*40*	*30*	*40*	*30*	*25*	*29*	*25*	*30*	*15*	***289***
% of shoppers that found at least one cheaper offer	96%	88%	87%	85%	83%	80%	77%	76%	70%	20%	**76%**
Number of cheaper offers found (mean)	4.5	7	4.2	6.8	3.9	9.2	3.6	12.7	3.2	3.6	**5.9**

Q17a-d. Total number of offers found; Total number of cheaper offers
Base: all mystery shoppers
Source: Mystery shopping exercise

[133] Caution should be exercised when comparing the results for Lithuania with those for other countries.

Using comparison tools

Across all countries (except Lithuania), price comparison tool were found by all mystery shoppers. In the 2010 study, (virtually) all mystery shoppers in Germany, Slovenia, Sweden and the UK had found a price comparison tool on the Internet; however, in Poland and Spain, only 64%-65% had found such a tool (compared to 100% in the current study).

The proportion of shoppers who were able to identify at least one cheaper offer via a price comparison tool ranged from 64% in Slovenia to 95% in Poland. The mean number of cheaper offers found varied between 7.7 in France and 49.7 in Germany. Not only in Germany, but also in the Czech Republic, Poland, Sweden and the UK, the mean number of cheaper offers found via comparison tools was 30 or higher. The number of cheaper offers found via a comparison tool is influenced by the number of providers in the country (for example, in the Czech Republic, there are roughly 350 providers, while in Slovenia, the number is roughly 10), but also by the number of providers that are compared in the comparison tool (e.g. some comparison tools only compare the main providers, while others include all; the latter factor can explain, for example, the difference in mean number of cheaper offers found in Italy and Poland).

Table 80: Cheaper offers found via comparison tools

	PL	IT	SE	CZ	DE	UK	ES	FR	SI	Total
Base	40	30	25	25	40	30	30	30	25	**275**
% of shoppers that found at least one alternative offer	100%	100%	100%	100%	100%	100%	100%	100%	100%	**100%**
Number of offers found (mean)	96.7	27	174.4	69.7	96.6	78.8	28.5	19.4	27.7	**68.7**
Base (shoppers that found at least one offer)	40	30	25	25	40	30	30	30	25	**275**
% of shoppers that found at least one cheaper offer	95%	90%	88%	88%	88%	87%	80%	73%	64%	**84%**
Number of cheaper offers found (mean)	46.3	12.3	32.5	36.6	49.7	29.9	12.7	7.7	20.7	**27.6**

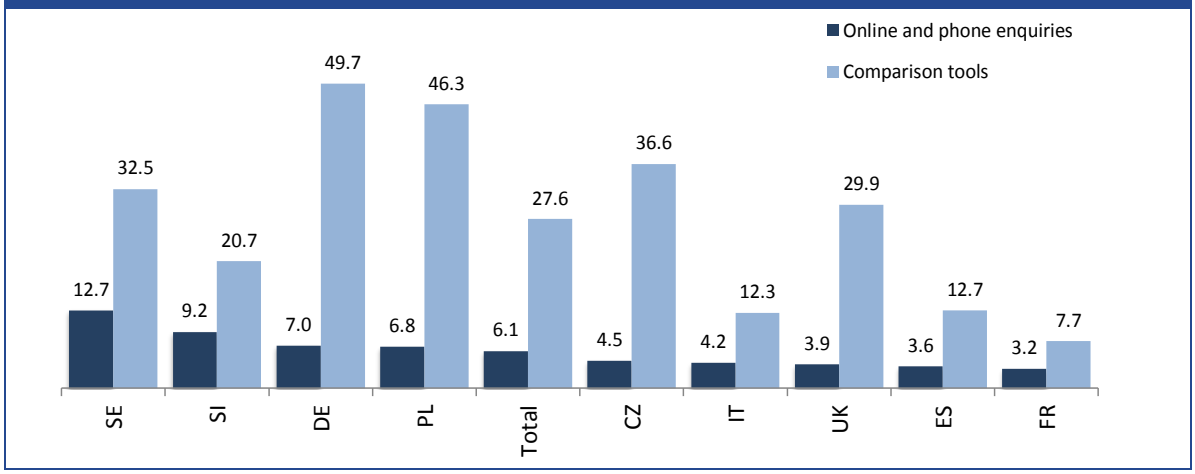
Q18a-b. Total number of offers found; Total number of cheaper offers
Base: all mystery shoppers (except Lithuania)
Source: Mystery shopping exercise

Comparing the results of contacting providers and using comparison tools

When comparing the results for cheaper offers found by contacting providers (online and phone enquiries) and by using comparison tools, it was noted that both methods gave shoppers access to cheaper offers. In France, Germany, Italy, Spain and the UK, the proportion of shoppers who indicated that they had found at least one cheaper offer by contacting different providers was similar to the proportion who had found cheaper offers via comparison tools. In Poland, Sweden and the Czech Republic, the proportion of shoppers who had been able to identify at least one cheaper offer via a price comparison tool was higher than the proportion who had found cheaper offers by contacting providers. For example, in Poland, 85% of shoppers had found at least one cheaper offer by contacting different providers, compared to 95% who had found cheaper offers via a price comparison tool. In Slovenia, the opposite was observed; while 80% of shoppers had found a cheaper offer by contacting various providers, the proportion who had found at least one cheaper offer via a comparison tool was 64%.

When comparing the mean number of cheaper offers found by contacting providers and by using comparison tools, then it can easily be seen that, when using a comparison tool, shoppers gained access to the offers of a larger number of providers and, as such, found a larger number of cheaper offers. For example, when shoppers in Italy contacted three to five alternative providers, they found on average 4.2 cheaper offers; however, when using one or two comparison tools, they found on average 12.3 cheaper offers.

Figure 160: Number of cheaper offers found (mean) – Contacting providers vs. using comparison tools



Q17a-d & Q18a-b. Total number of offers found; Total number of cheaper offers
Base: all mystery shoppers (except Lithuania)
Source: Mystery shopping exercise

Shoppers' characteristics

Analysing the data from this scenario, it is also important to take into account shoppers' profiles, and assess, for example, if shoppers with a high consumption profile were more likely to find cheaper tariffs than those with a low consumption profile. In Table 81 (on the following page), the proportion of shoppers who found at least one cheaper offer (via contacting providers or using comparison tools) by consumption level and past switching behaviour is presented. The largest share of mystery shoppers had a consumption level between 1,000 to 2,500 kWh/year (121 of 275 shoppers), and these shoppers were also the most likely to have found at least one cheaper offer by contacting alternative providers (90% vs. 70%-78% for other consumption levels) and/or by using a price comparison tool (89% vs. 78%-84%).

Table 81: Finding cheaper offers – by shopper characteristics									
		Consumption level				Switching experience			
	Total	Less than 1,000 kWh/year	1,000 to 2,500 kWh/year	2,500 to 5,000 kWh/year	More than 5,000 kWh/year	Switched provider in the past year	Switched provider between one and three years ago	Did not switch provider, but changed tariff (same provider)	Did not switch provider or change tariff in the past year
Base	275	27	121	82	45	23	34	39	179
% of shoppers that found at least one cheaper offer by contacting alternative providers	83%	70%	90%	78%	78%	74%	85%	80%	84%
% of shoppers that found at least one cheaper offer using a comparison tool	84%	82%	89%	78%	84%	83%	79%	80%	84%

Calculations based on various questions; *Base: all mystery shoppers (except mystery shoppers in Lithuania)*
Source: Mystery shopping exercise

7.9.2 How easy was it to find a cheaper offer or tariff?

Table 82 shows that, across the complete sample, 15% of shoppers has not been able to find a cheaper offer or tariff, 14% reported that the cheapest tariff was offered by their own provider and 11% found the cheapest offer on another provider's website or when contacting the provider by phone. The largest share of shoppers, however, had found the cheapest offer or tariff via a price comparison website (61%).

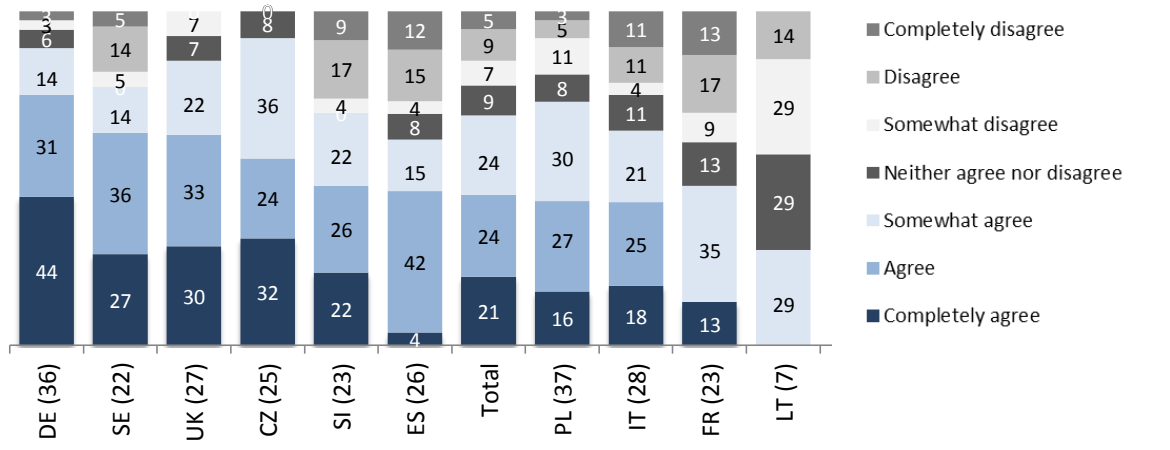
Table 82: Cheapest offers found - summary											
	CZ	IT	PL	SI	DE	UK	SE	ES	FR	LT[134]	Total
Base	25	30	40	25	40	30	25	30	30	25	***300***
Could not find a cheaper tariff/offer	0%	7%	8%	8%	10%	10%	12%	13%	23%	56%	***15%***
Cheapest tariff from own provider	24%	23%	8%	24%	10%	13%	4%	3%	0%	28%	***14%***
Cheapest offer from other provider (website or contact by phone)	12%	17%	0%	12%	5%	13%	4%	17%	13%	16%	***11%***
Cheapest offer found via a comparison tool	64%	53%	85%	56%	75%	63%	80%	67%	63%	-	***61%***

Calculations based on various questions
Base: all mystery shoppers
Source: Mystery shopping exercise

[134] Caution should be exercised when comparing the results for Lithuania with those for other countries.

At the end of the exercise, mystery shoppers who had found a cheaper tariff or offer were asked whether they agreed or disagreed that it was easy to find a cheaper tariff. Across most countries (the exceptions being France and Lithuania – see further), more than 40% of mystery shoppers *completely agreed* or *agreed* that it was easy to find a cheaper tariff; this figure varied between 43% in Poland and Italy to 75% in Germany. In France, 13% of mystery shoppers *strongly agreed* that it was easy to find a cheaper tariff. Finally, in Lithuania, none of the mystery shoppers *completely agreed* or *agreed* that it was easy to find a cheaper tariff; this is in line with the observations made about issues experienced by mystery shoppers in Lithuania when looking for a cheaper tariff.

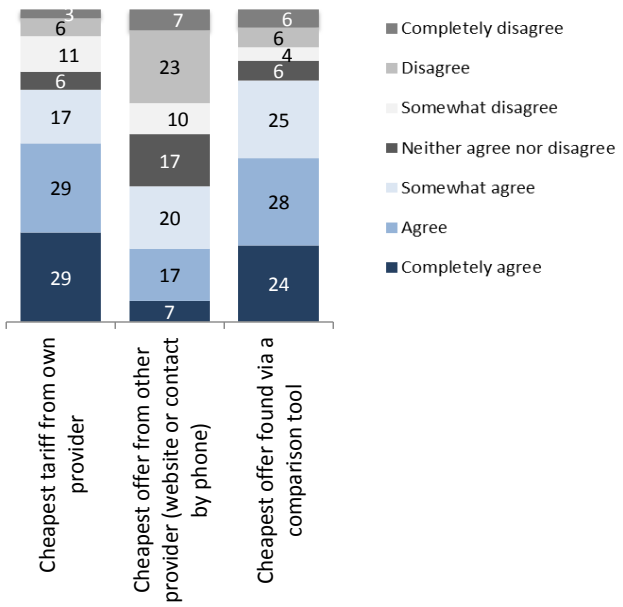
Figure 161: Agreement with the statement: "It was easy to find a cheaper tariff"



Q21. To what extent do you agree with the following statement: "It was easy to find a cheaper tariff"
%, Base: mystery shoppers that found at least one cheaper tariff from own provider or another provider
Source: Mystery shopping exercise

A majority of mystery shoppers who had found the cheapest offer/tariff with their own provider or who had found the cheapest offer from another provider via a comparison tool *completely agreed* or *agreed* that it was easy to find a cheaper tariff (58% and 52%, respectively). Mystery shoppers who had found the cheapest tariff by contacting other providers by phone or by visiting other providers' websites, however, were less likely to agree that it had been easy to find a cheaper tariff (7% *completely agreed* and 17% *agreed*).

Figure 162: Agreement with the statement: "it was easy to find a cheaper tariff", by characteristics of the cheapest offer



Q21. To what extent do you agree with the following statement: "It was easy to find a cheaper tariff"
%, Base: mystery shoppers that found at least one cheaper tariff from own provider or another provider
Source: Mystery shopping exercise

7.9.3 What are the conditions linked to cheaper tariffs?

Shoppers who had found at least one cheaper tariff or offer were asked to answer a set of questions about the overall cheapest tariff or offer that they had found.

The proportion of shoppers who answered that the cheapest offer/tariff they had found was linked to a promotion varied between 8% in the Czech Republic and 81% in Germany (see Table 83). The proportion of shoppers who reported that the conditions of the cheapest tariff/offer they had found were different from those for their current tariff ranged from 14% in Poland to 63% in Italy.

Table 83: Characteristics of the cheapest offer found											
	IT	LT[135]	UK	DE	FR	SI	CZ	ES	SE	PL	Total
Base (number of shoppers that found a cheaper tariff from their own provider or another provider)	28	7	27	36	23	23	25	26	22	37	**255**
Cheapest offer/tariff linked to a promotion	56%	9%	22%	81%	17%	61%	8%	23%	45%	43%	**37%**
Conditions linked to cheapest offer/tariff different than for current tariff	63%	45%	41%	31%	26%	26%	24%	23%	18%	14%	**31%**

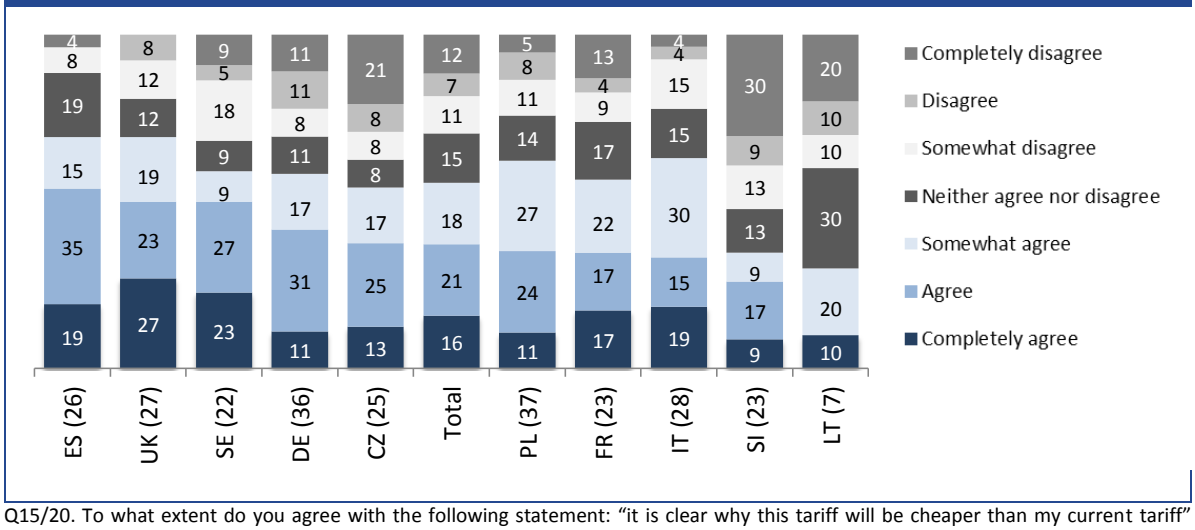
Q13/Q22. Is this tariff linked to a specific promotion? (e.g. a promotion for switching/becoming a new client); Q14/Q23. Are the conditions linked to this tariff different from those of your current tariff?
Base: Mystery shoppers who found at least one cheaper tariff/offer
Source: Mystery shopping exercise

An analysis of the different conditions mentioned by shoppers (across all countries) showed that 43% would have to manage their account online, 25% would need to switch to a direct deposit payment method and 8% would also need to switch gas provider (i.e. they would only get a cheaper offer by signing a bundled contract). Another 48% of shoppers who reported that the conditions would be different, referred to "other" conditions; among these, the most commonly mentioned conditions were having to switch to a different tariff type (e.g. from a day/night tariff to a fixed tariff) and having to sign a contract for a longer period of time (e.g. two years). Less frequently mentioned conditions included: a tariff only available for consumers with a heat pump, a tariff only available if the Internet provider is also changed or a tariff that varies depending on economic conditions.

[135] Caution should be exercised when comparing the results for Lithuania with those for other countries.

In a next step, mystery shoppers who had found at least one cheaper tariff or offer were asked whether it was clear why the cheapest offer/tariff would be cheaper than their current tariff. In Spain, 19% of these mystery shoppers *completely agreed*, and an additional 35% *agreed*, that it was clear why the tariff or offer that they selected would be cheaper than their current tariff. In Lithuania, just 10% of mystery shoppers *completely agreed*[136]*;* the lowest level of agreement measured. The highest level of disagreement, however, was observed in Slovenia: 30% of mystery shoppers in Slovenia *completely disagreed*, and a further 9% *disagreed* with this statement.

Figure 163: Agreement with the statement: "It is clear why this tariff will be cheaper than my current tariff"



Q15/20. To what extent do you agree with the following statement: "it is clear why this tariff will be cheaper than my current tariff" (shoppers answer the question thinking about the cheapest tariff found)

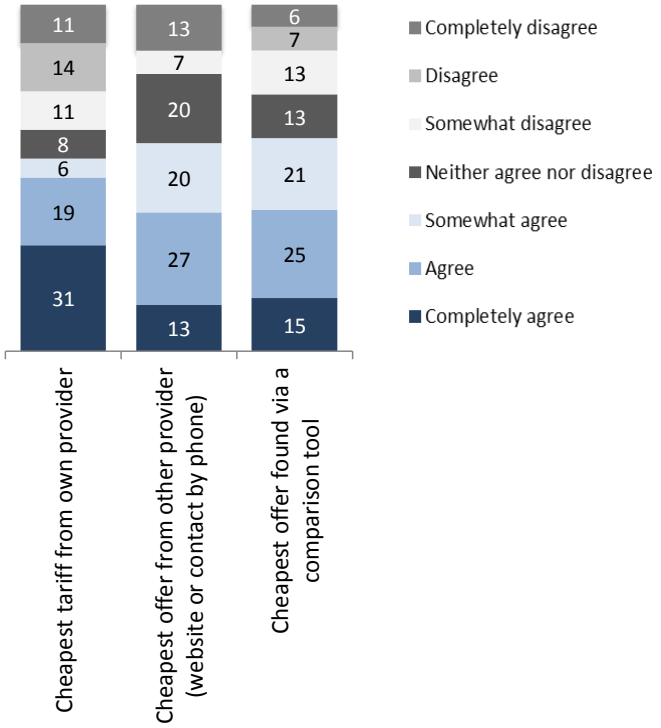
%, Base: mystery shoppers that found at least one cheaper tariff from own provider or another provider

Source: Mystery shopping exercise

[136] Note: In Lithuania, 10% of respondents selected the "completely agree" response, while no respondents selected the "agree" response.

One in two mystery shoppers who had found the cheapest tariff with their own provider *completely agreed* or *agreed* that it was clear why this tariff would be cheaper than their current tariff (31% *completely agreed* and 19% *agreed*). Among mystery shoppers who had found the cheapest tariff by contacting other providers by phone or via comparison tools, however, the proportion agreeing that it was it was clear why this tariff would be cheaper than their current tariff was lower (40%, in total, *completely agreed* or *agreed*).

Figure 164: Agreement with the statement: "It is clear why this tariff will be cheaper than my current tariff", by characteristics of the cheapest offer



Q15/20. To what extent do you agree with the following statement: "it is clear why this tariff will be cheaper than my current tariff" (shoppers answer the question thinking about the cheapest tariff found)

%, Base: mystery shoppers that found at least one cheaper tariff from own provider or another provider

Source: Mystery shopping exercise

As noted above, many shoppers disagreed that it was clear why the tariff they selected would be cheaper than their current tariff; as such, when asked to estimate the savings on an annual base from switching to the cheapest tariff, 25% of shoppers (who had found at least one cheaper tariff) answered that they were not able to estimate the savings. This in itself is an interesting finding since this makes it more difficult for consumers to assess the benefits related to the choice of tariffs on offer; this conclusion is in line with the 2010 study findings.

The table below presents descriptive statistics for the responses provided by shoppers who did feel able to estimate the savings; the mean estimated savings (on an annual base) from switching to the cheapest tariff ranged from €40 in the Czech Republic to €206 in Germany. Also in 2010, shoppers in Germany were the ones reporting the largest potential savings.

Table 84: Estimate of savings on an annual base if switching to cheapest tariff (in euro)

	DE	UK	ES	SI	SE	CZ	PL	IT	FR	Total
Base	32	22	21	15	17	18	31	16	20	192
Mean	205.9	154.7	99.5	76.7	120.6	40.4	82.4	85.4	82.8	112.44
Median	177.0	120.0	90.0	71.0	68.9	38.4	35.8	35.0	30.0	66.0
Minimum	20.0	31.1	9.0	4.0	.1	8.1	7.6	8.0	3.0	.1
Maximum	657.0	554.7	267.0	200.0	649.0	74.2	477.4	600.0	1010.0	1010.00

Q16/Q25. Estimate of savings made on an annual base if switching to cheapest tariff?
Base: Mystery shoppers who found at least one cheaper tariff/offer and were able to estimate savings
Source: Mystery shopping exercise

8. Affordability

This chapter examines the issue of affordability of electricity for consumers from a number of different perspectives. The chapter starts with presenting information on cross-Member State differences in household expenditure on electricity (Section 8.1), while the second section investigates the extent that consumers have difficulty paying electricity bills (Section 8.2).

In Section 8.3, an overview is presented of definitions of consumer vulnerability and energy poverty. Section 8.4 summarises the study's findings with regards to specific groups that can be considered more vulnerable in relation to the energy market.

The remaining sections provide more details about policy measures for consumers having difficulties in paying their electricity bills (Section 8.5), consumers' awareness of such policy measures (Section 8.6) and the proportions of consumers benefitting from various measures to assist energy poor (Section 8.7).

Box 11: Main findings with regards to "affordability of electricity"

- When considering the **share of electricity in household consumption expenditure**, newer Member States tend to have higher-than-EU-average electricity shares, while older Member States have lower-than-average shares. A number of factors play a role in the share of electricity in household consumption expenditure: high consumption, low incomes or high prices.
- Consumers in Greece were the most likely to report having **difficulties with paying their electricity bills**: 10% of survey respondents answered that they often could not pay such bills on time and 19% said this happened sometimes. Greece's current result represents an important deterioration compared to the 2010 results. In Croatia, Slovenia, Hungary and Romania, between 17% and 20% of respondents answered that they sometimes (or even often) could not pay their electricity bills on time.
- At EU28 level, 8% of survey respondents answered that they regularly had to pay a fee for a late payment of their electricity bill and 3% reported that their electricity consumption had been restricted due to non-payment of their bills.
- **Consumer vulnerability in relation to the energy market.** Older consumers (65+), economically inactive consumers and those with lower educational attainment tended to perform worse, on average, than other respondents in the behavioural experiment. This was particularly the case when looking at understanding of the terms and conditions in marketing material. The use of more complex information framing and the "dripping" of key terms and conditions behind a "pop-up" button exacerbated the problems these respondents had in the experiment. Furthermore, switching rates were lower among over 65 year-olds, economically inactive respondents and respondents with lower education attainment.
- **Policy measures for consumers in arrears with electricity bills.** Survey respondents who had the most difficulties in paying their electricity bills appeared to be the least likely to be aware of policy measures aimed at protecting people with payment difficulties (17% compared to 22%-25% across other groups).
- In the consumer survey, 5% of respondents reported that they benefitted from a social tariff or assistance from their electricity company (e.g. a staggered payment plan), and 3% received financial assistance from the government aimed at helping them to pay their electricity bills.

8.1 Cross-Member State comparison of expenditure on electricity

8.1.1 Share of electricity in household consumption expenditure

Following the methodology used in the Commission's first market study, this section presents the share of electricity in household consumption expenditure using data on household consumption expenditure on electricity available from the Household Budget Survey 2010 (provided by Eurostat). The Household Budget Survey provides data for the following indicators:

- Mean household income;
- Mean household electricity expenditure; and
- The share of electricity in mean household consumption expenditure.

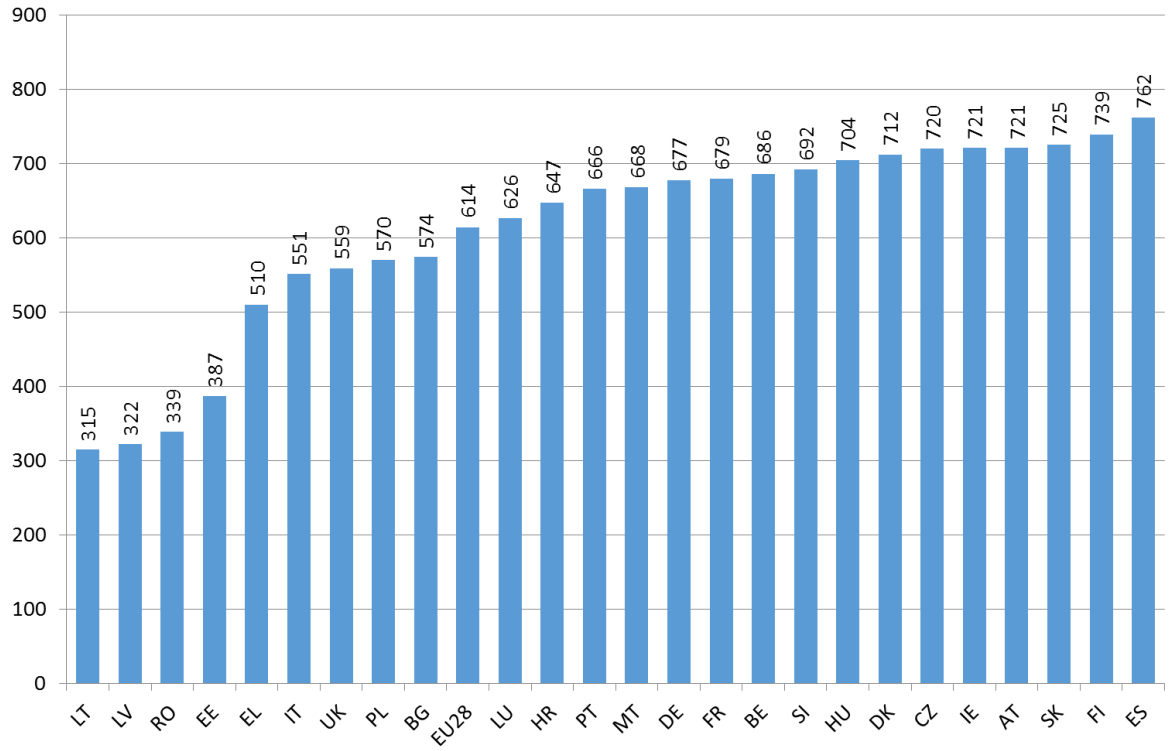
Figure 165 presents average household electricity expenditure and the share of household consumption expenditure on electricity. As shown in the figure, a number of new Member States (e.g. Romania) have lower than the EU average expenditure on electricity. Furthermore, Italy and Greece, as well as the UK, are also below the EU average. On the contrary, Germany, France and Denmark, as well as Spain and the Czech Republic are in the group of countries with higher that EU average expenditure. It has to be noted that, in 2010, Spain was ranked highest in terms of mean electricity expenditure.

When considering the share of electricity in household consumption expenditure (as presented in the second panel in Figure 165), newer Member States tend to have higher-than-EU-average electricity shares, while older Member States have lower-than-average shares. A number of factors play a role in the share of electricity in household consumption expenditure: high consumption, low incomes or high prices.

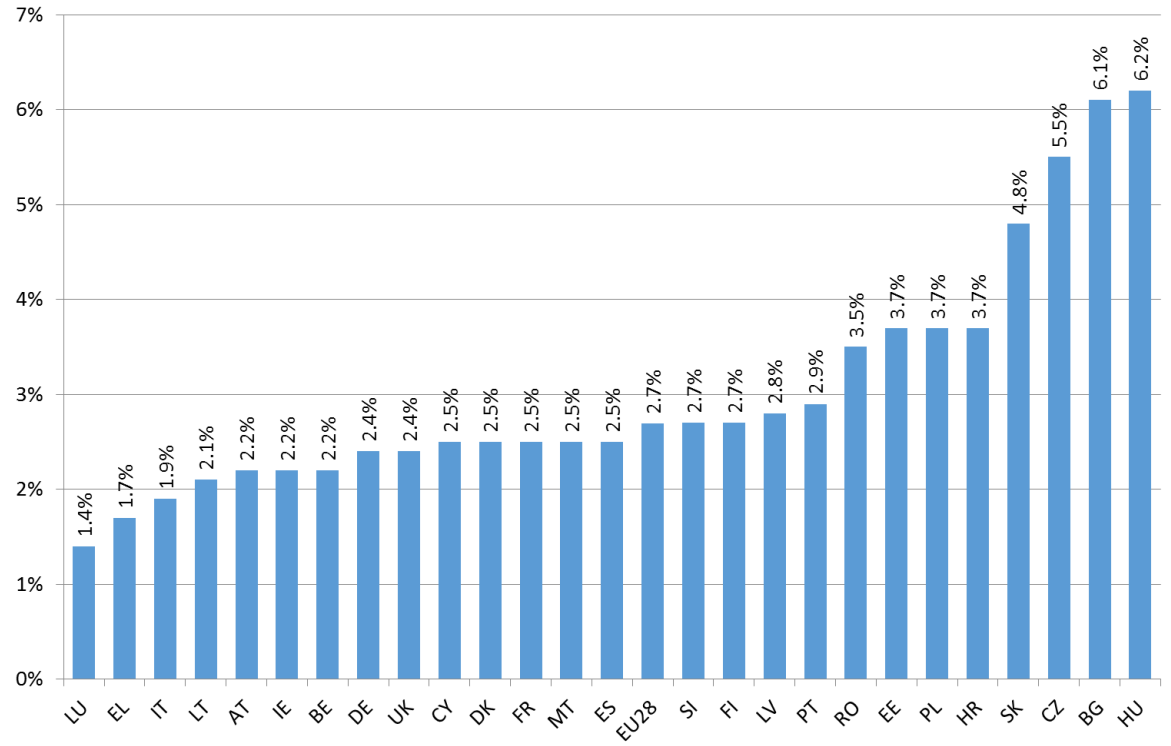
For example, looking at the last panel of Figure 165, it can be seen that Italy has a lower-than-average consumption of electricity but a higher-than-average income, so has a lower-than-average share of electricity expenditure in income, even though electricity prices in Italy are higher than average. Conversely, although Austria and Belgium have higher-than-average electricity consumption and electricity prices, their incomes are even higher relative to the EU28 average, so the shares of electricity consumption expenditure in income is lower than average. On the other hand, in countries like Bulgaria, electricity consumption is lower than the EU average; however, the difference in per-capita income in Bulgaria from the EU28 average is even higher (while electricity consumption is 15% lower in Bulgaria than the EU28 average, per-capita income is 57% lower). Thus, as far as Bulgaria is concerned, the share of electricity consumption expenditure in income is higher than average.

Figure 165: Average household electricity expenditure and share of household consumption expenditure on electricity (Household Budget Survey, 2010)

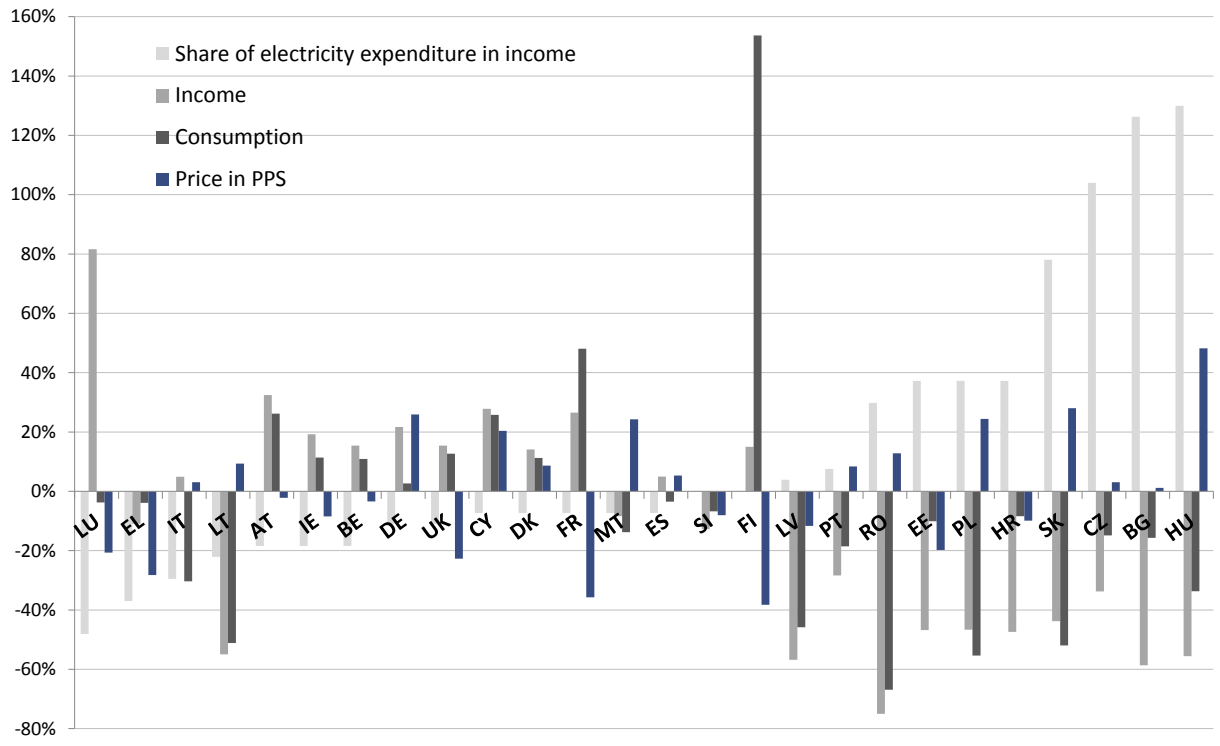
Average household electricity expenditure (2010)



Share of electricity in household consumption expenditure (2010)



Proportionate difference in income, electricity consumption, electricity price in PPS and the share of electricity expenditure in income (2010):



Note: Insufficient data are available for the Netherlands. Sweden reports electricity consumption expenditure of 0 in the Household Budget Survey figures, and is excluded from the chart. Cyprus reports household electricity expenditure of almost double that of Spain, and is excluded from the chart in the top panel. Austria's mean electricity expenditure is in line with reported expenditure of 1994 and 1999, but higher than in 2005.

Source: Authors calculations using Eurostat data from the Household Budget Survey

8.1.2 Share of household income spent on electricity

This section presents the calculation of the share of household income spent on electricity. This approach requires the following data from Eurostat; the most recent data is available for 2012:

- **Income per capita in PPS**: "Real adjusted disposable income per capita in PPS", available under "Annual sector accounts", available at: *http://epp.eurostat.ec.europa.eu/portal/page/portal/sector_accounts/data/main_tables;*
- **Population**: "Population on 1st January", available at: *http://epp.eurostat.ec.europa.eu/portal/page/portal/population/data/database*
- **Total energy consumption of households**: "Final energy consumption – Households", available under "Supply, transformation, consumption – electricity – annual data", available at: *http://epp.eurostat.ec.europa.eu/portal/page/portal/energy/data/database;*
- **Electricity prices in PPS:** Electricity prices in PPS including taxes for households with consumption of 2,500 to 5,000kWh/year, available at: *http://appsso.eurostat.ec.europa.eu/nui/show.do?wai=true&dataset=nrg_pc_204.*

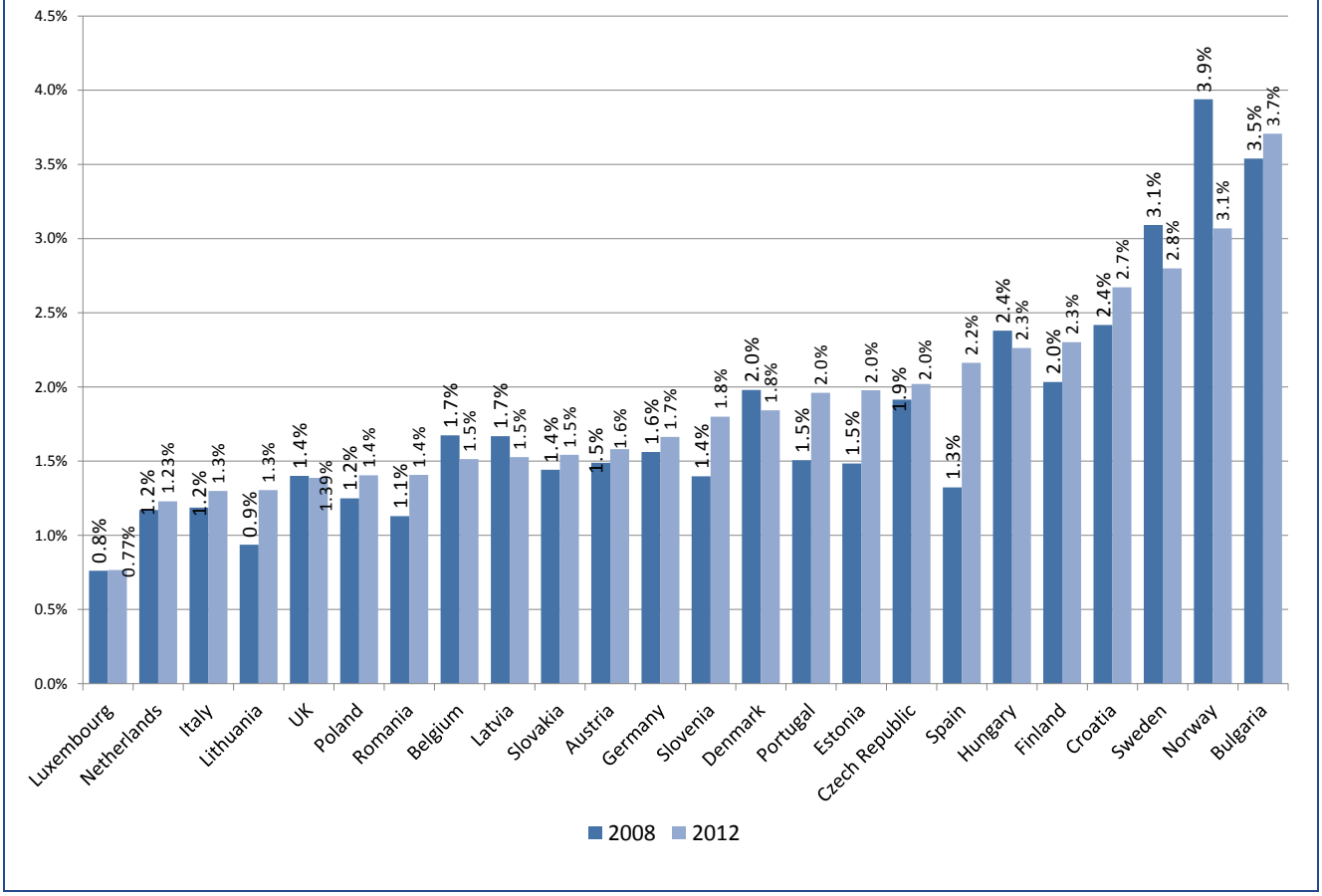
The share of household income spent on electricity is calculated as:

(Electricity prices in PPS x Total energy consumption of households) / (Income per capita in PPS x Population)

To ensure comparability with the first market study, the same approach as the one used in the previous study was adopted: for each Member State, there is only one aggregate figure for energy consumption by households reported by Eurostat; therefore, an assumption is made that consumption is priced at the tariff level that Eurostat classifies as "medium" (2 500 kWh < consumption < 5 000 kWh).

The following figure compares the share of income spent on electricity in 2012 and 2008 across countries.

Figure 166: Share of income spent on electricity 2012 and 2008

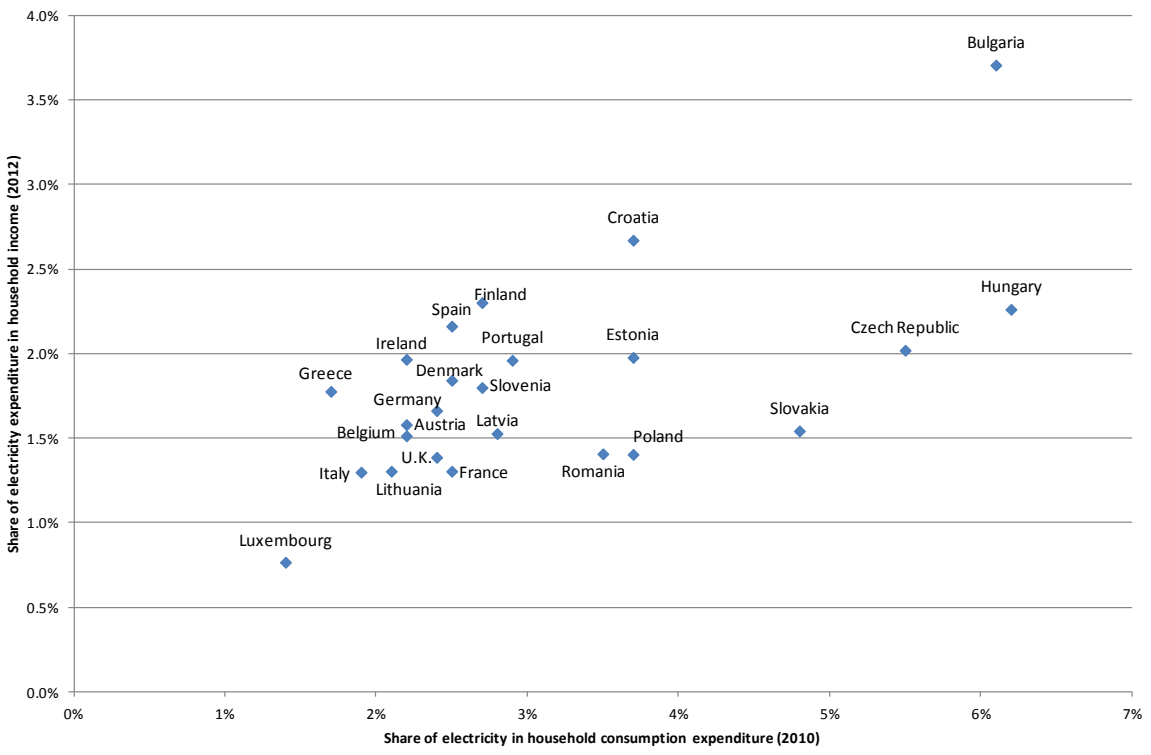


Note: Insufficient data are available for Cyprus and Malta using 2008 data. Insufficient data for Malta and Iceland using 2012 data.
Source: Authors calculations using Eurostat data

8.1.3 Relationship between share of electricity in consumption expenditure and share of electricity in household income

The pattern of the share of electricity in household consumption expenditure (illustrated in Figure 165) is similar to the pattern of the share of income spent on electricity (as estimated in Figure 167). Countries with higher shares of electricity in household expenditure tend to have higher shares of income spent on electricity, and vice versa, with a correlation coefficient of 0.49. The following figure illustrates the positive relationship between these two measures.

Figure 167: Relationship between share of electricity in consumption expenditure and share of electricity in household income



Note: For 2012 data: insufficient data for Malta and Iceland. For 2010 data: insufficient data are for the Netherlands. Sweden reports electricity consumption expenditure of 0 in the Household Budget Survey figures, and is excluded from the chart. Cyprus reports household electricity expenditure of almost double that of Spain, which makes it a significant outlier and therefore difficult to represent on the same graph as the remaining countries. It is therefore excluded from the chart. Austria's mean electricity expenditure is in line with reported expenditure of 1994 and 1999, but higher than in 2005.

Source: Authors calculations using Eurostat data

8.2 Consumers having difficulty paying their electricity bills

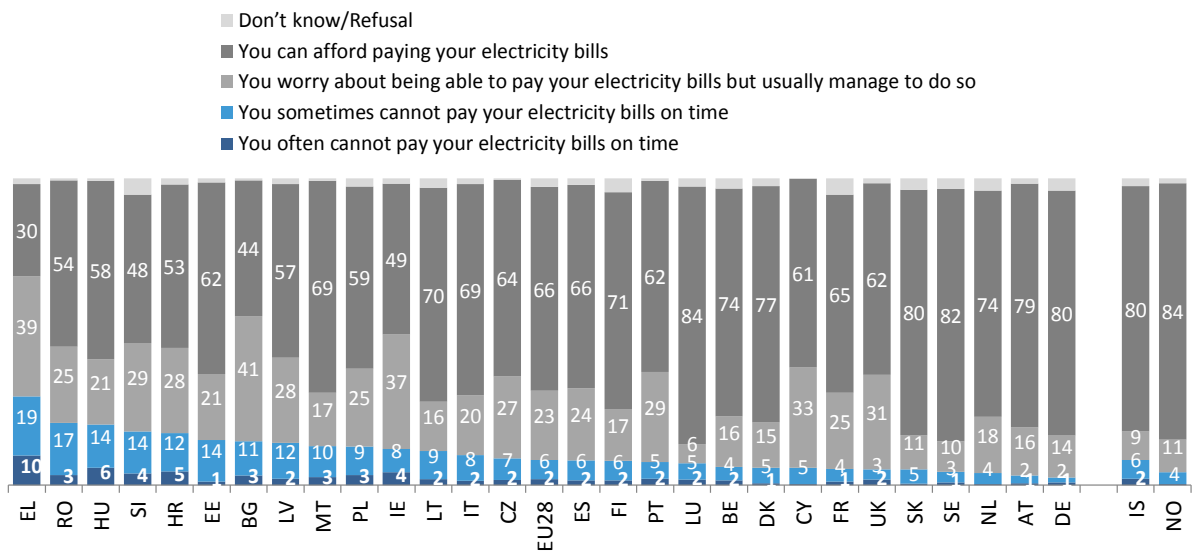
The previous section focused on household spending on electricity and the proportion of income that is devoted to paying for electricity. Although this information is important in terms of affordability of electricity for consumers in the EU, the present study is particularly interested in consumers that struggle to pay their electricity bills.

8.2.1 Results of the consumer survey

The consumer survey showed that respondents in Greece were the most likely to report having difficulties with paying their electricity bills: 10% answered that they often could not pay such bills on time and 19% said this happened sometimes; just 30% of respondents in Greece answered that they could afford paying their electricity bills, while 39% answered that they worried about paying electricity bills, but usually managed to do so. A similar question was also asked in the first market study; Greece's current result represents an important deterioration compared to the 2010 results.

In Croatia, Slovenia, Hungary and Romania, between 17% and 20% of respondents answered that they sometimes (or even often) could not pay their electricity bills on time. In Germany, Austria, the Netherlands, Sweden and Norway, this proportion stayed below 5%.

Figure 168: Affordability of electricity bills, by country



Q12. Which of the following situations applies to you?
% by country, Base: all respondents
Source: Consumer survey

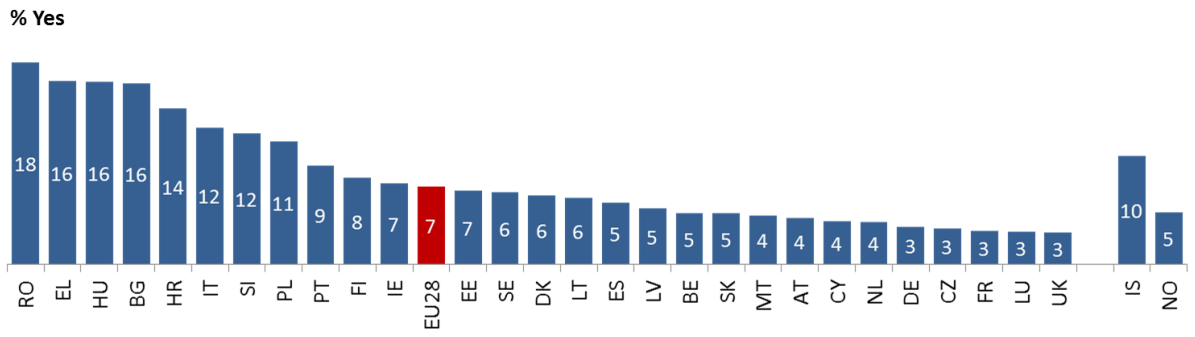
Few differences were found across socio-demographic groups in terms of the proportions of respondents who answered that they sometimes (or even often) could not pay their electricity bills on time. When focusing, however, on the proportions of respondents who **worried about being able to pay their electricity bills**, but usually managed to do so (and comparing these to the proportions of respondents who can afford bills without worries), the following observations are made:

- economically inactive respondents were more likely to worry about electricity bills than economically active respondents (27% vs. 20%);
- 26% of low-educated respondents worried about paying electricity bills, compared to just 19% of highly educated respondents;
- 27% of respondents who were the least informed about their household's electricity use worried about paying electricity bills; this proportion decreased to 16% for respondents who use electricity more consciously.

At EU28 level, 7% of respondents answered that they regularly had to pay **a fee for a late payment** of their electricity bill and 3% reported that their **electricity consumption had been restricted** due to non-payment of their bills.

In Bulgaria, Greece, Hungary and Romania, roughly a sixth (16%-18%) of respondents answered that they regularly had to pay **a fee for late payment of their electricity bills**; in the countries at the lower end of the country ranking, this figure stayed below 5%.

Figure 169: Proportion of consumers who often have to pay a fee for late payment of their electricity bill, by country



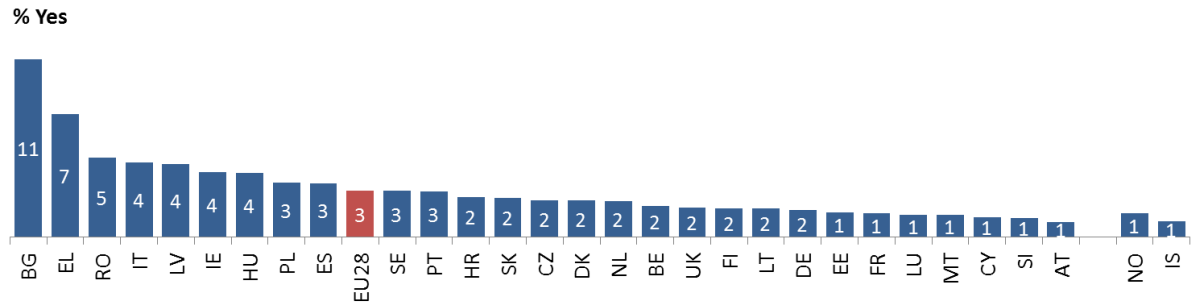
Q14_5. Please indicate whether each of the following statements applies to you or not: I often have to pay a fee for late payment of my electricity bill.

% Yes, by country, Base: All respondents

Source: Consumer survey

At EU28 level, 3% of respondents reported that their **electricity consumption had been restricted due to non-payment of their bills**. In Greece and Bulgaria (two countries that were also found at the higher end of the country ranking in Figure 169), this proportion increased to 7% and 11%, respectively.

Figure 170: Proportion of consumers who had their electricity consumption restricted due to non-payment of bills, by country



Q14_4. Please indicate whether each of the following statements applies to you or not: My electricity consumption has been restricted due to non-payment of my bills.
% Yes, by country, Base: All respondents
Source: Consumer survey

The views of consumer associations that responded to the stakeholder survey suggest that, generally speaking, consumer associations appear to overestimate the share of consumers who struggle to pay their electricity bills on time. However, the question posed to consumer associations was subjective in nature, leaving the consumer associations to interpret the meaning of "struggling to pay". As such, it is not possible to draw firm conclusions from this observation.

Table 85: Consumer associations' views on the proportion of consumers who struggle to pay electricity bills on time

	Less than 5%	5% to 9%	10% to 14%	15% to 19%	20% to 24%	More than 25%
Belgium			✓ (6%)			
Cyprus			✓ (5%)			
Denmark		✓ (6%)				
Germany			✓ (3%)			
Hungary					✓ (20%)	
Italy			✓ (10%)			
Portugal						✓ (7%)
Spain					✓ (8%)	
UK					✓ (5%)	

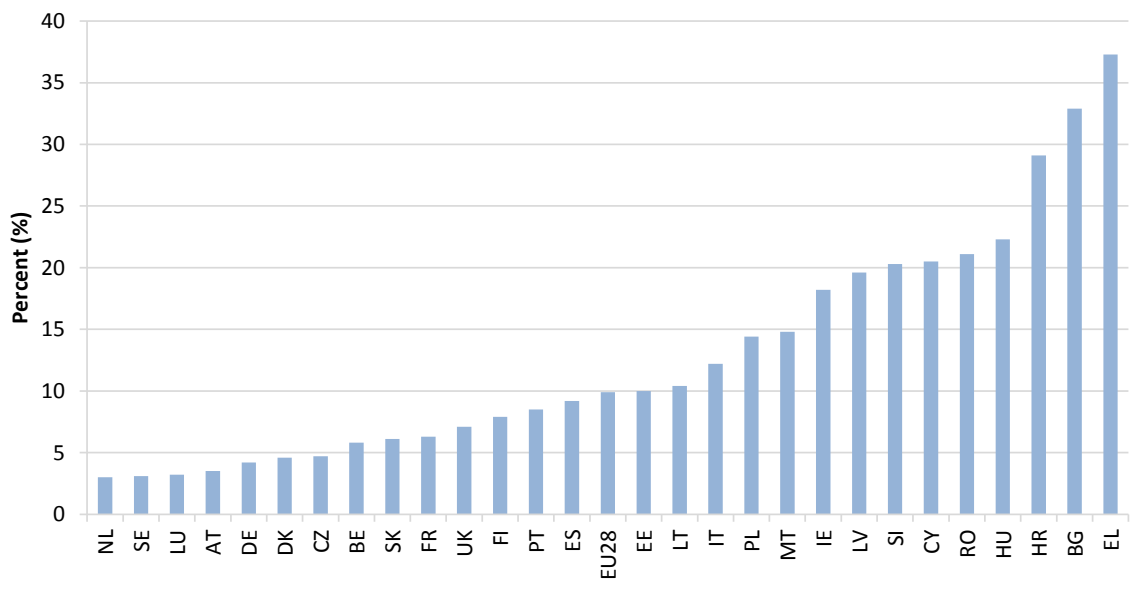
Note: Responses from consumer associations. Figures in parentheses give the share of respondents in the consumer survey who reported that '[they] sometimes/often cannot pay [their] electricity bills on time'.
Source: Stakeholder consultation and consumer survey

8.2.2 An analysis based on statistics published by Eurostat

Eurostat publishes the proportion of consumers who are in arrears with their utility bills.[137] Although utility bills include the costs of heating, gas and water, as well as electricity, this indicator still gives an idea of the Member States where problems with arrears are more common. Furthermore, data on this indicator are available for all Member States from the EU-Statistics on Income and Living Conditions database (EU-SILC, Eurostat), thus enabling cross-Member State comparison.[138]

In 2014, 10% of the EU28 population had been in arrears with utility bills in the previous 12 months. The proportion of the population behind on utility bills was especially high in Bulgaria and Greece (which had the highest rates of arrears overall). The lowest rates occur in several Member States in central and Northern Europe, such as Sweden, Luxembourg and the Netherlands, which has the lowest rates of arrears.

Figure 171: Percentage of population in arrears with utility bills (2014)



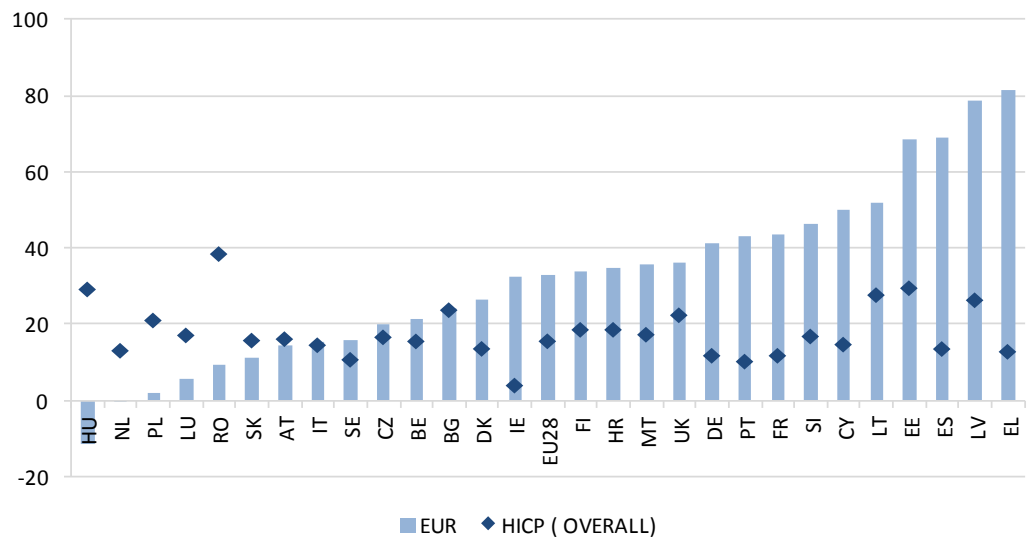
Note: Question: "In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?"
Source: Source: Eurostat - Arrears on utility bills (ilc_mdes07)

[137] Eurostat defines a person as "in arrears" if they are unable to pay on time (as scheduled) utility bills for their main dwelling.

[138] The data refers to the percentage of the population that has been in arrears in the last 12 months: that is, unable to pay on time (as scheduled) utility bills (heating, electricity, gas, water, etc.) for the main dwelling. Telephone bills are not considered as utility bills in this item. However, sewage and rubbish bills are taken into account in this item. If the household manages to pay through borrowing (from bank, relatives or friends), it is considered in the same way as if the household manages to pay from its own resources (the household is not counted as being in arrears).

One contributing factor behind the share of population in arrears is **if electricity prices rise so rapidly that households cannot afford to pay their bills**. Other contributing factors include unemployment and income. Figure 172 illustrates, across Member States, the percentage change in electricity prices,[139] as well as the percentage change in the Harmonised Indices of Consumer Prices (HICP).[140] As seen in the figure, countries with high percentage changes in electricity prices, which have risen faster than the overall HICP, also tend to have a higher share of population in arrears (e.g. Cyprus, Greece and Latvia), while countries with a low percentage change in electricity prices, rising slower than the HICP, tend to have a low share of the population in arrears (e.g. Luxembourg and the Netherlands). In some cases (e.g. Hungary, Poland and Romania), the percentage change in electricity prices is low, but the share of population in arrears with utility bills is high. One contributing factor may be that the HICP has risen very rapidly in these countries, and bills in general may be difficult to pay.

Figure 172: Percentage change over 2007-2014 of household electricity prices (€/kWh) and of HICP overall



Note: Prices for households with annual consumption of 2,500 to 5,000 kWh/year

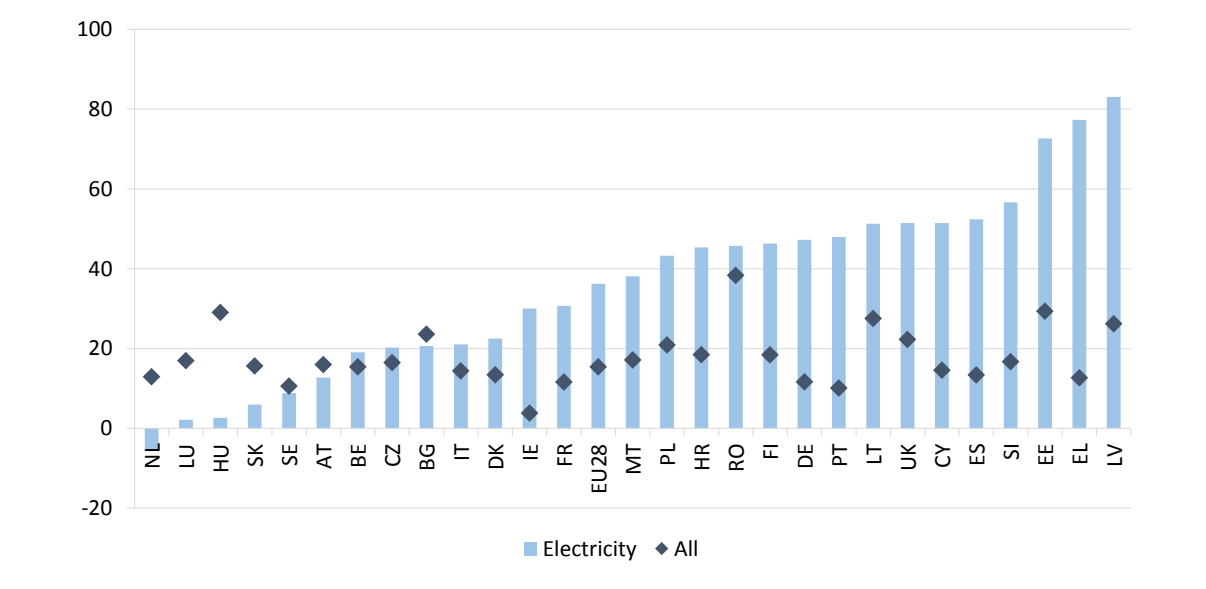
Source: Eurostat - Electricity prices for domestic consumers (nrg_pc_204); HICP (prc_hicp_aind)

[139] Prices are in € rather than PPS, since the figure uses the percentage change within Member States of HICP and electricity prices. Since both use proportional changes within Member States, PPS is not used.

[140] http: //appsso.eurostat.ec.europa.eu/nui/show.do?dataset=prc_hicp_aind&lang=en

In the same time period, HICP for electricity rose faster than HICP overall in almost all countries, as seen in Figure 173. In a number of Member States (e.g. Cyprus, Slovenia, Greece and Latvia) in which HICP for electricity rose more rapidly that the HICP overall (Figure 173), and electricity prices also rose more rapidly than the overall HICP (Figure 172), consumers were more likely to be in arrears (Figure 171).

Figure 173: Percentage change over 2007-2014 of HICP overall and HICP for electricity



Source: Eurostat - HICP (prc_hicp_aind)

It is also interesting to examine the **socio-economic characteristics of the population in arrears**. This may inform policy making by helping to target assistance at groups who are at risk of falling into arrears. Furthermore, it may help to show whether assistance, which is currently directed at certain groups, is helping to keep the rate of arrears low among this group relative to other groups.

An important factor affecting whether an individual is likely to struggle to pay their electricity bills is their **income level**. The correlation between per capita income of Member States and the proportion of the population in arrears is weak.[141] However, the relationship between per capita income and the proportion of population in arrears may be non-linear: income may play a larger role at lower levels of income. In addition, the picture within individual Member States may be different. Data from EU-SILC show that, in every Member State, the proportion of the population in arrears with utility bills is higher among the population with incomes below 60% of the median equivalised household income than for the population as a whole (Figure 174).[142]

The difference in the rate of arrears between those with incomes above and below 60% of the median equivalised income is at least double in 22 Member States, and close to or more than triple in 16 Member States. This is consistent with findings for the percentage of population unable to keep their homes warm across EU Member States.

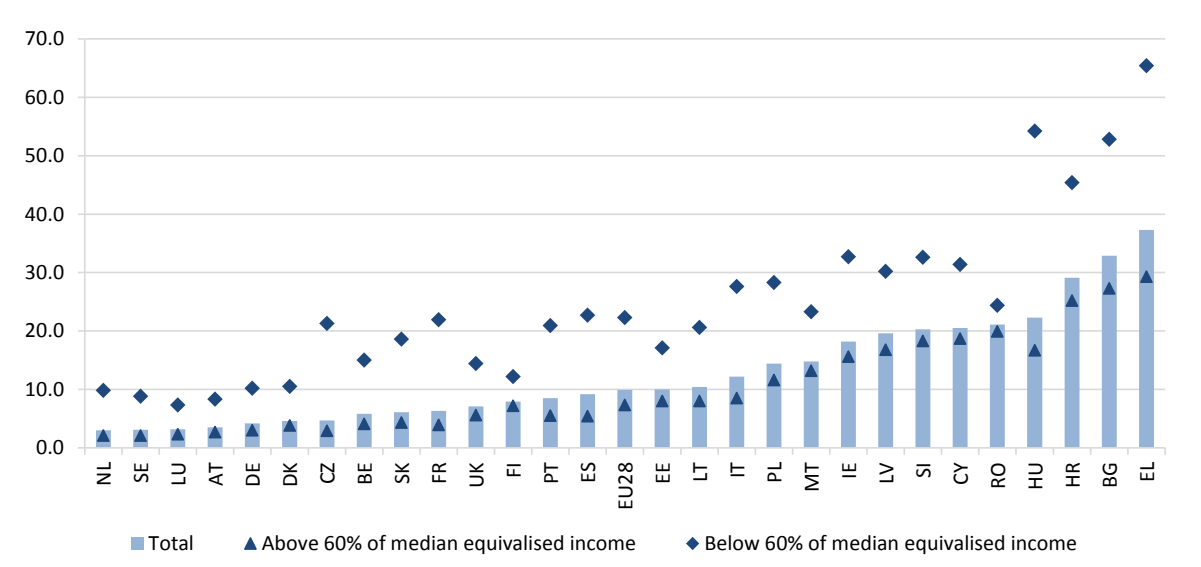
[141] A correlation coefficient of 0.34

[142] The EU-SILC survey is completed at the household level. Equivalised income is the income attributed to each member of the household. In order to take into account differences in household size and composition, the equivalised income of each household member is calculated by dividing the total disposable income of the household by an equivalisation factor (Eurostat applies an equivalisation factor according to the OECD-modified scale first proposed in 1994).

In Figure 175, it can be seen that countries with a high percentage of population in arrears with utility bills also display a high percentage of the population unable to keep the house adequately warm (e.g. Bulgaria and Greece), and countries with a low percentage of the population in arrears with utility bills frequently also have a low percentage of the population unable to keep the house adequately warm (e.g. Luxembourg and the Netherlands).

These observations highlight the importance of income as well as electricity prices for affordability of utility bills, and that policy may be more effective if it is targeted towards those with low incomes.

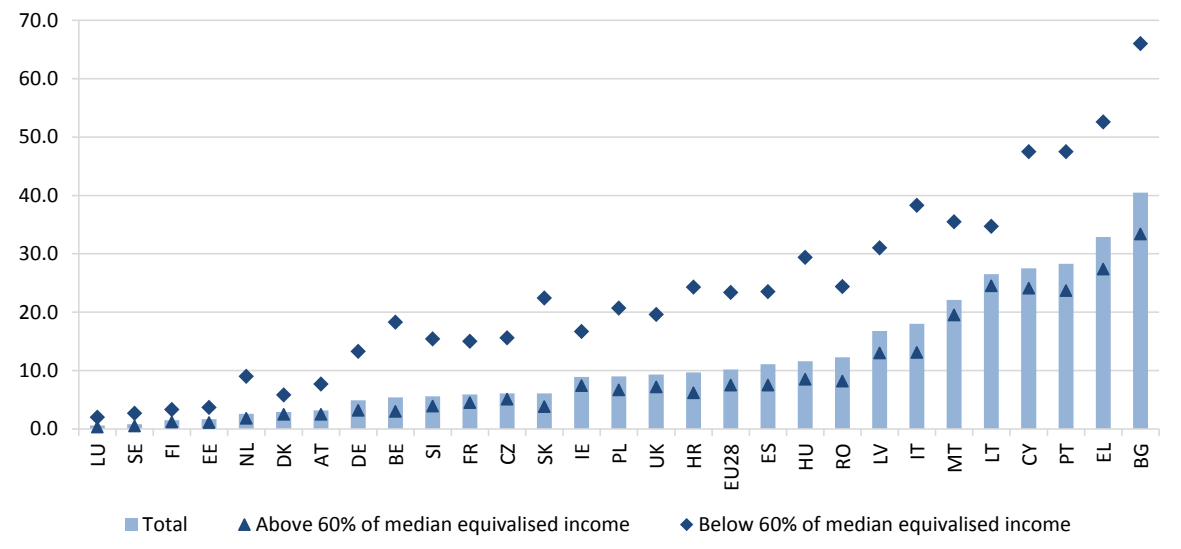
Figure 174: Percentage of population in arrears with utility bills: populations above and below 60% of median equivalised income (2014)



Note: Question: "In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?"

Source: Eurostat - Arrears on utility bills (ilc_mdes07)

Figure 175: Percentage of population unable to keep house warm (%): populations above and below 60% of median equivalised income (2014)



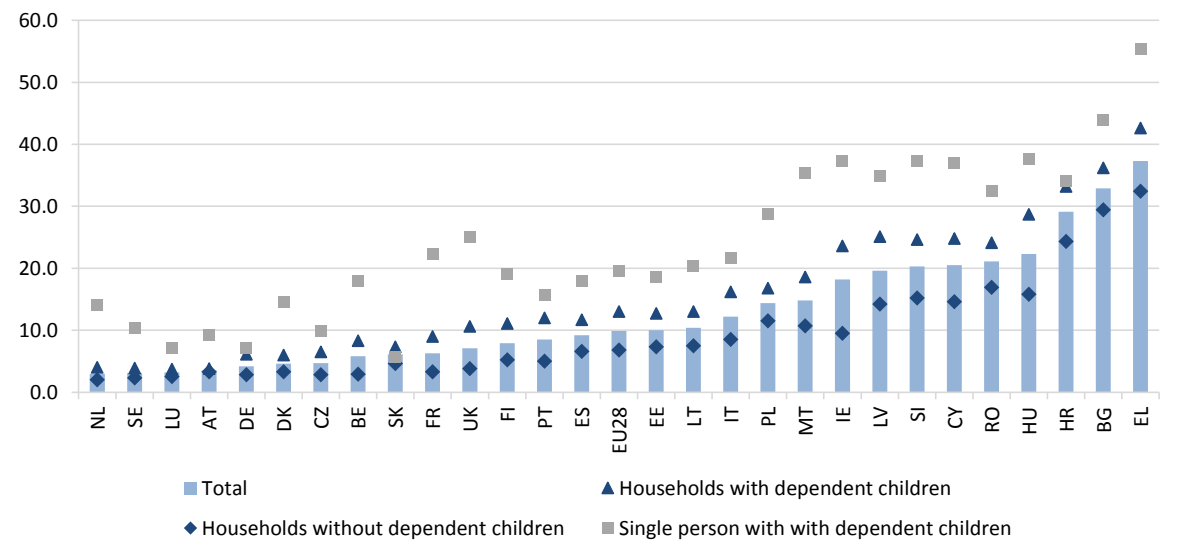
Note: Question: "Looking at this card, can I just check whether your household could afford the following: To keep your home adequately warm?"

Source: Eurostat - Arrears on utility bills (ilc_mdes01)

A second observation is that a higher proportion of households with **dependent children** are in arrears with utility bills than those without dependent children (Figure 176). This is especially true in the case of single parents with dependent children. Again, this may help to target assistance towards certain groups of consumers.

However, it should be recognised that this relationship may be linked to the previous observation about income level. Specifically, single parents with dependent children have, on average, lower incomes than the population as a whole, and are therefore more likely to be in arrears.

Figure 176: Percentage of population in arrears with utility bills: households with and without dependent children (2014)

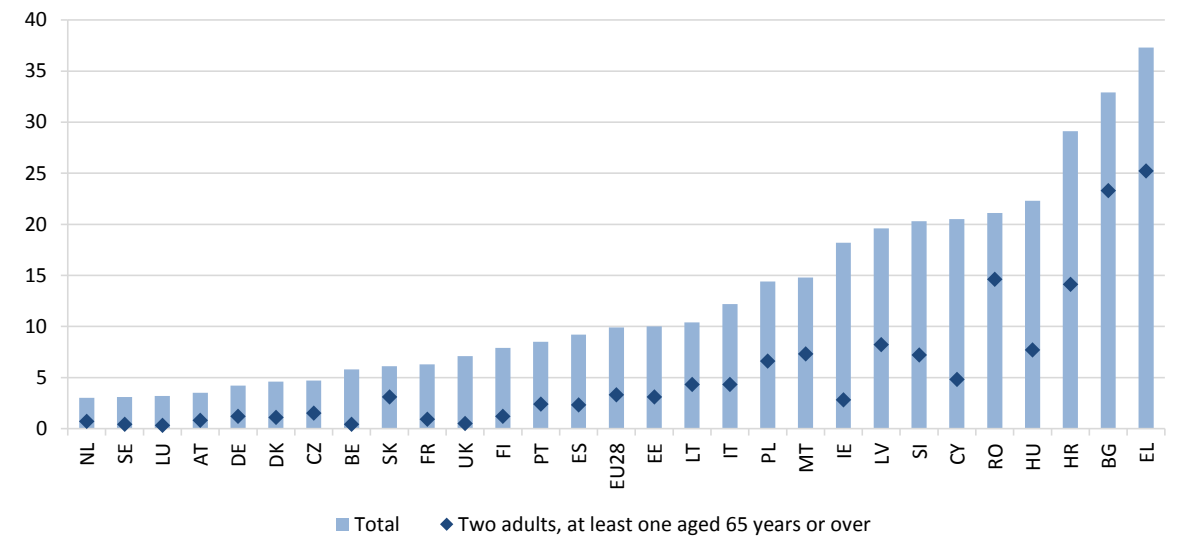


Note: Question: "In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?"

Source: Eurostat - Arrears on utility bills (ilc_mdes07)

Finally, the rate of arrears is lower among **elderly households** (Figure 177). This may reflect the diligence of the elderly in paying bills on time, but it may also be due to special protection measures, such as special assistance, which is offered to elderly consumers in some Member States.

Figure 177: Percentage of population in arrears with utility bills: households with an elderly member (2014)



Note: Question: "In the last twelve months, has the household been in arrears, i.e. has been unable to pay on time due to financial difficulties for utility bills (heating, electricity, gas, water, etc.) for the main dwelling?"
Source: Eurostat - Arrears on utility bills (ilc_mdes07)
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8.3 Definitions of consumer vulnerability, including energy poverty

Formal definitions of **vulnerable consumers** were found in national legislation in many but not all Member States of the EU. The following countries have defined consumer vulnerability within the energy sector:

- In Belgium, the concept of "vulnerable consumer" existed before the European recommendation but under the name of "residential protected client". It is defined in Art. 2 16° quarter of the law of 29 April 1999. The notion of "vulnerable customer" has been latterly transposed in Art. 2 16° quinquies and makes reference to the aforementioned definition.
- In Bulgaria, the Energy Act, Chapter 3, Section VI, Art. 38e makes reference to: "household clients, who receive allowances for electricity, heat or natural gas under the Act on Social Assistance and the legislative normative instruments on its implementation".
- In Croatia, the concept of "vulnerable client" existed before the EU recommendation but under the phrase "customers under special protection" and is defined in the Art. 65 of the Act on Electricity Market (National Gazette, no. 22/13), as of 8 February 2013.
- In Cyprus, pursuant to the provisions of the Rules governing the 2003 Electricity Market Law until 2012, a decree of the Minister of Energy, Commerce, Industry and Tourism, issued in September 2015 sets energy poverty, vulnerable electricity consumers categories and protection measures for these consumers. The decree was published in the Official Gazette on 4 September 2015 (EU Fri III (I), Nr. 4890, PI 289/2015).

- In the Czech Republic, there is a legal term "protected customer" that refers to hospitals and ill people dependant on life-support equipment[143] (see also Italy, below, which has a similar concept in force).
- In France, Act n°2010-788, 12 July 2010, on the national engagement for the environment (a.k.a. Grenelle 2 Act), which modifies law n°90-449, 31 May 1990, on the right to rent (a.k.a. Besson Act) defines energy vulnerability.
- In Hungary, Art. 64 and 65, 2007. évi LXXXVI[144] refers to "protected consumers".
- In Italy, the concept of "vulnerable consumer" is defined in Legislative decree 93/11145, but refers to "vulnerable consumers" as including clients involved in public service activities, i.e. public or private institutions dedicated to activities of assistance, such as hospitals, rest homes, prisons, and schools[146].
- In Ireland, a consumer is defined as vulnerable in Statutory Instrument SI 463 of 2011 as "a household customer who is (a) critically dependent on electrically powered equipment, which shall include but is not limited to life protecting devices, assistive technologies to support independent living and medical equipment, or (b) particularly vulnerable to disconnection during winter months for reasons of advanced age or physical, sensory, intellectual or mental health."
- In Latvia, the concept of "protected consumer" is defined in Art. 331 of the Electricity Market Law.
- Lithuania issued Resolution No. 527 as of 27 May 2015, which confirmed the description of the procedure of applying additional guarantees to socially vulnerable electricity consumers. According to the document, "vulnerable consumers" are household consumers of electricity (and jointly residing persons) who are in receipt of monetary social assistance in accordance with the support according to the procedure stipulated in the Law on Cash Monetary Social Assistance Support for Deprived People.
- In Poland, the definition of "vulnerable consumer" was introduced in the amendment of the Energy Law Act, which entered into force on 11 September 2013. A "vulnerable consumer" in the context of the energy sector is "a person who is granted a rent supplement and is a party to a supplier or complex agreement with an energy enterprise and whose place of residence is an energy supply destination"[147].
- In Portugal, the concept of "vulnerable consumer" in electricity was established for the first time in Portuguese legislation by Article 2 §1 of Decree Law 138-A of 28 December 2010. Benefits are available to "vulnerable consumers" who have a contract in their own name, exclusively for domestic use in permanent housing, with contracted power up to 6.9 kVA.
- In Romania, Electricity and Natural Gas Law no. 123/2012 defines the vulnerable consumer as "the final consumer belonging to certain category of households'

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[143] Insight Energy, May 2015, Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures, Policy Report.

[144] 2007. évi LXXXVI. törvény a villamos energiáról, 2nd July 2007, Magyar Közlöny, num. 86, 02-07-2007, pp. 6354-6409.

[145] Specifically, the '*Attuazione delle direttive 2009/72/CE, 2009/73/CE e 2008/92/CE relative a norme comuni per il mercato interno dell'energia elettrica, del gas naturale e ad una procedura comunitaria sulla trasparenza dei prezzi al consumatore finale industriale di gas e di energia elettrica, nonché abrogazione delle direttive 2003/54/CE e 2003/55/CE*'.

[146] See also Insight Energy, May 2015, Energy poverty and vulnerable consumers in the energy sector across the EU: analysis of policies and measures, Policy Report, which does not give a formal definition, but refers to Italy having several measures aimed at protecting customers. These are given as "vulnerable household customers, utilities, activities relating to "public service", including hospitals, nursing homes and rest, prisons, schools and other public and private facilities that perform an activity recognized of public service as well as household customers that require electricity-powered life-support equipment with severe health problems".

[147] Source: stakeholder survey conducted in 2015.

clients, which for reasons of age, health or wage can be in a risk of social marginalisation".

- In Slovakia, consumer vulnerability is defined in §3 b 17 of the Energy Act[148]. This states that a "vulnerable household electricity customer means a household electricity consumer whose vital functions are depending on the offtake of electricity or who suffers from a severe disability and uses electricity for heating".
- In Slovenia, the concept of a vulnerable consumer is determined in Article 51 of the Energy Act as of 15 October 1999[149], amended on 22 March 2014[150]. The article stipulates that vulnerable client is a "household customer, who due to his financial circumstances, income and other social circumstances and living conditions cannot use an alternative source of energy for domestic use, which would cause the same or lower costs to the minimum household use".

This study only found **legislative references to a definition of energy poverty** in two countries:

- In Greece, Article 2 Law 4001/2011 defines energy poverty as a situation in which the consumer has difficulty to cover expenses for the supply of electricity or that these costs represent a significant proportion of the available income.
- In Cyprus, Decree K.D.P.218/2013 on 26 June 2013 defines energy poverty and explains that energy poverty is related to the condition of consumers who may be in a difficult position because of low income, as evidenced by tax declarations in conjunction with their professional status, marital status and special health.

Working definitions of energy poverty[151] were more common and were found in the following countries:

- Belgium relies on the number of consumers receiving electricity from a supplier of last resort as an indicator of those who are energy poor.
- Ireland uses the so-called "expenditure-based" approach to the calculation of energy poverty that classifies as energy poor all those consumers who spend more than 10% of their income on energy costs. This appears to be exactly the same approach as the "10% measure" originally used in the UK (see below).
- In Romania, all households below a certain income are considered to be energy poor.
- In Slovakia, energy poverty includes people who are not yet under the threshold definition of "material poverty" but at the same time cannot afford to pay for energy for basic living needs.
- In July 2013, the UK government adopted the low income high costs (LIHC) definition of fuel poverty in England. Under the LIHC definition of fuel poverty, a household is considered to be fuel poor if it has above average required energy costs, and if meeting its required energy costs would push it below the poverty line (defined as 60% of median equivalised household income). Prior to this, fuel poverty in England was measured using the "10% measure", under which household was considered fuel poor if it was spending more than 10% of its

[148] Act No. 251/2012 Coll. on energy and on amendments and supplements of certain acts. In Slovak: Zákon č. 251/2012 Z. z. o energetike, and last amended on 1 December 2014

[149] Available at: http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO1550

[150] Available at: http://www.pisrs.si/Pis.web/pregledPredpisa?id=ZAKO6665

[151] "Working definitions" are definitions used either officially or semi-officially, but not found in primary legislation. Some of these definitions are used to inform policy e.g. by allowing a country to set an indicator that can subsequently be quantified, allowing the government to calculate how much of the population is subject to energy poverty. However, an energy poverty definition for policy purposes may not be related to any form of alleviation measures, such as extra social welfare payments.

income on fuel to achieve adequate standards of warmth. Scotland, Wales and Northern Ireland continue to use the "10% measure" to define fuel poverty.

8.4 Are there specific groups that can be considered more vulnerable in relation to the energy market?

The definition of consumer vulnerability has developed from one that was predominately based on consumer characteristics such as age, low income or disability to a broader definition that recognises that anyone can find themselves in vulnerable circumstances and that consumers can move in and out of vulnerable situations. The European Commission study on *Vulnerable Consumers in Key Markets in the EU* (2016)[152] provides such a new definition and distinguishes five dimensions of vulnerability.

A vulnerable consumer could be defined as:

"A consumer, who, as a result of socio-demographic characteristics, behavioural characteristics, personal situation, or market environment:

- is at higher risk of experiencing negative outcomes in the market;
- has limited ability to maximise his/her well-being;
- has difficulty in obtaining or assimilating information;
- is less able to buy, choose or access suitable products; or
- is more susceptible to certain marketing practices."

This definition takes into account that consumer vulnerability is situational, meaning that a consumer can be vulnerable in one situation but not in others, and that some consumers may be **more** vulnerable than others.

Evidence collected during this study indicates the following groups may be particularly susceptible in relation to the energy market:

Consumers in arrears with electricity bills. Survey respondents who sometimes (or often) could not pay their electricity bills on time were less likely to disagree that bills provided by their electricity company were easy and clear to understand (33% vs. 19% for respondents without payment difficulties) and they were more likely to disagree that it was easy to compare tariffs offered by their electricity company (42% vs. 27%, respectively) or tariffs offered by different electricity companies (47% vs. 38%, respectively). Respondents who had the biggest difficulties in paying their electricity bills appeared to be the least likely to be aware of policy measures aimed at protecting people with payment difficulties (17% compared to 22%-25% across other groups).

Respondents who sometimes or often could not afford paying their electricity bills on time were as likely as respondents who had no such difficulties to have tried to switch provider or tariff (28% and 29%, respectively); however, respondents with payment difficulties appear to have been less successful, and the actual switching rate for this group was lower (19% vs. 25% for respondents without payment difficulties).

Older consumers (65+), consumers with lower educational attainment and economically inactive consumers. Respondents with these socio-demographic characteristics tended to perform worse, on average, than other respondents in the behavioural experiment. This was particularly the case when looking at understanding of the terms and conditions in marketing material. The use of more complex information framing and the "dripping" of key terms and conditions behind a "pop-up"

[152] European Commission (2016). Consumer Vulnerability in Key Markets in the EU.

button exacerbated the problems these respondents had in the experiment. Further, switching rates were lower among over 65 year-olds, economically inactive respondents and respondents with lower education attainment. For example, while 15% of over 65 year-olds had switched provider or tariff with their current provider in the past three years, this figure was 30% for younger respondents.

It is also noteworthy that stakeholders referred to older consumers as being the victims of pressing sales tactics, in particular in face-to-face scenarios. One stakeholder described older consumers as being "forced to change supplier against their will" as well as "not being able to evaluate the contract being signed". Another stakeholder simply referred to "pressure on vulnerable people (older consumers)" as being an issue in their retail market.

Credulous or excessively trusting consumers. Credulity and being trusting are behavioural drivers of vulnerability.[153] The Unfair Commercial Practices Directive, Guidance Chapter on Vulnerable Consumers, includes credulity within the definition of vulnerability.[154] Consumers' trust in advertising materials and communications provided by electricity companies is one method for assessing credulity. In the consumer survey, respondents were asked to indicate their agreement with a series of statements concerning their level of trust in electricity company advertising, pre-contractual information and presentation of tariffs. Respondents who indicated they had a high level of trust in these communications also tended to be more likely to provide the incorrect response in the marketing material exercise. Further, trust and credulity was also found to play a role in whether respondents were able to correctly identify and switch to the cheapest deal in the "stay or switch" experiment; those exhibiting a high level of trust tended to choose the cheapest deal less often than those who were more cautious.

Consumers who do not compare offers. In the European Commission study on *Vulnerable Consumers in Key Markets in the EU* (2016)[155], consumers who did not compare deals in markets were found to be more susceptible to marketing practices. In the current study, respondents in the behavioural experiment who reported they had not actively searched for alternative offers from different electricity companies, also tended to choose more expensive offers in the experiment.

Consumers who are situationally vulnerable. Consumer vulnerability does not have to be linked to a personal characteristic of the consumer. Some consumers may be situationally vulnerable, for example, due to their place of residence. One French source presented a different picture of energy vulnerability breaking down the presence of energy vulnerability by location[156]. As can be observed from Table 86, the population most vulnerable to energy poverty increases as population density decreases: the rate of energy poor increases from 11% in big cities to 29% in the country side.

Table 86: Vulnerability by residence (% at risk)

Big cities	10.7%
Ring	16.9%
Median cities	18.5%
Ring from median cities	23.8%

[153] European Commission (2016). Consumer Vulnerability in Key Markets in the EU.

[154] http://ec.europa.eu/justice/consumer-marketing/files/ucp_guidance_en.pdf

[155] European Commission (2016). Consumer Vulnerability in Key Markets in the EU.

[156] Energie Mediateur (2014) 'Rapport Activité 2013'. Available at : http://www.energie-mediateur.fr/fileadmin/user_upload/Publications/Rapport-Activite-2013-MNE.pdf

Multiple centres	23.9%
Countryside	28.6%

Source: Energie Mediateur (2014)

8.5 Policy measures for consumers in arrears with electricity bills

When categorising the specific measures for consumers who have difficulties in paying their electricity bills, the following measures were identified per country (as presented in Table 87).

Table 87: Summary of measures to assist energy poor or vulnerable consumers

	Social or discounted tariff	Direct payment to consumer	Direct payment to supplier	Pre-paid meter	Energy efficiency support	Limits on disconnect-ion	Payment negotiation	General Social Welfare (may be multiple measures)
Austria								√
Belgium	√			√	√	√	√	
Bulgaria								√
Croatia			√					√
Cyprus	√				√			
Czech Republic								√
Denmark	√							
Estonia	:	:	:	:	:	:		:
Finland								√
France	√				√			
Germany								√
Greece		√						
Hungary				√		√	√	
Iceland	:	:	√	:	:	:		:
Ireland		√				√	√	√
Italy	√							
Latvia	√							
Lithuania	:	:	:	:	:	:	:	:
Luxembourg			√	√		√	√	√
Malta	√				√			
Netherlands						√		
Norway			√			√		√
Poland		√		√				
Portugal	√							
Romania						√		
Slovakia						√		
Slovenia						√		
Spain	√							
Sweden			√			√		√
UK		√			√			√
Total	**9**	**4**	**5**	**4**	**5**	**10**	**4**	**11**

Note: ":" signifies a "don't know" response

Source: Stakeholder consultation

ACER and CEER have also examined specific measures to protect vulnerable consumers in their 2014 Market Monitoring Report[157], and created the following table:

Table 88: Measures to protect vulnerable electricity consumers (ACER/CEER)

	Electricity
Restrictions on disconnection due to non-payment	16
Earmarked social benefits to cover (unpaid) energy expenses	9
Special energy prices for vulnerable customers (also known as social tariffs)	8
Additional social benefits to cover (unpaid) energy expenses (non-earmarked financial means)	4
Free energy-saving advice to vulnerable consumers	3
Right to deferred payment	2
Exemption from some components of final customer energy costs (e.g. energy price, taxes, levies)	2
Financial grants for the replacement of inefficient appliances	2
Free basic supply of energy	1
Replacement of inefficient basic appliance at no cost to vulnerable households	1
Other	5

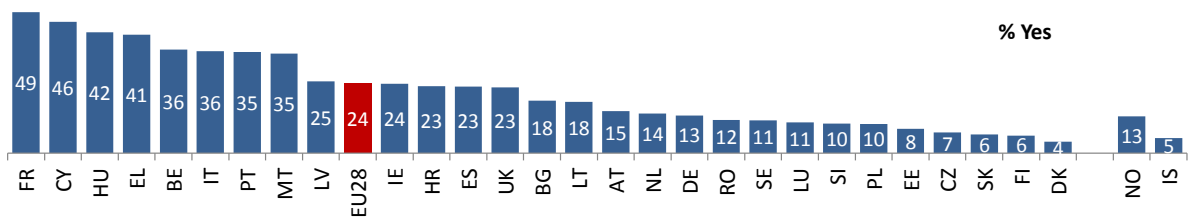
Source: CEER Database, National Indicators (2014), taken from the 2014 Market Monitoring Report

It is quite possible, however, that protection measures are understated due to the high cross-over between traditional social welfare mechanisms and energy poverty policy. Within social welfare frameworks, some specific energy poverty or consumer vulnerability measures pre-date the recent inclusion of the concepts of energy poor and consumer vulnerability into legislation. For example, a supplementary fuel allowance for winter (traditionally to protect pensioners who are at risk from cold weather) has been in place in the UK since 1992[158].

8.6 Consumers' awareness of policy measures for consumers in arrears with electricity bills

In Greece, Hungary, Cyprus and France, roughly 40% – or more – of respondents in the consumer survey answered that they were aware of policy measures aimed at protecting people who have difficulties with paying their energy bills (between 41% in Greece and 49% in France). In Denmark, Iceland, Finland, Slovakia, the Czech Republic and Estonia, on the other hand, less than 10% of respondents had heard of such measures (from 4% in Denmark to 8% in Estonia).

Figure 178: Awareness of policy measures aimed at protecting people who have difficulties in paying their energy bills, by country



Q13. Are you aware of any policy measures aimed at protecting people who have difficulties in paying their energy bills?
% by country, Base: all respondents
Source: Consumer survey

[157] ACER/CEER (2014), Market Monitoring Report.

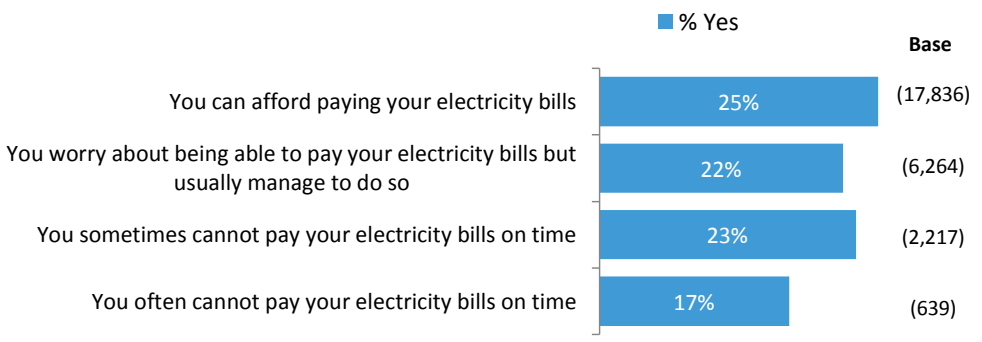
[158] For example, the winter fuel payment in the UK is governed by the Social Fund (Winter Fuel Payment) Regulations 2000, under the Social Security Contributions and Benefits Act 1992.

Socio-demographic considerations and affordability of electricity bills

Awareness of policy measures aimed at protecting people who have difficulties in paying their energy bills was higher among over 64 year-olds: 27% had heard of such measures compared to 24% for younger respondents (under 65). In Section 8.2.2, it was noted that the rate of arrears is lower among elderly households and that this may be due to special assistance offered to elderly consumers in some Member States. If such special assistance is indeed offered, this may also explain the higher awareness level measured among elderly respondents.

Respondents who had the most difficulties in paying their electricity bills, on the other hand, appeared to be the least likely to be aware of policy measures aimed at protecting people with payment difficulties (17% compared to 22%-25% across other groups.

Figure 179: Awareness of policy measures aimed at protecting people who have difficulties in paying their energy bills, by respondent characteristics

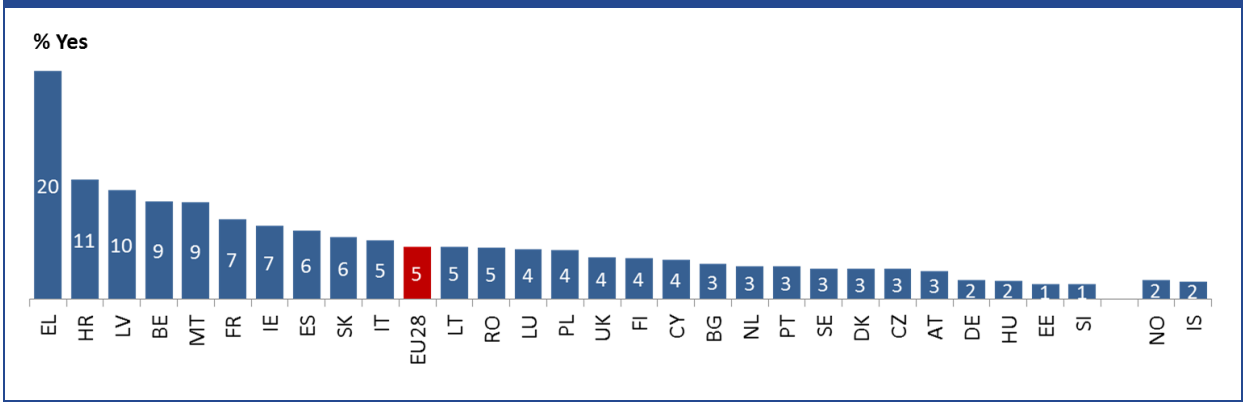


Q13. Are you aware of any policy measures aimed at protecting people who have difficulties in paying their energy bills?
Q12. Which of the following situations applies to you?
% EU28, Base: all respondents (respondents that did not answer Q12 – don't know/refused - are not shown)
Source: Consumer survey

8.7 Consumers benefiting from assistance in paying their electricity bills

The consumer survey results with regards to the proportions of consumers receiving financial assistance showed, first of all, that the proportion benefitting from **a social tariff or assistance from their electricity company** (e.g. a staggered payment plan) ranged from 1% in Estonia and Slovenia to 20% in Greece.

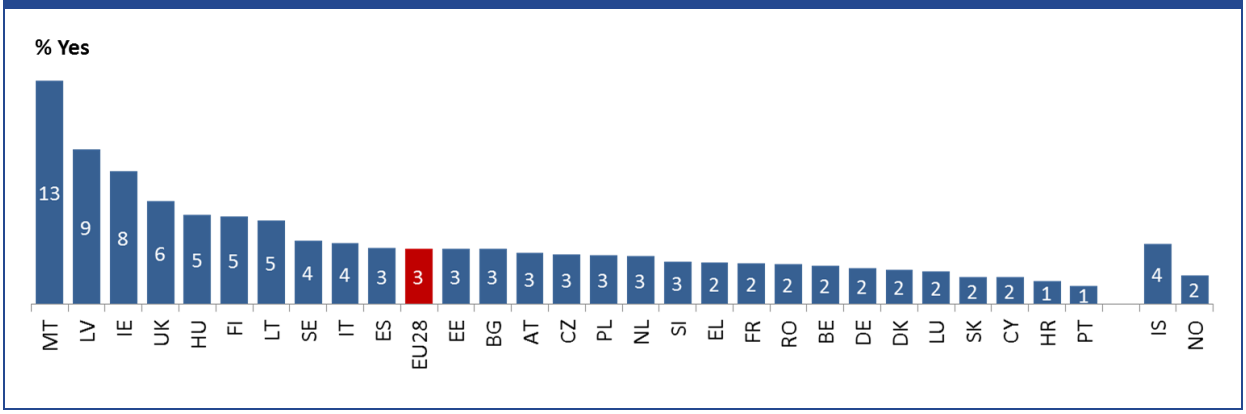
Figure 180: Proportion of consumers who benefit from a social tariff or other assistance from their electricity company, by country



Q14_1. Please indicate whether each of the following statements applies to you or not: I benefit from a social tariff or other assistance (e.g. a staggered payment plan) from my electricity company.
%, by country, Base: All respondents
Source: Consumer survey

Secondly, the proportion of survey respondents who received **financial assistance from the government** aimed at helping them to pay their electricity bills ranged from 1% in Croatia and Portugal to 13% in Malta.

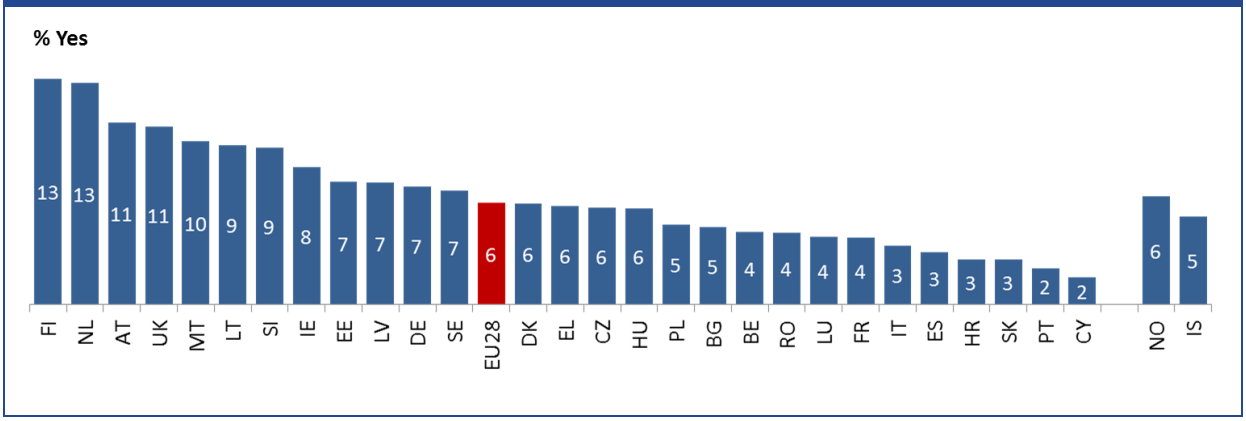
Figure 181: Proportion of consumers who benefit from financial assistance from the government to cover energy costs, by country



Q14_2. Please indicate whether each of the following statements applies to you or not: I benefit from financial assistance from the government aimed at helping me with my electricity bill
%, by country, Base: All respondents
Source: Consumer survey

Finally, the proportion of survey respondents who received financial assistance from the government to pay for general living expenses ranged from 2% in Cyprus and Portugal to 13% in the Netherlands and Finland.

Figure 182: Proportion of consumers who benefit from financial assistance from the government for general living expenses, by country



Q14_3. Please indicate whether each of the following statements applies to you or not: I benefit from financial assistance from the government aimed at helping me with my general living expenses.

%, by country, Base: All respondents

Source: Consumer survey

9. Consumers' attitudes towards energy efficiency and renewable energy

This chapter analyses consumers' attitudes towards energy consumption and renewable energy. Consumers may try to reduce electricity consumption for environmental reasons or to reduce costs; this is assessed in Section 9.1.1. Attitudes may also be deduced from actions taken by consumers to reduce energy consumption; these actions are discussed in Section 9.1.2.

In Section 9.2, consumers' access to information about energy efficiency related topics is assessed. In the last section, the focus moves to "green" tariffs; Section 9.3.1 looks at information about "green" tariffs provided on electricity companies' websites, while Section 9.3.2 presents the results of the "stay or switch" task in the behavioural experiment, where respondents were given the opportunity switch to a "green" tariff.

Box 12: Main findings with regards to "energy consumption and energy efficiency"

- **Ensuring optimal energy consumption.** Across the EU28, 57% of survey respondents "strongly agreed" that it was important for them to find ways to better manage their energy consumption. The consumer survey also showed that 12% of respondents had sought public advice on energy saving, 8% had applied for public funding for energy saving home improvements and 7% had asked an independent expert to conduct an energy audit of their home.
- Across the EU28, 23% of survey respondents "strongly agreed" that their electricity company provided them with **advice on how to reduce their energy consumption**; this figure varied between 8% in Bulgaria and 39% in Malta.
- Among electricity companies in the 10 mystery shopping countries, those in the Czech Republic, Italy, Lithuania and Poland received the lowest scores in terms of providing information on energy efficiency related topics on their websites. While 40% of shoppers in the UK had found information about **smart energy tools** (e.g. "smart" power strips that automatically cut power to devices when they go into standby mode) on the electricity company's website they evaluated; this proportion was 2% in the Czech Republic, 7% in Italy, 8% in Poland and 12% in Lithuania. In Sweden and the UK, somewhat more than a third of mystery shoppers had found **a tool to compare their energy use** to others' energy use or average energy use on the electricity company's website; in Italy and Lithuania, on the other hand, less than a tenth of shoppers reported that such a tool was available.
- **"Green" energy tariffs.** The proportion of mystery shoppers who reported that the electricity company they had evaluated offered "green" tariffs varied between 10% in the Czech Republic and 92% in Sweden. A slim majority (53%) of shoppers (who had found information about "green" tariffs on the electricity company's website) *completely agreed* or *agreed* that it had been easy to find detailed information about "green" tariffs on the electricity company's website.
- In the "stay or switch" task of the behavioural experiment, respondents were given the opportunity switch to a green electricity offer. Respondents were allocated to one of two treatments: a "high" and a "low" green premium. Almost 4 in 10 (37%) respondents chose to switch to the green offer in the high premium treatment compared to 42% in the low premium treatment. This indicates that consumers are willing to pay a premium for green tariffs.

9.1 Consumers' views on energy consumption and energy efficiency

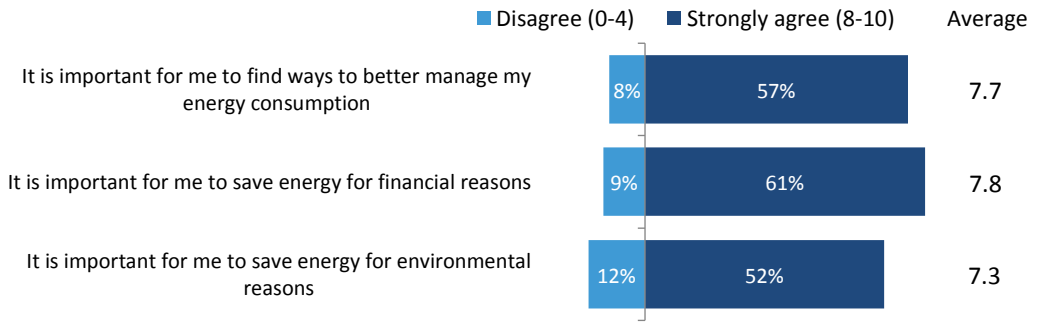
9.1.1 Consumers' views on energy efficiency and cost saving

Across the EU28, 57% of survey respondents "strongly agreed" (scores 8 to 10)[159] that it was **important for them to find ways to better manage their energy consumption;** the average score for this item was 7.7.

Roughly one in two (52%) respondents "strongly agreed" (scores 8 to 10), and 12% "disagreed" (scores 0 to 4), that it was **important for them to save energy for environmental reasons**. By comparison, a higher proportion (61%) "strongly agreed" that it was important for them to save energy **for financial reasons**; 9% "disagreed" with this statement. The average score was 7.3 for the former statement, compared to 7.8 for the latter statement.

As expected, the study found that survey respondents who thought it was important to save energy for financial reasons outnumbered those who thought it was important to save energy for environmental reasons. Nonetheless, the difference in proportions was maybe somewhat smaller than could be expected (61% vs 52%; a difference of 9 percentage points).

Figure 183: Agreement with various statements about energy efficiency



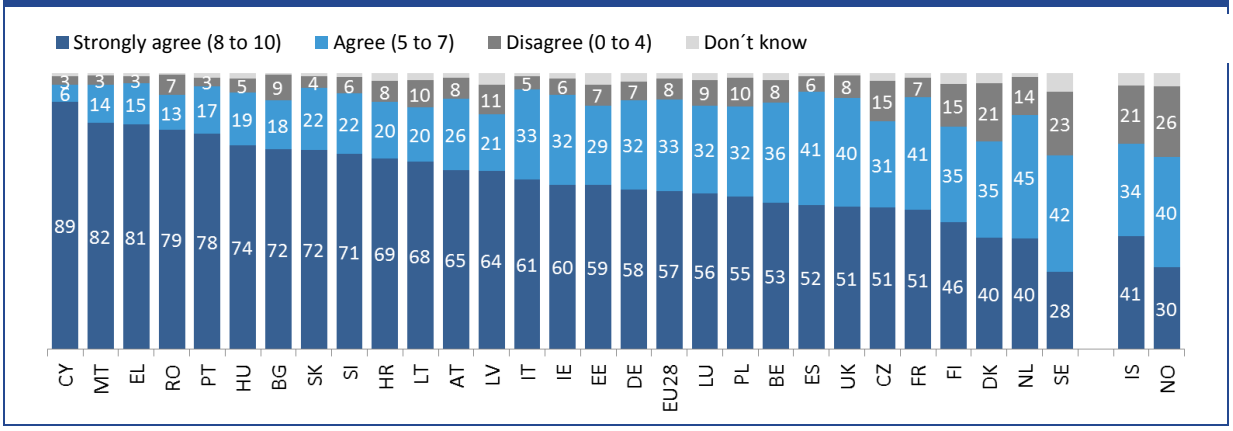
Q15_1 to 5. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".
%, EU28, Base: all respondents
Source: Consumer survey

[159] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. Figure 183 presents the results across the EU28; the numbers in the right-hand column of the figure show the average scores on the scale, while the percentages give more information about the distribution of respondents across the scale values. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

Individual country results

The proportion of respondents who "strongly agreed" (scores 8 to 10) that it was important for them to **find ways to better manage their energy consumption** ranged from 28% in Sweden to 89% in Cyprus. In six countries, less than half of respondents "strongly agreed": 28% in Sweden, 30% in Norway, 40% in Denmark and the Netherlands, and 41% in Iceland. The largest shares of respondents who "disagreed" (scores 0 and 4) with the statement were observed in Denmark and Iceland (both 21%), Sweden (23%) and Norway (26%).

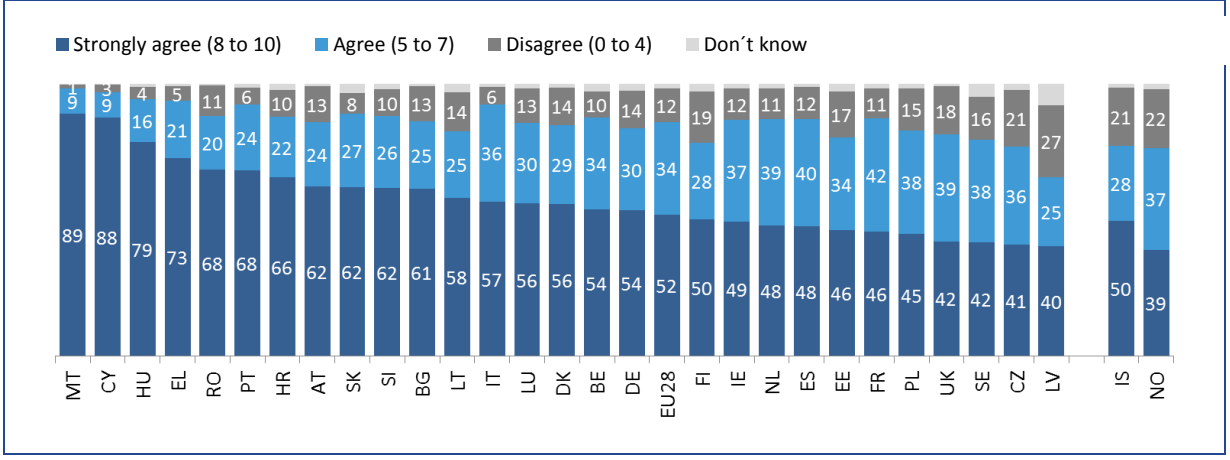
Figure 184: Agreement with the statement: "It is important for me to find ways to better manage my energy consumption", by country



Q15_1. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is important for me to find ways to better manage my energy consumption. *%, by country, Base: all respondents*
Source: Consumer survey

In Greece, Hungary, Cyprus and Malta, more than 70% of respondents "strongly agreed" (scores 8 to 10) that it was important for them to **save energy for environmental reasons** (between 73% and 89%). In 11 countries, less than half of respondents "strongly agreed" with this statement (from 39% in Norway and 40% in Latvia to 49% in Ireland).

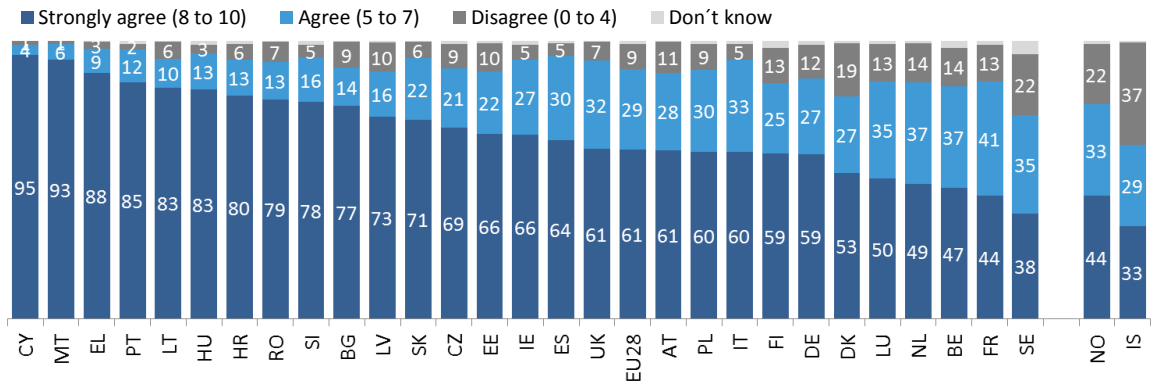
Figure 185: Agreement with the statement: "It is important for me to save energy for environmental reasons", by country



Q15_5. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is important for me to save energy for environmental reasons.
%, by country, Base: all respondents
Source: Consumer survey

The level of "strong" agreement (scores 8 to 10) for the statement that it was important for respondents to **save energy for financial reasons** ranged from 33% in Iceland and 38% in Sweden to 95% in Cyprus. France, Norway, Belgium, the Netherlands, Luxembourg and Denmark joined Iceland and Sweden at the lower end of the country ranking (between 44% and 53% of respondents in these countries "strongly agreed"), while Greece and Malta were close to Cyprus (with 88% and 93%, respectively, of respondents who "strongly agreed").

Figure 186: Agreement with the statement: "It is important for me to save energy for financial reasons", by country



Q15_4. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": It is important for me to save energy for financial reasons.

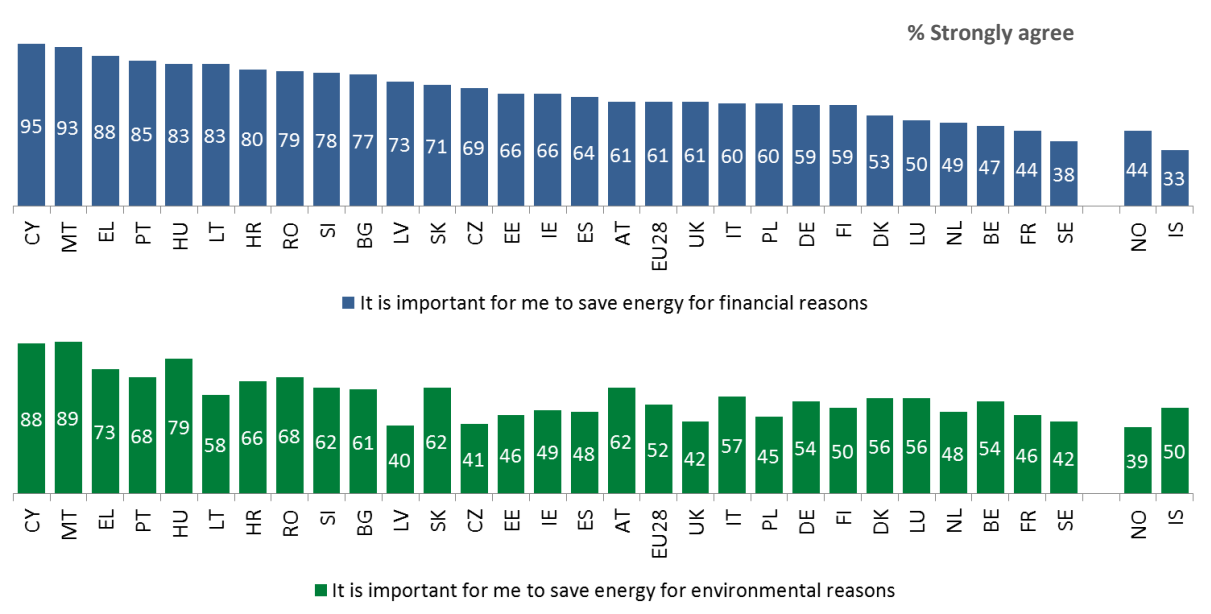
%, by country, Base: all respondents

Source: Consumer survey

In a large majority of countries (22 out of 30), respondents who "strongly agreed" that it was important for them to **save energy for financial reasons** outnumbered those "strongly agreeing" that it was important for them to **save energy for environmental reasons**; for example, in Latvia, 73% of respondents "strongly agreed" with the financial reasons statement, compared to 40% for the environmental reasons statement.

In Austria, France and the Netherlands, more or less equal shares of respondents agreed with the two statements; for example, in Austria, 61% of respondents "strongly agreed" with the financial reasons statement and 62% with the environmental reasons statement. In Iceland, respondents who "strongly agreed" that it was important for them to save energy for environmental reasons outnumbered those "strongly agreeing" that it was important for them to save energy for financial reasons (50% vs. 33%, respectively); this was also the case, although to a lesser extent, in Belgium, Denmark, Luxembourg and Sweden.

Figure 187: "Saving energy for financial reasons" vs. "saving energy for environmental reasons" (bar charts), by country



Q15_4&5. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree".

%, EU28, Base: all respondents

Source: Consumer survey

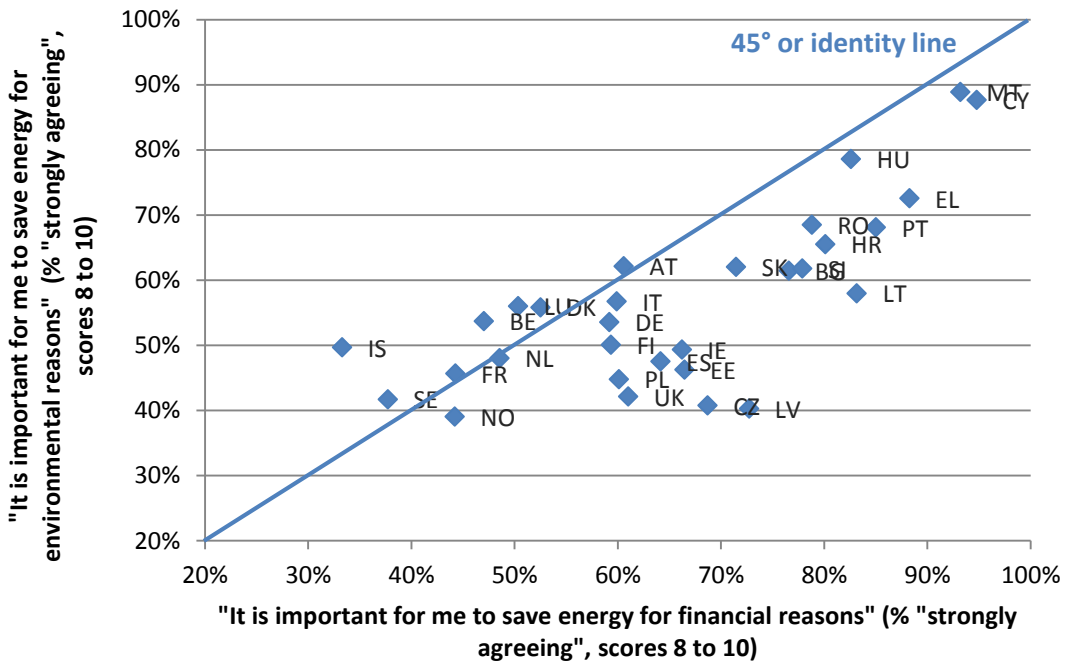
The scatterplot in Figure 188 displays the values for the level of "strong" agreement (scores 8 to 10) for the two statements about energy saving; the level of "strong" agreement for the statement that it is important to save energy for financial reasons is plotted on the horizontal axis, while the level of "strong" agreement for the statement that it is important to save energy for environmental reasons is plotted on the vertical axis. Each dot on the scatterplot represents a country.

There is a positive correlation between the proportion of respondents "strongly agreeing" that it was important for them to save energy for financial reasons and the proportion of consumers "strongly agreeing" that it was important for them to save energy for environmental reasons (a correlation coefficient of .74 – this number signifies a strong and positive correlation between the two variables at country level).

The scatterplot contains a 45° reference line or identity line; if a country is positioned on this line, this mean that the level of "strong" agreement for both statements is the same. For example, the dot representing the Netherlands is positioned very close to the 45° reference line; in the Netherlands, 49% of respondents "strongly agreed" with the financial reasons statement and 48% with the environmental reasons statement.

A country positioned below the 45° reference line is characterised by a higher level of "strong" agreement for the financial reasons statement than for the environmental reasons statement; while the opposite is true for countries positioned above the 45° reference line. Moreover, the further a country is removed from the 45° reference line, the larger the difference between the levels of "strong" agreement for the two statements. Latvia is the country that is the furthest removed from the 45° reference line; in this country, 73% of respondents "strongly agreed" with the financial reasons statement, compared to 40% for the environmental reasons statement (a difference of 33 percentage points).

Figure 188: "Saving energy for financial reasons" vs. "saving energy for environmental reasons" (scatterplot), by country



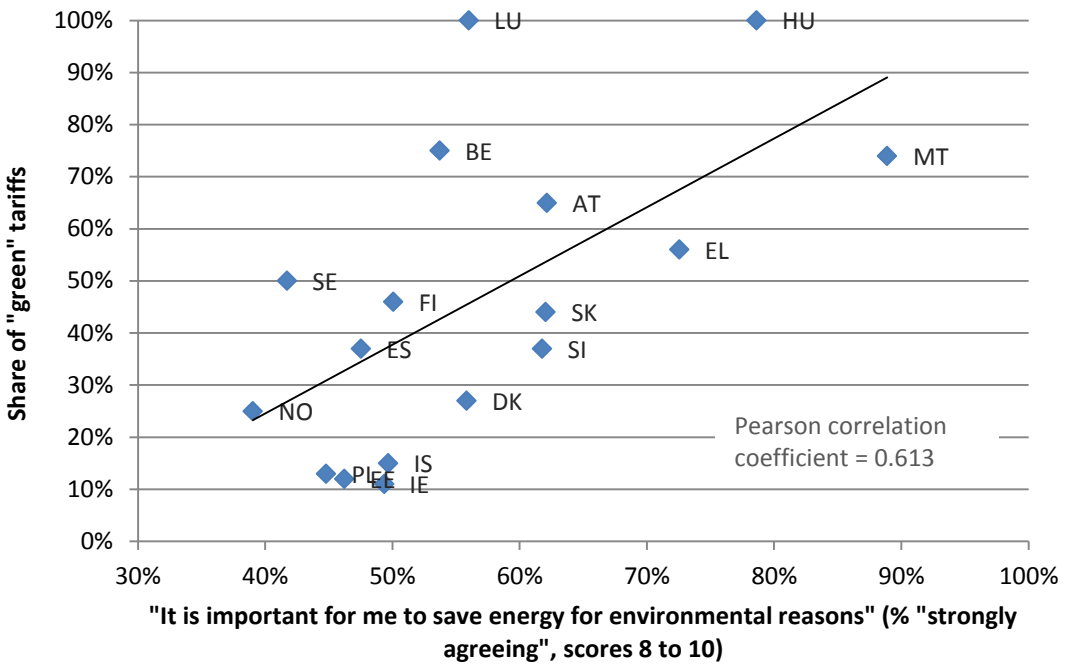
X-axis: Consumer survey Q15_4, % "totally agreed" (scores 8 to 10), Base: all respondents
Y-axis: Consumer survey Q15_5, % "totally agreed" (scores 8 to 10), Base: all respondents
Source: Consumer survey

Consumers' concerns about the environment and share of green tariffs

Consumers' concerns about the environment and their willingness to take action may give electricity companies an incentive to provide green energy options. Information from the price collection indicates that green tariffs (electricity provided from 100% green sources) were offered in 17 countries, and in some of these countries, these tariffs make up a large proportion of the entire range of tariffs on offer (see Table 61 in 7.3.2).

One can observe a relationship between consumers' views on the environment and the share of green tariffs in the total number of tariffs on offer. In countries where green tariffs are available (17 countries out of 30), there is a positive relationship between the share of green tariffs and the proportion of consumers "strongly agreeing" that it was important for them to save energy for environmental reasons (a correlation coefficient of .61 – this number signifies a strong and positive correlation between the two variables at country level)[160].

Figure 189: Consumer environmental opinions and share of green tariffs



X-axis: Consumer survey Q15_5, % "totally agreed" (scores 8 to 10), countries where green tariffs are available (EU28 + NO, IS), Base: all respondents
Y-axis: Price collection exercise, Share of green tariffs in total number of tariffs (countries where green tariffs are available)
Source: Price collection exercise and Consumer survey

In a number of countries, no green tariffs were offered, even though many consumers were willing to cut down their energy consumption for environmental reasons. For example, the price collection exercise found that no green tariffs (with electricity provided from 100% green sources) were offered in Portugal and Romania. In both countries, however, 68% of respondents "strongly agreed" that it was important for them to save energy for environmental reasons. In these countries, the market may not be providing sufficient choice in terms of green energy alternatives.

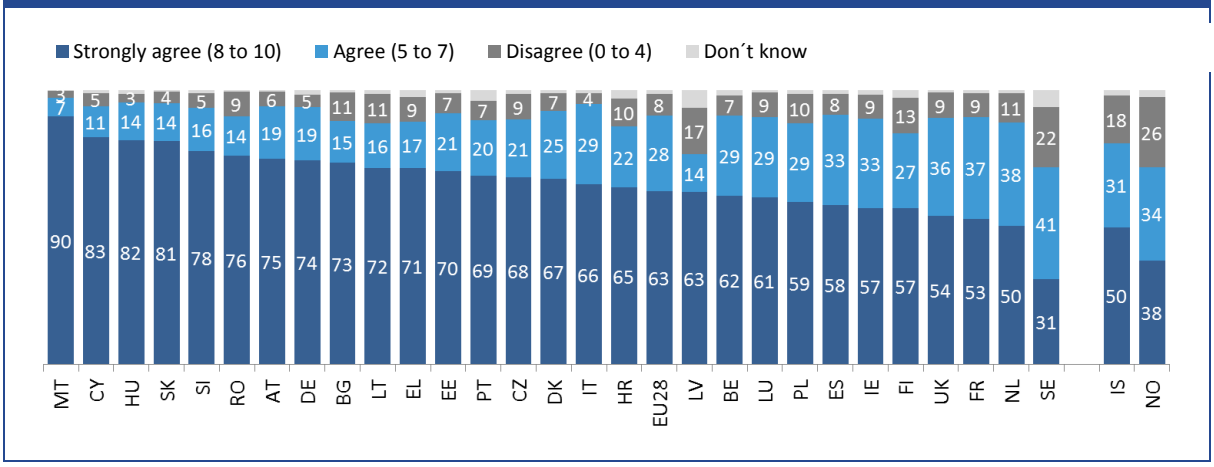
[160] Note: the choice by consumers for "green" tariffs will, of course, not lead to energy savings. Green tariffs is about the production of electricity from renewable energy sources, and not about energy saving.

9.1.2 Consumers' experiences with reducing energy consumption

Paying attention to **energy efficiency when buying household appliances** is one way to better manage one's energy consumption; 63% of survey respondents across the EU28 "strongly agreed" (scores 8 to 10) that energy efficiency played a role when they bought household appliances. The average score for this statement is 7.8 (out of 10).

In most countries, at least one in two respondents "strongly agreed" (scores 8 to 10) that energy efficiency was important when buying household appliances; the highest share of respondents who expressed "strong" agreement was observed in Malta (90%). Sweden and Norway stood out with, respectively, just 31% and 38% of respondents who "strongly agreed" (scores 8 to 10) that they paid attention to energy efficiency when buying household appliances[161].

Figure 190: Agreement with the statement: "I pay attention to energy efficiency when buying household appliances", by country



Q15_2. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I pay attention to energy efficiency when buying household appliances.

%, by country, Base: all respondents

Source: Consumer survey

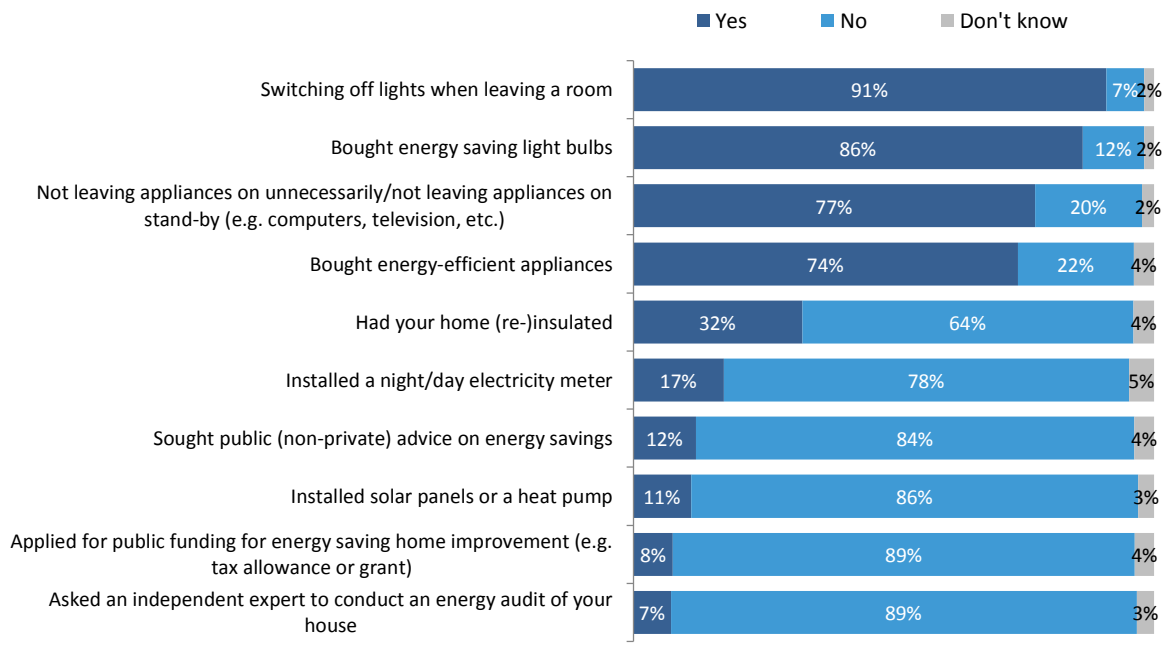
Figure 191 (on the next page) shows that 91% of survey respondents said they switched off lights when leaving a room and 86% answered that they had bought energy saving light bulbs. Roughly three-quarters (77%) of respondents reported that they did not leave on appliances unnecessarily and did not leave appliances on stand-by, and 74% had bought energy efficient appliances.

The results of this question also showed that 32% of respondents answered that they had their home (re-)insulated and 11% mentioned that they had installed solar panels or a heat pump. One in six (17%) respondents had installed a night/day electricity meter.

Finally, 12% of respondents had sought public advice on energy saving, 8% had applied for public funding for energy saving home improvements and 7% had asked an independent expert to conduct an energy audit of their home.

[161] When interpreting these findings, one needs to take into account the characteristics of household appliances sold in stores across countries; for example, if all household appliances being sold in a store are energy efficient ones, consumers do not need to pay attention to this aspect when making a choice.

Figure 191: Measures taken to reduce energy consumption



Q16. Which of the following have you done, or are you doing, to reduce your energy consumption?
% EU28, Base: All respondents
Source: Consumer survey

Individual country results

Across all countries, the most popular measures taken by respondents to reduce their energy consumption were: (1) switching off lights when leaving a room (between 76% in Sweden and 98% in Malta), (2) buying energy saving light bulbs (between 76% in Croatia and 99% in Malta); (3) not leaving on appliances unnecessarily (between 63% in Estonia and 89% in Malta); and (4) buying energy efficient appliances (between 47% in Latvia and 88% in Austria and Malta).

In Poland, Slovenia, Estonia, the Czech Republic, Cyprus, Romania and Bulgaria, more than 40% of respondents reported that they had their home (re-)insulated (between 42% and 53%). In Cyprus, 53% of respondents mentioned that they had installed solar panels or a heat pump; this figure was 31% in Greece.

The largest shares of respondents who had installed a night/day electricity meter were observed in Croatia and Bulgaria (67% and 72%, respectively); in three other countries, more than 40% had installed such a meter: 44% in both Estonia and Slovenia and 49% in Belgium.

In Austria and Malta, roughly 3 in 10 respondents had sought public advice on energy saving (29% and 31%, respectively); in Poland, Germany and Croatia, this applied to roughly one in five respondents (between 19% and 22%). In four countries, 10% or more of respondents had applied for public funding for energy saving home improvements: 10% in Belgium, 11% in Slovenia, 12% in Ireland and 13% in Italy. Respondents in Ireland and Italy were also among the most likely to have asked an independent expert to conduct an energy audit of their home (11% and 12%, respectively).

Table 89: Measures taken to reduce energy consumption (% "Yes"), by country										
	Switching off lights when leaving a room	Bought energy saving light bulbs	Not leaving appliances on unnecessarily/not leaving appliances on stand-by	Bought energy-efficient appliances	Had your home (re-) insulated	Installed a night/day electricity meter	Sought public (non-private) advice on energy savings	Installed solar panels or a heat pump	Applied for public funding for energy saving home improvement	Asked an independent expert to conduct an energy audit of your house
BG	91%	80%	77%	83%	53%	72%	7%	7%	9%	3%
SI	93%	87%	80%	79%	42%	44%	12%	22%	11%	5%
AT	96%	83%	86%	88%	30%	20%	29%	15%	8%	10%
MT	98%	99%	89%	88%	20%	6%	31%	20%	6%	7%
CY	95%	90%	67%	66%	50%	9%	11%	53%	6%	4%
BE	92%	85%	73%	73%	38%	49%	6%	16%	10%	7%
IT	91%	89%	79%	82%	27%	21%	8%	16%	13%	12%
HR	94%	76%	71%	64%	24%	67%	22%	4%	6%	10%
IE	93%	88%	84%	75%	37%	14%	13%	9%	12%	11%
HU	93%	90%	81%	85%	37%	27%	9%	3%	5%	6%
EL	95%	87%	73%	67%	31%	24%	11%	31%	7%	6%
LU	94%	87%	76%	76%	39%	9%	9%	20%	9%	8%
DE	91%	86%	85%	84%	23%	9%	21%	14%	7%	9%
EE	95%	82%	63%	82%	43%	44%	1%	9%	3%	3%
EU28	91%	86%	77%	74%	32%	17%	12%	11%	8%	7%
CZ	85%	86%	72%	81%	47%	28%	4%	5%	4%	5%
UK	93%	87%	84%	69%	40%	8%	11%	7%	7%	7%
ES	90%	88%	81%	76%	26%	12%	12%	11%	7%	7%
SK	92%	91%	64%	85%	38%	19%	9%	4%	3%	3%
FR	92%	87%	70%	69%	40%	17%	6%	10%	8%	7%
RO	93%	81%	66%	76%	52%	6%	12%	3%	8%	6%
LT	89%	86%	75%	76%	28%	26%	4%	4%	5%	3%
NL	92%	84%	79%	62%	19%	37%	4%	9%	6%	3%
PL	84%	84%	70%	56%	42%	18%	19%	6%	6%	6%
DK	93%	91%	67%	77%	22%	3%	4%	12%	8%	6%
PT	94%	87%	69%	64%	17%	26%	7%	6%	2%	4%
FI	86%	85%	64%	67%	13%	11%	13%	14%	3%	2%
SE	76%	83%	67%	57%	16%	5%	10%	18%	4%	4%
LV	87%	77%	74%	47%	30%	3%	4%	3%	5%	3%
NO	90%	81%	71%	55%	23%	3%	4%	25%	3%	2%
IS	90%	81%	65%	62%	10%	1%	7%	1%	1%	1%

Q16. Which of the following have you done, or are you doing, to reduce your energy consumption?
% by country, Base: All respondents
Source: Consumer survey

9.2 Obtaining information about energy efficiency and related topics

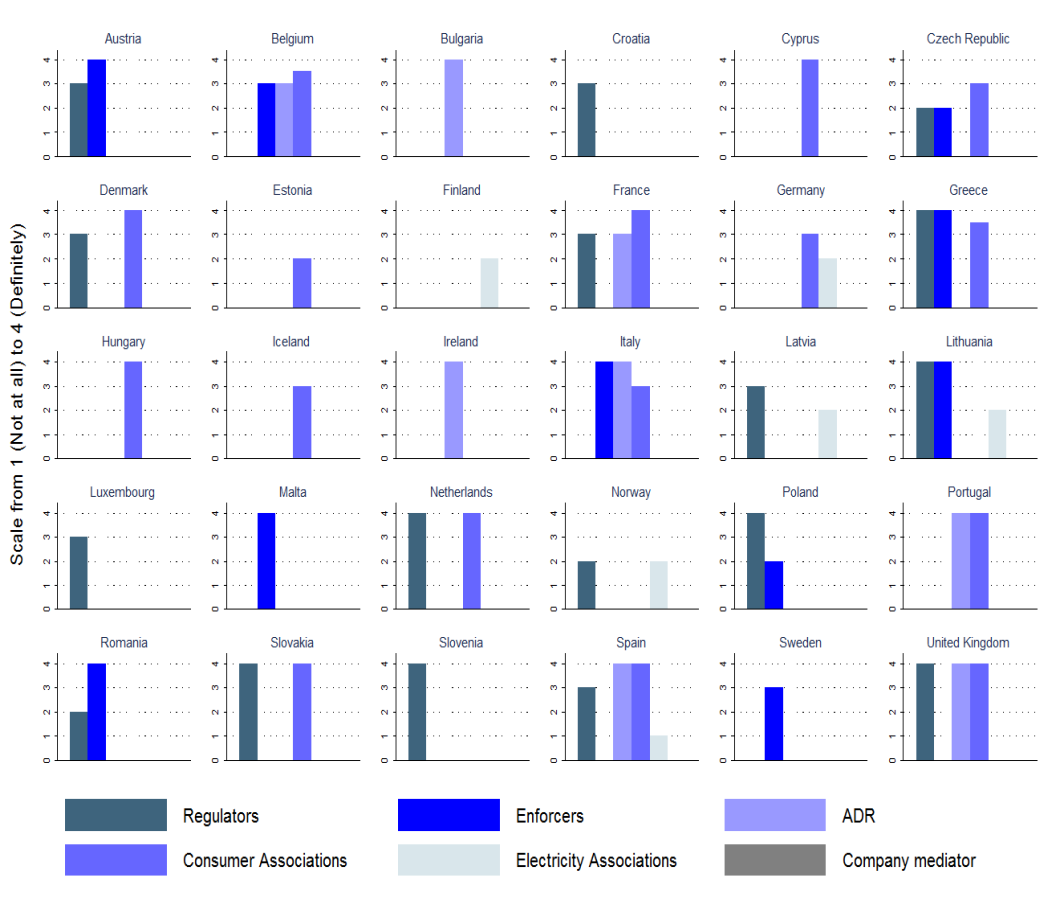
9.2.1 Providing consumers with advice on how to reduce their energy consumption

In Section 2.4, it was noted that, across the EU28, 23% of survey respondents "strongly agreed" (scores 8 to 10) that their electricity company provided them with advice on how to reduce their energy consumption; this figure varied between 8% in Bulgaria and 39% in Malta.

In line with the results of the consumer survey, the mystery shoppers' analysis of their electricity bills revealed that 26% of electricity bills contained tips on saving energy (see Section 5.2). Mystery shoppers in Germany and the UK were the most likely to have found tips on how to reduce their energy consumption on their electricity bill, while shoppers in the Czech Republic and Poland were the least likely to have found this information on their bill.

When stakeholders in the retail electricity industry were asked whether they thought that electricity companies should give tips/advice to consumers on ways to reduce their energy consumption, a majority answered that this is something that should be done by electricity companies. For example, in Bulgaria, Cyprus, Hungary, Ireland, Malta, the Netherlands, Portugal, Slovakia, Slovenia and the UK, all responding stakeholders answered that this was "definitely" a task of electricity companies.

Figure 192: Stakeholders' views whether electricity companies should give tips/advice to consumers on ways to reduce their energy consumption



Note: Stakeholder agreement with statement: 'Electricity suppliers should give tips / advice to consumers on ways to reduce their electricity consumption' (Blank means no response received)

Source: Stakeholder consultation

9.2.2 Information about energy efficiency and related topics found on electricity companies' websites

Table 90 presents an overview of energy efficiency related topics for which mystery shoppers had found information on electricity companies' websites. Across all countries, the information that was most frequently found was linked to **advice on rational energy use** and energy saving; this figure varied between 16% in the Czech Republic and 68% in the UK. Across all countries, the second most frequently mentioned topic was **advice on improving the energy efficiency of one's home**; this type of advice was mentioned, for example, by 59% of shoppers in the UK and 62% in Slovenia.

An analysis across the various topics showed that electricity companies in the Czech Republic, Italy, Lithuania and Poland scored worst in terms of providing information on energy efficiency related topics on their websites. For example, while 40% of shoppers in the UK had found information about smart energy tools on the electricity company's website; this proportion was 2% in the Czech Republic, 7% in Italy, 8% in Poland and 12% in Lithuania.

A small proportion of mystery shoppers noted that they had found "other" information about topics related to energy efficiency on the electricity company's website. These topics varied from information on how to save energy in the garden to information about arranging an energy audit for one's home.

Table 90: Proportion of mystery shoppers who found information about various energy efficiency related topics on electricity companies' websites

	UK	SI	DE	FR	SE	ES	LT	PL	IT	CZ	*Total*
	75	50	100	75	50	75	50	100	75	50	*700*
Advice on rational energy use/energy saving	68%	66%	67%	61%	56%	57%	30%	37%	31%	16%	***50%***
Improving your home's energy performance	59%	62%	54%	43%	48%	47%	28%	20%	16%	14%	***39%***
Smart energy tools (e.g. "smart" power strips that automatically cut power to devices when they go into standby mode)	40%	26%	26%	35%	18%	20%	12%	8%	7%	2%	***20%***
Self-generation of electricity (e.g. using solar panels)	40%	32%	18%	17%	32%	15%	10%	7%	12%	2%	***18%***
Grants and allowances to improve your home's energy performance	37%	20%	22%	23%	10%	7%	0%	3%	9%	4%	***14%***
Other	5%	2%	8%	0%	10%	0%	6%	1%	0%	0%	***3%***

Q8. Do you find any information/advice on sustainable energy use/saving electricity? Q8a. If yes, what type of information could you find?
Base: all mystery shoppers
Source: Mystery shopping

Table 91 shows the proportion of mystery shoppers who had found information about **energy service contracts**[162] on the electricity company's website. This proportion ranged from 18% in the Czech Republic and Germany to 71% in Poland. The proportion of shoppers who answered that the electricity company's website contained information about **smart meters** was 4% in Lithuania and the Czech Republic, but increased to 43% in the UK. In France, Germany, Slovenia and Sweden, more than a fifth of shoppers had found information about smart meters on the electricity company's website (between 21% and 28%).

In Sweden and the UK, somewhat more than a third of mystery shoppers had found **a tool to compare their energy use** to others' energy use or average energy use on the electricity company's website (34% and 36%, respectively); in Italy and Lithuania, on the other hand, less than a tenth of shoppers reported that such a tool was available on the electricity company's website (8% and 4%, respectively).

Table 91: Proportion of mystery shoppers who found information about energy service contracts, energy comparison tools and smart meters on electricity companies' websites

	PL	UK	SE	FR	SI	ES	DE	CZ	IT	LT	Total
	100	75	50	75	50	75	100	50	75	50	700
Energy service contracts	71%	20%	28%	37%	32%	53%	18%	18%	31%	26%	***35%***
A tool to compare your energy use to others' energy use or average energy use	22%	36%	34%	29%	28%	12%	30%	30%	8%	4%	***23%***
Smart meters	9%	43%	28%	21%	26%	9%	22%	4%	11%	4%	***18%***

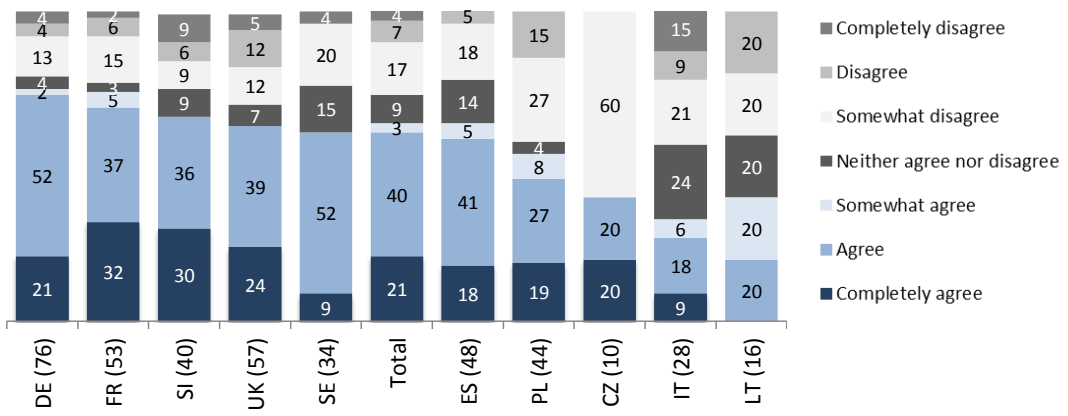
Q11. Does the website contain a tool to compare your energy use to others' energy use or average energy use?
Q12. Do you find any information on smart meters?
Q13. Do you find any information on energy service contracts?
Base: all mystery shoppers
Source: Mystery shopping

It was noted on the previous page that electricity companies in the Czech Republic, Italy, Lithuania and Poland scored worse than other countries in terms of providing information on energy efficiency related topics on their websites. Moreover, Figure 193 (on the next page) shows that mystery shoppers in these countries were less likely than those in other countries to *completely agree* or *agree* that it had been **easy to find the information about sustainable energy use** on the electricity company's website (between 20%[163] in Lithuania and 46% in Poland). By comparison, in Germany, 21% of shoppers who had found information about sustainable energy use *completely agreed* and 52% *agreed* that this information had been easy to find on the electricity company's website.

[162] An energy service contract is a contract between provider and client to implement certain measures to improve energy efficiency.

[163] Note: In Lithuania, 20% of respondents selected the "agree" response, while no respondents selected the "completely agree" response.

Figure 193: Agreement with the statement: "It was easy to find information about sustainable energy use (saving electricity)"



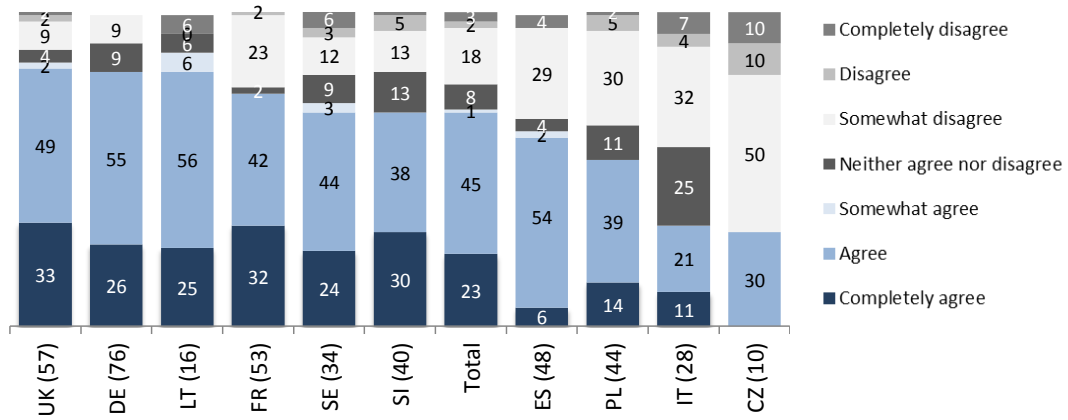
Q9. To what extent do you agree with the following statement: "it was easy to find information on sustainable energy use (saving electricity)"?

%, Base: mystery shoppers who found information/advice on sustainable energy use/saving electricity

Source: Mystery shopping

When mystery shoppers were asked to evaluate the quality of the information on sustainable energy use they had found on the electricity company's website, a large variation across countries was observed; shoppers in the Czech Republic were the least likely to agree that the **information provided was easy to understand** (30% *agreed* and no shoppers *completely agreed*), while those in the UK were the most likely to agree with the statement (33% *completely agreed* and 49% *agreed*).

Figure 194: Agreement with the statement: "The information on sustainable energy use provided on the website was easy to understand"



Q10. To what extent do you agree with the following statement: "the information on sustainable energy use provided on the website was easy to understand"?

%, Base: mystery shoppers who found information/advice on sustainable energy use/saving electricity

Source: Mystery shopping

9.2.3 Information about energy efficiency and related topics obtained when contacting electricity companies by phone

Mystery shoppers were also instructed to contact the electricity company assigned to them by phone and ask for advice and information about various energy related topics. Table 92 provides an overview of the proportion of mystery shoppers who answered that they had received *complete and correct information* about the topic in question.

Mystery shoppers in Lithuania were consistently the least likely to report having received complete and correct information when calling an electricity company to ask questions about energy efficiency and related topics. For example, 10% of mystery shoppers in Lithuania answered that the operator had been able to provide them with complete information about rational energy use and energy saving; this proportion increased to 69% in Germany. Similarly, the proportion of shoppers who had received complete and correct information about self-generation of electricity varied between 8% in Lithuania and 52%-54% in Sweden and Germany.

In Section 9.2.2, it was observed that electricity companies in the Czech Republic scored worst in terms of providing information on energy efficiency related topics on their websites. A different picture emerged when shoppers tried to obtain information by phone; for the various topics, between 34% and 46% of shoppers in the Czech Republic answered that they had obtained complete and correct information when contacting the electricity company by phone.

The results for information provision about smart meters showed that 56% of shoppers in the UK reported having received complete and correct information about such meters; in Sweden, this proportion was 50%. In Lithuania and Italy, on the other hand, less than a tenth (8%-9%) of mystery shoppers said that the operator had been able to provide them with complete and correct information about smart meters.

Table 92: Proportion of mystery shoppers who reported having received complete/correct information about various energy efficiency related topics when contacting electricity companies by phone

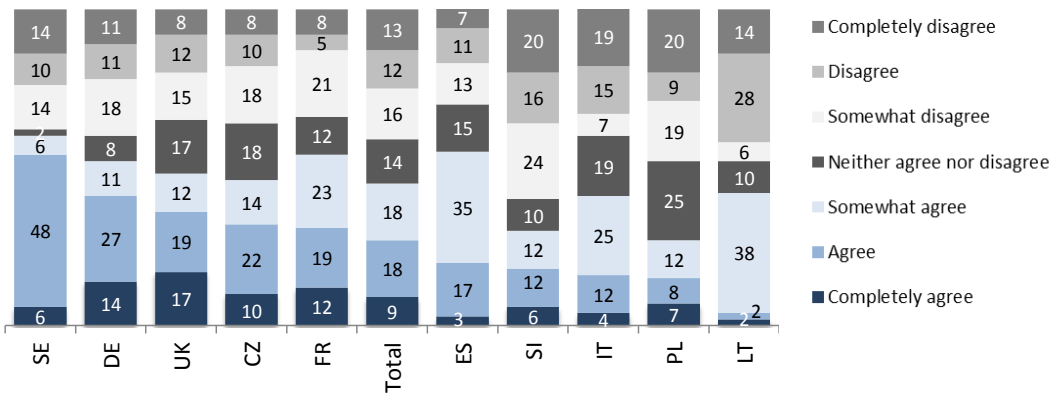
	DE	SE	UK	FR	CZ	SI	ES	PL	IT	LT	*Total*
	100	50	75	75	50	50	75	100	75	50	*700*
Rational energy use/energy saving	69%	54%	52%	52%	46%	58%	35%	33%	33%	10%	***45%***
Improving your home's energy performance;	59%	58%	53%	43%	42%	*50%*	32%	24%	28%	8%	***40%***
Energy service contract	36%	36%	36%	39%	34%	22%	32%	51%	33%	22%	***36%***
Self-generation of electricity	54%	52%	47%	33%	38%	34%	19%	18%	23%	8%	***33%***
Smart meters	44%	50%	56%	33%	36%	32%	32%	26%	9%	8%	***33%***
Grants and allowances to improve your home's energy performance	39%	40%	53%	32%	36%	22%	21%	19%	21%	10%	***30%***
Smart energy tools	39%	48%	35%	40%	36%	22%	21%	19%	16%	6%	***28%***

Q15-Q21. Ask the operator for advice about [topic]; how do you rate the information/advice received?
% "provided complete/correct information; Base: all mystery shoppers
Source: Mystery shopping

In line with the findings presented in Table 92, mystery shoppers in the Czech Republic, France, Germany, Sweden and the UK were more likely than their counterparts in the other mystery shopping countries to *strongly agree* or *agree* that the customer service had provided them with clear and complete information about sustainable energy use.

Mystery shoppers in the UK were overall the most likely to *strongly agree* that the customer service had provided them with clear and complete information about sustainable energy use (17%); however, the total proportion of mystery shoppers who *strongly agreed* or *agreed* that clear and complete information had been provided was the highest in Sweden (54%). In sharp contrast, just a small number (4%) of mystery shoppers in Lithuania *strongly agreed* or *agreed* that the customer service had provided them with clear and complete information about sustainable energy use.

Figure 195: Agreement with the statement: "The customer service provided clear and complete information/advice on sustainable energy use"



Q22. To what extent do you agree with the following statement: "the customer service provided clear and complete information/advice on sustainable energy use"?
%, Base: all mystery shoppers
Source: Mystery shopping

9.3 "Green" energy tariffs

9.3.1 Information about "green" tariffs found on electricity companies' websites

Section 7.3.2 looks at the availability of "green" tariffs, as well as whether and why consumers may need to pay a premium for these tariffs (price collection). In this section, the results of the mystery shopping exercise are presented. It is important to note that, in the price collection exercise, green tariffs were defined as tariffs with electricity from 100% environmentally friendly sources; in the mystery shopping, however, "green" tariffs were not restricted to tariffs with electricity from 100% environmentally friendly sources, and shoppers were asked to look for information about the percentage of electricity in "green" tariffs that came from renewable energy.

The proportion of mystery shoppers who reported that the electricity company they had evaluated offered "green" tariffs (i.e. they found information on the electricity company's website on the availability of such tariffs) varied between 10% in the Czech Republic and 92% in Sweden. In the latter country, 52% of shoppers answered that only "green" tariffs (and no other tariffs) were offered by the electricity company.

In the Czech Republic, 66% of mystery shoppers reported that it was not clear from the electricity company's website whether "green" tariffs were offered or not; somewhat lower figures were observed in Poland (51%), Lithuania (44%) and Spain (43%).

Table 93: Availability of "green" energy tariffs (mystery shopping)

	SE	DE	FR	UK	ES	SI	IT	PL	LT	CZ	Total
	50	100	75	75	75	50	75	100	50	50	700
Only "green" tariffs	52%	40%	40%	23%	20%	14%	12%	5%	4%	2%	30%
A mix of "green" and other tariffs	40%	44%	43%	32%	9%	52%	33%	21%	16%	8%	22%
No "green" tariffs, only other tariffs	6%	7%	9%	31%	28%	16%	23%	23%	36%	24%	20%
This is not clear on the provider's website	2%	9%	8%	15%	43%	18%	32%	51%	44%	66%	28%

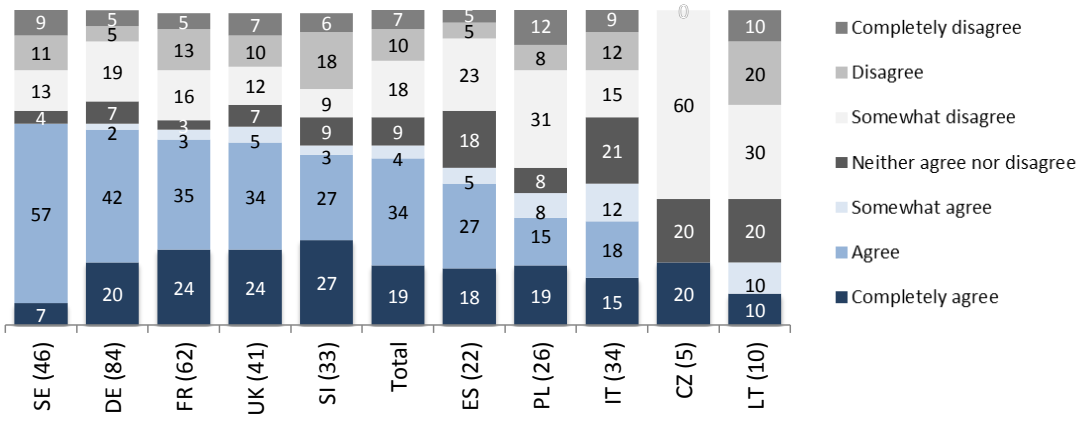
Q3. Does the provider offer "green" energy tariffs?
Base: all mystery shoppers
Source: Mystery shopping

Among mystery shoppers who had found information on the electricity company's website that "green" tariffs were offered, 68% also found information about the percentage of electricity in these "green" tariffs that came from renewable energy and 72% found information about how the renewable energy was generated. In France, Germany, Spain and Sweden, a vast majority of these shoppers answered that 100% of the energy in the "green" tariffs came from renewable energy sources. Across all countries, hydro or marine power, wind power and solar power were the most frequently mentioned sources of renewable energy.[164]

Table 93 (above) shows that mystery shoppers in France, Germany and Sweden were the most likely to have found information on the electricity company's website about the mix of tariffs offered by the electricity company: less than 10% answered that it was not clear from the company's website what type of tariffs were offered ("green" vs. other tariffs). Figure 196 (on the next page) illustrates that mystery shoppers in France, Germany and Sweden were among the most likely to agree that **it was easy to find detailed information about this topic on the electricity company's website**: roughly 6 in 10 mystery shoppers (who had found information about "green" tariffs) *completely agreed* or *agreed* that this information had been easy to find (between 59% and 64%); similar figures were also observed in the UK (58%) and Slovenia (54%).

[164] More detailed results for the questions about the percentage of electricity in "green" tariffs that came from renewable energy and the ways in which renewable energy was generated can be found in Annex A5.5.

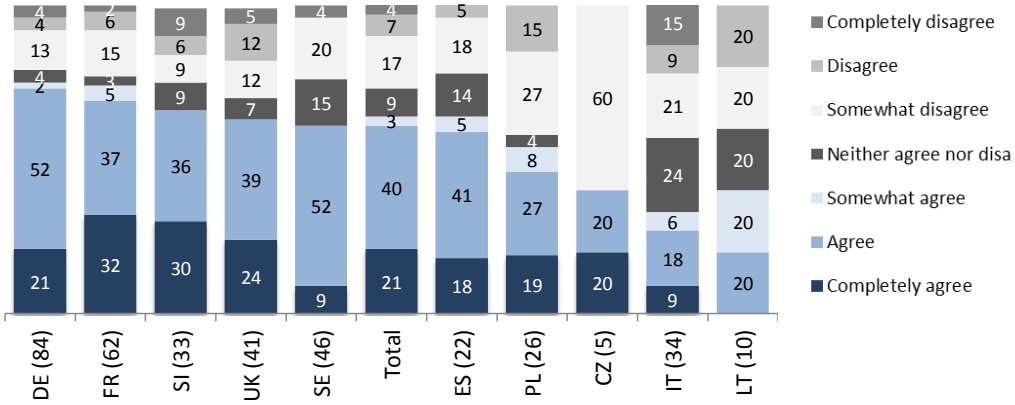
Figure 196: Agreement with the statement: "It was easy to find detailed information about "green" tariffs"



Q6. To what extent do you agree with the following statement: "it was easy to find detailed information about "green" tariffs"?
%, Base: mystery shoppers who indicated that the provider offers "green" tariffs or a mix of "green" and other tariffs (the number of mystery shoppers that answered the question is reported in brackets)
Source: Mystery shopping exercise

A similar picture appeared when mystery shoppers were asked **whether the information they had found about "green" tariffs on the electricity company's website was easy to understand**. The proportion of mystery shoppers, who had found information about "green" tariffs on the electricity company's website, and who *completely agreed* or *agreed* that the information provided was easy to understand ranged from 20%[165] in Lithuania to 73% in Germany.

Figure 197: Agreement with the statement: "The information about "green" tariffs provided on the website was easy to understand"



Q7. To what extent do you agree with the following statement: "the information about green tariffs provided on the website was easy to understand"?
%, Base: mystery shoppers who indicated that the provider offers "green" tariffs or a mix of "green" and other tariffs (the number of mystery shoppers that answered the question is reported in brackets)
Source: Mystery shopping exercise

[165] Note: In Lithuania, 20% of respondents selected the "agree" response, while no respondents selected the "completely agree" response.

9.3.2 Choosing a "green" tariff – results of a behavioural experiment

In the "stay or switch" task of the behavioural experiment, respondents were given the opportunity to switch to a green offer[166]. Respondents were informed that they could switch to a green offer, where a contribution would be made to an environmental fund, but that they would have to pay a "premium" if they decided to switch. The "stay or switch" experiment was incentivised: respondents received "Ipsos points" that translated to "real world" earnings. Respondents knew that they would need to give up Ipsos points if they chose the green offer. This setup captured the fact that, in the "real world", consumers may need to pay a cost in order to engage in a more environmentally friendly behaviour.

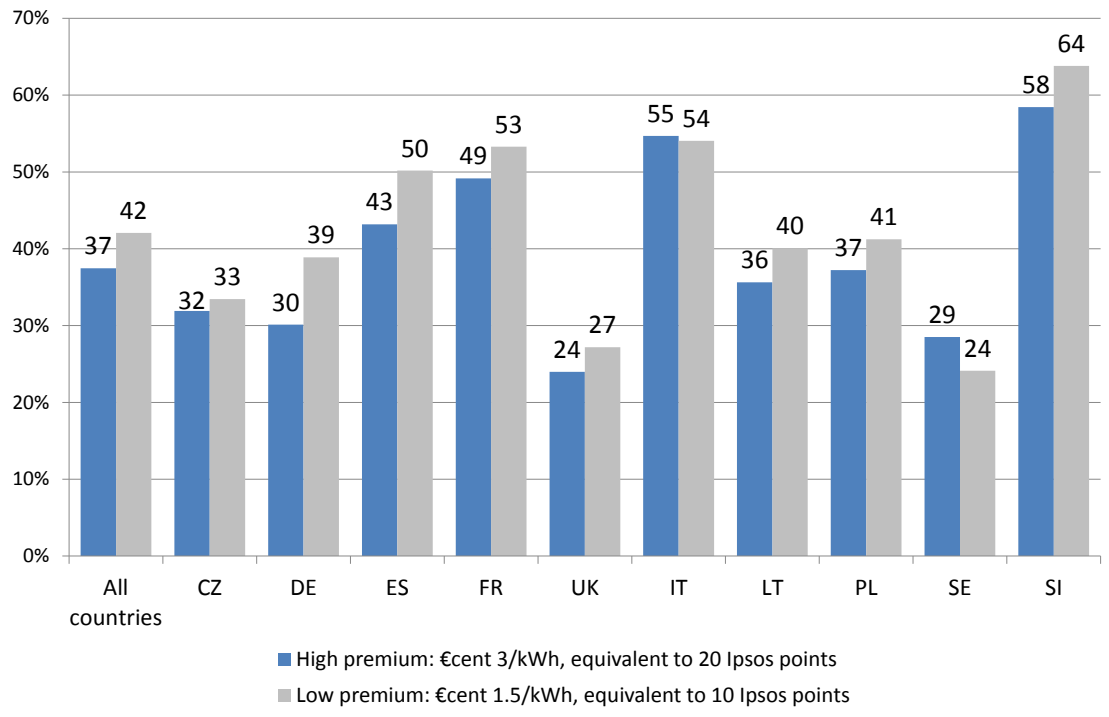
Respondents were allocated to one of two treatments: a "high" green premium (€3/kWh) and a "low" green premium (€1.5/kWh). In the high premium treatment almost 4 in 10 (37%) respondents chose to switch to the green offer, this compares to 42% of respondents who chose the green tariff in the low premium treatments illustrated in Figure 198.[167] The differences by premium level are statistically significant for the whole sample, but not for individual countries (except for Germany and Spain).

These observations indicate that consumers are willing to pay a higher price for green energy tariffs, and this willingness is responsive to changes in the price of these tariffs (namely it is greater at lower prices compared to higher prices as would be expected). However, the absolute proportions of 37% and 42% should be interpreted with caution. This is because in behavioural experiments, the treatment effects provide information on the relative impacts (that demand decreases with an increase in price), but because these are simulated environments the absolute magnitudes may not translate to real markets (e.g. at a price of €1.5/kWh, it is not possible to say that 42% of consumers would choose a green tariff in the real market).

[166] For more details, see Annex 6.

[167] Low premium level was equivalent to 10 Ipsos points in the experiment. The high premium was equivalent to 20 Ipsos points.

Figure 198: Share of respondents who selected the green offer



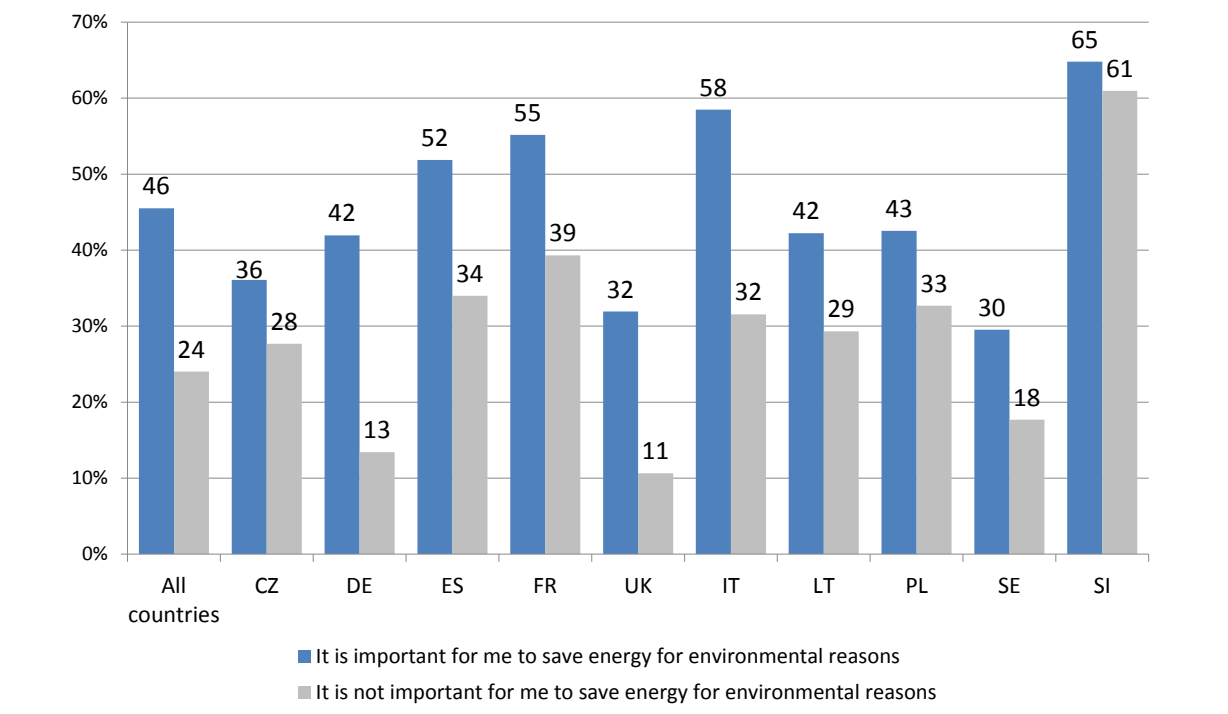
Note: Base varies by treatment: High green premium = 5,027; Low green premium = 5,029.
Source: Behavioural experiment

The consumer survey also enables an exploration of the types of consumer behaviour that are linked to the choice of the "green" offer in the experiment. For example, the consumer survey can explore **respondents' choice to switch to the green offer based on whether they consider it important to save energy for environmental reasons**[168]. Figure 199 presents the proportion of respondents that chose the green offer based on whether they agreed it was important to save energy for environmental reasons[169] or whether they disagreed with this statement[170].

Respondents who reported in the consumer survey that it was important to save energy for environmental reasons were, on average, almost twice as likely to switch to the green offer. On average, 46% of respondents who agreed that it was important to save energy for environmental reasons switched to the green offer, compared to 24% of respondents who did not agree with the statement. This effect is statistically significant at 99%.

In the case of Slovenia, however, there was no substantial difference in the proportions of respondents switching to the green offer: more than 60% of respondents switched to the green offer, irrespective of their attitudes to saving energy for environmental reasons.

Figure 199: Share of respondents who selected the green offer, by whether they find it important to save energy for environmental reasons



Note: Base varies by treatment: High green premium =5,027; Low green premium = 5,029.
Source: Behavioural experiment

[168] Question 15 in the consumer survey.
[169] A score of 6 or above on a scale of 0 to 10, where 10 was totally agree and 0 was totally disagree.
[170] A score of 5 or below on a scale of 0 to 10, where 10 was totally agree and 0 was totally disagree.

Consumers may be expected to choose the "green" option more often if they show **concern for their energy consumption**. The consumer survey asked respondents whether they conduct a number of energy saving options (10 in total).[171] Table 94 displays regression results for the probability of choosing the "green" option against the number of energy saving measures respondents undertake (as reported in the consumer survey). As seen in the table, respondents who indicated carrying out no energy saving measures were not significantly less likely to choose the "green" choice, while respondents who indicated performing more than 5 (out of 10) energy saving measures were 10 percentage points likelier to choose the "green" choice. This suggests that respondents were likelier to choose the "green" choice when they were already engaged in practical energy saving measures.

Table 94: Regression results: impact of number of energy saving measures undertaken on probability of choosing green option

	0 energy saving measures		More than 5 (out of 10) energy saving measures		Average probability of choosing the green offer	
	Coeff	Robust standard error	Coeff	Robust standard error	Coeff	Robust standard error
All countries	-1 pp	0.04	**10 pp****	0.02	**40%*****	0.01
CZ	2 pp	0.13	2 pp	0.04	**33%*****	0.02
DE	-6 pp	0.07	**8 pp***	0.04	**35%*****	0.02
ES	8 pp	0.09	8 pp	0.05	**47%*****	0.02
FR	-1 pp	0.09	-1 pp	0.05	**51%*****	0.02
UK	4 pp	0.10	**14 pp*****	0.05	**26%*****	0.02
IT	1 pp	0.10	**14 pp*****	0.04	**54%*****	0.02
LT	-3 pp	0.12	6 pp	0.05	**38%*****	0.02
PL	-9 pp	0.08	**9 pp***	0.05	**39%*****	0.02
SE	3 pp	0.06	-1 pp	0.05	**26%*****	0.01
SI	-8 pp	0.10	**7 pp***	0.04	**61%*****	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

[171] Question 16 of the consumer survey.

Respondents who **value the "green" credentials of an electricity company** may also be expected to choose the green deal more often. The consumer survey asks a number of questions about the factors respondents consider when choosing an electricity company, including the green credentials of the electricity company.[172] Table 95 presents regression results of the impact of agreeing with this statement[173] on selecting the green offer. Respondents in all countries were more likely to choose the green offer if they indicated that green credentials were important when choosing an electricity company. It can be seen that the results are statistically significant at 99% level. Overall, respondents were 25 percentage points more likely (on a baseline of 40%) to switch to the green offer if they agreed that green credentials were important when choosing an electricity company.

Table 95: Regression results: impact of importance of green credentials on probability of choosing green option

	Green credentials are important when choosing an electricity company		Average probability of choosing the green offer	
	Coeff	Robust standard error	Coeff	Robust standard error
All countries	**25%*** **	0.01	**40%*** **	0.007
CZ	**16%*** **	0.03	**33%*** **	0.015
DE	**30%*** **	0.03	**35%*** **	0.02
ES	**14%*** **	0.04	**47%*** **	0.02
FR	**22%*** **	0.04	**51%*** **	0.02
UK	**28%*** **	0.03	**26%*** **	0.015
IT	**29%*** **	0.04	**54%*** **	0.02
LT	**14%*** **	0.04	**38%*** **	0.02
PL	**12%*** **	0.04	**39%*** **	0.02
SE	**21%*** **	0.03	**26%*** **	0.01
SI	**29%*** **	0.04	**61%*** **	0.02

Note: OLS regression. Country-level regressions are weighted by the share of socio-demographic groups in the population of each country. Overall results are weighted by the share of the population of each country in the total. ***: significant at 99%; **: significant at 95%; *: significant at 90%.

Source: Behavioural experiment

[172] Q22, option 6 of the consumer survey. Respondents are asked to indicate their agreement on a scale of 0 to 10, with 0 indicating total disagreement and 10 indicating total agreement.

[173] Agreement is measured by selecting 6 or more out of 10 on the agreement scale.

10. Innovation

Consumers have become engaged in new ways of using energy that go beyond mere electricity consumption; for example, by moving towards self-generation of electricity and using smart metering infrastructure. This chapter presents an overview of the study's findings with regards to new initiatives in the electricity market.

Section 10.1 looks at consumers' perceptions as to whether electricity companies are putting forward innovations in technology and services, while Section 10.2 looks at regulatory and legislative barriers and incentives to innovation in technology and services. Section 10.3 has a closer look at consumers' views about bundling of gas and electricity offers.

In Section 10.4, stakeholders' views about the main innovations for consumers in the electricity market are presented, while the last three sections of this chapter present the study's results with regards to three of such innovations: (1) smart metering (Section 10.5), (2) collective switching (Section 10.6) and (3) self-generation of electricity and feed-in tariffs (Section 10.7).

Box 13: Main findings with regards to "innovation in retail electricity markets"

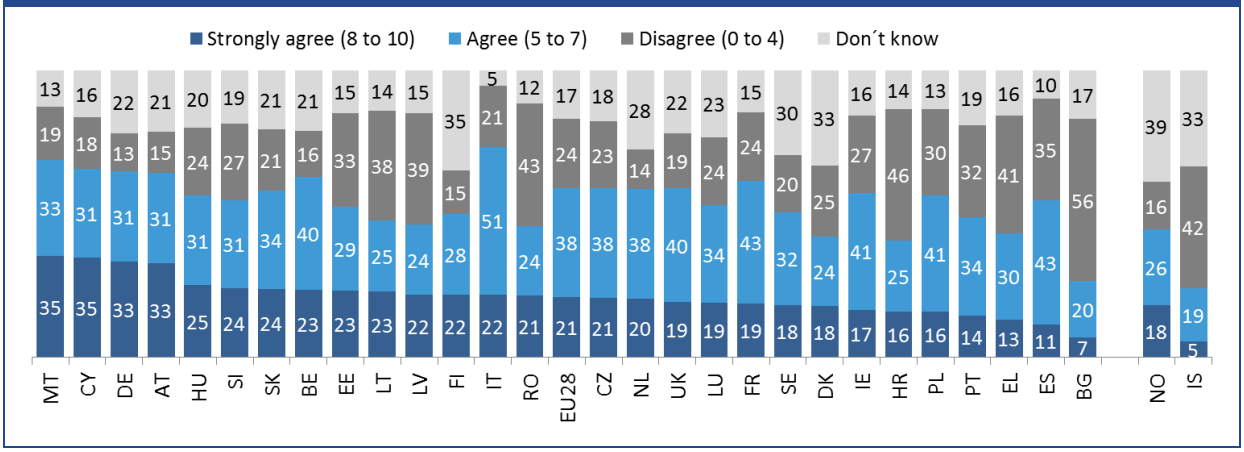
- **Proactivity and innovation.** Across the EU28, 21% of survey respondents "strongly agreed" that their electricity company introduced innovations in technology and services that were matching their needs; the proportion "strongly agreeing" ranged from 7% in Bulgaria to 35% in Cyprus and Malta.
- According to the stakeholders in the retail electricity industry surveyed in this study, the main innovations in the electricity market for consumers were: (1) price comparison tools; (2) smart meters; (3) collective switching; and (4) green energy/self-generation.
- Roughly 7 in 10 stakeholders believed that legislation in the area of new types of metering (i.e. smart meters) stimulates innovation and only 8% thought that legislation impedes innovation. For innovation in the fields of comparison websites, provision of green electricity, self-generation of energy and the possibility to sell back excess own-generation, roughly one in two stakeholders indicated that legislation has a positive impact. In contrast, three-quarters of stakeholders indicated that legislation has no impact on innovation in collective switching.
- **Smart meters.** Awareness of smart meters remained low in most Member States; the highest levels of self-reported awareness of smart meters were observed in Romania (40%), Finland (41%), the UK (48%), Malta (60%) and Slovakia (71%). The proportion of mystery shoppers who answered that the electricity company's website contained information about smart meters ranged from 4% in Lithuania and the Czech Republic to 43% in the UK.
- **Collective switching.** Of the survey respondents who had switched electricity company in the past three years, 18% had switched as part of a collective switching campaign. In Portugal, this figure reaches 58%. Other countries displaying relatively high collective switching rates were Belgium (38%), Spain (36%) and Italy (30%). Respondents who had switched via a collective switching campaign were somewhat more likely to state that the switching process had been difficult compared to respondents who had switched, but not via a collective switching campaign (18% vs. 14%).

10.1 Are electricity companies proactive in putting forward innovations in technology and services?

Across the EU28, 21% of survey respondents "strongly agreed" (scores 8 to 10)[174] that their electricity company **introduced innovations in technology and services that were matching their needs.** The proportion "strongly agreeing" ranged from 5% in Iceland and 7% in Bulgaria to 35% in Cyprus and Malta. Germany and Austria joined Cyprus and Malta at the higher end of the country ranking with one third of respondents who "strongly agreed".

The highest level of disagreement was observed in Bulgaria, where 56% of respondents disagreed (scores 0 to 4) that their electricity company introduced innovations in technology and services that were matching their needs.

Figure 200: Agreement with the statement: "[PROVIDER] introduces innovations in technology and services that are matching my needs", by country



Q2_9. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] introduces innovations in technology and services that are matching my needs.

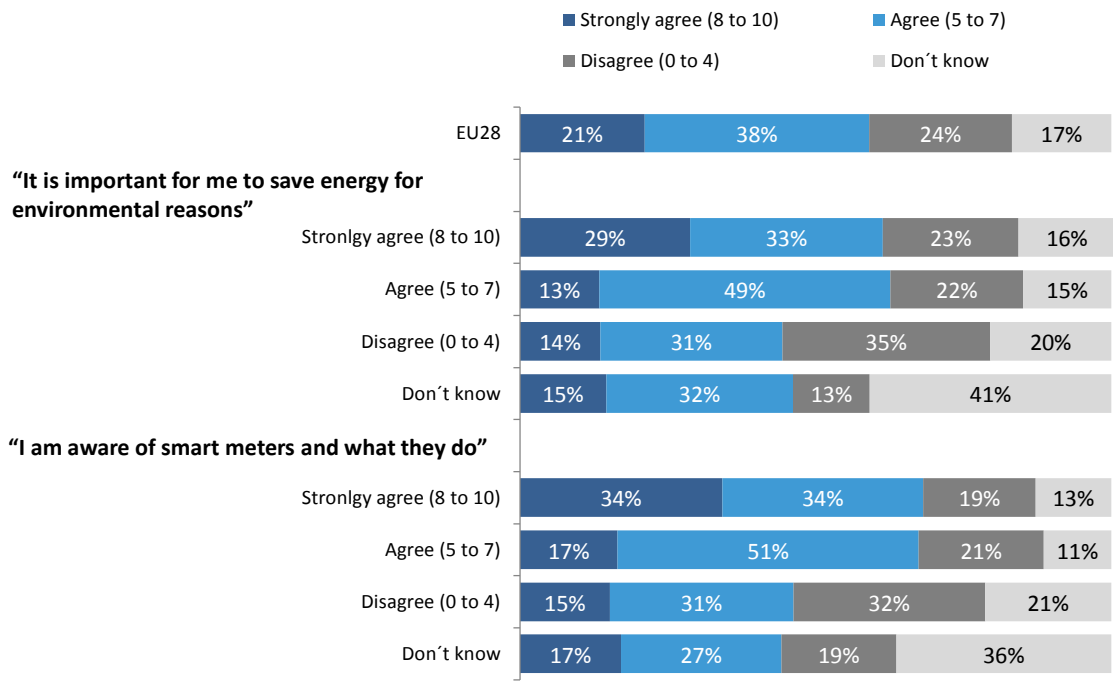
%, by country, Base: all respondents

Source: Consumer survey

[174] Respondents were each time presented with an 11-point scale (from 0 to 10) and were asked to position themselves on that scale. For analysis purposes, respondents who selected scores 8 to 10 were labelled as expressing "strong agreement" and respondents who selected scores 0 to 4 as expressing "disagreement".

Figure 201 illustrates that respondents who "strongly agreed" that it was important for them to save energy for environmental reasons were also more likely to "strongly agree" that their electricity company introduced innovations in technology and services that were matching their needs (29% vs. 13%-15% for other respondents). A higher level of agreement was also observed for respondents who "strongly agreed" that they were aware of smart meters and what smart meters do (34% vs. 15%-17%).

Figure 201: Agreement with the statement: "[PROVIDER] introduces innovations in technology and services that are matching my needs", by environmental behaviour



Q2_9. The following question deals with the quality of services offered in the electricity retail market. Please indicate how much you agree or disagree with each of the following statements, using a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": [PROVIDER] introduces innovations in technology and services that are matching my needs.
%, EU28, Base: all respondents
Source: Consumer survey

10.2 Legislation and regulation supporting innovation

The analysis of regulatory and legislative barriers and incentives to innovate builds upon the assessment of stakeholders in the retail electricity industry. Stakeholders were asked for their opinion of whether there are any legislative or regulatory factors that impede or stimulate innovation in the retail electricity sector in their country.

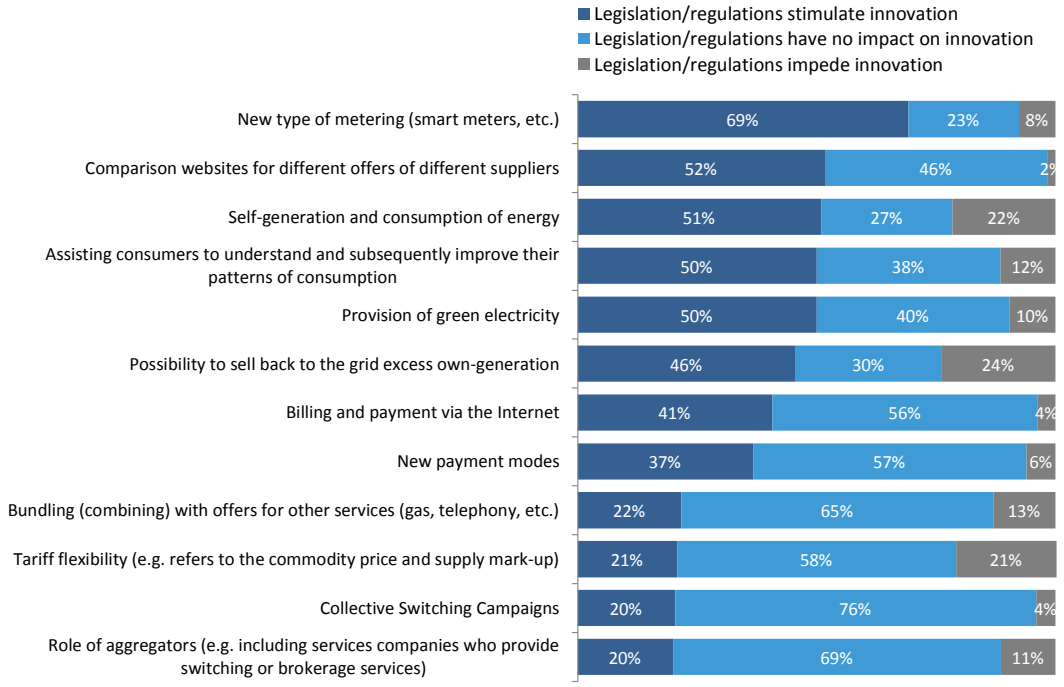
Overall, the legislative and regulatory environment was viewed as being most stimulating for innovation in the area of **new types of metering (smart meters etc.)**: 69% of stakeholders believed that legislation in this area stimulates innovation and only 8% thought that legislation impedes innovation in this area.

In relation to innovations in **comparison websites**, **self-generation of energy**, **assisting consumers to improve their patterns of consumption**, **provision of green electricity** and the **possibility to sell back excess own-generation**, roughly one in two stakeholders indicated that legislation has a positive impact (between 46% and 52%). In the remaining areas, the majority of stakeholders indicated that

legislation has no impact. In particular, 76% of stakeholders answered that legislation has no impact on innovation in collective switching campaigns.

Focusing solely on the proportion of stakeholders who answered that there are legislative or regulatory factors that impede innovation, it was noted that this response was most frequently selected in relation to innovations in tariff flexibility (21%), self-generation of energy (22%) and the possibility to sell back excess own-generation (24%).

Figure 202: Overall responses to the questions of whether there are any regulatory or legislative factors which impede or stimulate innovation in the retail electricity sector



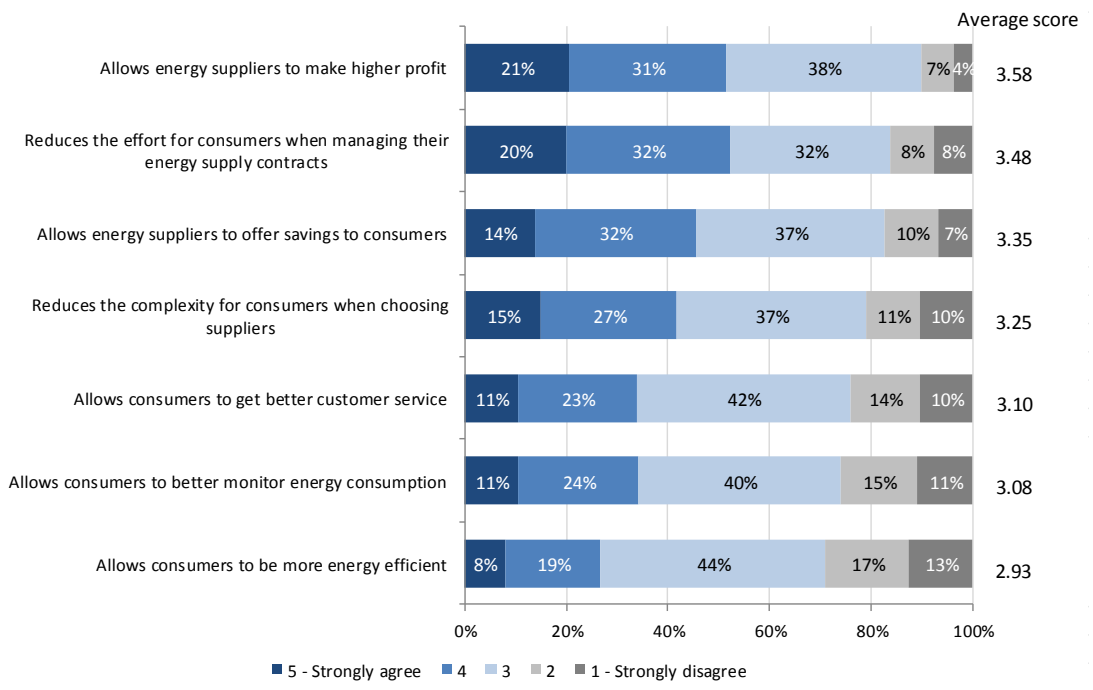
Question: Are there legislative/regulatory factors that impede or stimulate innovation in the retail electricity sector in your country with regard to the following aspects? (%, Base: all stakeholder that provided a response to this question)
Source: Stakeholder consultation

10.3 Consumers' views on bundling

Bundling is referred to by DG Competition of the European Commission as "a set of several products is sold in one sole "package"".[175] Roughly one in five (22%) stakeholders answered that the legislative and regulatory environment was stimulating innovation in the area of bundling (see Figure 202); the majority (65%) of stakeholders, however, shared the view that legislation had a "neutral" impact.

When respondents in the behavioural experiment were asked about their attitudes towards bundling of gas and electricity offers, the statements that respondents agreed with most strongly were that bundling "allows energy suppliers to make higher profit" (with an average score of 3.6 out of 5) and "reduces the effort for consumers when managing their energy supply contracts" (with an average score of 3.5 out of 5). The statement that respondents least agreed with was that bundling "allows consumers to be more energy efficient" (average score of 2.9 out of 5).

Figure 203: Agreement with various statements about bundling of gas and electricity

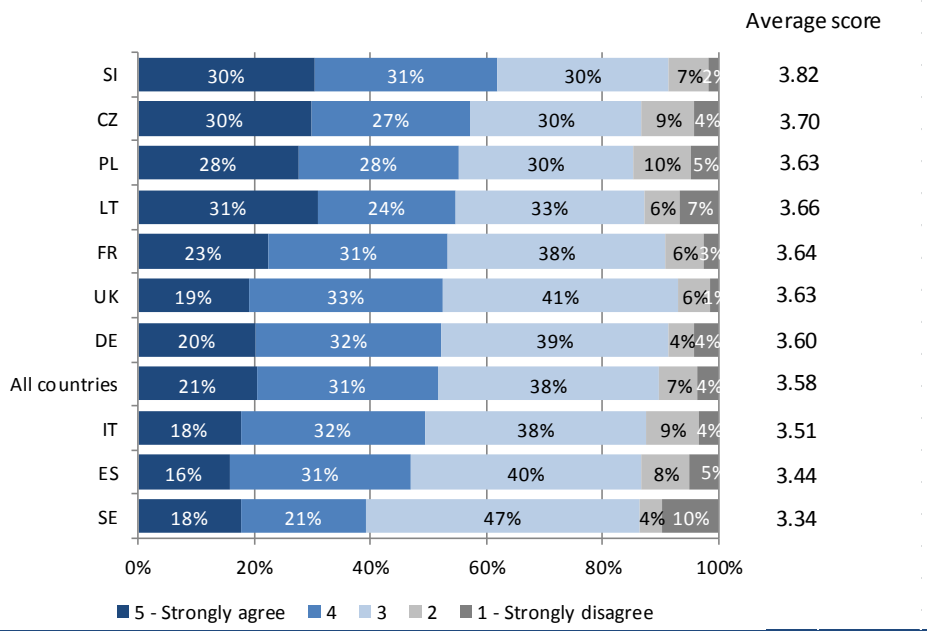


Note: Base = 10,016
Source: Behavioural experiment

Figure 204 (on the next page) shows that, when respondents were asked to what extent they agreed with the statement that **bundling allows energy suppliers to make higher profit**, the level of agreement (scores 4 and 5) varied between 39% in Sweden (with an average score of 3.3) and 61% in Slovenia (with an average score of 3.8).

[175] http://ec.europa.eu/competition/antitrust/art82/024_en.pdf, accessed 14th June 2016.

Figure 204: Agreement with the statement that bundling allows energy suppliers to make higher profit, by country

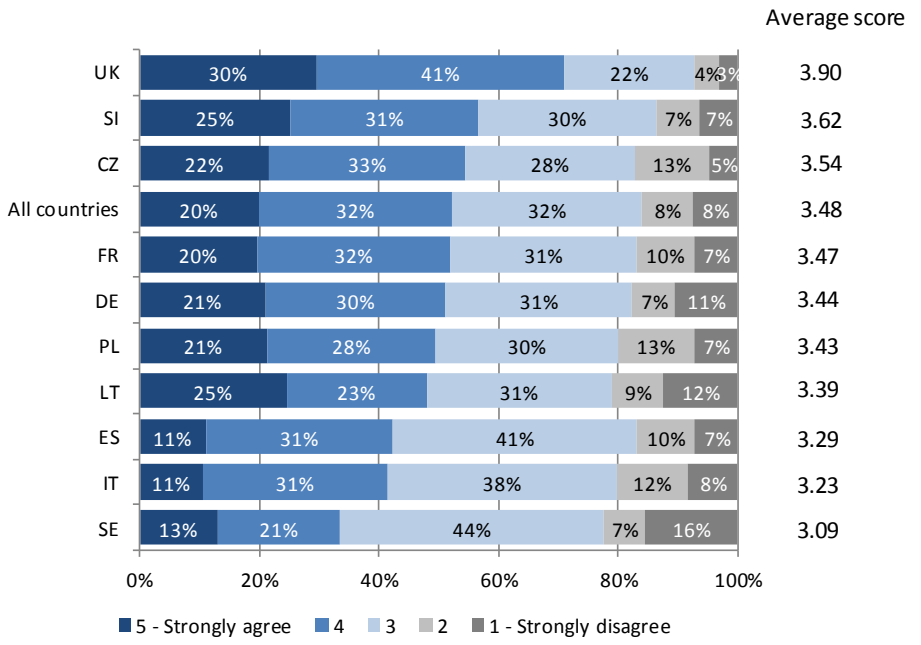


Note: Base = 10,016

Source: Behavioural experiment

The proportion of respondents who agreed (scores 4 and 5) that **bundling reduces the effort for consumers when managing their energy supply contracts** ranged from 34% in Sweden (an average score of 3.1) to 71% in the UK (an average score of 3.9), as displayed by Figure 204. In other countries, such as Germany, France, the Czech Republic and Slovenia, more than half of respondents agreed with this statement (between 51% and 56%).

Figure 205: Agreement with the statement that bundling reduces the effort for consumers when managing their energy supply contracts, by country

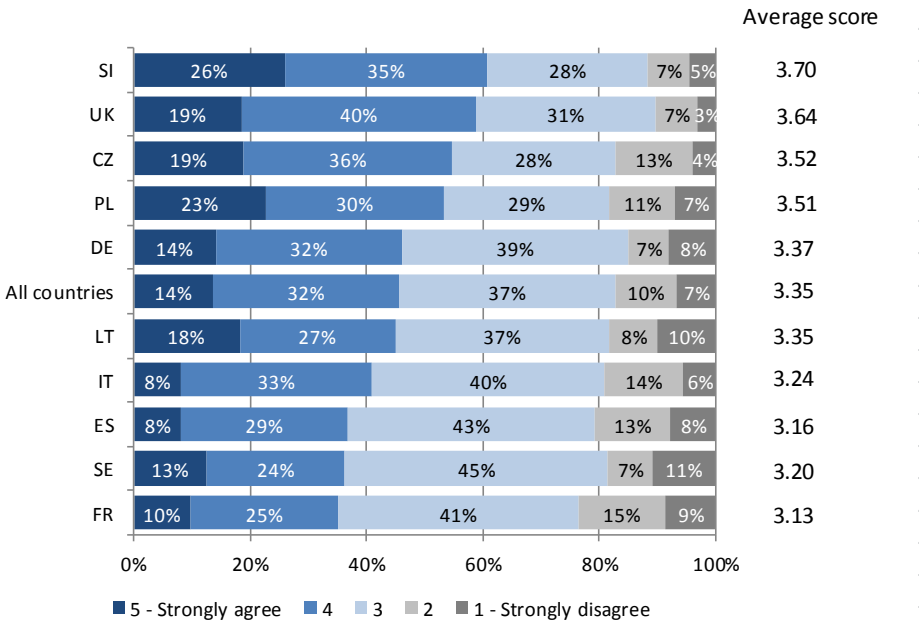


Note: Base = 10,016

Source: Behavioural experiment

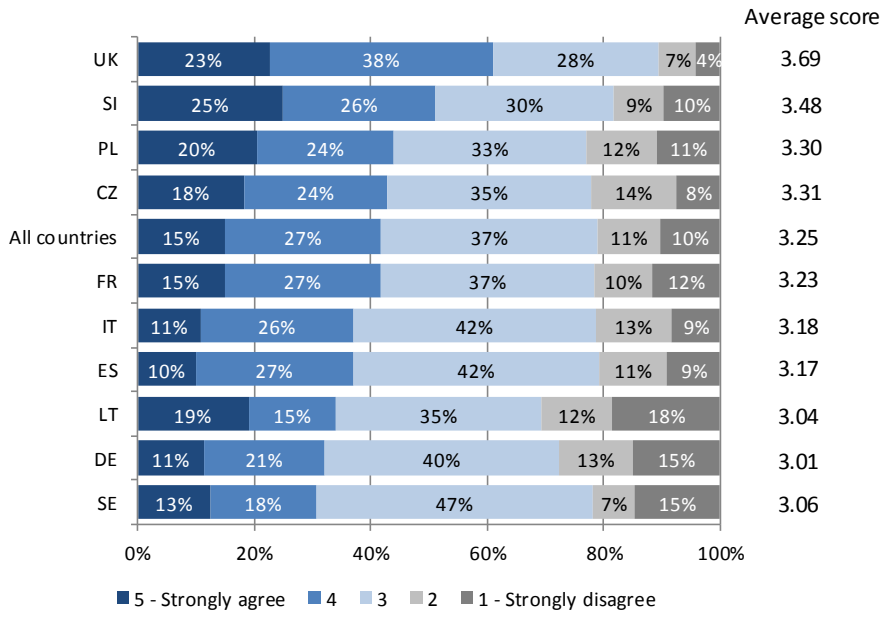
As it can be seen in Figure 205, across the ten countries surveyed, 46% of respondents agreed (scores 4 and 5) that **bundling allows energy suppliers to offer savings to consumers**. The individual country level results show that respondents in France were the least likely to agree with this statement (35%; an average score of 3.1), while respondents in Slovenia were the most likely to agree (61%; an average score of 3.7).

Figure 206: Agreement with the statement that bundling allows energy suppliers to offer savings to consumers, by country



Note: Base = 10,016
Source: Behavioural experiment

Figure 207: Agreement with the statement that bundling reduces the complexity for consumers when choosing suppliers, by country

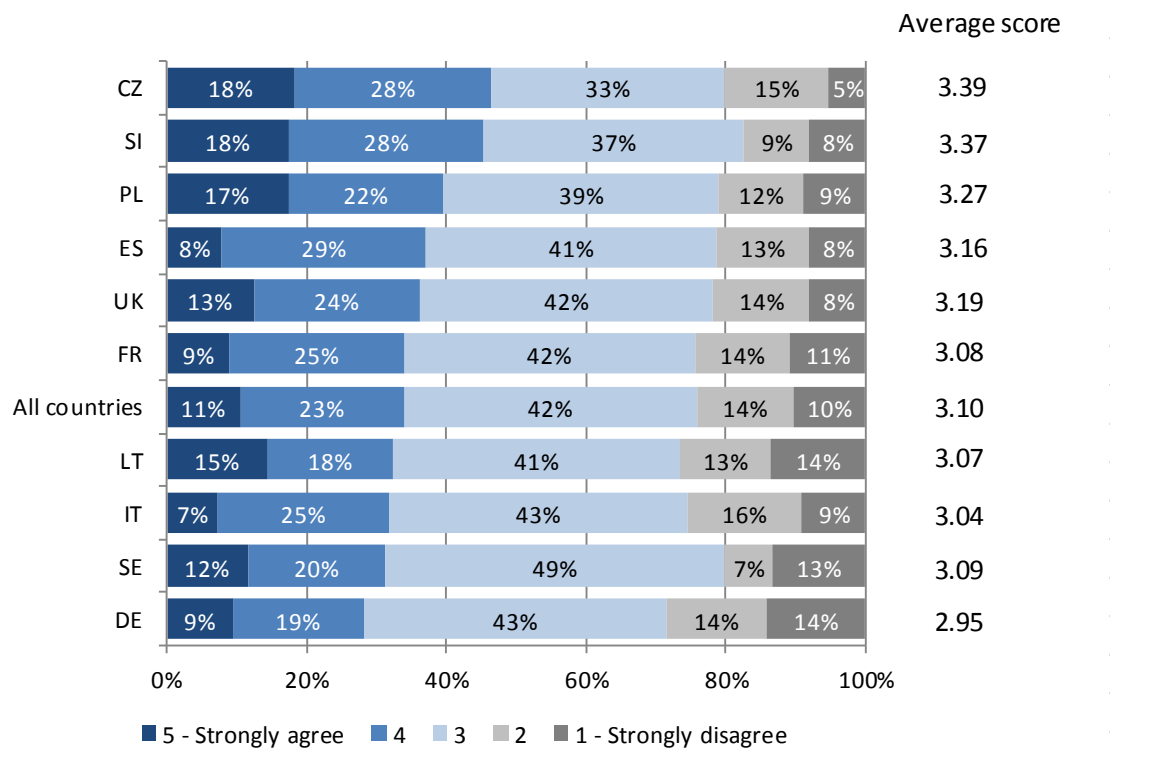


Note: Base = 10,016
Source: Behavioural experiment

Figure 207 shows that, in the UK, 61% of respondents agreed (scores 4 and 5) that **bundling reduces the complexity for consumers when choosing an electricity supplier** (an average score of 3.7). In Sweden and Germany, however, this figure dropped to roughly one third (31% and 32%, respectively). Although the lowest levels of agreement were measured in Sweden and Germany, the highest proportion of "strongly disagree" responses was found in Lithuania, where 18% of respondents selected score 1 on the scale.

The level of agreement (scores 4 and 5) for the statement that **by bundling gas and electricity, consumers can get better customer service** varied between 28% in Germany and 46% in the Czech Republic, as shown in Figure 207. The average scores for this statement varied between 3.0 in Germany and 3.4 in the Czech Republic. In all countries, a relative majority of respondents took a neutral stance when presented with this statement (i.e. they selected a score of 3 out of 5 when asked whether they agreed with the statement or not).

Figure 208: Agreement with the statement that bundling allows consumers to get better customer service, by country

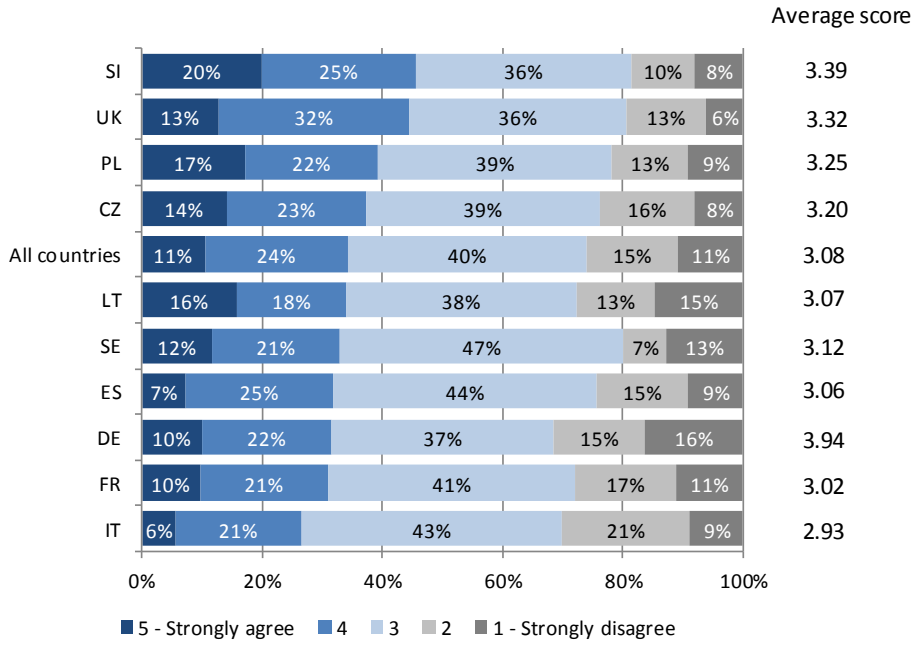


Note: Base = 10,016

Source: Behavioural experiment

For the statement that **bundling allows consumers to better monitor their energy consumption** (Figure 208), a similar country ranking as for most other "bundling" statements was observed. Once again, countries such as Slovenia and the UK are found at the top of the country ranking, with 45% of respondents agreeing (scores 4 and 5). Italy had the lowest proportion of respondents who agreed with this statement (27%; an average score of 2.9).

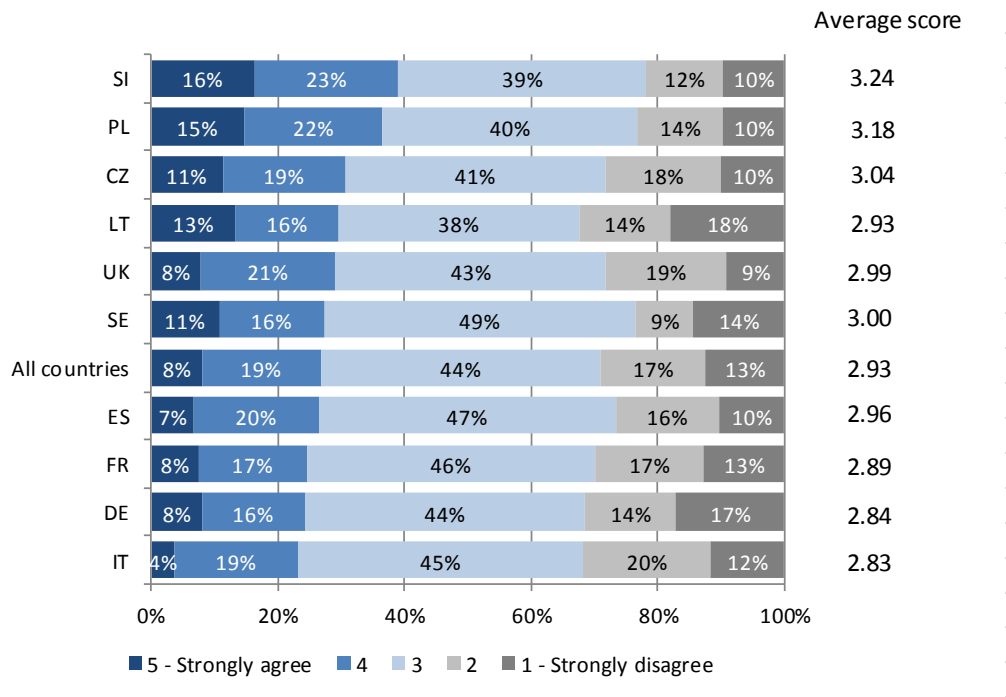
Figure 209: Agreement with the statement that bundling allows consumers to better monitor energy consumption, by country



Note: Base = 10,016
Source: Behavioural experiment

The proportion of respondents who agreed (scores 4 and 5) that **bundling allows consumers to be more energy efficient** ranged from 23% in Italy to 39% in Slovenia (see Figure 210 on the next page). Across all countries surveyed, almost 3 out of 10 respondents disagreed (scores 1 and 2) with this statement (between 22% in Slovenia and 32% in Italy and Lithuania). There are no other statements that collected such a high percentage of disagreement spread across all the countries considered. Furthermore, in Germany and Lithuania, one in six respondents (17%-18%) even *strongly disagreed* with the statement.

Figure 210: Agreement with the statement that bundling allows consumers to be more energy efficient, by country



Note: Base = 10,016

Source: Behavioural experiment

10.4 Main innovations – stakeholders' views

According to the stakeholders in the retail electricity industry surveyed in this study, some of the main innovations in the electricity market for consumers are:

- smart metering;
- collective switching; and
- green energy/self-generation.

More detailed results of the question about main innovations presented to stakeholders during the consultation are shown in Table 96 (on the next page). Stakeholders in 15 countries mentioned "smart metering" as one of the main innovations in the electricity market; moreover, most stakeholders expected a large impact of this innovation on consumers (with an average score of 4.3 out of 5). Similarly, 15 stakeholders mentioned "collective switching" as one of the main innovations that would have a large impact on consumers (with an average score of 4.5 out of 5). Finally, stakeholders in 16 countries referred to "self-generation of electricity" (with an average score of 3.8 out of 5). The remaining sections of this report analyse these three innovations in a more detailed way.

Table 96: Main innovations identified by stakeholders and average rating across stakeholders of the expected impact on consumers of these innovations																															
	AT	BE	BG	HR	CY	CZ	DK	EE	FI	FR	DE	EL	HU	IS	IE	IT	LV	LT	LU	MT	NL	NO	PL	PT	RO	SK	SI	ES	SE	UK	Number of stakeholders that listed the innovation as one of the main innovations	Expected impact of this innovation on consumer (average score across stakeholders and countries)
Self-generation	4	3	-	-	3	-	-	-	4	-	4	3	-	-	-	4	-	3	-	4	5	-	4	4	4	-	4	3	-	4	**16**	3.8
Collective switching	5	5	-	-	-	4	4	-	-	4	-	-	-	-	-	4	-	5	-	-	5	5	4	5	4	-	-	5	-	4	**15**	4.5
Smart metering	4	-	-	-	5	-	5	4	5	-	-	-	4	-	-	-	4	-	-	4	4	4	-	4	-	-	4	4	5	4	**15**	4.3
Billing/payment changes	-	4	-	-	3	-	5	-	-	4	-	-	4	-	3	-	-	-	-	-	-	-	4	4	4	-	4	2	5	5	**13**	3.9
Electricity products and services	-	5	-	-	-	-	-	-	4	4	4	-	-	4	4	-	-	-	-	-	5	5	-	4	-	-	4	4	-	4	**12**	4.3
Tariff/pricing/contract developments	4	-	-	-	-	4	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	5	-	-	5	-	-	**6**	4.5
Green energy	5	-	-	-	-	4	4	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	**5**	4.0
Price comparison	-	5	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	4	**4**	4.5
Transparency/data hubs	-	-	-	-	-	-	5	-	5	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	-	4	-	**4**	4.3
Standards/regulation	-	-	-	-	-	-	2	-	-	-	5	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	4	-	-	-	**4**	3.8
Dual offers	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	**2**	4.5
Opening markets	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	**2**	3.0
Unbundling	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1**	5

Note: Answer to: 'In your opinion, what are the main innovations that have occurred in the retail electricity sector over the last 5 years (e.g. in metering, collective switching, self-generation/consumption, billing and payment)?' and 'Please provide an indication of the expected impact on consumers for each listed innovation'

Source: Stakeholder consultation

10.5 Smart metering

Innovation in metering usually refers to smart metering. Smart metering[176] is one of the mechanisms the EU is using to move towards a more sustainable and green Union.[177] Among the advantages associated with smart meter rollout are:

- Consumer empowerment through greater awareness of their own energy consumption;
- Higher energy efficiency via more tailored energy use;
- A cost-efficient use solution in an era of scarce resources; and
- When deployed together with a smart grid, greater energy savings through adjusting supply-demand of energy at a real time basis.[178]

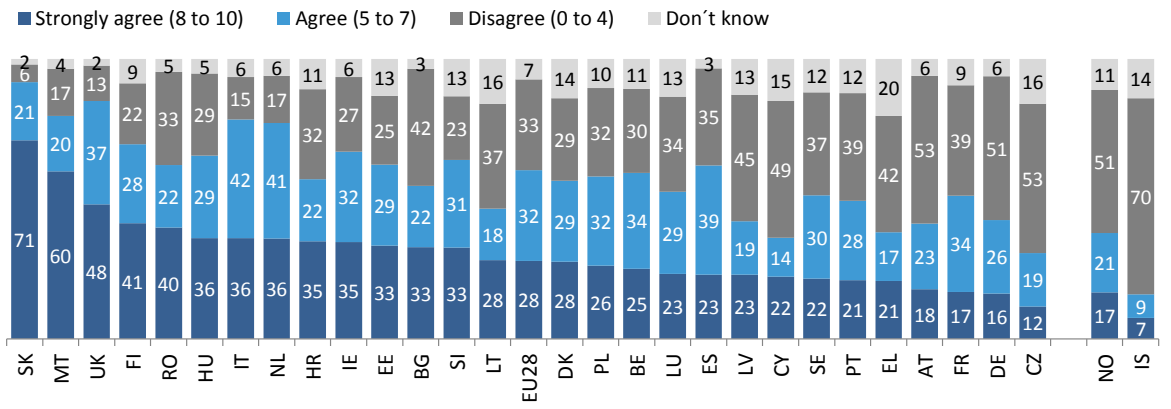
Across the EU, many Member States have plans to achieve an 80-100% rollout of smart meters by 2020, which is one of the objectives embraced by EU legislation.[179]

10.5.1 Consumers' awareness of smart meters

Evidence suggests that awareness of smart meters is low in most Member States. Across the EU28, 33% of respondents disagreed (scores 0 to 4) that they were aware of smart meters and what they did, and a further 7% replied with a "don't know" response.

The highest levels of self-reported awareness of smart meters were observed in Romania (40% selected scores 8 to 10), Finland (41%), the UK (48%), Malta (60%) and Slovakia (71%). A variety of reasons can be brought forward to explain the higher levels of awareness in these countries – from differences in the current level of rollout of smart meters to varying levels of media attention.

Figure 211: Agreement with the statement: "I am aware of smart meters and what they do", by country



Q15_3. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I am aware of smart meters and what they do

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[176] The definition of "Smart metering" or "intelligent metering system" is contained in Article 2, point 28 of the Energy Efficiency Directive (2012/27/EU), and it is understood as "an electronic system that can measure energy, consumption, providing more information than a conventional meter, and can transmit and receive data using a form of electronic communication".

[177] European Commission (2010). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Energy 2020 – a strategy for competitive, sustainable and secure energy. COM (2010) 639 final, Brussels, 10 November 2010.

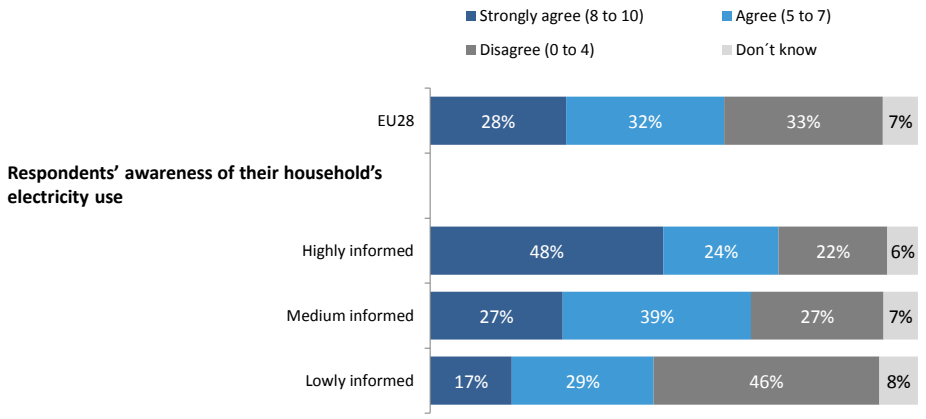
[178] DG Energy (webpage update October 2015), Smart grid and meters'. Retrieved from: https: //ec.europa.eu/energy/en/topics/markets-and-consumers/smart-grids-and-meters.

[179] Klaus-Dieter Borchartdt, Director (26 June 2014), 'Benchmarking smart metering deployment in EU'. Internal Energy Market Directorate-General for Energy European Commission.

%, by country, Base: all respondents
Source: Consumer survey

Respondents who use electricity in a more conscious way were more likely to be aware of smart meters and what they do: 48% of "highly" informed respondents "strongly agreed" (scores 8 to 10) with the statement "I am aware of smart meters and what they do". In sharp contrast, just 17% of "poorly" informed respondents "strongly agreed" with this statement, while 46% of them disagreed (scores 0 to 4).

Figure 212: Agreement with the statement: "I am aware of smart meters and what they do", by respondent characteristics

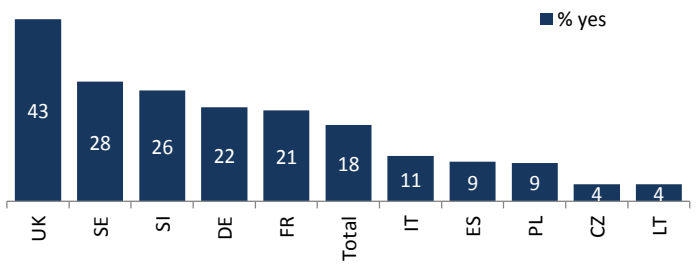


Q15_3. To what extent do you agree or disagree with the following statements. Please use a scale from 0 to 10, where 0 means that you "totally disagree" and 10 means that you "totally agree": I am aware of smart meters and what they do
% EU28, Base: all respondents
Source: Consumer survey

10.5.2 Information provision about smart meters

The proportion of mystery shoppers who answered that the electricity company's website contained information about smart meters was 4% in Lithuania and the Czech Republic, but increased to 43% in the UK. In France, Germany, Slovenia and Sweden, more than a fifth of shoppers had found information about smart meters on the electricity company's website (between 21% and 28%).

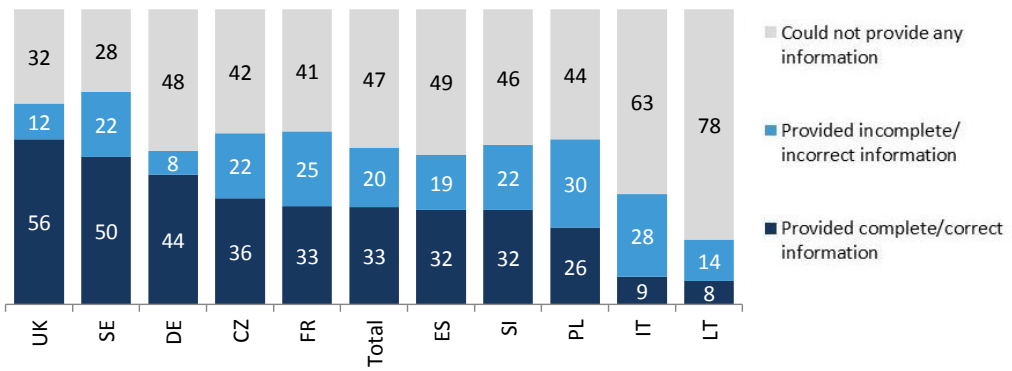
Figure 213: Proportion of shoppers who found information about smart meters on electricity companies' websites



Q12. Do you find any information on smart meters?
%, Base: all mystery shoppers
Source: Mystery shopping exercise

When contacting electricity companies by phone, 56% of shoppers in the UK reported having received complete and correct information about smart meters from the operator; in Sweden, this proportion was 50%. In Lithuania and Italy, on the other hand, less than a tenth (8% and 9%, respectively) of mystery shoppers said that the telephone operator at the electricity company had been able to provide them with complete and correct information about smart meters.

Figure 214: Information about smart meters provided when contacting electricity companies by phone



Q20. Ask the operator for information on smart meters; how do you rate the quality of information/advice received?
%, Base: all mystery shoppers
Source: Mystery shopping exercise

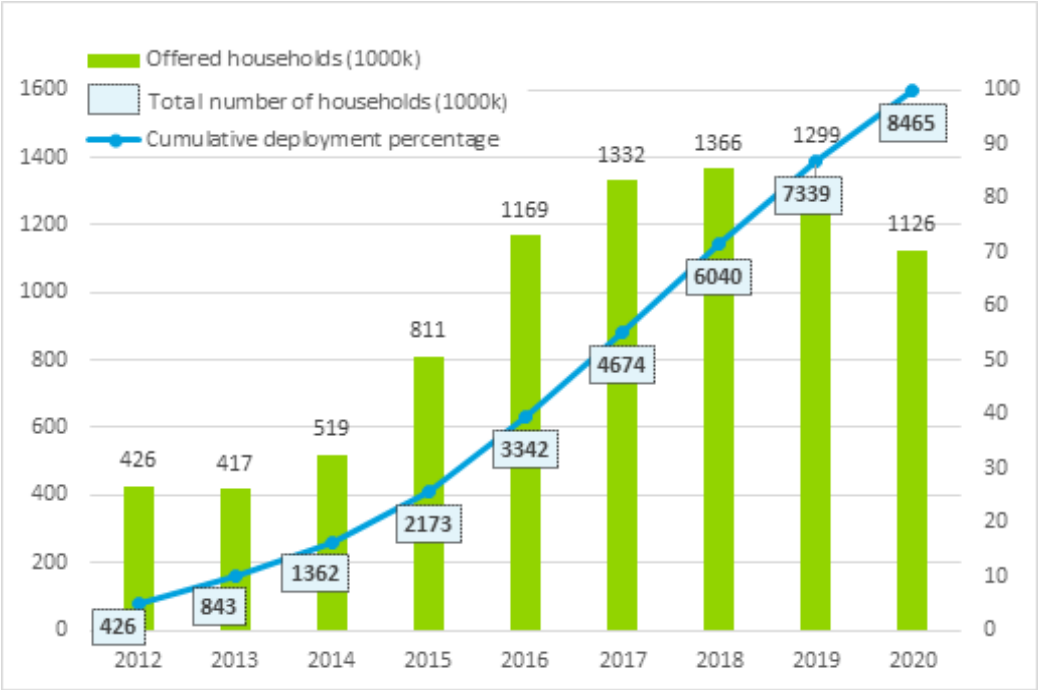
10.5.3 A case study: The experience of the Netherlands with smart meter rollout

This section summarises the findings of the case study on smart meter rollout conducted in the Netherlands. Approximately two million households that have been offered smart meters[180], out of a total of circa 8.5 million electricity connections at the household level. In line with EU goals, the aim is to move from the current 40%-50% towards an 80%-100% smart meter deployment by 2020[181].

[180] *Offered* because the Netherlands has a voluntary smart meter deployment (see section 'Background': households decide whether to accept or not this system, and whether to use it online or offline).

[181] Data on number of smart meters installed/offered facilitated by Rijksdienst voor Ondernemend Nederland/ Netherlands Enterprise Agency (RVO), October 2015. Official data to be released beginning 2016.

Figure 215: Number of households offered a smart meter in the Netherlands (1000k), 2012-2020



Note: the figure can be read as follows:

- The green bar displays the total number of households per annum that have received/are expected to receive an offer for a smart meter installation. For example, in 2015, 811,000 households were offered installation182. The total value across all years amounts to 8,465,000 households.
- The blue line indicates the cumulative number (and percentage) of households who have received/are expected to receive an offer of smart meter installation. As the graph displays, the number of households that received an offer to install a smart meter is expected to reach 100% by 2020.

Source: Data facilitated by Rijksdienst voor Ondernemend Nederland/Netherlands Enterprise Agency (RVO)

Challenges during the initial deployment of smart meters in the Netherlands

The initial deployment of smart meters in the Netherlands faced some challenges. Despite discussions on smart meter rollout started at the political level as early as 2004, it took seven years for the Netherlands to agree upon a framework for deployment. One of the incentives to introduce smart meters came with the liberalisation of the electricity and gas markets. The greater market penetration was associated with administrative problems for Dutch households' electricity billing[183]. Digital meters were seen as a partial solution to this problem: given more frequent billing and detailed data on personal electricity use, it was considered that smart metering would have empowered consumers in their engagement with electricity suppliers in the household market, and diminish these problems. Additionally, a smart grid network[184] was also regarded as a priority by the Dutch government, which would expand the possible uses of smart meters[185].

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[182] Data on the number of households which accepted the installation will be released early 2016 by the Department of Economic Affaires of the Dutch Government, according the interview held with Rijksdienst voor Ondernemend Nederland/ Netherlands Enterprise Agency (RVO).

[183] Van Elburg, Henk (2011), 'SmartRegions: improving energy efficiency prospects of smart metering through collaboration and innovative services', Rijksdienst voor Ondernemend Nederland/ Netherlands Enterprise Agency (RVO).

[184] A smart grid is an electricity supply network that uses digital communications technology to detect and react to local changes in usage. The combination of a smart grid and smart meters would optimise the advantages of both.

[185] In 2010, the Netherlands approved the 'Intelligent Grids Innovation Programme' in order to develop the smart grids network in the country. Source: RVO (2014), 'Who is who: Players in the smart grid sector'.

The bill to amend the Electricity and Gas market law, which aimed at incorporating the Energy End-Use and Energy Service Directive[186] (ESD) in the Dutch legislative system, was proposed in 2007 in the Dutch Parliament by the Minister of Economic Affairs. The proposition featured a mandatory smart meter rollout[187]. However, concerns about data privacy were raised by the main consumer protection association of the Netherlands, *Consumentenbond*, which opposed the policy and led a campaign against mandatory installation. The Dutch government decided not to proceed with the initial bill as originally designed, and introduced new measures to address the concerns of *Consumentenbond*. A final compromise was reached in 2011, when the legal scheme for the rollout was approved by the two chambers of the Dutch Parliament[188]. Specifically, the new framework involved:

- voluntary installation;
- voluntary automatic meter reading, with three separate possibilities:
    - no automatic meter reading;
    - fixed settings for automatic reading on pre-scheduled basis; and
    - full automatic smart reading (i.e. anytime automated readings).

Through this framework, the consumer was given the freedom to choose not only to install the smart meter, but also the smart meter's online connection to the network, which is the crucial difference between smart and traditional meters (i.e. without automatic reading, the functioning of the smart meter is similar to that of traditional meters). In 2014, the Parliament approved the measures which enabled a large-scale deployment of smart meters. Approximately €470m of contracts for the purchase of six million smart meters have been established between the four Dutch DSOs and smart meter manufacturers[189]. Figure 216 summarizes the different stages of the legal process for the smart meter rollout in the Netherlands.

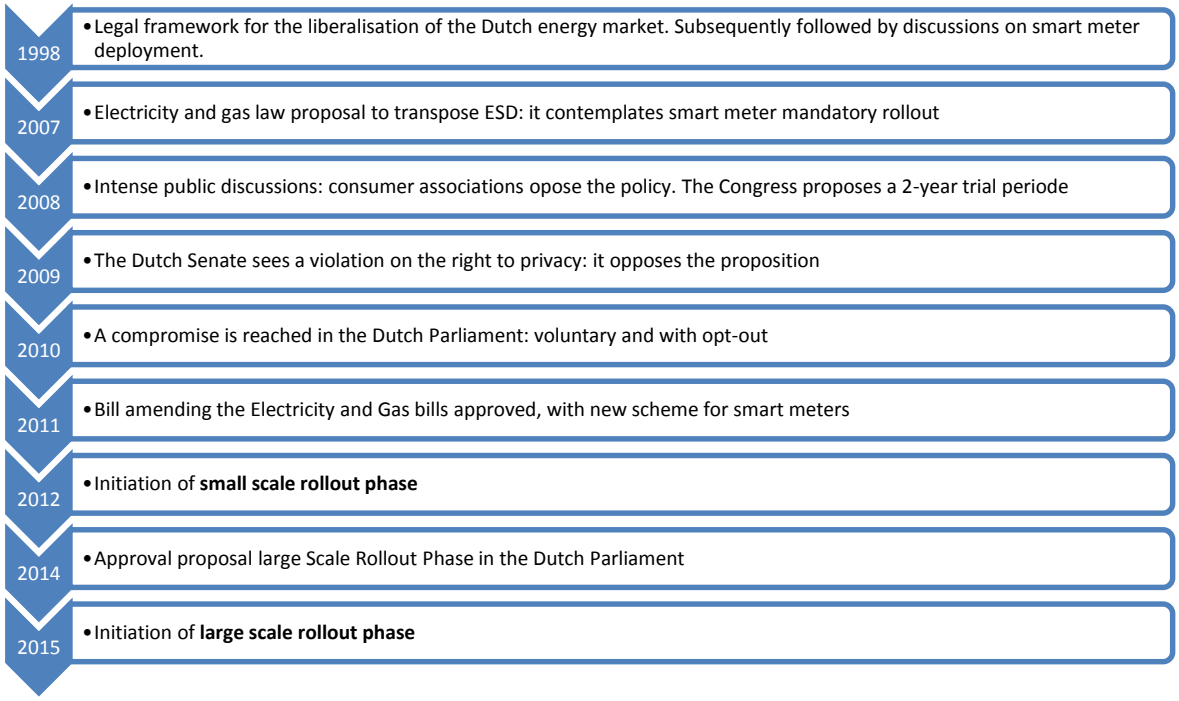
[186] Energy End-Use and Energy Service Directive (ESD), 2006/32/EC.

[187] Amendment of the Electricity and Gas Acts proposal transposing the ESD Directive.

[188] Van Elburg, Henk (March, 2014), 'Dutch Energy Savings Monitor'. Rijksdienst voor Ondernemend Nederland/ Netherlands Enterprise Agency (RVO). p4.

[189] Energati (undated), 'Netherlands Smart Meter rollout goes large-scale'. Retrieved from: http: //www.engerati.com/article/netherlands-smart-meter-rollout-goes-large-scale.

Figure 216: Chronology of Dutch smart meter rollout legal scheme



Source: Data facilitated by the Rijksdienst voor Ondernemend Nederland/Netherlands Enterprise Agency (RVO)

Actors in the Dutch rollout of smart meters

As can be seen in Table 97, there is a number of different actors who are responsible for smart meter rollout in the Netherlands, each of them with a specific role.

Table 97: Actors in the rollout

Actor	Responsibility
Ministry of Economic Affairs	Ministry in charge of overall rollout
Netherlands Enterprise Agency (RVO)	Monitoring and evaluation of the market for smart metering products and services
DSOs	Replacement of old meters, deployment of new meters, and ultimate ownership of the meters
Electricity suppliers	Provision of management services (e.g. electricity billing, additional electricity services, etc.)
Consumers	Recipients of the smart meters

Evaluation of the Dutch smart meter rollout

The first phase of the smart meter rollout has been concluded in the Netherlands. This first small scale rollout phase was initiated in 2012 (now being followed by the large scale rollout, initiated in 2015 and currently ongoing) and has now been evaluated. The small scale rollout was intended to inform the second stage of the programme, following the

quantitative (actual and potential savings) and qualitative (households' opinions) assessment[190].

Assessment of the first phase of rollout

The Dutch Energy Savings Monitor[191] assessed the first phase of smart meter installation in 500,000 households that voluntarily agreed to participate in the pilot[192]. Based on a follow-up with 600 households, the report drew the following conclusions:

- It was the type of feedback delivered to households, and not the design of the smart meter, which triggered greater energy savings from households.
- The involvement of electricity suppliers was important; not only to deliver the feedback (i.e. data on energy consumption) to households in due time, but also to enable them to design new tariffs based on households' energy consumption patterns.
- Regarding energy expenditure reduction; indirect feedback through bi-monthly reports was associated with less than 1% energy expenditure reduction, whereas direct feedback seemed to reduce it by around 3%-5%.

Direct feedback was presented to the consumer via non-web based prototype layouts. Some examples of these prototypes[193] included:

- A heating thermostat with integrated energy display, smart plugs to monitor individual appliances, or an app for smartphones.
- A user-friendly interface showing the levels of consumption as an adequate tool for vulnerable consumers.

According to Dutch Energy Savings Monitor[194], smart meters with direct feedback are more impactful as daily feedback can be habit forming through stimulating action-reaction patterns, more awareness and more interest in energy consumption. However, according to some stakeholders interviewed, whilst the smart metering industry is sufficiently developed in the Netherlands, there is a vacuum on the side of innovative display systems that can provide customised and visual feedback. This is one of the key issues to address in the coming years.

Another point that was considered noteworthy by stakeholders was that, during the initial stages of this large-scale deployment, only a small number of households opposed installation of smart meters. This was seen as an indication of acceptance of smart meters and the rollout policy.

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[190] Van Elburg, Henk (March, 2014), 'Dutch Energy Savings Monitor'. Rijksdienst voor Ondernemend Nederland/Netherlands Enterprise Agency (RVO).

[191] Van Elburg, Henk (March, 2014), 'Dutch Energy Savings Monitor'. Rijksdienst voor Ondernemend Nederland/Netherlands Enterprise Agency (RVO).

[192] Voluntarily means that the consumer could agree on the smart meter installation and whether remote meter reading is activated.

[193] SmartRegions (undated), 'Solutions for innovative smart metering services. Smart Regions pilot activities in the Netherlands'. Available at the webpage of Smart Regions, through direct download. Retrieved from: http: //webcache.googleusercontent.com/search?q=cache: dRHoKOOnyKwJ: smartregions.ohoi.net/GetItem.asp?item=digistorefile;415746;1522&params=open;gallery+&cd=1&hl=ca&ct= clnk&gl=lu

[194] Van Elburg, Henk (March, 2014), 'Dutch Energy Savings Monitor'. Rijksdienst voor Ondernemend Nederland/Netherlands Enterprise Agency (RVO).

Compliance with EU recommendations

In October 2011, the European Commission published a set of functional requirements for smart meters, issued by the Directorates-General for Energy (DG ENER) and Communications Networks, Content and Technology (DG CONNECT), and based on the cost-benefit analysis in 11 Member States of smart metering systems as set out in Annex I of Directives 2009/72/EC and 2009/73/EC for electricity and gas markets[195]. In this document, a set of desired functionalities that every smart meter system should fulfil was described. As Table 98 summarises, the Netherlands is aligned with the European Commission's recommended minimum functional requirements for smart metering systems in almost all criteria.

However, in the Netherlands, some of the functionalities have been introduced with certain conditions. For example, on the side of security problems prevention, the Dutch policy does not foresee a remote switch-off of the smart meter. This reflects the initial refusal of this policy in the Netherlands, due to data privacy issues that prevented the adoption of the initial legislation with mandatory smart meter rollout.

Table 98: Recommended common minimum functional requirements that every smart system for electricity should fulfil

Area	Recommendation	Followed
Consumer	(a) Provide readings directly to the consumer and/or any third party	✓
	(b) Update readings frequently enough to use energy saving schemes	✓
Metering operator	(c) Allow remote reading by the operator	✓
	(d) Provide two-way communication for maintenance and control	✓
	(e) Allow frequent enough readings for networking planning	✓
Commercial aspects of supply	(f) Support advanced tariff system	✓
	(g) Remote on/off control supply and/or flow or power limitation	
Security – Data protection	(h) Provide secure data communications	✓
	(i) Fraud prevention and detection	✓
Distributed generation	(j) Provide import/export and reactive metering	✓

Source: 2012/148/EU Recommendation (but the table itself is based on Figure 3 in COM(2014) 356 final[196])

Conclusions

Despite early discussion and interest in the deployment of smart meters, the Netherlands faced some initial opposition which led to the dropping of a mandatory take-up of smart meters in favour of a more consensual approach. Some of the lessons learned from the Dutch experience include:

- Smart meter deployment requires the involvement of all actors affected by the policy: from households to electricity suppliers, DSOs and the responsible public agents.
- An evaluator (i.e. the Netherlands Enterprise Agency in the case of the Netherlands) is a valuable addition since it allows lessons learned to be analysed to optimise policy and development of smart meter rollout in other countries.

[195] European Commission (2011), 'Set of common functional requirements of the smart meter'. Available at: https: //ec.europa.eu/energy/sites/ener/files/documents/2011_10_smart_meter_funtionalities_report.pdf

[196] Commission staff working document (2014), 'Cost-benefit analyses & state of play of smart metering deployment in the EU-27', page 14. Available at: http: //eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX: 52014SC0189&from=EN

- Understanding the needs and concerns of consumers is necessary for both acceptance and meaningful impact of the rollout: information campaigns or public discussions can be a good opportunity to receive their feedback.
- A good understanding of smart metering at household level is crucial for its acceptance and appropriate deployment.
- A two-stage approach can be beneficial to test how agents respond to the policy, as well as to improve its initial design.
- Smart meter deployment should be accompanied with appropriate data visualization systems, to ensure that consumers receive customised feedback on their energy use.
- Visual and continuous feedback can create powerful habit-forming patterns in households, which will ultimately lead to the realisation of the expected benefits of energy efficiency and savings.

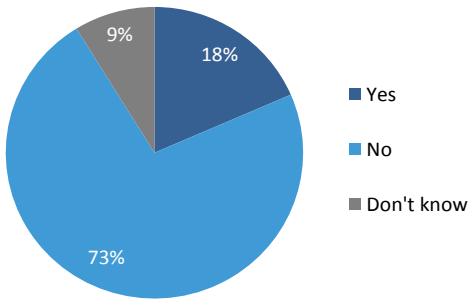
10.6 Collective switching

Collective switching can be a powerful tool to stimulate consumers to consider switching to lower energy tariffs. This section looks at the results of the consumer survey with regards to collective switching, and presents the findings of a case study on the iChoosr switching platform in the UK.

10.6.1 Consumers' experience with collective switching

Roughly one in five (18%) survey respondents who had switched electricity company in the past three years answered that they had switched as part of a collective energy switching campaign. This figure rises to 58% in Portugal. Other Member States displaying a high proportion of collective switching included Belgium (38% of survey respondents who had switched, had done so as part of a collective energy switching campaign), Spain (36%) and Italy (30%).

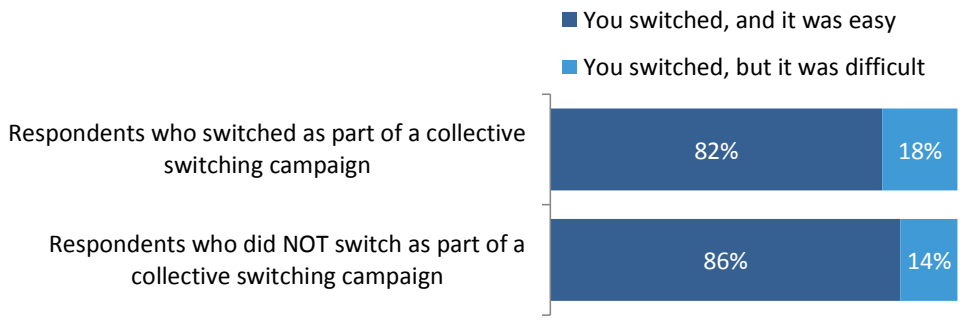
Figure 217: Switching as part of a collective switching campaign



Q29. Did you switch as part of a collective energy switching campaign?
%, EU28 (except Cyprus, Latvia and Malta), Base: Respondents who switched electricity company in the last three years
Source: Consumer survey

Respondents who had switched via a collective switching campaign were somewhat more likely to state that the switching process had been difficult compared to respondents who had switched, but not via a collective switching campaign (18% vs. 14%).

Figure 218: Experience when switching, by type



Q28. Which of the following best reflects your experience of switching?
Q29. Did you switch as part of a collective energy switching campaign?
% EU28 (except Cyprus, Latvia and Malta), Base: respondents who switched electricity company in the past three years
Source: Consumer survey

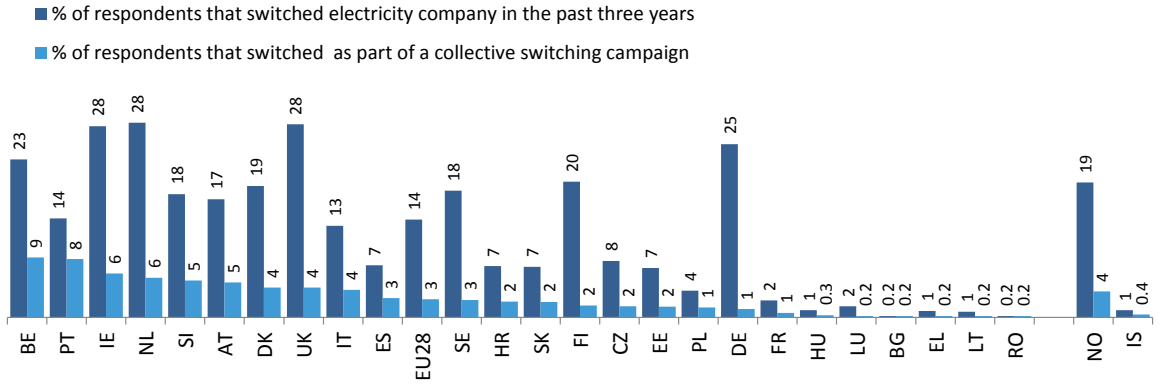
Socio-demographic considerations

Young people tended to be more likely to have switched as part of a collective switching campaign: 23% of 18-29 year-olds who had switched electricity company had done so via a collective switching campaign vs. 17% for 30-64 year-olds[197]. Respondents who sometimes or often could not pay their electricity bills on time were also more likely to have switched via a collective switching campaign with respect to those who felt more comfortable about paying their electricity bills on time (35% vs. 18%).

Individual country results

Figure 219 presents the proportion of survey respondents who had switched electricity company via a collective switching campaign and the total proportion of respondents who had switched electricity company in the past three years (including those who had switched via a collective switching campaign) per country. The collective switching rate ranged from a negligible proportion in countries such as Romania and Lithuania to 8% in Portugal and 9% in Belgium.

Figure 219: Collective switching rate, by country



Q27.Have you tried to switch your electricity company in the last three years?; Q28. Which of the following best reflects your experience of switching?; Q29. Did you switch as part of a collective energy switching campaign?

[197] The results for over 64 year-olds are not discussed; the sample contained only 29 respondents over 64 who had switched in the past three years.

%, by country (except Cyprus, Latvia and Malta), Base: all respondents
Source: Consumer survey

10.6.2 Case study of the iChoosr switching platform in the UK

Higher competition in energy markets is one of the goals behind the push for an effective market liberalisation promoted through the Third Energy Package[198]. Competition is seen as a key solution to the better functioning of energy markets because it is expected to ensure better consumer protection and quality of living by lowering energy prices. In fact, one of the main concerns of the EU was the steady increase in electricity and gas fees for households, as it could create more energy poverty and vulnerability for certain consumers[199]. In order to secure and speed the opening of these markets and contribute to better and fair energy deals, switching is seen as a potential answer to enhance consumer protection and awareness in this regard[200].

Collective switching: pros and cons

Collective switching is defended in article 3.3 of Directive 2009/72/EC on the internal market in electricity[201], in which the voluntary aggregation of households to pursue fair energy deals is seen as a way to strengthen their market position. Among other benefits of collective switching, the Working Group "Consumers as Energy Market Actors" considers it a good initiative to reduce the complexity of the electricity market for consumers and increase both their understanding regarding functioning of the market and greater awareness of household electricity consumption. At the same time, collective switching can be beneficial for market agents, as it is a practice that can facilitate the entry of new players in the electricity market, creating more competitive dynamics[202].

Despite the benefits, there are also some challenges. For instance, the impact of collective switching on final prices is blunted when taxes, levies and network costs (i.e. the regulated part of the final electricity price) can be as much as two thirds of the bill[203]. This appears to have been a factor in the Netherlands, in which the lower threshold for tariff prices seems to be limited[204]. Additionally, some real-case experiences in the market have displayed that the winning offer is not always the best deal for consumers. In the UK, this was found to be the case for the first collective switching campaign, the "Big Switch", organised by the consumer association "Which"[205].

Collective switching business models

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[198] The EU started the liberalization process by mid 90s, but the Third Energy Package, which encompasses the 'latest round of energy regulation in the EU', aims at achieving an effective choice of suppliers. EC DG ENER, 'Market legislation'. Accessed September 2015. Retrieved from: https: //ec.europa.eu/energy/en/topics/markets-and-consumers/market-legislation

[199] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Energy on prices and costs in Europe. COM/2014/021 final. Available at: http: //eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX: 52014DC0021

[200] EC DG ENER, 'Consumer rights and protection'. Accessed September 2015. Retrieved from: https: //ec.europa.eu/energy/en/topics/markets-and-consumers/consumer-rights-and-protection

[201] Directive 2009/72/EC of the European Parliament and of the Council of 13 July 2009 concerning common rules for the internal market in electricity and repealing Directive 2003/54/EC. Available at: http: //eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX: 32009L0072

[202] Working Group, 'Consumers as Energy Market Actors' Interim draft report. Pages 22-25. Available at: http: //ec.europa.eu/energy/sites/ener/files/documents/Draft_WG_report_consumers_market_agents_TC_110315_web_version3.pdf

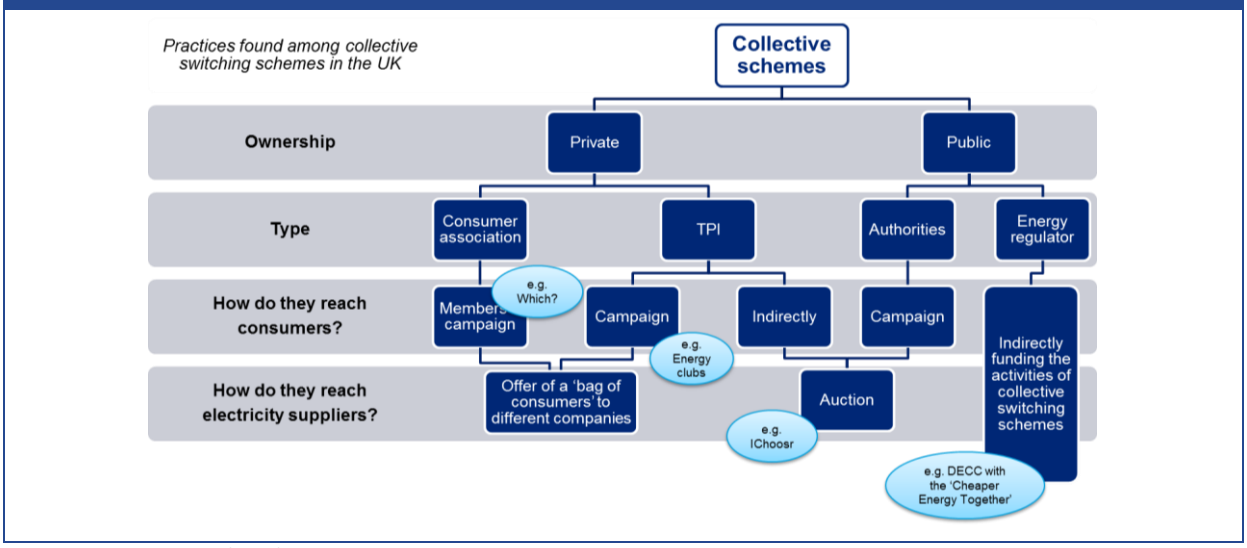
[203] Eurostat, 'Energy price statistics'. Last update May2015. Accessed September 2015. Available at: http: //ec.europa.eu/eurostat/statistics-explained/index.php/Energy_price_statistics.

[204] Working Group, 'Consumers as Energy Market Actors' Interim draft report. Page 23.

[205] Some post-case studies estimate that the £1,048 yearly reduction in price could have been £340 higher if the switch had been done individually through a regulator certified price comparison tool. See for instance: Energylinx (2012), 'Big Switch: the aftermath'. Accessed September 2015. Retrieved from: http: //www.energylinx.co.uk/news/2012/09/collective-switching-the-aftermath.html.

There are different business models for collective switching, depending on the actor organising the campaign: from consumer associations to local authorities, but also independent intermediaries between consumers and electricity suppliers; the latter is typified as a "Third Party Intermediary" (TPI)[206]. The following graph displays some typologies based on practices from collective switching scheme practices in the UK.

Figure 220: Practices found among collective switching schemes in the UK[207]



Source: Based on DECC (2013) 'Helping Customers Switch. Collective Switching and Beyond'

The case study

iChoosr started in the Netherlands and Belgium in 2008, entered the UK market in 2012 (following a request from the Department of Energy & Climate Change (DECC)), and in the Austrian market in 2014. The company's offices remain independent of each other and run collective switching activities for different markets other than the electricity sector (e.g. solar photovoltaic (PV) collective purchasing schemes).

The initial objective of DECC in inviting scheme organisers such as iChoosr to the UK market was for them to act as TPI between electricity suppliers and local councils, with the aim to generate greater engagement among household consumers, specifically from the consumer segment which had not switched within the last three years. In the UK, this segment represents circa 70% of the customers of iChoosr[208]. To have access to consumers, the agreement was that iChoosr would work closely with local authorities, and specifically with a nominated person who would coordinate consumers (the "community leader"). Since 2012, 160 councils have contacted iChoosr, and for the October 2015 auction, there were 50,000 consumers registered with iChoosr[209].

iChoosr's switching process can be divided in three phases being: (1) a registration phase, in which the "community leader" informs stakeholders of the upcoming auction and consumer register; (2) the auction, with five categories associated to each different tariff type; and finally, (3) the actual switching.

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[206] Ofgem understands TPI to 'include switching websites, energy brokers and energy efficiency advice providers who interact with energy consumers'. Ofgem (2013), 'Third Party Intermediaries: exploration of market issues and options'. Available at: https: //www.ofgem.gov.uk/ofgem-publications/74752/tpi-con-doc.pdf

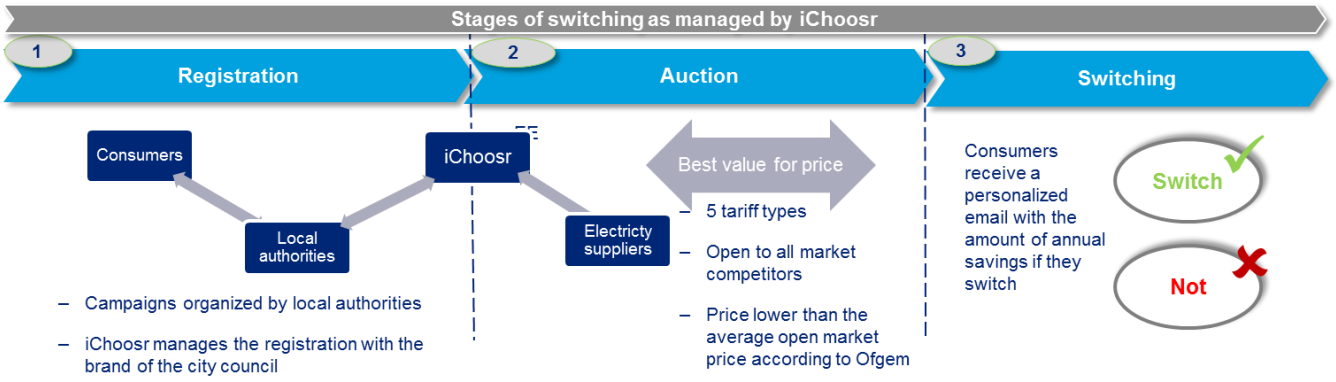
[207] For further details, please refer to the following document: Department of Energy & Climate Change (2013), 'Helping Customers Switch. Collective Switching and Beyond'. Available at: https: //www.gov.uk/government/uploads/system/uploads/attachment_data/file/253862/Helping_Customers_Switch_Collective_Switching_and_Beyond_final__2_.pdf

[208] Information obtained from a stakeholder interview with iChoosr UK.

[209] The registration rate is dependent on the intensity of the awareness-raising activities organized by the community leader to motivate their local citizens to join a switching campaign.

- The **registration** is made through a website designed with the local council brand, but it is a system managed by iChoosr.
- The price offered by the **auction** participants must surpass the competitive market price, benchmarked with Ofgem's database of competitive market tariff prices. The last auction brought an average reduction of circa £50-150 compared to the average lower price, and it was won by British Gas, Eon and Ovo[210]. Generally, there are five to six suppliers competing for the bid. Competitors in the bid are not just firms from the UK's "Big Six" (i.e. the largest six energy suppliers), but also new entrants can participate the auction[211].
- Finally, the **switching** of a consumer within the following four weeks, if they opt to proceed with the supplier switch. The switching starts with a personalised email (or a letter, if registered offline) being sent to the customer, which specifies the yearly savings that should occur from the switching.

Figure 221: Stages of switching as managed by iChoosr



The collective tariff offered by the electricity supplier falls outside the "tariff cap" in place in the UK, which is the maximum number of tariffs that a company can offer to the consumer, currently set at four[212]. Therefore, and according to iChoosr, the market agents use collective tariffs to compete for a segment of consumers – always on the basis of price – "even when they are not necessarily competitive in the open market"[213]. The suppliers will make the tariff available only for a certain number of months and they are not obliged to offer that tariff to any other customers except the participants in the switching campaign. However, the supplier must ensure this tariff price for at least one year.

iChoosr measures its success rate by the number of final switches. To improve performance, the company considers communication a key element in boosting the switching rate among consumers. Specifically, the use of a trusted brand (i.e. local authorities) and a personalised message to the registered individual, are considered useful mechanisms to motivate the consumer to switch, together with the availability of a permanent service help line for customers. Regarding revenues for iChoosr, the company

[210] Information obtained from a stakeholder interview with iChoosr UK.

[211] The winning price is not always below the average as it can depend on the maturity of the collective switching market. When the threshold was surpassed, the market also attracted Price Comparison Tools as bidders, adding a new market competitor to the electricity suppliers already participating in the auction. Source: Information obtained from a stakeholder interview with iChoosr UK.

[212] Collective switching schemes are excluded from the tariff cap. Ofgem (2014), 'Protecting consumers on collective switching schemes'. Available at: https: //www.ofgem.gov.uk/ofgem-publications/85960/collectiveswitchingfinal2correctedvers.pdf

[213] Information obtained from interview with iChoosr UK.

receives a fixed rate from the supplier for each consumer who switches to the winning offer.

Conclusions

Collective switching can be a very powerful tool to stimulate consumers to consider switching to lower energy tariffs, in particular consumers who may have been more reluctant to engage with the market. The strength and sustainability of collective switching business models, however, lie in the ability of all stakeholders to realise benefits: the consumer to have a lower tariff, the supplier to gain market share, and – where they choose to be involved – authorities to leverage market mechanisms to deliver lower costs for citizens and assist in the alleviation of energy poverty. There are also good practices to be observed, and a recent working group report has proposed general principles to be observed in collective switching campaigns[214], being:

- transparency;
- clarity concerning the offer;
- building consumer trust;
- the right amount of information; and
- exploration of new tools to reach consumers.

iChoosr's combined public/private approach ensures that a "neutral" stakeholder (i.e. local government) is part of the switching process, which ensures a degree of oversight, as well as an obligation by the local authority to actively market the switching solution. However, not all switching campaigns have this business model, and it is up to national authorities to consider to what extent they become an active partner or supervisor of switching campaigns. A recent Ofgem report, published in February 2014, raised the desirability of accrediting TPIs in a similar fashion to comparison tools[215] (supervision and accreditation is becoming more frequent for price comparison tools[216]). In the UK, a legal framework for TPIs is currently being developed by the Working Group on TPIs, coordinated by Ofgem[217], while another alternative is the code of practice maintained by the UK's Utilities Intermediaries Association (UIA), which was established as a trade association for TPIs in 2010. Their code involves a set of standards for TPIs operating in the energy market[218]. However, regardless of these initiatives, collective switching schemes must naturally comply with consumer protection law requirements[219]. For collective switching to be an impactful tool to lower energy costs for consumers, appropriate market practices that build trust with consumers and other important stakeholders (such as energy companies, local authorities, consumer associations and national regulators) would be very desirable.

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[214] Working Group, 'Consumers as Energy Market Actors' Interim draft report. Page 24.

[215] Ofgem (2015), 'Protecting consumers in collective switching schemes'. Available at: https: //www.ofgem.gov.uk/ofgem-publications/85960/collectiveswitchingfinal2correctedvers.pdf

[216] See, for example, modes of accreditation for comparison tools in European Commission (2014), Study on the coverage, functioning and consumer use of comparison tools and third-party verification schemes for such tools.

[217] Ongoing work documents can be found under the Ofgem dedicated webpage section, 'Third Party Intermediate (TPI) Programme'. Accessed September 2015. Retrieved from: https: //www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/third-party-intermediaries-tpi-programme

[218] Code of practice from UIA (accessed September 2015): http: //www.uia.org.uk/tpi-code-of-practice.htm

[219] Ofgem (2015), 'Third Party intermediaries: what your small business needs to know'. Factsheet. Available at: https: //www.ofgem.gov.uk/sites/default/files/docs/2015/03/481_tpi_facsheet_may15_web.pdf

10.7 Feed-in tariffs

This section summarises the findings of a case study on feed-in tariffs, the **Belgian green certificates**. The system of green energy certificates was introduced in Belgium at the behest of the EU, as part of the effort to combat climate change and respond to the progressive exhaustion of fossil energy sources. Among other things, the EU undertook that 20% of its total energy consumption would be provided by renewable energy sources by 2020. In this context, Belgium's binding target for 2020 under the EU commitment was to derive at least 13% of energy consumption from renewable sources[220].

Introduction of Green Certificates in Belgium

Belgium is a federal state consisting of three regions: the Walloon Region, the Flemish Region and the Brussels-Capital Region. The responsibility for defining and running "prosumer"-oriented programmes is the responsibility of the regions and not the central government. This led initially to five Green Certificates mechanisms being put in place in Belgium[221]; these were:

- In the Flemish Region (Flanders), there are two systems, Green Energy and Cogeneration, which were based upon the energy balance and use of fossil energy all along the supply chain that is then subtracted from the number of granted Green Certificates.
- In the Walloon Region (Wallonia), the system was based upon the avoided fossil CO_2 emissions with respect to a reference being the combined cycle power plant firing natural gas with an efficiency of 55%.
- The system of the Brussels-Capital Region was based upon the same principle as the Walloon one and is compatible with that system.
- The Federal system was limited to territorial waters and therefore to off-shore wind projects.

As the systems are different in the three regions, some technologies were encouraged in one region and not in others[222].

Green Certificate mechanism

The following principles were common to all Belgian Green Certificate schemes:

- A growing obligation or quota (percentage) of renewable power production was based on the yearly electricity sales for each power supplier (high consumers were partially exempted, except for Cogen Certificates in Flanders);
- Penalties were applied for the share that was not covered by the Certificates (per missing Green Certificate);
- Certificates could be exchanged on the market between green energy producers and suppliers needing them to meet their quota;
- Regulatory bodies in each region granted the Green Certificates and surveyed the market;
- Certified bodies inspected the green power plants and the bio-fuel resources.

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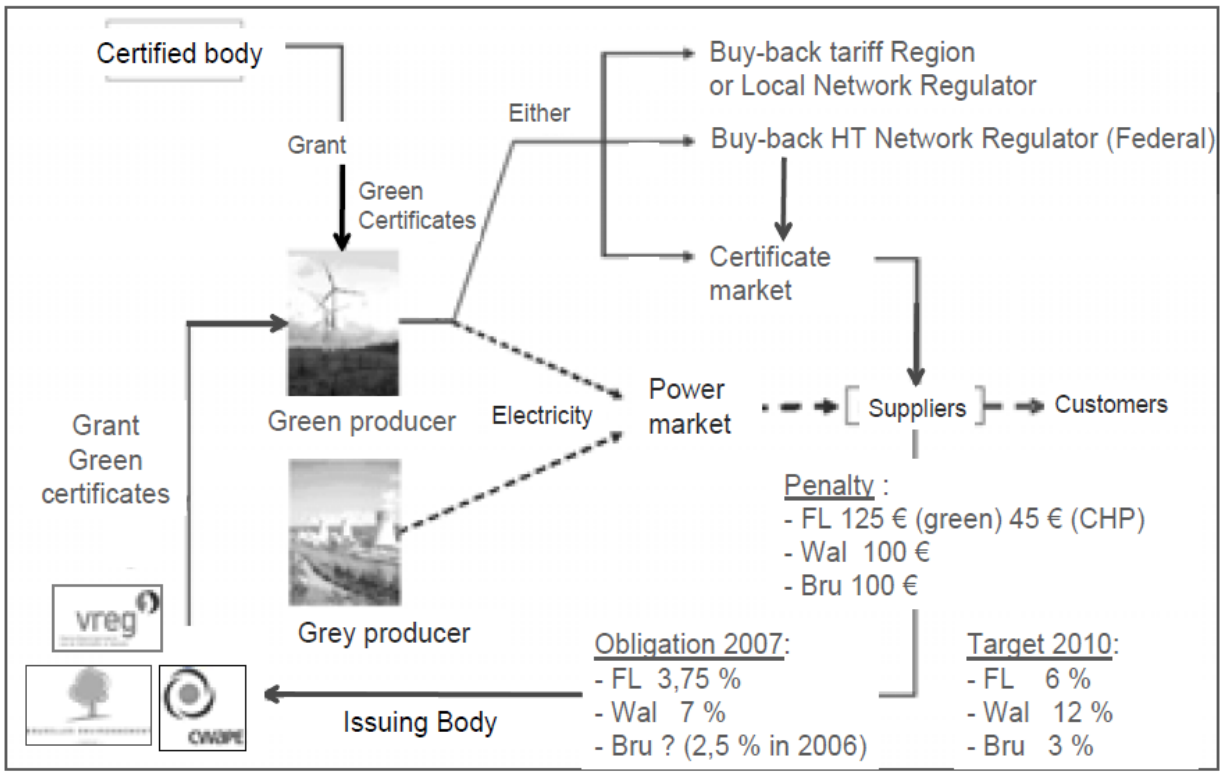
[220] Eubelius, Green energy certificates – Flemish Parliament adapts support for green electricity, June 2011, retrieved from http: //www.eubelius.com/en/spotlight/green-energy-certificates-%E2%80%93-flemish-parliament-adapts-support-green-electricity on 8 October 2015.

[221] F. Van Stappen, D. Marchal, Y. Ryckmans, R. Crehay, Y. Schenkel, undated paper (circa 2007), Green certificates mechanisms in Belgium: a useful instrument to mitigate GHG emissions, http: //www.laborelec.be/ENG/wp-content/uploads/PDF/Valbiom-Berlin-Green_certificates_Belgium-V4_II_55.pdf, retrieved on 8 October 2015.

[222] F. Van Stappen, D. Marchal, Y. Ryckmans, R. Crehay, Y. Schenkel, undated paper (circa 2007), Green certificates mechanisms in Belgium: a useful instrument to mitigate GHG emissions, http: //www.laborelec.be/ENG/wp-content/uploads/PDF/Valbiom-Berlin-Green_certificates_Belgium-V4_II_55.pdf, retrieved on 8 October 2015.

Figure 222: Green Certificate mechanism



Major energy suppliers had the possibility to generate the certificates with their own assets or purchase them at a market price. It is important to note that Walloon and Brussels Green Certificates were exchangeable, while there was no mutual recognition with the Flemish ones. Major energy providers might use their generated Green Certificates for their own purposes if they are also suppliers, to sell them on the market or to sell them at a guaranteed price either to the high-tension network operator (federal level), or to the distribution network operator (regional level), or to the region itself (Wallonia only). Major suppliers which failed to purchase or create the minimum number of certificates would be fined with a penalty of €125 or €100 (depending on the region)[223]. It was envisaged that electricity suppliers would recover the cost of the quota obligation imposed on them through their tariffs, i.e. that the final consumer would in practice bear the cost of the support system.

In order to support the establishment of units producing energy from renewable sources, the three regions subsidised investment in renewable energy production, with the amount varying between 20% and 50% of the investment depending on the size, the nature of the applicant (e.g. whether households, SMEs or large enterprises) and the technology. The federal authority also set up a tax reduction scheme for individuals and enterprises to support investment in renewable energy (and energy saving). Households could deduct 40% of the investment costs and enterprises up to 20.5%[224].

[223] F. Van Stappen, D. Marchal, Y. Ryckmans, R. Crehay, Y. Schenkel, undated paper (circa 2007), Green certificates mechanisms in Belgium: a useful instrument to mitigate GHG emissions, http: //www.laborelec.be/ENG/wp-content/uploads/PDF/Valbiom-Berlin-Green_certificates_Belgium-V4_II_55.pdf , retrieved on 8 October 2015.

[224] Dr. Lydia Greunz, Expert Evaluation Network, Delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013, Year 1 – 2011, Task 1: Policy Paper on Renewable Energy and Energy Efficiency of Residential Housing: Belgium The penalty for missing GCs in Flanders was €125 until 31/03/2012, on 31/03/2013 it went down to € 118 and after after 31/03/2013 the penalty is € 100 (stakeholder feedback)

For prosumers, the major impact of the above polices was on the use of photovoltaic (PV) panels, more commonly known as solar panels, as this was the energy production method most accessible to a wide number of consumers due to a much lower initial investment cost than, for example, wind turbines. Belgium uses a net metering system which means that any excess energy produced by consumers is credited to the consumer's bill and offset against future consumption. However, the consumer receives no cash for the surplus[225].

Issues with the approach

Since its introduction a number of criticisms have been raised in relation to the Green Certificate approach in Belgium.

- Favouring PV technology was considered to be a poor decision based on the low impact this channel had on national renewable energy targets.
- Grid operators were forced by law to pay the minimum price guaranteed by the authorities, but subsequently could only sell the certificates at market value. The guaranteed price exceeded the market value by a factor, leaving grid operators facing a significant and ongoing loss on the transaction.
- Support policies for the installation of PV systems were considered too generous[226] and did not reflect the lowering cost of PV systems, as well as costing the consumer too much overall.
- There was considered to be a lack of coordination between the authorities in the overall development of the support schemes[227].

In an expert evaluation report from 2011, it was noted that:

> *"Overall the policy focus has so far been strongly on solar energy which has received the highest rate of support in regional and national support schemes and for which the guaranteed minimum price of certificates is significantly above the market price of GCs [Green Certificates]. This has resulted in a large increase in the number of PV installations over the last few years but the volume of energy produced by these is insignificant and represents less than 0.2% of energy from renewables."*[228]

The same report drew attention to the variation in the rate for guaranteed minimum prices for green certificates. For solar produced energy, the guaranteed minimum price in regional and national schemes was considered "exceptionally high". For instance, in the Flemish region, the minimum price of green certificates for solar electricity was €450/MWh against a market price of around €107/MWh. This was confirmed by an interviewee of the study who described how the losses built up by grid operators would take three to five years to recuperate based on an increase of €60-€65 on grid tariffs[229].

In addition to this, the knock-on effect to energy consumers was also considered to be unjustifiable by another stakeholder group (Febeliec); "The initial system granted certificates without taking into account the technology or capacity, during the entire lifespan of the installation and independently to the real evolution of the electricity price. This contributed to over-subsidising some applications. The decision by the government to give minimum guarantees to certain technologies above the level of the fine and not to

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[225] Stakeholder interview, 28 August2015.

[226] There were reductions, but they did not sufficiently reflect falling installation costs (stakeholder feedback).

[227] According to stakeholder feedback, this is very important, as one of the mayor reasons for situations of over-subsidising was the cumulation of a (regional) production support scheme with a (federal) fiscal bonus. Had the regional support been lowered when the fiscal bonus was introduced, there would not have been such a boom.

[228] Dr. Lydia Greunz, Expert Evaluation Network, Delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013, Year 1 – 2011, Task 1: Policy Paper on Renewable Energy and Energy Efficiency of Residential Housing: Belgium

[229] Stakeholder interview, 28 August 2015.

take into account additional costs external to the certificates' system that are needed for intermittent technologies (grid costs, reserve capacity in conventional plants, …), led to an unjustifiably expensive green power mix. The costs for the system end up at the consumer by means of the electricity bill."[230]

Coordination and monitoring by the authorities were also considered to be poor. For example, despite having a population of 11 million people, the country initiated five difference Green Certificate schemes, differing by region and technology, with limits on interchangeability. The expert study of 2011 also commented that the different systems in place led to fragmentation of the already small energy market, which in turn was likely to increase the cost of producing electricity from renewables[231]. According to one stakeholder interviewed in this study, this was partially the result of a degree of competition between the regions[232]; for example, the minimum guaranteed price for PV in Flanders was five times higher than that in Wallonia[233]. The same interviewee also highlighted how the federal government also decided to support PV via an income tax write off on the investment, despite very generous support already in place. In a similar vein, the expert study stated that there was a "lack of comprehensive information on the total cost of existing public support for renewable energy in Belgium as emphasised by the IEA [International Energy Agency] and the Federal Energy Department." [234]

Outcome

During the summer of 2012, an in-depth reform of the Green Certificates' system was carried out. A variable support mechanism was introduced where the number of green certificates to be granted no longer only depends on the quantity of the electricity produced, but is adjusted on the basis of the current electricity price and the technological evolution for installations without fuel costs. The quantities of certificates are now set by dividing the minimum support by the expected market value of the certificates (banding)[235]. This was intended to address overpayment for certificates by maintaining a more market-based approach. However, concerns regarding an ongoing over-supply of certificates continue. The Flemish government decided to cut, then stop, certificates for PV[236], while the Wallonia government, as of 2013, has decided to introduce a new scheme called *Qualiwatt* to replace their previous PV system[237].

Conclusions

From a consumer perspective, the development of the PV market in Belgium is an interesting case study. While theoretically the technology allows consumers to become prosumers at an affordable level for many households (in contrast to other renewable energy systems which can have much higher capital investment costs or are location specific), the subsidies which were created to stimulate the market ultimately have to be paid for by consumers themselves through higher electricity costs as well as via taxes. For example, in 2013, the cost of tariffs for solar PV was estimated at €2.5bn over 15

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[230] Febeliec, 22 September 2015, Position Paper 'System of certificates for green electricity in Flanders'.

[231] Dr. Lydia Greunz, Expert Evaluation Network, Delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013, Year 1 – 2011, Task 1: Policy Paper on Renewable Energy and Energy Efficiency of Residential Housing: Belgium.

[232] Stakeholder interview, 28 August 2015.

[233] On a one to one certificate basis, but the content of the certificates was not comparable, due to the CO_2-basis in Wallonia and the production basis in Flanders (stakeholder feedback).

[234] Dr. Lydia Greunz, Expert Evaluation Network, Delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013, Year 1 – 2011, Task 1: Policy Paper on Renewable Energy and Energy Efficiency of Residential Housing: Belgium.

[235] Febeliec, 22 September 2015, Position Paper 'System of certificates for green electricity in Flanders'.

[236] Stakeholder interview, 28 August 2015.

[237]Enerdata, 25 March, Wallonia updates green certificate system for PV units (Belgium), retrieved from http://www.enerdata.net/enerdatauk/press-and-publication/energy-news-001/wallonia-updates-green-certificate-system-pv-units-belgium_17799.html on 8 October 2015.

years[238]. While PV technology benefits those consumers who invested in it, all consumers actually contribute to the cost, leading to an uneven market impact at the consumer level.

At the same time, the efficiency of renewable energy in terms of delivering on Belgium's 2020 carbon reduction commitments was considered to be insignificant, with PV accounting for less than 1% of renewable energy production in the country. An expert study concluded in 2011 that: "The current, very costly, support system for solar electricity is hard to justify" and that Belgium had to consider all renewable technologies and to prioritise the most cost-efficient ones[239].

This rationale is also applicable when considering the consumer welfare aspect; investment in less efficient energy sources will only lead to higher overall energy costs. While any uptake of PV technology can contribute towards lower CO_2 emissions, and lower overall energy costs to households that invest in PV, generous subsidies to the sector may be counter-productive in the context of overall retail energy policy.

[238]Enerdata, 25th March, Wallonia updates green certificate system for PV units (Belgium), retrieved from http://www.enerdata.net/enerdatauk/press-and-publication/energy-news-001/wallonia-updates-green-certificate-system-pv-units-belgium_17799.html on 8th October 2015

[239] Dr. Lydia Greunz, Expert Evaluation Network, Delivering Policy Analysis on the Performance of Cohesion Policy 2007-2013, Year 1 – 2011, Task 1: Policy Paper on Renewable Energy and Energy Efficiency of Residential Housing: Belgium

11. Conclusions and recommendations

This chapter provides the key conclusions of the study and policy recommendations. The discussion of the conclusions relates to the three overarching questions of the study:

- Is a well-functioning electricity market in place for consumers in the EU, Iceland and Norway? Specifically, in terms of:
  - quality of services and availability of information;
  - choice of electricity companies and price tariffs;
  - comparability of offers and switching rates;
  - billing practices;
  - unfair commercial practices and complaint handling;
  - prices and affordability;
  - sustainable energy use and innovation.
- To what extent are consumers able to make informed, rational and empowered choices? Do they possess the necessary tools to undertake this behaviour and what motivates behaviour in the energy market?
- How has the performance of retail electricity markets for consumers developed since the 2009-2010 in-depth market study?

11.1 General consumer attitudes and awareness

This first section summarises the study's findings with respect to consumers' perceptions about electricity market conditions and their trust in electricity companies. Although many consumers express doubts whether market conditions are improving, trust in electricity companies remains at a high level in many countries. At the same time, consumers who feel better informed tend to show higher levels of trust.

Consumer perceptions of electricity market conditions. Across the EU28, 58% of consumers surveyed "strongly agreed" or "agreed" that the retail electricity market in their country was not functioning very well. In Bulgaria, 51% of consumers "strongly agreed" with this statement; in Latvia, Greece and Romania, roughly a third of consumers expressed strong doubts about the well-functioning of the electricity market.

19% of consumers "strongly agreed" that electricity market conditions in their country were improving. A large variation was observed across countries: in Malta, 52% of consumers "strongly agreed" that market conditions were improving; in Bulgaria, just 7% expressed this view. Consumers who were in arrears with electricity bills were more likely to indicate that there was room for improvement with regard to the functioning of the electricity market in their country.

Trust in electricity companies. 40% of consumers surveyed "strongly agreed" when asked whether they trusted their electricity company to respect the rules and regulations set up to protect consumers; this figure varied between 15% in Bulgaria and 68% in Finland. Among consumers who had not tried to switch electricity company, 42% stated that they were satisfied with their current electricity company; 12% had not switched because they distrusted other electricity companies. This study found that the proportion "strongly agreeing" that they trust their electricity company to respect rules and regulations is four times higher (84% vs. 22%) among respondents who "strongly agreed" that their electricity company provides them with information on various topics than among respondents who "disagreed". In 2010, trust in electricity companies was particularly low in Bulgaria and Malta; while Bulgaria is still found at the bottom of the country ranking, Malta now scores better.

11.2 Consumer awareness

The study also measured consumers' awareness of various aspects of their electricity usage. Few consumers declare not knowing how much they pay for electricity; however, more admit not knowing how much electricity they consume or how the price of electricity is calculated. Although consumers' awareness of the right to switch is high across most countries, many consumers are not yet aware that switching should be possible in a timeframe of three weeks.

Electricity use and tariff characteristics. When consumers were asked whether they felt informed about their household's electricity use, 52% "strongly agreed" that they knew how much they paid for electricity. Significantly fewer consumers "strongly agreed" that they knew how much electricity they used (34%), the main characteristics of their tariff (32%), how the price of electricity was calculated (26%) or how the electricity they used was produced (24%).

Contract terms and conditions. 57% of consumers surveyed declared they have read the terms and conditions of the contract with their electricity company, but only 46% reported knowing the advance period in case they wanted to terminate their current contract.

Switching provisions. 68% of consumers surveyed[240] thought they were free to choose any electricity company from those offering services in their area; however, just 35% were aware that the switch should be completed within three weeks. Bulgaria, Lithuania, Greece, Luxembourg and Iceland had the lowest proportions of consumers who replied they have the right to switch electricity company. Consumers were also asked whether you could be charged for the switch: 45% answered that such charges were not allowed.

Measures aimed at protecting consumers in arrears. Only 24% of consumers surveyed answered that they were aware of policy measures aimed at protecting people who have difficulties with paying their energy bills. Consumers who had the most difficulties in paying their electricity bills appeared to be the least likely to be aware of these policy measures (17% compared to 22%-25% across other groups).

Recommendation 1 on raising awareness about protective measures for the energy poor

Full information on policy measures aimed at protecting people who have difficulties with paying their energy bills should be easily accessible. This could be ensured, for example, through the single point of contact (SPOC). Furthermore, information provision to increase levels of awareness should be specifically targeted at energy poor consumers who are more difficult to reach through conventional means of communication (e.g. due to lack of internet access).

11.3 Information provision

This study evaluated electricity companies' information provision on cheaper tariffs, billing and payment methods, efficient energy consumption and complaint procedures; the conclusions of this evaluation are presented in the next paragraphs.

Cheaper tariffs. 29% of consumers surveyed "disagreed" that their electricity company proposed to them a cheaper tariff or a tariff more in line with their preferences or consumption level when they asked the question, while 25% "strongly agreed" and 36% "agreed" with the statement. Germany was characterised by the highest proportion of "strongly agree" responses (44%) and Bulgaria by the lowest proportion (6%). Although Latvia was one of the worst-performing countries in 2010, the country now scores better

[240] Across the EU28, without Cyprus, Latvia and Malta.

with 28% of consumers who "strongly agreed" that their electricity company proposed to them a cheaper tariff or a tariff more in line with their preferences or consumption level.

Billing and payment methods. The proportion of mystery shoppers (in 10 countries) who disagreed that their electricity bills were easy to understand amounted to 41%. Items that were found to be especially difficult to understand included: how the billing amount was calculated, the switching code or meter identification, the contact details of the national energy regulator and grid operator, and information about the fuel mix.

Advice on how to reduce energy consumption. 35% of consumers surveyed "disagreed" and 58% "strongly agreed" or "agreed" that their electricity company provided them with advice on how to reduce their energy consumption; the level of disagreement varied between 21% in the Netherlands and 73% in Bulgaria. The mystery shoppers' analysis of their electricity bills (in 10 countries) revealed that just 26% of electricity bills contained tips on saving energy.

Among electricity companies in the 10 mystery shopping countries, those in the Czech Republic, Italy, Lithuania and Poland scored worst in terms of providing information on energy efficiency related topics on their websites. While 40% of shoppers in the UK had found information about **smart energy tools** on the electricity company's website; this proportion was 2% in the Czech Republic, 7% in Italy, 8% in Poland and 12% in Lithuania. In Sweden and the UK, somewhat more than a third of mystery shoppers had found **a tool to compare their energy use** to others' energy use or average energy use; in Italy and Lithuania, on the other hand, less than a tenth of shoppers reported that such a tool was available.

Recommendation 2 on increasing awareness about energy-efficient behaviour

Energy efficiency is a central objective of the Energy Union's strategy and it is an effective way to cut emissions, bring savings to consumers, and reduce the EU's fossil fuel import dependency. **Electricity companies can contribute to this objective by providing better information to consumers**. At the time of the study, many electricity companies were falling short in providing information on how to reduce energy consumption and providing consumers with tools to monitor and compare their energy use.

Complaint procedures. Few consumers "strongly agreed" that their electricity company informed them about how to file a complaint or about alternative dispute resolution entities (this proportion ranged from 8% in Luxembourg to 31% in Romania). When mystery shoppers (in 10 countries) contacted electricity companies' customer services, 35% had not received complete and correct information about the complaint handling process. One in two mystery shoppers received the contact details of the national energy regulatory authority and 42% received contact details of an ADR body. A large variation was observed across countries: 80% of mystery shoppers in the UK had received complete and correct information about the complaint handling process, compared to 36% of shoppers in Lithuania.

A large variation was also observed in mystery shoppers' evaluations of electricity companies' websites: while 88% of shoppers in the UK had found information about how to file a complaint on the website, this figure decreased to 26% in Poland. 27% of mystery shoppers reported that a complaint could be submitted on the electricity company's website, 22% found a link to the national body in charge of energy regulation and 19% a link to an ADR body or found information on how to contact an ADR body.

Recommendation 3 on raising awareness on complaint procedures

There is a large variation across Member States in information provision on complaint handling by electricity companies. **In order to help consumers who have a complaint, more detailed information about complaint handling procedures should be provided by electricity companies – on their websites, on electricity bills etc.**

11.4 Quality of service and assistance

40% of consumers surveyed "strongly agreed" that their electricity company offered overall a high quality service; this figure varied between 20% in Bulgaria and 64% in Cyprus. Among consumers who had contacted their electricity company in the past 12 months, 45% replied that the assistance and information they had received fully lived up to what they had wanted. In Bulgaria, 21% of consumers (who had contacted their electricity company) indicated that the assistance they had received fully lived up to what they had wanted. In most countries, more than a third of consumers would "strongly recommend" their electricity company to friends or family.

Recommendation 4 on quality of service and assistance

There is scope for **improving the quality of service and customer service relations**. Some countries, nevertheless, have seen an improvement compared to 2010, such as Malta.

11.5 Choice and comparability

This section summarises how much choice consumers have in terms of the number of electricity companies and number of tariffs available to them. In a small number of countries, consumers appear to be satisfied with the choice they have. Regarding comparability, some common marketing methods, such as presenting upfront information in the offer in a non-standardised way, may affect consumers' ability to correctly assess the key features of an offer and to make the best choice according to their consumption profiles.

Choice of electricity companies and tariffs. 36% of consumers surveyed "strongly agreed" that they could choose from a sufficient number of electricity companies; 18% "disagreed" that this was the case. The proportion "strongly agreeing" varied between 7% in Bulgaria and 55% in Germany and the Netherlands. The proportion of "strongly agree" responses was higher in countries with high market maturity as opposed to countries with less mature electricity markets (33% in "high", 22% in "medium" and 24% in "low" market maturity countries).

When asked whether their electricity company offered a sufficient number of tariffs (such as green tariffs, night/day tariffs etc.), 27% of consumers "strongly agreed" that this was the case, and 17% "disagreed". In Germany and Estonia, 42% of consumers "strongly agreed"; in Spain, however, this figure was just 13%.

On average across countries, there has been an increase in the share of unique price tariffs from 62%, in 2010 to 71% in 2015. The data collected through the price collection exercise indicates that consumers now have less choice in terms of off/on-peak tariffs; this means that for those consumers who are able to adjust their electricity consumption between on and off peak periods, fewer tariffs are available that suit their needs.

"Green" tariffs (tariffs for which 100% of electricity production is from renewable sources) were found on offer in 16 EU Member States, and in some of these countries, these tariffs make up a large proportion of the entire range of tariffs on offer. In a number of countries, however, no green tariffs were offered, even though many consumers surveyed were willing to cut down their energy consumption for environmental reasons, and consumers in the behavioural experiment were willing to pay a premium for green tariffs.

Recommendation 5 on increasing choice in terms of tariffs

In many Member States, consumers are not satisfied with the choice of electricity companies and the choice of tariffs. In some Member States, the market may not be providing sufficient choice in terms of renewable energy alternatives. **The choice of electricity services (products) available to consumers should be improved by offering, for example, a wider range of tariffs such as green tariffs.**

Also, some tariff types do not encourage consumers to consider whether their behaviour is energy-efficient or how they could reduce their energy consumption. **Peak/off-peak tariffs are one way to do this, and could thus be encouraged. Consumers need advice on which type of tariff is the most suitable for them.**

Comparability of offers and tariffs. The behavioural experiment tested how common marketing methods, such as presenting upfront information in the offer in a non-standardised way and placing information relevant to assessing the overall cost behind a "pop-up" button, impact consumers' ability to correctly understand an offer. The "stay or switch" experiment was designed to test if the pricing structure used in alternative offers impacts switching behaviour.

Presenting upfront information in the offer in a non-standardised way: 67% of respondents in the behavioural experiment correctly identified the cheapest offer when the marketing material was non-standardised, compared to 79% when the material was standardised. **Standardising the presentation of information** so that details of the offer are placed in the same position across different offers helps consumers to compare offers and to identify which offer is cheapest.

Presenting important information for assessing the total cost of an offer behind a "pop-up": 42% of respondents in the behavioural experiment correctly answered the comprehension question when information was dripped in a "pop-up", compared to 71% when the information was not dripped. The observations from the experiment indicate that all information that is required to assess the total cost of electricity offers should be clearly **shown upfront and not dripped in a "pop-up".** This is also a legal requirement under EU consumer and marketing law.

Complicated price structure: respondents in the "stay or switch" behavioural experiment were less likely to choose the cheapest deal if the price structure was more complicated: 66% **chose the cheapest deal when the price structure had just two components** (a unit price per kWh and a standing charge per day), compared to 59% when the price structure had three components (one unit price for the first batch of energy, another unit price for additional energy and a standing charge per day).

Consumers' experiences with comparing offers. When asked whether consumers had compared tariffs, 49% admitted not having compared tariffs from their own electricity company and 41% said the same about tariffs from different electricity companies. Consumers find comparing tariffs from their own electricity company easier than comparing offers of different companies: 24% thought it was difficult to compare tariffs of their current electricity company, compared to 35% who thought that comparing tariffs from different electricity companies was difficult.

Recommendation 6 on comparability of offers and tariffs

Although the opportunity to switch between offers/tariffs and benefit from lower prices exists in many countries, consumers who do not actively search the market for better offers will not reap the benefits of lower prices. Consumers may not be aware that they can switch or that there is a choice of tariff or electricity company.

Member States should thus **improve the switching environment by increasing awareness about the switching process, and by fostering practices which will encourage and make it easier for consumers to compare offers and switch tariffs**. For example, standardising the presentation of information, and presenting information that is required to assess the total cost of offers up front, could help consumers to compare offers and to identify which offer is the cheapest. Under EU consumer and marketing law, all information that is required to assess the total cost of offers should be indicated up front.

In addition, tools that assist consumers to better understand the pricing structure of their electricity tariffs, and how much electricity they use, should be considered. For example, **the development of awareness tools or behavioural prompts**, such as personal projections that provide consumers with a simulation of their expected costs, **could help in this respect by displaying elements such as energy costs, fixed costs, and taxes and levies.**

At the same time, **information campaigns could increase consumers' awareness of their switching rights and the gains that could be available to them if they switched; these can be organised by the electricity companies themselves or by other bodies.**

Comparison tools. In the consumer survey, 64% of respondents who had compared tariffs of different electricity companies said they had used comparison tools to do so, compared to 38% who had visited the websites of electricity companies and 8% who had contacted electricity companies by phone. Regardless of the method used by consumers to compare tariffs, a similar proportion of consumers "strongly agreed" that it was easy to compare tariffs from different electricity companies (33% for online comparison tools, 31% for phone contacts with electricity companies and 29% for visiting websites of electricity companies).

Mystery shoppers searched for cheaper offers by visiting electricity companies' websites or by contacting them by phone; all mystery shoppers also searched for alternative offers via one or more comparison tools (the exception being Lithuania where none of the mystery shoppers had found a comparison tool). One in two mystery shoppers who had found a cheaper offer via a comparison tool *completely agreed* or *agreed* that it was easy to find a cheaper tariff; mystery shoppers who had found the cheapest tariff by contacting electricity companies by phone or by visiting their websites, however, were less likely to agree that it had been easy to find a cheaper tariff (24% *completely agreed* or *agreed*).

Recommendation 7 on comparison tools

Although energy comparison tools have become an important tool for consumers to compare tariffs of different electricity companies, this study also identified some issues – for example, estimating potential savings appears to be difficult with many comparison tools. The Commission should work with national regulatory authorities to **develop transparency and reliability criteria for energy comparison tools[241] and to ensure that consumers have access to at least one independently verified**

[241] The criteria could be adapted to the energy sector and it could be complementary to the criteria for the application of the Unfair Commercial Practices Directive (UCPD) provided in the Commission's Guidance on the UCPD and the key principles developed by the Multi-Stakeholder Group on Comparison Tools.

comparison tool to assess their current contract against all offers available on the market. This should increase consumer trust, and facilitate comparison and switching.

11.6 Switching

Switching is an important consumer activity which enables consumers to benefit from better deals on offer from alternative electricity companies or to obtain a better deal from their current electricity company. Most EU Member States have implemented the provisions of the Electricity Directive that give consumers the right to switch electricity companies within a three-week period and without extra charges. In countries, such as Hungary, Romania and Greece, however, the actual switching rates remain very low. Moreover, this study identified various barriers to switching; these barriers are discussed in this section.

Switching provisions. All EU Member States, with the exception of Croatia, have implemented legislation to give consumers the right to switch electricity companies. Furthermore, a majority of Member States have specified a time limit of three weeks for the switching process, in line with the EU Directive. However, when mystery shoppers (in 10 countries) asked about the duration of the switching process, at least 3 in 10 shoppers in Slovenia (30%), Poland (36%), the Czech Republic (42%) and Italy (47%) were informed that the change would take more than three weeks.

Switching rates. Across the EU28, 24% of consumers surveyed had switched electricity company and/or tariff while staying with their current company. This figure is higher than the one observed in the 2010 study, when the provider and tariff switching rate was 17%. Although caution should be exercised when comparing the results of the two studies (in 2009, respondents were asked whether they had switched in the past two years, while in the current study, the timeframe used was three years).

In the UK, the Netherlands and Ireland, 28% of consumers had switched electricity company in the past three years. In Iceland, Bulgaria, Luxembourg, Lithuania, Hungary, Romania and Greece, the switching rate remains negligible (between 0.2% and 2%). The proportion of consumers who had switched tariff while staying with their current electricity company in the past three years ranged from 1% in Bulgaria to 28% in the UK.

Drivers of switching. A majority (61%) of consumers who had tried to switch electricity company said this was because they had found a better deal. All other reasons listed in the survey were each time selected by a minority of consumers: for example, 13% reported that they had been contacted by another electricity company, 6% had received recommendations from family or friends, and 7% was looking for a more environmentally friendly electricity company. A small group of consumers surveyed had tried to switch electricity company because they were dissatisfied with their previous electricity company: 8% referred to a poor customer service, 8% to problems linked to billing and 2% to interruptions in electricity supply.

Barriers to switching

Status quo bias. The behavioural experiment identified that there is a tendency for consumers to remain with their current electricity contract even when there were better deals available in the experiment. The consumer survey found that just 24% of respondents thought they were currently on the cheapest tariff (given their usage and preferences), while 41% did not know whether they were on the cheapest tariff or not. This "status quo" behavioural bias can arise because people prefer the familiar, they weigh potential losses more than (equivalent) potential gains and they compare alternatives using their current situation as the reference point.

Difficulties to compare offers and tariffs. 14% of consumers surveyed indicated as a reason for not switching the difficulty in comparing offers of different electricity companies; this figure varied between 5% in Lithuania and 25% in Denmark.

Difficulties to estimate potential savings. In eight of the 10 mystery shopping countries, more than 40% of shoppers *completely agreed* or *agreed* that it was easy to find a cheaper tariff; this figure varied between 43% in Poland and Italy to 75% in Germany. However, when asked to estimate the savings on an annual basis from switching to the cheapest tariff, 25% answered that they were not able to estimate the savings (even when using comparison tools) – in other words, they experienced difficulties to assess the benefits related to the choice of tariffs on offer.

Perceptions about the switching process. When asked about the reasons for not switching electricity company, 16% of consumers answered that the savings would not justify the trouble linked to changing electricity companies, 12% mentioned that switching would be too complicated and 4% referred to the length of the switching process. Although perceptions that switching would be complicated were rather common, for the majority of consumers surveyed, who had actually switched electricity company in the past three years, the switching process had been easy: 85% answered that changing electricity company had been easy, compared to 15% who stated the opposite.

Collective switching. 18% of consumers who had switched electricity company in the past three years had switched as part of a collective switching campaign. In Portugal, 58% of consumers who had switched electricity company had done so via a collective switching campaign. Other countries with relatively high rates of collective switching were Belgium, Spain and Italy. Consumers who had switched via a collective switching campaign were somewhat more likely to state that the switching process had been difficult (18% vs. 14% of consumers who had switched, but not via a collective switching campaign).

Recommendation 8 on switching

Switching electricity companies needs to be technically easy, reliable and quick; the study found that, in many instances, switching is not a quick process and takes more than three weeks (i.e. the time limit set out in the Electricity Directive). **National regulatory authorities should be encouraged to ensure switching times are shortened to comply with EU legislation as a minimum, and to make the switching time even shorter when possible.**

This study showed that consumers' perceptions about the complexity of the switching process and actual switching experiences do not necessarily match; however, there are possibilities to make the switching process easier and thus to improve consumers' perceptions. For example, **by encouraging exchange of best practices regarding collective switching campaigns**. For collective switching to be an impactful tool to lower energy costs for consumers, appropriate safeguards that build trust with consumers and other important stakeholders (such as electricity companies, local authorities, consumer associations and national regulators) are a must.

11.7 Billing

This study evaluated the content of electricity bills, whether the content of electricity bills is presented in an understandable way, and tested via a behavioural experiment what can help to increase consumers' understanding of their electricity bills.

Content of electricity bills. The Electricity and Energy Efficiency Directives require that electricity bills contain certain information elements, but some electricity companies in the 10 mystery shopping countries are not yet complying with these requirements. For example, only 32% of mystery shoppers found information about the fuel mix/energy sources on their electricity bill and 28% about the single point of contact in their country. Information about the period of notice to terminate a contract was not found on bills in Italy, Poland, Slovenia and Spain, while in Germany and France, at least half of shoppers had found such information on their bill (50% and 57%, respectively). Annual bills more frequently contained certain information elements, such as historical energy consumption (51% vs. 43%).

Bill comprehension. 40% of consumers surveyed "strongly agreed" that the bills of their electricity company were easy and clear to understand. A large variation was observed across countries: while more than 6 out of 10 consumers in Lithuania, Estonia and Cyprus "strongly agreed" with this statement, less than 3 out of 10 consumers in Spain, Bulgaria and Italy expressed "strong" agreement.

Although 40% of consumers surveyed "strongly agreed", and an additional 37% "agreed", that their electricity bills were easy to understand, this seemingly positive result was not substantiated in the mystery shopping exercise. Among mystery shoppers (in 10 countries), only 14% *completely agreed* and 29% *agreed* that their electricity bill was easy to understand. This disparity can be explained by the fact that the results in the consumer survey might be influenced by a social desirability bias (i.e. tendency of survey respondents to answer questions in a manner that will be viewed favourably by others). Moreover, respondents in the consumer survey made their evaluation based on memory, while mystery shoppers were instructed to study a recent bill in detail before participating in the exercise.

Electricity companies in the Czech Republic, France and Germany were identified as scoring best in terms of providing information on electricity bills in line with the requirements set out in the Electricity Directive. Electricity companies in Germany, however, appear to be better than those in the Czech Republic and France in presenting this information in a way that is easy to understand: in Germany, 50% of mystery shoppers *completely agreed* or *agreed* that their bill was easy to understand; the level of agreement, however, fell to 36% in the Czech Republic and to 30% in France.

The **framing of information** is very important in helping consumers to access, assess and act upon information. Behavioural economics recognises that more information does not necessarily help consumers to make better choices. Furthermore, due to cognitive limitations, consumers tend to use heuristics to make choices when faced with information complexity. The behavioural experiment tested the impact of framing bill information by making use of different bill formats.

The bill with **a comparability box** was rated better by consumers in terms of information provided on usage and charges, and as having less complex language, although the actual language used was the same just the presentation format was different. The comparability box also helped respondents in the behavioural experiment to better understand their bill; on average across all questions, 84% of respondents who saw the best practice bill selected the correct answers, compared to 79% of respondents who saw the standard bill.

The experiments also confirmed that presenting historical consumption **in a chart rather than in a table** improves consumer understanding of their electricity consumption. When referring to their consumption history in a table, 42% of respondents could correctly answer how much energy they had consumed in the previous year, compared to 58% of respondents when referring to their consumption history in a chart.

Recommendation 9 on bill content and presentation

Actions should be set up to ensure that electricity companies comply with the requirements set out in the Electricity and Energy Efficiency Directives with regard to the content of electricity bills. Bills should clearly show, up front and using a simple format, the important elements of the bill including the price to be paid, the consumption amount, fuel mix, and information on how to switch or file a complaint. Bills should be clear and avoid the addition of superfluous information in order to improve consumer understanding.

Additional guidance at EU level regarding user-friendly energy billing could be provided; this guidance should not just focus on content of bills, but also on the way information is presented. Including a "comparability box" in electricity bills that presents the supplier name, contract period, tariff type/name, switching code and price, would help consumers to understand their bills better. Presenting historical electricity use in a chart as

opposed to a table would help consumers better understand their past energy consumption.

11.8 Prices

Electricity prices are very different across Member States, leading to a large variation in consumers' perceptions of such prices. Although Malta was one of the worst-performing countries in 2010; the country now scores better with more consumers expressing the view that their electricity company offered balanced and reasonable prices.

Consumers perceptions of prices. 28% of consumers surveyed "strongly agreed" that their electricity company offered balanced and reasonable prices (between 8% in Bulgaria and 45% in Germany; in Bulgaria, 62% "disagreed" that this was the case). Additionally, 27% "strongly agreed" that electricity companies offered competitive tariffs prices (between 10% in Bulgaria and Greece and 48% in Germany).

Cross-Member State variation in prices. Prices compare very differently between Member States depending on whether they are measured in Euros or purchasing power standards (PPS), illustrating the importance of accounting for the general cost of living when comparing electricity prices across the EU. Newer Member States such as Hungary, Slovakia and Poland have among the lowest electricity prices in Euros, but among the highest prices in PPS. Finland has the lowest electricity price in PPS terms, followed by Luxembourg and Sweden. Over the 10 years from 2004 to 2014, prices in PPS (both including and excluding taxes) rose in most Member States (25 out of 27 Member States).

Furthermore, the structure of household electricity prices differs considerably across countries. In some countries taxes contribute a large part of the overall price, whereas in others electricity costs and supply margins are more important. The study found that low consumption consumers pay the highest fixed charges. If a high proportion of the electricity prices is due to a fixed element, consumers cannot substantially change their electricity expenditure, even if they reduce their electricity consumption.

Recommendation 10 on tariff structure

The fact that consumers with lower electricity usage pay higher per unit prices as a result of fixed fees charged by a number of electricity companies has potentially negative consequences both in terms of encouraging reductions in electricity consumption and in terms of possible distributional consequences if low consumption consumers are also consumers with low income. As such, this study reiterates the 2010 study recommendation to **change tariff structure to avoid higher per unit prices for low-consumption consumers, especially for those who are also low-income consumers. Electricity companies could also be encouraged to ensure consumers are aware of the full range of contracts on offer and to pay particular attention and provide advice especially to those consumers facing energy poverty.**

11.9 Affordability

Affordability issues were also addressed in this study. Depending on the approaches that are used to measure energy poverty and affordability, there is a difference in estimates as to how widespread this phenomenon is. Energy poverty is most widespread in Greece; the country's current result represents an important deterioration compared to the 2010 results.

Consumers in Greece were the most likely to report having **difficulties with paying their electricity bills**: 10% of consumers surveyed answered that they often could not pay such bills on time and 19% said this happened to them sometimes. In Croatia, Slovenia, Hungary and Romania, between 17% and 20% of consumers answered that they sometimes (or even often) could not pay their electricity bills on time.

In total, 8% of consumers surveyed answered that they regularly had to pay **a fee for a late payment** of their electricity bill, 3% reported that their **electricity consumption had been restricted** due to non-payment of their bills, 5% benefitted from **a social tariff or assistance from their electricity company** (e.g. a staggered payment plan), and 3% received **financial assistance from the government** aimed at helping them to pay their electricity bills.

In Bulgaria, Greece, Hungary and Romania, roughly a sixth of consumers answered that they regularly had to pay a fee for late payment. In Greece and Bulgaria, 7% and 11%, respectively, of consumers reported that their electricity consumption had been restricted due to non-payment of their bills. One in five consumers in Greece replied that they benefitted from a social tariff or assistance from their electricity company.

Recommendation 11 on tackling energy poverty

It will be important to establish methodologies that can be used at EU level to **measure energy poverty in both quantitative and qualitative ways**. This could include using existing Eurostat data on household expenditure and energy costs for a basic quantitative metric, while a second approach would take into account more qualitative factors, such a housing quality and energy needs per social group. Having a combination of such approaches would allow for a more coherent picture of energy poverty, as well as the most impactful policy responses.

11.10 Vulnerable consumers

Evidence collected during this study indicates that a number of groups may be particularly vulnerable in the energy market.

Older consumers (65+), economically inactive consumers and those with lower educational attainment tended to perform worse in the marketing material behavioural experiment. Therefore, common marketing methods such as presenting up-front information in the offer in a non-standardised way and placing information relevant to assessing the overall cost behind a "pop-up" button can disproportionality affect consumers in these socio-demographic groups. Further, switching rates were lower among over 65 year-olds, economically inactive respondents and respondents with lower education attainment. For example, while 15% of over 65 year-olds had switched provider or tariff in the past three years, this figure was 30% for younger respondents.

Recommendation 12 on vulnerable consumers

Interventions and actions that assist older consumers, economically inactive consumers and lower educated consumers should be considered. For example, actions to improve online accessibility, and ensuring that information is presented in a clear, understandable format without key terms and conditions in small print or "dripped", particularly in communications specifically targeted at these groups.

Policy measures to address vulnerability and energy poverty should take into account various drivers, such as local living conditions, which reflect the differing needs of certain consumers.

The range of consumers receiving a social tariff or assistance from their electricity company, or government financial assistance, ranges greatly across the Member States. **Member State authorities are thus encouraged to ensure adequate support using an appropriate range of measures, and that consumers are aware that this support is available.** Such measures could include support to invest in energy efficient housing renovation, advisory services to encourage more economical use of electricity, and repayment terms for those facing temporary financial difficulties. For those facing severe energy poverty, social welfare support should be considered.

Arrears on electricity bills. Consumers who reported that they sometimes or often cannot afford to pay their electricity bills on time were as likely as consumers without such difficulties to have tried to switch provider or tariff (28% and 29%, respectively); however, they were overall less successful in this endeavour and the actual switching rate for this group was lower (19% vs. 25% for consumers without payment difficulties).

Experience with comparing offers. Electricity markets seem to be easier to navigate for more experienced consumers. Consumers who had actively engaged in searching offers were better able, on average, to understand the marketing offers and to correctly answer the comprehension questions. In the behavioural experiment, respondents who had compared offers, tended to choose the cheapest deal more often than respondents who had not compared offers (63% of respondents who had compared offers chose the cheapest deal, compared to 57% of respondents who had not compared offers).

11.11 Complaints and redress

The most common (regulatory) approach for complaint handling is for the consumer to go through their electricity company as a first point of contact. The study found that roughly a tenth of consumers surveyed had complained to their electricity company in the past three years; among these, however, many were not satisfied with the way their complaint had been dealt with.

Incidence and type of problems. 31% of consumers surveyed had experienced a problem with their electricity company in the past three years; this figure ranged from 17% in Germany to 60% in Romania. Problems related to billing and pricing were more frequently mentioned: 11% of consumers (who had experienced a problem) referred to problems with prices (e.g. too high or incorrect), 11% to estimates of electricity consumption (e.g. incorrect estimates) and 8% to billing problems (e.g. non-transparent or incorrect billing).

Among consumers who had experienced a problem with their electricity company, 40% had filed a complaint (between 18% in Lithuania and 59% in Malta). Consumers who had complained to their electricity company largely outnumbered those who had contacted a third party – e.g. a consumer organisation, ombudsman or regulator (35% vs. 5%).

Complaint handling. Many complaints filed were resolved within a matter of days: 17% of consumers reported that their complaint had been dealt with within one day, and 18% said it had taken between two and four days. At the other end of the scale, for 20% of consumers, more than a month had passed between filing the complaint and reaching a solution. Only 22% of consumers, who had filed a complaint, reported being "very satisfied" with the way their complaint had been dealt with.

The most important reasons for not filing a complaint were that it was unlikely that a satisfactory solution would be reached (mentioned by 36% of consumers who had experienced a problem, but had not complained), that it would be too time consuming (21%), that the sums involved were too small (17%) or that it was too difficult to file a complaint (13%).

Recommendation 13 on complaint handling

Although some consumers were not satisfied with complaint handling by their electricity company, very few have contacted a third party – e.g. a consumer organisation, ombudsman or regulator. It will be worth **examining the effect of Directive 2013/11/EU on consumer Alternative Dispute Resolution on internal complaint handling by electricity companies.** The Commission will examine the overall application of the Directive in 2019 and every four years thereafter.

11.12 Enforcement

With more choice and offers, consumers need even greater assurances that they enjoy effective protection from commercial practices that are not in line with EU consumer and marketing law (i.e. unfair commercial practices). In this section, findings about the incidence of such practices, as reported by respondents in the consumer survey, are presented. Results from the consumer survey tend to indicate that problems related to commercial practices that are not in line with EU consumer and marketing law are relatively rare; many stakeholders participating in the consultation, however, considered such practices by electricity companies to be, overall, "common".

Compliance with contract and other EU consumer and marketing law. Presented with four commercial practices that are not in line with EU consumer and marketing law, each time roughly one in seven consumers answered that this practice occurred in their country: unclear, incomplete and difficult to understand contract information (18%); electricity bills that do not accurately reflect real consumption (15%); misleading pre-contractual documents that omit relevant information (15%); and, contracts that do not respect consumer rights (13%). When asked to think about **advertising of electricity companies**, 34% of consumers answered that advertising sometimes deceives, misleads and omits relevant information and 39% "strongly agreed" that electricity companies made their tariffs appear more attractive than they really were to encourage customers to switch.

Consumers in Bulgaria were overall the most likely to state that problems related to such commercial practices occurred in their country (e.g. when asked whether the information in their electricity contract was clear, complete and easy to understand, 45% disagreed). In Finland, on the other hand, consumers were overall the least likely to agree that such commercial practices occurred in their country; nonetheless, even in Finland, 36% of consumers "strongly agreed" that electricity companies make their tariffs appear more attractive than they really are to encourage customers to switch.

Recommendation 14 on advertising of offers

Roughly 10% of consumers who had compared tariffs of different electricity companies had based these comparisons on advertisements by electricity companies. **Enforcement activities should be set up to ensure that advertising by electricity companies respects the requirements of EU consumer and marketing law. In particular, advertising should not deceive, mislead or omit relevant information that consumers need to take informed purchasing decisions and should not take advantage of vulnerable consumers.**

Role of the national energy regulator. 24% of consumers surveyed "strongly agreed" that the national energy regulator played an essential role in monitoring and enforcement of the retail electricity market and 42% "strongly agreed" when asked whether the national energy regulator could do a better job in making the electricity market work for consumers. A considerable proportion of consumers across most countries could not express an opinion about the role of the national energy regulator.

11.13 Innovation

Consumers have become engaged in new ways of using energy that go beyond mere electricity consumption. However, 41% of consumers surveyed did not agree that their electricity company introduced innovations in technology and services that were matching their needs or were not aware of any such initiatives; this figure ranged from 32% in Malta to 73% in Bulgaria.

According to the stakeholders in the retail electricity industry surveyed in this study, the main innovations in the electricity market for consumers are: **(1) smart meters, (2) collective switching, and (3) self-generation**. Roughly 7 in 10 stakeholders believed that legislation in the area of new types of metering stimulates innovation and roughly one in two stakeholders said the same for innovation in the fields of self-generation of

energy and the possibility to sell back excess own-generation. In contrast, three-quarters of stakeholders indicated that legislation has no impact on innovation in collective switching practices.

Smart meters. Awareness of smart meters remained low in most countries; the highest levels of self-reported awareness of smart meters were observed in Romania (40%), Finland (41%), the UK (48%), Malta (60%) and Slovakia (71%). The proportion of mystery shoppers who answered that the electricity company's website contained information about smart meters ranged from 4% in Lithuania and the Czech Republic to 43% in the UK. The case study on smart meters illustrated that smart meter deployment should be accompanied with **appropriate data visualization systems**, to ensure that the consumer receives customized feedback on their energy use.

Recommendation 15 on fostering innovation

The best practices from billing (e.g. reliance on graphics) and use of mobile and web technologies should be aligned with **developments in smart meter graphical display** (i.e. innovative display systems that can provide customised and visual feedback) **to ensure that consumers can avail themselves of the benefits from smart meter technologies**.

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