



EUROPEAN COMMISSION  
EUROSTAT

Directorate E – Sectoral and regional statistics  
E.5 – Energy

# **Quality report of European Union statistics on electricity and natural gas prices for the reporting semestrial periods of years 2019 - 2021**

**2022 edition**

Date:	23 September 2022
Version:	1
Authors:	Stavros LAZAROU, Tena GNJATOVIC

# Table of Contents

<b>1. INTRODUCTION .....</b>	<b>5</b>
<b>2. OVERVIEW.....</b>	<b>5</b>
2.1. Legal basis .....	6
2.2. Coverage .....	7
2.3. General description of the process and its outputs.....	9
2.4. Confidentiality .....	11
<b>3. RELEVANCE, ACCURACY AND RELIABILITY .....</b>	<b>11</b>
3.1. Relevance.....	11
3.2. Completeness.....	12
3.3. Accuracy.....	13
3.4. Reliability .....	14
3.4.1. Data revision policy .....	14
3.4.2. Data revision analysis .....	15
3.4.3. Average size of revisions and data stability.....	15
<b>4. Timeliness and punctuality .....</b>	<b>16</b>
4.1. Timeliness and punctuality .....	16
4.2. Corrections.....	16
<b>5. Accessibility, clarity, coherence and comparability.....</b>	<b>17</b>
5.1. Accessibility .....	18
5.2. Clarity .....	18
5.3. Coherence .....	18
5.4. Comparability – geographical.....	19
5.5. Comparability – over time .....	19
<b>6. Conclusions and recommendations.....</b>	<b>20</b>
<b>Annex 1 (Legal framework).....</b>	<b>21</b>
<b>Annex 2 (Data processing) .....</b>	<b>24</b>
<b>Annex 3 (Publications) .....</b>	<b>26</b>
<b>Annex 4 (Population sample).....</b>	<b>27</b>
<b>Annex 5 (Revision policies) .....</b>	<b>30</b>
<b>Annex 6 (Revisions) .....</b>	<b>38</b>
<b>Annex 7 (Timeliness) .....</b>	<b>40</b>
<b>Annex 8 (National deadlines).....</b>	<b>43</b>
<b>Annex 9 (Punctuality).....</b>	<b>44</b>
<b>Annex 10 (Number of corrections).....</b>	<b>47</b>
<b>Annex 11 (delay between first and final data).....</b>	<b>50</b>

<b>Annex 13 (Methodological guidance)</b> .....	<b>53</b>
---	-----------

## Document History

Version	Date	Comment
0.1	23/09/2022	Document created by LAZAROU Stavros (ESTAT)
1	03/11/2022	Document corrected by GNJATOVIC Tena (ESTAT)

## 1. INTRODUCTION

This report contains summarised information for the second exercise on quality reporting in the field of natural gas and electricity prices in the European Union. Its primary objective is to analyse the main aspects of natural gas and electricity prices data quality and detect areas to improve it in the future. Its scope is analysing quality performance for the reference years 2019, 2020 and 2021.

Eurostat compiled this document using the information included in the quality reports sent by the EU Member States in 2022 and the actual data sent by them in 2019, 2020 and 2021, which are available in Eurobase<sup>1</sup>. The scope of the report are the reference years 2019, 2020 and 2021. The quality reports we include in this analysis are the following:

- Energy statistics - Gas prices for domestic and industrial consumers<sup>2</sup> for the datasets:
  - o Gas prices for household consumers - bi-annual data
  - o Gas prices for non-household consumers - bi-annual data
  - o Gas prices components for household consumers - annual data
  - o Gas prices components for non-household consumers - annual data
  - o Household consumption volumes of gas by consumption bands – annual data
  - o Non-household consumption volumes of gas by consumption bands – annual data
- Energy statistics - electricity prices for domestic and industrial consumers, price components<sup>3</sup> for the datasets:
  - o Electricity prices for household consumers - bi-annual data
  - o Electricity prices for non-household consumers - bi-annual data
  - o Electricity prices components for household consumers - annual data
  - o Electricity prices components for non-household consumers - annual data
  - o Household consumption volumes of electricity by consumption bands – annual data
  - o Non-household consumption volumes of electricity by consumption bands – annual data

The quality concept applied in this report is in conformity with the definition developed by the European Statistical System. In this definition, quality consists of the following components: relevance, accuracy, timeliness and punctuality, accessibility and clarity, comparability and coherence. We briefly explain each of the quality components shortly at the start of each section in the report<sup>4</sup> before we analyse them for the needs of this exercise.

## 2. OVERVIEW

Eurostat initiated the collection of energy prices in 1990 with the objective of improving the transparency for gas and electricity prices charged to industrial end-users. While the legal basis was amended several times, the main objective of improving price transparency remained the same and became increasingly important, especially in the context of the European Energy Union. Transparency for gas and electricity prices encourages consumers to choose between different suppliers and energy sources and hereby helps the promotion of a fair competition. On European Union level, it provides a comparison between Member States and facilitates the

---

<sup>1</sup> Eurobase : <https://ec.europa.eu/eurostat/data/database>

<sup>2</sup> [https://ec.europa.eu/eurostat/cache/metadata/en/nrg\\_pc\\_202\\_sims.htm](https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_202_sims.htm)

<sup>3</sup> [https://ec.europa.eu/eurostat/cache/metadata/en/nrg\\_pc\\_204\\_sims.htm](https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_204_sims.htm)

<sup>4</sup> Most of the introductory texts that shortly explaining each quality component are taken from the ‘ESS Handbook for Quality and Metadata Reports 2020’, available at: [bf98fd32-f17c-31e2-8c7f-ad41eca91783 \(europa.eu\)](https://ec.europa.eu/eurostat/cache/metadata/en/ess_handbook_2020.pdf)

organisation of the internal market. This helps the European Union to become more efficient in its use of energy, and consequently less dependent on fossil fuels.

Regarding the data collection process, Eurostat put to practise in 2007 a major change in the methodology. EU started the process of energy market liberalisation in the 1990s and fully completed it by mid-2007. The new circumstances necessitated an update of the collection in order to meet the emerging requirements of the liberalised market. To that end, Eurostat adapted the methodology for the collection of energy prices and the EU Member States agreed in December 2006 to the following changes:

- Collection of national prices instead of regional prices
- Prices for electricity and natural gas provided by the companies based on the real prices paid by industrial customers averaged over a given period of six months
- The definition of standard consumers replaced by consumption bands, including one for big industrial users
- Collection of disaggregated electricity prices (separate component price data for production, network and taxes).

Initially, reporting countries provided price data for the household sector on a voluntary basis. This changed with the implementation of Regulation (EU) 2016/1952, which entered into force in 2016. Reporting natural gas and electricity price data for the household sector became obligatory. Eurostat modified the collection of data of industrial users to include all non-household consumers, i.e. industrial, commercial and other users not included in the households sector.

Furthermore, Regulation (EU) 2016/1952 introduced the obligation for Eurostat and reporting countries to provide quality reports. The first quality reporting cycle was conducted in 2019, with Member States submitting their first national quality reports, covering reference years 2017 and 2018. The second quality reporting cycle was conducted in 2022, covering the reference periods from 2019 to 2021.

## **2.1. Legal basis**

The main legal text in the area of European statistics on natural gas and electricity prices is Regulation (EU) 2016/1952 of the European Parliament and of the Council of 26 October 2016 on European statistics on natural gas and electricity prices and repealing Directive 2008/92/EC. This regulation provides for quality assessment and quality reports according to article 7.

Paragraph 1 legislates the application of the standard quality criteria laid down in Article 12 (1) of Regulation (EC) No 223/2009, which states the quality assessment dimensions that apply to the data:

- ‘relevance’, which refers to the degree to which statistics meet current and potential needs of the users;
- ‘accuracy’, which refers to the closeness of estimates to the unknown true values;
- ‘timeliness’, which refers to the period between the availability of the information and the event or phenomenon it describes;
- ‘punctuality’, which refers to the delay between the date of the release of the data and the target date (the date by which the data should have been delivered);
- ‘accessibility’ and ‘clarity’, which refer to the conditions and modalities by which users can obtain, use and interpret data;
- ‘comparability’, which refers to the measurement of the impact of differences in applied statistical concepts, measurement tools and procedures where statistics are compared between geographical areas, sectoral domains or over time;
- ‘coherence’, which refers to the adequacy of the data to be reliably combined in different ways and for various uses;

Paragraph 3 of Regulation (EU) 2016/1952 states the obligation for countries to transmit quality reports to Eurostat every three years:

*‘Every three years, Member States shall provide the Commission (Eurostat) with a standard quality report on the data in accordance with the quality criteria laid down in Article 12(1) of Regulation (EC) No 223/2009. Those reports include information on the scope and collection of the data, the calculation criteria, the methodology and data sources used, and any changes thereto.’*

Furthermore, paragraph 4 states the obligation for Eurostat to assess the quality of the data provided and to prepare and publish a report on the quality of European statistics on natural gas and electricity prices:

*‘The Commission (Eurostat) shall assess the quality of the data provided and shall use that assessment and an analysis of the quality reports referred to in paragraph 3 in order to prepare and publish a report on the quality of the European statistics covered by this Regulation.’*

Two implementing acts supplement Regulation (EU) 2016/1952:

1. Commission Implementing Regulation (EU) 2017/2169 of 21 November 2017 concerning the format and arrangements for the transmission of European Statistics on natural gas and electricity prices pursuant to Regulation (EU) 2016/1952 of the European Parliament and of the Council (Text with EEA relevance.)

2. Commission Implementing Regulation (EU) 2019/803 of 17 May 2019 concerning the technical requirements regarding the content of quality reports on European statistics on natural gas and electricity prices pursuant to Regulation (EU) 2016/1952 of the European Parliament and of the Council (Text with EEA relevance.)

Regulation (EC) No 223/2009 of the European Parliament and of the Council of 11 March 2009 on European Statistics strengthens the role of quality reporting. Article 12.3 of this Regulation states that European statistics shall be developed, produced and disseminated based on uniform standards and harmonised methods.

At national level:

In addition to European regulations, many participating countries have their own national legislation. Annex 1 includes information on applicable national laws or regulations. Only Bulgaria, Estonia and Lithuania do not report any national legislation. However, many legal texts in other countries are not updated with the new requirements, not well defined, or do not specify deadlines or sanctions.

## **2.2. Coverage**

In total, the official data transmission consists of four questionnaires<sup>5</sup>, which address two products (natural gas and electricity) and two categories of end-users (households and non-households).

For all questionnaires, there are two different levels of disaggregation:

1. Semestrial prices. Reporting countries provide data twice a year. The reference periods are the semesters of the calendar year. These prices are divided in 3 levels:
  - a. Level 1 prices: prices excluding taxes and levies.
  - b. Level 2 prices: prices excluding VAT and other recoverable taxes and levies.
  - c. Level 3 prices: prices including all taxes and levies.

---

<sup>5</sup> The questionnaires are available at : <https://ec.europa.eu/eurostat/web/energy/methodology/prices>

2. Annual prices. Reporting countries provide annual prices once a year together with the data for the second semester. The reference periods are the calendar years. These prices are divided into the following components and taxes:
- a. Energy and supply: generation, aggregation, balancing energy, supplied energy costs, customer services, after-sales management and other supply costs.
  - b. Network cost: transmission and distribution tariffs, transmission and distribution losses, network costs, after-sale service costs, system service costs, and meter rental and metering costs.
  - c. Value added taxes (VAT): as defined in Council Directive 2006/112/EC.
  - d. Renewable taxes: taxes, fees, levies or charges relating to the promotion of renewable energy sources, energy efficiency and CHP generation.
  - e. Capacity taxes: Taxes, fees, levies or charges relating to capacity payments, energy security and generation adequacy; taxes on coal industry restructuring; taxes on electricity distribution; stranded costs and levies on financing energy regulatory authorities or market and system operators.
  - f. Environmental taxes: taxes, fees, levies or charges relating to air quality and for other environmental purposes; taxes on emissions of CO<sub>2</sub> or other greenhouse gases. This component includes the excise duties.
  - g. Nuclear taxes (only for the electricity questionnaires): taxes, fees, levies or charges relating to the nuclear sector, including nuclear decommissioning, inspections and fees for nuclear installations.
  - h. All other taxes: taxes, fees, levies or charges not covered by any of the previous five categories: support for district heating; local or regional fiscal charges; island compensation; concession fees relating to licences and fees for the occupation of land and public or private property by networks or other devices.

In addition to these elements, the network cost includes the transmission/distribution ratio. Countries also report the relative share of consumption in the different consumption bands. Eurostat uses it to calculate the single national prices (national weighted averages).

Reporting countries provide prices in national currencies per kWh for electricity and GJ for natural gas and according to different bands of consumption.

For the electricity of household sector, the bands are:

- DA: consumption of less than 1000 kWh.
- DB: consumption of 1000 kWh or more but less than 2500 kWh.
- DC: consumption of 2500 kWh or more but less than 5000 kWh.
- DD: consumption of 5000 kWh or more but less than 15000 kWh.
- DE: consumption of 15000 kWh or more.

For the electricity of final non-household sector, the bands are:

- IA: consumption of less than 20 MWh.
- IB: consumption of 20 MWh or more but less than 500 MWh.
- IC: consumption of 500 MWh or more but less than 2000 MWh.
- ID: consumption of 2000 MWh or more but less than 20000 MWh.
- IE: consumption of 20000 MWh or more but less than 70000 MWh.
- IF: consumption of 70000 MWh or more but less than 150000 MWh.
- IG: consumption of 150000 MWh or more.

For the natural gas of households sector, the bands are:

- D1: consumption of less than 20 GJ.
- D2: consumption of 20 GJ or more but less than 200 GJ.
- D3: consumption of 200 GJ or more.

For the natural gas of final non-households sector, the bands are:



- I1: consumption of less than 1000 GJ.
- I2: consumption of 1000 GJ or more but less than 10000 GJ.
- I3: consumption of 10000 GJ or more but less than 100000 GJ.
- I4: consumption of 100000 GJ or more but less than 1000000 GJ.
- I5: consumption of 1000000 GJ or more but less than 4000000 GJ.
- I6: consumption of 4000000 GJ or more.

In addition to these bands of consumption, the questionnaires include an automatic calculation of the single prices for the annual data.

For the reference period of the quality report, Eurostat received data from 41 countries<sup>6</sup>:

- All 27 EU Member States
- 3 EFTA countries
- 7 candidate or potential candidate countries
- 4 other countries

Finally, the information provided in the national quality reports could only be analysed in a summarised way, since it would not be possible to publish a synthetic EU quality report containing all the details of the information transmitted by countries. However, the national quality reports are accessible at:

- [https://ec.europa.eu/eurostat/cache/metadata/en/nrg\\_pc\\_202\\_sims.htm](https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_202_sims.htm) for natural gas quality reports
- [https://ec.europa.eu/eurostat/cache/metadata/en/nrg\\_pc\\_204\\_sims.htm](https://ec.europa.eu/eurostat/cache/metadata/en/nrg_pc_204_sims.htm) for electricity quality reports

### **2.3. General description of the process and its outputs**

Eurostat collects, processes and publishes natural gas and electricity prices every 6 months. The deadline for the countries to transmit data is 3 months after the reference period. The dissemination package is released one month before the legal deadline, 4 months after the reference period.

As a first step, all questionnaires sent by the reporting countries undergo validation checks such as completeness, plausibility, coherence and time-series checks. Eurostat confirms the validity of the submitted data and publishes them. The data from the questionnaires are loaded into our internal database, the prices per kWh are calculated from the prices per GJ for the natural gas data and the prices in EUR and PPS (purchasing power standard) are calculated using conversion rates. Many different PPS rates using different types of goods are available but it has been decided to use the PPS rates based on the national GDP as the aim is to be able to compare the weight of the energy bill in different economies. Finally, the data are disseminated in Eurostat's public database into the following datasets:

- nrg\_pc\_202: Gas prices for household consumers - bi-annual data
- nrg\_pc\_203: Gas prices for non-household consumers - bi-annual data
- nrg\_pc\_204: Electricity prices for household consumers - bi-annual data
- nrg\_pc\_205: Electricity prices for non-household consumers - bi-annual data
- nrg\_pc\_202\_c: Gas prices components for household consumers - annual data
- nrg\_pc\_203\_c: Gas prices components for non-household consumers - annual data
- nrg\_pc\_204\_c: Electricity prices components for household consumers - annual data
- nrg\_pc\_205\_c: Electricity prices components for non-household consumers - annual data
- nrg\_pc\_202\_v: Household consumption volumes of gas by consumption bands- annual data
- nrg\_pc\_203\_v: Non-household consumption volumes of gas by consumption bands - annual data

---

<sup>6</sup> Data for the UK is available up to the first semester of 2020.

- nrg\_pc\_204\_v: Household consumption volumes of electricity by consumption bands - annual data
- nrg\_pc\_205\_v: Non-household consumption volumes of electricity by consumption bands - annual data
- nrg\_pc\_206: Share for transmission and distribution in the network cost for gas and electricity - annual data

When all EU countries are available, Eurostat calculates EU aggregates using the average of the national prices arithmetically weighted by the consumption of the countries. For the PPS prices of the EU aggregates, two methods are possible. The first option would be to use EU aggregate PPS rates. However, these rates are averages weighted on the GDP. Instead, Eurostat recalculates the average of the national PPS prices weighted by the countries' consumption.

*At national level:*

As seen in Annex 2, around one half of the countries collect all the data needed directly from their electricity or natural gas suppliers. However, fourteen EU Member States additionally use other data sources. These data sources can be the network operators (for the network prices) or administrative data for regulated prices or taxes. The data from these other sources can be of higher quality, but the compilation of the different prices is then more complicated, as these countries have to do extra calculations in order to be able to report all the disaggregated data points requested by the Regulation.

Nine EU Member States collect electricity and/or natural gas prices on a quarterly or monthly basis. This also implies extra calculations, as after having done the national aggregates, they then have to calculate a time aggregate possibly weighted on the consumption in each period.

All Member states use electronic questionnaires or online surveys for data transmission. This is an improvement compared to the situation at the time of the previous quality report, when several countries still accepted questionnaires filled in manually and sent by fax or land mail. Electronic/online questionnaire simplify the processing of the data and help to avoid copying mistakes.

The validation checks done by the EU member states on the data from their provider varies a lot. Some countries did not report any other validation checks than the ones performed on their national aggregates but most of them are validating every single transmission they receive. This task might seem easy for countries with few suppliers requested to fill in the survey, but it might get very complicated for countries like Italy with several hundreds of suppliers both for electricity and for natural gas.

The data compilation process is easy for the countries asking all the data needed directly from their electricity or natural gas suppliers: they just need to calculate the averages weighted on the market share of each of these suppliers. The other countries need to do extra calculations in addition to this:

Some countries are getting the network prices from the network operators or from administrative sources (when it is a regulated price). Thanks to this, they can calculate the energy and supply prices by deducting the network prices from the level 1 prices (prices without any taxes).

A different process is observed for the prices for households in countries with a regulated market. As the prices are regulated, the electricity and natural gas suppliers do not need to be surveyed for the prices. They are only asked to provide data on the market share and the number of customers. The national prices are calculated directly from administrative sources and from the public prices reported on the suppliers' websites.

Concerning dissemination, all countries rely on Eurostat's publications and online database. However, as presented in Annex 3, 16 EU member states also have national publications (press releases or annual/bi-annual/quarterly publications). Twelve of them are also hosting an online database or excel spreadsheets on their national servers. The Member States with national

publications generally publish also documents on methodology. Three countries mentioned that they have an online database, but no documents on the methodology. Finally, only six Member States indicated that they have a procedure in place to give access to micro-data.

## 2.4. Confidentiality

The questionnaire provides for the possibility to specify confidential values. Reporting countries should flag the band as confidential either on the semestrial prices, the annual prices, the consumption volumes or a combination of these elements. The transmission and distribution shares of the network prices can also be confidential.

Our internal database is stored in a secure environment accessible by a restricted number of persons that have signed a declaration of confidentiality. Eurostat does not publish in its public database the data flagged as confidential, and the confidential data might be used to calculate the aggregate only if it is not possible to recalculate the confidential data. An aggregate does not take into account the confidential data if there is only 1 or 2 data points that are confidential.

*At national level:*

It is possible that reporting countries are generally considering a consumption band as confidential when less than three customers constitute the band. They are also sometimes reporting a band as confidential if less than 3 suppliers provide data for that band. Finally, it might happen that there are more than 3 customers or 3 providers for a band, but it is well known that one of them represents a big share of the band (>80%). In such a case, reporting countries can also flag the band as confidential.

If data are available elsewhere, they cannot be flagged as confidential.

## 3. RELEVANCE, ACCURACY AND RELIABILITY

Relevance is an attribute of statistics measuring the degree to which statistical information meets current and potential needs of the users.

The accuracy of statistical outputs in the general statistical sense is the degree of closeness of computations or estimates to the exact or true values that the statistics were intended to measure.

Reliability refers to the closeness of the initial estimated value to the subsequent estimated value.

### 3.1. Relevance

We assess the relevance of the collection analysing its users. We inquire several aspects such as who they are, what needs they have, whether they are satisfied, what is done to meet their needs.

Eurostat compiles EU natural gas and electricity prices in line with the relevant legislation (see chapter “Legal basis”). Regulation (EU) 2016/1952 contains a defined list of variables, which reflect in particular the most relevant institutional users' needs.

Eurostat's users are

- the public and organizations, for comparison
- researchers, for analysis
- media, for publications
- policy users, for forecasting and decision-making.

The public uses our data for comparison purposes. They access our information directly or through reading articles written by the media. Therefore, it is important that our data are comparable across Europe. Eurostat and national reporting authorities clarify potential

differences in their country reports, which are available at the metadata section of Eurostat's Eurobase.

Researchers use our data for conducting their scientific analysis. To facilitate them, we provide data tables and bulk download features in our database. We clarify the definitions for each statistical flow and we strive to maintain a long time series, despite potential methodological changes that could lead to a break of series.

Eurostat has regular meetings with the main policy users of natural gas and electricity prices statistics, and discusses the users' needs in its bi-annual Energy Statistics Working Group (ESWG) meetings. At EU level, Eurostat revises its collections based on the feedback it receives from the policy makers and makes them more relevant to their needs.

Apart from that, Eurostat also launches regular general user satisfaction surveys. However, these surveys are on all the data collected by Eurostat and the natural gas and electricity prices datasets are a very small portion of it. It is therefore not possible to know the satisfaction of the users of these datasets. However, from the last satisfaction survey done in 2020, the level of satisfaction with the overall quality of European data remained steadily high, with 70% of all users considering the quality to be "very good" or "good" and 18.7% considering it as "adequate".

As a response to user needs, Eurostat started publishing data on consumption volumes per consumption band. These data are available in Eurobase starting from reference year 2017.

*At national level:*

Many countries indicate in their data quality reports that they consider Eurostat as the main user of their data. Therefore, they align their collection efforts to Eurostat's needs. They generally confirm that Eurostat's needs are fully satisfied.

Several countries explained the needs from their users:

- Netherland specified that a national average price would be easier to understand for basic users. This information is available for the annual prices data.
- Ireland mentioned that an EU average price would be interesting. We have been calculating it since 2019.
- France indicated that the following additional information would be useful: differentiation between market and regulated prices; standard deviations of prices for different bands in order to feel the dispersion of prices around the average; prices quoted by subscribed power and not by annual consumption

Estonia, Lithuania, Romania, Slovakia and Slovenia conduct satisfaction surveys on a regular basis. In France, a users' committee meets every 2 years. Sweden accepts suggestions by e-mail.

## **3.2. Completeness**

The focus of this report is on the reference years 2019-2021. For this period, all EU Member States have submitted their national reports, as well as the majority of EFTA and Energy Community countries.

All EU Member States submitted the complete prices data for the period 2019-2021. This includes semestrial data, as well data collected on an annual basis. However, there are some issues with data that is flagged by countries as confidential. Specifically, the Czech Republic treated all the consumption bands as confidential for the consumption volumes data in the electricity prices questionnaire for the period 2019-2021, thus preventing Eurostat from calculating the EU aggregate. In general, countries should ensure that the published is as complete as possible and provide a valid justification for treating the data as confidential.

### 3.3. Accuracy

Statistics can be different from the true values because of random variability (the statistics change from one implementation of the survey to another due to random effects) and/or bias (the average of the possible values of the statistics from one implementation to another is not equal to the true value due to systematic effects).

Several types of error, stemming from all survey processes, contribute to the error of the statistics (their bias and variability). A certain typology of errors is widely adopted in statistics. Sampling errors affect only sample surveys; they occur because only a subset of the population, usually randomly selected, is surveyed. Non-sampling errors affect sample surveys and complete enumerations alike and comprise:

- Coverage errors are due to divergences between the target population and the sample used. Possible divergence types are under-coverage (i.e. the sample does not cover all type of units of the target population), over-coverage (i.e. the sample includes units which do not belong to the target population) and misclassification (i.e. the sample includes units which belong to the target population but are wrongly classified). These errors can be estimated by comparing the sample with the target population.
- Measurement errors are errors that occur during data collection and cause the recorded values of variables to be different from the true ones. Their causes are commonly categorized as:
  - o Survey instrument: the form, questionnaire or measuring device used for data collection may lead to the recording of wrong values.
  - o Respondent: respondents may, consciously or unconsciously, give erroneous information.
  - o Interviewer: interviewers may influence the answers given by respondents.
- Processing errors are introduced at the stage of processing the data collected by the surveys: coding, data entry, data editing, imputation, aggregations, etc.
- Non-response errors refer to the difference between the statistics computed from the collected data and those that would be computed if there were no missing values. Indeed, non-response is the failure of a survey to collect data on all survey variables, from the entire statistical population.

In several countries, the supplier companies are required by law to provide data. However, it is not always the case. For countries without national legislation, or when the national legislation has not yet been updated to match the requirements of Regulation (EU) 2016/1952, this can pose a challenge as regards data accuracy due to multiplication of data sources and the calculations / estimations that need to be performed in order to get the requested data.

The accuracy of the data calculated by Eurostat fully depends on the quality of the national statistical systems and may vary from country to country. Countries with low consumption have a smaller impact on the result of the calculations. There is therefore a special focus on the accuracy of the biggest countries.

#### *At national level*

In the present quality reporting exercise most countries reported statistical populations representing a very big portion of the target populations (>60%), and thus no or negligible sampling errors. Countries also reported low non-response rates, and while some countries mention that coverage errors can happen, they estimate their impact as negligible as it would concern a very limited number of units.

The only exception is Germany, that has a statistical population of 40% for households electricity and natural gas, and 45% for non-households electricity and natural gas. This is nevertheless a much higher percentage and a significant improvement compared to the previous quality report submitted by Germany. However, Germany also reported a rather high non-response rate (10%). The sampling error for this country is between 0.6% and 4% for electricity

and between 1% and 4% for natural gas, depending on the band. On the other hand, they reported very good coverage.

Concerning measurement errors, their main cause are mistakes made by the reporting suppliers while encoding their data in the questionnaires. Most of these errors, especially when they are of high magnitude, are detected during the validation of the data and discussed with the data suppliers for corrections.

Regarding processing errors, the main causes are due to human mistakes in countries where the processing is not automated. In countries where the processing is automated, there might have been some errors when setting up the system but the errors were probably corrected after a couple of cycles.

The tables in Annex 4 show the statistical populations, the non-response rates, the sample used and the level of automation for the electricity and natural gas data collections.

It should be noted that only France and the Netherlands reported that the coverage error can be higher for the highest or smallest bands. In practice, the samples for the highest bands are small, and the impact of one unit not reported in the right band is therefore bigger. This is true for all countries and especially for the non-households sector. This raises the issue of the quality for the highest bands of the non-households sector. For the smallest bands, there can be some connections not qualifying as the proper end-user. For example, there can be alarm systems or lifts in the household surveys, or households in the non-households surveys.

## **3.4. Reliability**

### **3.4.1. Data revision policy**

In relation to reliability, it is sometimes unavoidable to revise initial data. For example, this can happen when data providers did not send their data in time, in which case initial data contains estimates. Data can also be revised because an improvement in the methodology is implemented following the availability of new information.

However, revisions are sent sometimes very late without any apparent reason. These situations must be prevented by establishing a common 'revision policy'. In general, countries expressed their agreement for a harmonised framework on revisions in energy statistics which is common to all Member States, in line with the European Statistics Code of Practice. A regular revision analysis was also welcomed and the publication of a revision/release calendar was highly supported.

According to the main ESS quality standards that deal with revisions (ESS Code of Practice and the ESS guidelines on revision policy for Principal European Economic Indicators (PEEIs)), revisions have to follow a standardised procedure, including appropriate communication. Pre-announcement of revisions is considered as one of the core principles of a revision policy. It contributes to transparency, better information and a better coordination of the workload.

For these reasons, the Energy Statistics Working Group approved in October 2015 a revision policy for energy statistics. However, this revision policy was approved before the new Regulation (EU) 2016/1952 came into force. Therefore, the revision policy still mentions Directive 2008/92/EC for natural gas and electricity prices.

#### *At national level*

The presence of revision policies or well-established revision practices at national level is an indicator for transparency and better information to the users.

As can be observed in Annex 5, many countries do not have any revision policies covering the data collections. However, they do explain the normal practice which is that they correct the data

when mistakes are detected. Some of them mention that semester 1 data is automatically revised when processing the semester 2.

Some countries, specifically Bulgaria, Cyprus, Malta and Luxembourg, have no revision policy at all. A clear recommendation for these countries is to develop their revision policy that should be consistent with the one adopted at European level.

### 3.4.2. Data revision analysis

Eurostat revise the data as soon as a revision is sent by a country if it is justified and correctly validated.

*At national level*

Eurostat asked the countries to complete sections 17.1 and 17.2 of the national quality reports with information on data revision policy and data revision practice. A data transmission is considered to be a revision if it occurs more than 5 months after the reference period. This corresponds to the deadline by which Eurostat has to publish the data. If a transmission is done before that date, we consider it to be a correction, and it is most often triggered from the validation questions that Eurostat sends to the countries.

As the countries indicated in their reports, revisions can often occur for semester 1 when the countries submit more detailed data for semester 2 and for the whole year. Data can also be revised when the country receives updated data from one of its data providers. For the period 2019-2021, a large number of revisions were triggered by Eurostat's announcement that consumption volumes data would be published in Eurobase. This led many countries to send revisions, which typically did not concern figures but rather their confidentiality status. This was expected to happen and should appear much less frequently in the future. Annex 10 shows the number of revisions per semester and country.

If the need to revise data is recurrent, countries should analyse their data collections and decide on the need to adapt their national statistical systems to provide data that are more accurate within the requested deadline.

### 3.4.3. Average size of revisions and data stability

As Eurostat's internal database does not store each version of the data points received, a detailed revision analysis is not straightforward and can only be done by extracting data points directly from the questionnaires. From Eurostat's experience, revisions that are not due to adjustments in the methodologies or obvious errors are generally minor confirming the low sample errors at the country level and negligible on the EU aggregate level. Nevertheless, Eurostat decided to do a quantitative revision analysis, using the Relative Mean Absolute Revision (RMAR) indicator. The indicator is calculated as:

$$\text{RMAR} = \frac{\sum_{t=1}^n |X_{Lt} - X_{Pt}|}{\sum_{t=1}^n |X_{Lt}|}$$

- $X_{Lt}$  is the latest available published estimate for reference semester  $t$ ;
- $X_{Pt}$  is the first published estimate for reference semester  $t$ ;
- $n$  = Number of successive reference semester in the time series considered.

The indicator was developed as part of the project on quantitative indicators for quality reporting launched by Eurostat. It was extensively discussed in the Energy Statistics Working Group and endorsed by the countries as a useful quality indicator.

*At national level*

In the previous quality reporting cycle Eurostat asked the countries to comment on the magnitude of the revision, but none of the countries provided any feedback on this. Eurostat assumes that the reason for this is that they also don't store each version of the data points in a dedicated database. The analysis would then be manual and would require a huge amount of time. For this reason, Eurostat calculated the RMAR indicator by extracting the data points from all the received questionnaires, and inserted the figures in the national quality reports in the section 17.2.1. This information is also available in Annex 6 of this report. In general, the results confirm that revisions tend to be minor for both electricity and natural gas prices datasets.

## **4. TIMELINESS AND PUNCTUALITY**

Timeliness describes the length of time between data availability and the event or phenomenon they describe.

Punctuality is the time lag between the actual delivery of data and the target date on which they were scheduled for release as announced in an official release calendar, laid down by Regulations or previously agreed among partners.

### **4.1. Timeliness and punctuality**

The legal deadline for Eurostat to publish the data is 5 months after the reference period. Data are consistently published one month in advance, 4 months after the reference period and month after the legal deadline for the countries to transmit their data.

*At national level*

Countries have a deadline of 3 months after the reference period to submit their data. This means 92 days for the data of the first semesters (31 for July + 31 for August + 30 for September) and 90 days for the data of the second semesters (31 for January + 28 for February + 31 for March).

Annex 7 shows timeliness. When a deadline is on a non-working day, the country should still ensure that the data is submitted before.

Since late submissions do not always come from the same countries, Eurostat cannot target its efforts to improve punctuality on a reduced number of countries. However, for the period from 2019 to 2021, we can already see a general improvement in timeliness. For example, in 2019 (both semesters combined), seven countries submitted their data late, whereas in 2021 (both semesters combined), only two countries did not fully respect the deadline (Annex 7, Annex 9).

Similarly to the fact that Eurostat's timeliness is highly dependent on the countries' timeliness, the countries' timeliness is also highly dependent on the providers' timeliness. The deadlines that the countries give to their provider can be shown in Annex 8. It is quite early in many countries but they are often not enforced by a regulation and therefore, providers might send the data late.

Having well specified regulations with the required data and the deadline for sending the data is highly recommended.

Punctuality is the difference between the deadline and the actual date of transmission. Annex 9 shows the same table as Annex 7, but with the deadlines subtracted. This makes it easier to see the magnitude of the delay or the advance.

### **4.2. Corrections**

Timeliness and punctuality refer to the first transmission of the data. However, this first version of the data needs to be validated by Eurostat and this process sometimes triggers validation



questions that are sent to the countries. Countries then have the possibility to provide explanations and/or correct the data.

Eurostat considers as correction any new transmission received shortly after the first version of the data. Eurostat uses a threshold of 5 months after the reference period corresponding to Eurostat's deadline for the dissemination of the data. After that period, the new transmissions are considered to be revisions of the data, rather than corrections.

As for the revisions, Eurostat updates the country data in Eurobase as soon as the new transmission is successfully validated.

#### *At national level*

The second semester of each year includes much more disaggregated annual data. Eurostat is then able to check the consistency between this annual data and the semestrial data, potentially leading to more sophisticated validation questions. This is the reason why there are typically more corrections for second semester data. It is also during this consistency check that Eurostat can discover issues in the data of the first semester leading to revisions of that semester.

In order to decrease the number of corrections, clear instructions / procedures on the validation checks that are to be carried out at each level (countries and Eurostat) should be created. This would help identify whether a certain aspect of data quality needs to be improved before submitting the questionnaires. Reporting instructions are available on Eurostat's website, but need to be updated with the latest developments done in Eurostat in term of methodology and validation checks. Specific instructions on how to report energy allowances and subsidies should also be included in the reporting instruction. For 2021, these instructions were sent to the countries by e-mail.

Annex 11 shows the number of days between the first transmission and the last correction of the data. The corrections that arrived after the countries' deadline for transmission are shown in red. As many countries submit their questionnaires very close to the deadline, this does not allow any time for potential corrections before the deadline. However we can see a clear improvement in the timing of corrections in the period 2019-2021.

Recommendation for countries and Eurostat: the validation of the data received should be done as soon as possible.

## **5. ACCESSIBILITY, CLARITY, COHERENCE AND COMPARABILITY**

According to the European Statistics Code of Practice, European statistics should be presented in a clear and understandable form, disseminated in a suitable and convenient manner, available and accessible on an impartial basis with supporting metadata and guidance.

Accessibility and clarity refer to the simplicity and ease, the conditions and modalities by which users can access, use and interpret statistics, with the appropriate supporting information and assistance: a global context, which finally enables them to make optimum use of the statistics.

Coherence measures the adequacy of the statistics to be combined in different ways and for various uses.

Comparability is a measurement of the impact of differences in applied statistical concepts, measurement tools and procedures where statistics are compared between geographical areas or over time.

## 5.1. Accessibility

Accessibility is determined by the physical conditions by means of which users obtain data: where to go, how to order, delivery time, pricing policy, marketing conditions (copyright, etc.), availability of micro or macro data, various formats.

It is important to highlight that all data published by Eurostat in the field of energy statistics are available on the Eurostat website and are free for non-commercial and commercial purposes, as long as Eurostat is properly referenced.

For experienced and professional users, the whole output as regards energy data collections can be accessed online, using the open access Eurostat database (Eurobase)<sup>7</sup>. This tool allows for customised downloads, where users can select the required indicators, countries, time series, products and units. Through direct queries, customized tabulations of energy statistics results are available to users in electronic format.

For occasional users, articles with the most relevant information are published and kept up-to-date in electronic format in Statistics Explained articles<sup>8</sup>. SE articles for Prices are very well received by our users. They are compatible with the special needs of people with disabilities. News items are also published when new relevant data becomes available. Furthermore, the prices of natural gas and electricity are now also accessible through an interactive tool<sup>9</sup>.

*At national level*

The way countries disseminate their data is already discussed in section 2.3 and shown in Annex 3.

## 5.2. Clarity

In addition to the legal act and its three implementing acts, Eurostat provides reporting instructions. This manual has been created before the new data collection started and should now be updated with the latest developments in the methodology and the validation checks.

Moreover, Eurostat also provide a complete metadata / quality report structure. This should also be updated with the information provided by the countries in this quality report exercise.

*At national level*

As can be seen in Annex 13, apart from internal guidelines for the data compilers or documentation provided by Eurostat, few countries have documentations on their data. This can be explained by the fact that few of them are actually publishing the data themselves. However, as part of this quality reporting cycle, all EU Member States have submitted their quality reports. Eurostat has validated and published these quality reports in Eurobase.

## 5.3. Coherence

There is no other domain comparable to natural gas and electricity prices, therefore the coherence cross domain is not applicable.

However, for the internal coherence (or the sub-annual and annual statistics coherence) Eurostat ensures that the semestrial prices are coherent with the annual prices.

---

<sup>7</sup> <https://ec.europa.eu/eurostat/web/energy/data/database>

<sup>8</sup> Electricity: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Electricity\\_price\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Electricity_price_statistics)

Natural gas: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Natural\\_gas\\_price\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php/Natural_gas_price_statistics)

<sup>9</sup> [https://ec.europa.eu/eurostat/cache/infographs/energy\\_prices/enprices.html](https://ec.europa.eu/eurostat/cache/infographs/energy_prices/enprices.html)

#### *At national level*

France was the only country that mentioned that there was a small difference between the annual price and the average weighted half-yearly price. The reason for this is that the suppliers have the possibility of modifying first semester prices and volumes during the second half of the year.

In practice, Eurostat did not observe incoherence between annual and semestrial prices for any of the countries. In case any incoherence is detected, Eurostat sends a validation question to the country concerned and the issue is typically resolved by sending a correction. For some countries, however, there was expected incoherence between annual and semestrial prices because of the way countries was asked to report energy subsidies and allowances for the second semester 2021. Eurostat should modify the allowances and subsidies reporting instructions so that coherence between semestrial and annual prices is not impacted.

It can be understood from the reports that the countries ask for the annual, more disaggregated data, only with the semester 2 cycle, as it need to be reported only during this cycle. However, in order to construct the semestrial prices, the data providers need the disaggregated data. In order to avoid the problem of coherence, it would be better to request the disaggregated data for both semesters and reconstruct the semestrial prices and annual prices from that data.

### **5.4. Comparability – geographical**

There is no same statistical variable that are reported by different countries. Each country reports its own data that is reported by no other countries. The data from different countries can still be compared but there is no special conclusion to get from this apart from the fact that some countries are cheaper than others.

In its national quality report, Germany warned that comparing German non-households data with other countries might be somewhat misleading, due to the fact that, in addition to VAT, electricity tax and energy tax are recoverable taxes for non-household consumers in Germany.

France pointed out that until the first half of 2021, the prices sent to Eurostat only concerned mainland France, with the exception of Corsica. Since the second half of 2021, the prices relate to the whole of France except Mayotte, i.e. metropolitan France including Corsica, Guadeloupe, Martinique, French Guyana and Réunion.

#### *At national level*

The same applies. Generally, the data collected is representing the whole country and if a comparison between regions would be possible, it would only show that some regions are cheaper than others.

### **5.5. Comparability – over time**

Eurostat collects electricity and natural gas prices in the format described in section 2.2 since 2007. However, prior to entry into force of Regulation (EU) 2016/1952, data for household consumers was submitted on a voluntary basis. The households data became mandatory as of reference year 2017. Before 2007, Eurostat also collected prices of electricity and natural gas but using different bands.

#### *At national level*

Although households data was not mandatory prior to 2017, most Member States already provided their data (on a voluntary basis) as of 2007 semester 2. Several Member States also provided 2007 semester 1.

In their quality reports, countries have mentioned even longer time series, but previous transmissions were done in a different format and using different definitions for the bands. For the reference period of the quality report, countries have not indicated any break in series.

## **6. CONCLUSIONS AND RECOMMENDATIONS**

The various analyses carried out in this report allow us to draw some conclusions and propose recommendations at different levels:

*For Eurostat:*

- The validation of the data received should continue to be done as soon as possible.
- The reporting instructions and the metadata / quality report should be updated. Specifically, instructions on how to report subsidies and allowances should be part of the general reporting instructions.
- The reporting instructions for subsidies and allowances should be modified so that coherence between semestrial and annual prices is not impacted.

*For countries:*

- Although many countries have regulations or agreement in place, countries have often difficulties to enforce their data suppliers to submit the data on time. It is advised to specify in the national regulations which data is mandatory and the deadline that need to be respected, including sanctions in case of non-compliance.
- If the suppliers have the data, we advise to request all the data needed from them. The other data sources can still be used to validate the data reported by the suppliers.
- Countries should ensure that the published is as complete as possible and provide a valid justification for treating the data as confidential.
- Some countries - Bulgaria, Cyprus, Malta and Luxembourg - have no revision policy at all. A clear recommendation for these countries is to develop their revision policy that should be consistent with the one adopted at European level.
- If the need to revise data is recurrent, countries should analyse their data collections and decide on the need to adapt their national statistical systems to provide data that are more accurate within the requested deadline.
- When a deadline is on a non-working day, the country should still ensure that the data is submitted before.
- Having well specified regulations with the required data and the deadline for sending the data is highly recommended.
- In order to decrease the number of corrections, clear instructions / procedures on the validation checks that are to be carried out at each level (countries and Eurostat) should be created. This would allow to know whether a certain aspect of data quality needs to be improved before submitting the questionnaires. Reporting instructions are available on Eurostat's website but need to be updated with the latest developments done in Eurostat in terms of methodology and validation checks.
- The validation of the data received should be done as soon as possible.

## ANNEX 1 (LEGAL FRAMEWORK)

Table 1. Overview of national legal framework covering EU data requirements

Country	Applicable legal texts at national level in the area of energy statistics
BE	Royal decree (6 January 2019) on the organisation of the data collection for the establishment of statistics on gas, electricity and heat balance and the establishment of price statistics on gas and electricity.
BG	No legal acts and other agreements at national level.
CZ	Act No. 89/1995 Coll. on the state statistical service, was amended by Act No. 220/2000 Coll., Act No. 411/2000 Coll., and Act No. 230/2006 Coll.
DK	Electricity supply act 2018/1009 of 27 June 2018, Gas supply act 2018/1127 of 5 September 2018.
DE	Gesetz über die Preisstatistik (PreisStatG): Gesetz über die Preisstatistik in der im Bundesgesetzblatt Teil III, Gliederungsnummer 720-9, veröffentlichten bereinigten Fassung, das zuletzt durch Artikel 1 des Gesetzes vom 10. Dezember 2019 (BGBl. I S. 2117) geändert worden ist  In English: Act on Price Statistics
EE	
IE	National Law on energy prices S.I. No. 578/2014 - European Communities (Reporting of Electricity and Natural Gas Prices charged to Industrial Customers) Regulations 2014
EL	Greek Statistical Law No 3832/2010, as in force
ES	For electricity prices, until 2020 the legislation in force was: <ul style="list-style-type: none"> <li>• <a href="#">Orden ITC/606/2011</a>, de 16 de marzo, por la que se determina el contenido y la forma de remisión de la información sobre los precios aplicables a los consumidores finales de electricidad al Ministerio de Industria, Turismo y Comercio.</li> </ul> Since 2021 the legislation has changed and what has been in force since then is: <ul style="list-style-type: none"> <li>• <a href="#">Orden TED/456/2021</a>, de 29 de abril, por la que se determina el contenido y las condiciones de remisión al Ministerio para la Transición Ecológica y el Reto Demográfico de la información sobre los precios aplicados a los consumidores finales de electricidad.</li> </ul> For gas prices: <a href="#">Ley 34/1998, de 7 de octubre, del sector de hidrocarburos</a> , <a href="#">Ley 12/1989, de 9 de mayo, de la Función Estadística Pública</a>
FR	Visa No. 2022S034EQ from the Minister of the Economy and Finance, valid for the year 2022.
HR	The Official Statistics Act (Official Gazette, No 12/13 - consolidated text) <a href="http://narodne-novine.nn.hr/clanci/sluzbeni/2013_01_12_168.html">http://narodne-novine.nn.hr/clanci/sluzbeni/2013_01_12_168.html</a>  The Official Statistics Act (Official Gazette, No 25/20) <i>Zakon o službenoj statistici</i> (nn.hr)  Programme of Statistical Activities of the Republic of Croatia 2018-2020 (Official Gazette, No 31/2018) <a href="https://narodne-novine.nn.hr/clanci/sluzbeni/2018_04_31_623.html">https://narodne-novine.nn.hr/clanci/sluzbeni/2018_04_31_623.html</a>  Programme of Statistical Activities of the Republic of Croatia 2021-2027 (Official Gazette, No 29/2022) <i>Program statističkih aktivnosti Republike Hrvatske 2021. – 2027.</i> (nn.hr)

	<p>Annual Implementation Plan of Statistical Activities of the Republic of Croatia for 2019 (Official Gazette, No 19/2019) <a href="https://narodne-novine.nn.hr/clanci/sluzbeni/2019_02_19_405.html">https://narodne-novine.nn.hr/clanci/sluzbeni/2019_02_19_405.html</a></p> <p>Annual Implementation Plan of Statistical Activities of the Republic of Croatia for 2020 (Official Gazette, No 12/2020) Godišnji provedbeni plan statističkih aktivnosti Republike Hrvatske 2020. godine (nn.hr)</p> <p>Annual Implementation Plan of Statistical Activities of the Republic of Croatia for 2021 (Official Gazette, No 12/2021) Godišnji provedbeni plan statističkih aktivnosti Republike Hrvatske 2021. (nn.hr)</p>
IT	<p>Law 14 November 1995, n. 481/95</p> <p>ARERA Resolution 168/2018/R/com of March 29th, 2018 (<a href="https://www.arera.it/it/docs/18/168-18.htm">https://www.arera.it/it/docs/18/168-18.htm</a>)</p> <p>ARERA Resolution ARG/gas 64/09 of May 29th, 2009 and subsequent amendments (<a href="https://www.arera.it/it/docs/09/064-09arg.htm">https://www.arera.it/it/docs/09/064-09arg.htm</a>)</p>
CY	Statistics Law, No. 15 (I) of 2000
LV	Statistics Law (in force since 04 June 2015), <a href="#">Regulation of the Council No 644 "Official Statistics Programme for 2020-2022"</a> .
LT	There is no national legislation.
LU	Law of 10 juillet 2011 presenting STATEC and its missions
HU	<a href="https://njt.hu/jogszabaly/2017-11-20-5Z_11/2017">https://njt.hu/jogszabaly/2017-11-20-5Z_11/2017</a> . Decree of the Hungarian Energy and Public-utility Regulatory Authority's President on the data reporting obligations of Hungarian Energy and Public-utility Regulatory Authority's licensees.
MT	The Malta Statistics Authority (MSA) Act ( <a href="#">LEĠIŻLAZZJONI MALTA (legislation.mt)</a> )
NL	<a href="#">wetten.nl - Regeling - Wet op het Centraal bureau voor de statistiek - BWBR0015926 (overheid.nl)</a> , Effective from 01 January 2019.
AT	Electricity Statistics Ordinance 2016, Natural Gas Statistics Ordinance 2017
PL	Annual Regulation of the Council of Ministers regarding Programme of Statistical Surveys of Public Statistics: <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002103">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20180002103</a> (for 2019) <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190002366">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20190002366</a> (for 2020), <a href="https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200002062">https://isap.sejm.gov.pl/isap.nsf/DocDetails.xsp?id=WDU20200002062</a> (for 2021).
PT	<p>Law n.º 22/2008 of 13 may - Law of the national statistical system - <a href="https://dre.pt/application/file/a/249157">https://dre.pt/application/file/a/249157</a>;</p> <p>Protocol between National Statistics Institute (Statistics Portugal) and DGEG;</p> <p>Executive order n.º 62-A/2015 of 3 March - <a href="https://dre.pt/application/file/a/66657885">https://dre.pt/application/file/a/66657885</a>;</p> <p>Decree Law n.º. 69/2018 of 27 August;</p> <p>Decree Law n.º 15/2022 of 14 January</p>
RO	<p>Cooperation Agreement signed between National Institute of Statistics and ANRE for providing data/information related to electricity prices</p> <p>Cooperation Agreement signed between National Institute of Statistics and ANRE for providing data/information related to natural gas prices</p>
SI	National Statistics Act (OJ 45/1995 and 9/2001)

	Annual Programme of Statistical Surveys (for 2022 published in OJ 183/21)
SK	<p>Slovak National Council law No 540/2001 (Digest) on the state statistics as amended and supplemented by further regulations.</p> <p>The obligation to provide data is stated in the Statistical Law and its provisions. The Programme of State Statistical Surveys is fixed for a 3-year period.</p>
FI	Statistics Act (280/2004, amend. 361/2013)
SE	<p>Law regulating the official statistics in Sweden (2001:99)</p> <p>Laws regarding the quality and accessibility (2001:100)</p> <p>Law regulating Statistics Sweden (SCB-FS 2016:17)</p> <p>Law regarding Swedish Energy Agency (STEMFS 2016:5)</p>

## ANNEX 2 (DATA PROCESSING)

Table 2. Overview of national processing means

Country	Data Sources	Frequency	Mean
BE	Suppliers and administrative data for taxes	Bi-annually	Questionnaire
BG	Suppliers and network operators	Bi-annually	Excel questionnaire
CZ	Suppliers and administrative data for regulated prices	Monthly for electricity, quarterly natural gas and non-households electricity, and yearly for number of consumers	Electronic questionnaires, E-mails, web questionnaires, PDF questionnaires
DK	Suppliers and administrative data	Bi-annually	Excel questionnaire for households electricity and online platform for non-households electricity. Excel questionnaire for both households and non-households gas
DE	Suppliers and network operators, administrative data	Bi-annually	Web-based questionnaires
EE	Suppliers	Bi-annually	PDF questionnaires
IE	Suppliers	Bi-annually	Excel questionnaire via e-mail
EL	Suppliers	Bi-annually and yearly for price components	Eurostat's questionnaire
ES	Suppliers	Bi-annually for electricity and quarterly for natural gas	XML questionnaire sent through online system for electricity and excel questionnaire for natural gas
FR	Suppliers and administrative data	Bi-annually	Online questionnaire
HR	Suppliers	Bi-annually	Questionnaire sent by e-mail
IT	Suppliers	Quarterly	Web-based questionnaire (or xml upload)
CY	Suppliers	Bi-annually	Excel questionnaire
LV	Suppliers and network operators	Bi-annually	E-survey or report send by e-mail
LT	Suppliers	Bi-annually	Questionnaire transmitted via online system or e-mail
LU	Suppliers	Bi-annually	E-mail and postal format
HU	Suppliers and administrative data	Monthly	Excel questionnaires
MT	Suppliers, network	Bi-annually	Questionnaire (only 1 supplier)



	operators and administrative data		
NL	Suppliers and network operators	Quarterly	Excel questionnaire from suppliers and public data from network companies
AT	Suppliers and network operators	Bi-annually	Excel questionnaire
PL	Suppliers	Bi-annually and quarterly	Online survey
PT	Suppliers	Bi-annually	Eurostat's template by e-mail
RO	Suppliers	Bi-annually for Electricity, Monthly for natural gas	Online questionnaires
SI	Suppliers and administrative data	Quarterly	PDF questionnaires by email
SK	Suppliers and administrative data	Bi-annually	PDF questionnaires
FI	Suppliers and administrative data for network prices (regulated)	Monthly for electricity, bi-annually for natural gas until 2021 and from 2021 monthly for natural gas	Electronic questionnaire similar to Eurostat's
SE	Suppliers	Bi-annually	Online survey

### ANNEX 3 (PUBLICATIONS)

Table 3. Overview of national publications

Country	Publications	Database	Documentation on methodology	Access to microdata
BE	yes		yes	
BG		yes	yes	
CZ	yes		yes	
DK	yes	yes	yes	
DE	yes			
EE		yes	yes	
IE	yes		yes	
EL			yes	
ES	yes			
FR	yes	yes	yes	yes
HR	yes		yes	
IT				
CY				
LV	yes	yes	yes	yes
LT		yes	yes	yes
LU		yes		
HU	yes			
MT				
NL	yes	yes	yes	
AT	yes			yes
PL	yes		yes	
PT	yes	yes	yes	
RO				
SI	yes	yes	yes	
SK				
FI	yes	yes		yes
SE		yes		yes

## ANNEX 4 (POPULATION SAMPLE)

Table 4. Overview of national population sample for the electricity datasets

Countries	Electricity								Automated
	Households				Non-households				
	Suppliers included in the survey	Population represented	Unit non-response rate	Sample size (%age of the population)	Suppliers included in the survey	Population represented	Unit non-response rate	Sample size (%age of the population)	
BE	8 / 60	>90.00%	0.00%	90.00%	17 / 60	>90.00%	0.00%	90.00%	
BG	33 / 56	100.00%	0.00%	100.00%	56 / 56	100.00%	0.00%	100.00%	Calculations
CZ	3 / 50	60.00%	0.00%	60.00%	8 / 100	80.00%	0.00%	80.00%	
DK	38 / 42	99.10%	0.00%	99.10%	40 / 42	99.00%	0.00%	99.00%	Fully
DE	22 / 1100	40.00%	10.00%	?	20 / 1100	45.00%	10.00%	?	
EE	25 / 25	100.00%	0.00%	100.00%	55 / 55	100.00%	0.00%	100.00%	
IE	6 / 9	98.00%	29.00%	96.00%	8 / 12	96.00%	40.00%	92.00%	
EL	15 / 16	100.00%	0.00%	100.00%	16 / 15	100.00%	0.00%	100.00%	
ES	45 / 400	95.00%	10.00%	90.00%	37 / 400	75.00%	17.40%	70.00%	
FR	24 / 25	?	?	?	34 / 36	?	?	?	Fully
HR	9 / 12	100.00%	0.00%	100.00%	9 / 12	100.00%	0.00%	100.00%	
IT	480 / 662	92.00%	?	?	529 / 662	86.00%	?	?	
CY	1 / 1	100.00%	0.00%	100.00%	1 / 1	100.00%	0.00%	100.00%	
LV	5 / 24	91.00%	0.00%	91.00%	5 / 24	92.00%	16.60%	?	
LT	2 / 2	96.00%	0.00%	96.00%	11 / 23	96.00%	0.00%	96.00%	
LU	4 / 4	100.00%	not estimated	?	5 / 5	100.00%	not estimated	?	
HU	91 / 91	100.00%	0.00%	100.00%	91 / 91	100.00%	0.00%	100.00%	
MT	1 / 1	100.00%	0.00%	100.00%	1 / 1	100.00%	0.00%	100.00%	
NL	4 / 36	75.00%	<9.40%	>70.00%	6 / 48	70.00%	5.00%	>65.00%	Most operations
AT	155 / 158	99.80%	0.00%	99.80%	170 / 172	99.60%	0.00%	99.60%	
PL	56 / 67	97.70%	11.40%	?	56 / 67	83.72%	11.40%	?	
PT	16 / 21	100.00%	10.00%	?	24 / 26	100.00%	10.00%	?	
RO	62 / 62	100.00%	0.00%	100.00%	100 / 100	100.00%	0.00%	100.00%	fully
SI	18 / 18	100.00%	0.00%	100.00%	21 / 21	100.00%	0.00%	100.00%	

SK	19 / ?	100.00%	0.00%	100.00%	22 / ?	75.00%	0.00%	80.00%	
FI	25 / 72	70.00%	5.00%	?	25 / 72	50.00%	5.00%	?	
SE	13 / ?	75.00%	5-10.00%	?	13 / ?	75.00%	5-10.00%	?	

Table 5. Overview of national population sample for the natural gas datasets

Natural gas									
	Households				Non-households				
Countries	Suppliers included in the survey	Population represented	Unit non-response rate	Sample size (%age of the population)	Suppliers included in the survey	Population represented	Unit non-response rate	Sample size (%age of the population)	Automated
BE	7 / 50	>90.00%	0.00%	90.00%	16 / 50	>90.00%	0.00%	90.00%	
BG	17 / 18	100.00%	0.00%	100.00%	18 / 18	100.00%	0.00%	100.00%	Calculations
CZ	3 / 50	60.00%	0.00%	60.00%	12 / 50	79.00%	0.00%	79.00%	
DK	13 / 14	99.00%	0.00%	99.00%	13 / 14	95.00%	0.00%	95.00%	
DE	15 / 900	16.70%	10.00%	?	20 / 900	45.00% of consumption	10.00%	?	
EE	23 / 28	100.00%	0.00%	100.00%	27 / 28	100.00%	0.00%	100.00%	
IE	5 / 8	94.00%	0.00%	95.00%	7 / 10	100.00%	0.00%	100.00%	
EL	8 / 9	100.00%	0.00%	100.00%	12 / 13	100.00%	0.00%	100.00%	
ES	60 / 60	100.00%	33.00%	67.00%	48 / 48	100.00%	35.00%	65.00%	
FR	14 / 14	?	?	?	31 / 33	?	?	?	Fully
HR	44 / 46	98.00%	0.00%	98.00%	44 / 46	98.00%	0.00%	98.00%	
IT	413 / 510	99.00% of consumption	Not known	Not known	423 / 510	85.00% of consumption	Not known	Not known	Fully
LV	7 / 10	86.00%	0.00%	86.00%	7 / 10	90.00%	0.00%	90.00%	
LT	1 / 2	99.00%	0.00%	95.00%	3 / 5	90.00%	0.00%	90.00%	
LU	4 / 4	100.00%	Not estimated	?	6/6	100.00%	?	Not estimated	
HU	60 / 60	100.00%	0.00%	100.00%	60 / 60	100.00%	0.00%	100.00%	
NL	4 / 36	75.00%	<9.00%	>70.00%	6 / 48	70.00%	<9.00%	>65.00%	Most operations

AT	48 / 49	99.90%	0.00%	99.90%	63 / 64	100.00%	0.00%	100.00%	
PL	75 / 90	89.77%	10.00%	?	75 / 90	89.77%	10.00%	?	
PT	17 / 21	100.00%	10.00%	?	20 / 26	100.00%	10.00%	?	
RO	66 / 66	100.00%	0.00%	100.00%	74 / 74	100.00%	0.00%	100.00%	
SI	19 / 19	100.00%	0.00%	100.00%	19 / 19	100.00%	0.00%	100.00%	
SK	18 / ?	100.00%	0.00%	100.00%	24 / ?	100.00%	0.00%	100.00%	
FI					5 / 25	?	0.00%	?	
SE	4 / 4	100.00%	7.00%	?	4 / 4	100.00%	7.00%	?	

## ANNEX 5 (REVISION POLICIES)

Table 6. Overview of national revision policies and practice for electricity

Country	17.1 Data revision - policy	17.2 Data revision - practice
BE	<p>Revision policy</p> <p>There are 3 types of revisions :</p> <ol style="list-style-type: none"> <li>1. Revisions of provisional figures: carried out, according to a predefined scheme, following the availability of new (more complete) figures.</li> <li>2. Revisions as a consequence of changes in methodology. (much less frequent) (generally result in a break in time-series. Such revisions can be necessitated by: changes of concepts, definitions, classifications or international norms ; modification of a legal base ; modification of methodology or approach ; new data sources; technical or managerial changes ; actualisation of a reference weight scheme.</li> <li>3. Corrections of errors (errors in survey or administrative data, wrong hypotheses, calculation errors, etc...) are ad hoc revisions.</li> </ol> <p>A planning of revisions is established conform the European legislation and the annual work programme.</p>	<p>At the same time that semester statistics are compiled there is a relatively high probability of revising the statistics of the previous semester. This is because of the fact that the actual data will always be compared with the data of the previous 2 semesters. If there would have been undetected errors or "arbitrary quality decisions" that are not upheld in the following semester, then the figures of the previous semesters will be revised. The clear advantage of this process is that the information relevance of the actual statistics will be enhanced if they can be compared with previous data in a reliable way.</p>
BG	No revision policy established for the organisation regarding these data.	No planned revisions of data. Unplanned revisions are made in case of detecting different types of errors - technical errors, discrepancies with previous periods.
CZ	<p>For general revision policy, see Key documents</p> <p>Data are final when first released and are not subject to revision.</p> <p>Preliminary data are not published. All figures are final when first published.</p>	Only minor revisions were submitted.
DK	The data for the first semester are revised when submitting the data for the second semester in order to ensure consistency between semestrial and annual prices.	Data is revised in case of errors or new information.
DE	There are no regular data revisions, because the results are covered 100% by the survey. Revisions are only made, if obvious implausibilities become obvious after data dissemination.	Data revision took place for the second semester 2019 data because of the beginning of the Covid 19 pandemic in spring 2020 and the higher non response rate of reporting units because of lockdowns.
EE	The data revision policy and notification of corrections are described in the dissemination policy of Statistics Estonia at <a href="https://www.stat.ee/dissemination-policy">https://www.stat.ee/dissemination-policy</a> .	The published data may be revised if the methodology is modified, errors are discovered, new or better data become available.
IE	Data may be revised if a supplier submits data after the deadline or revises historic data. If possible, Eurostat are informed of	Provisional data might be sent to Eurostat in case not all electricity suppliers have

	these revisions and pre-announcements are made.	sent their micro data.
EL	Whenever data is submitted as provisional, a revision follows as soon as the final data is available. In case one or more data providers submit a revision, prices are recalculated and submitted as soon as it is possible and no longer than a month after the change occurs. If the revision refers to more than 2 semesters backwards, a preannouncement takes place. When necessary, the semester 1 data is revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.	Revision practice is described in S.17.1.
ES	Data revision is done internally. There are two phases in which data is revised. The first phase takes place when raw data is received from suppliers. The processes and checks carried out during this phase are described in point "18 Statistical processing" of this report, in particular point "18.4 Data validation". They can be generally described as: Completeness and validity check of the information uploaded by each supplier in PRICE Manual check for inconsistencies and outlier values in the data reported. Manual comparisons with wholesale market price evolution and with data from previous reference periods. Semester 1 data are revised when submitting semester 2 data for consistency reasons, which also helps validate annual prices. The second phase is related to the processed data. Any calculations associated with data processing are double-checked by someone different from the person who carries out the procedure. Thus the final output is validated before its remission to Eurostat and its release in any other forum as described in points 8 to 10 of this report.	As stated in point "17.1 Data revision - policy" a series of checks on data and the methods used to process it are carried out before price information is sent to Eurostat. There are not any fixed dates for these revisions since suppliers will not always report following a calendar. Furthermore, there is another type of revision carried out whenever a supplier informs the Ministry of errors in the data it has previously submitted. These errors can take place before or after the period for data reporting is closed. If the period is still open, the supplier only has to upload the correct data. However, if the period is closed then it has to inform the Ministry of the error and provide the correct data. This error could even be detected after the Kingdom of Spain has sent to Eurostat its price report, and therefore any corrections that would have to be made would also be sent to Eurostat, even if it is outside Spain's deadline in relation to Eurostat.
FR	We have informed suppliers that it will be possible to modify the data for the first semester when entering the data for the second semester and the annual. This will promote coherence between half-year prices and annual prices. As a result, online Semester 1 questionnaires will be automatically opened for online collection during the second semester collection.	Suppliers can revise their 1st semester prices at the same time as they enter their 2nd semester prices and their annual prices, six months later.
HR	A revision policy is covering this data collection at national level. In case of revision, the revised data is sent to Eurostat. The semester 1 data are revised when submitting the semester 2 data for	Preliminary data is not published in this survey so there is no data revision.

	consistency reason between semestrial and annual prices.	
IT	Semester n data are checked immediately after the delivery of the data.	Revisions are requested to the suppliers immediately after the delivery of the data, when data are inconsistent with those previously submitted or when the values are very distant from the average values.
CY	There is no revision policy.	There is no schedule for revisions.
LV	If errors are found, the primary data are verified by contacting the respective respondent and, if error is approved, the data are corrected.	Historical data are reviewed regularly. In practice, the data and calculations on the previous periods are checked when producing price statistics for the current period. Availability of new source data or measurement error are the main reasons for revisions.
LT	Statistics Lithuania's revision policy is provided in the document General Principles behind the Performance, Analysis and Announcement of Revisions of Statistical Indicators.	The results published are final and not revised later.
LU	No data revision policy	Revisions are applied in case of calculation errors
HU	There is no systematic revision, if needed, data is updated with the next upload cycle.	<p>The HEA collects full-scale administrative data from its licensees, which provide high quality outputs. There was a complete methodology supervision in 2013, since then the forms have guidelines for completing. This guidelines were discussed with the data suppliers.</p> <p>In 2018 (parallel with the improvement of the Eurostat methodology) the HEA made some corrections in the methodology, clarified some remaining questions and initiated an additive reporting obligatory for the DSO's to improve its report's quality. So, there are 3 time series, which are not comparable:</p> <ul style="list-style-type: none"> <li>- before 2013 (partially validated data)</li> <li>- 2013-2017 (fixed methodology)</li> <li>- 2018 onwards (different methodology on network costs and taxes)</li> </ul> <p>The settlements between the participants of the electricity market can be done up to after two months of the reference period, they can initiate self-revision on their reports. The provided data is used several parts of HEA, more colleagues check the data and that is why the clarification takes time. In every reporting period HEA check the previous data sets if there is any changes and updates the reports.</p>
MT	No revision policy covering this data collection at national level.	Semester 1 data are revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.
NL	There are no planned revisions for this statistic and there is no written policy for	Unplanned revisions occur when new insights and better data cause time series



	it.	to be revised. These are to be pre-announced internally and externally.
AT	Usually the last period will be revised, if companies have sent new data for this period in the meantime.	Data are revised if suppliers are sending the prices after the deadline or they are revising the prices. In this case, the revision is sent with the next data transmission.
PL	The semester 1 data are revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.	1. Revision data by comparing with data from previous reference period, 2. Revision data to ensure consistency of annual data with data from both semesters, 3. Revision data in case of some changes (in source data, in methodology of calculation).
PT	The main revisions result of new information or data correction provided by the operators. Every time a revision occurs, a new document (with the last revision date) replaces the old version.	We make revision when the operators send new information changing the data sent.
RO	Data revision policy follow the Revision Policy of the NIS Romania, which represent one of the key documents of the office. The same revision policy is applied to all the data released nationally and transmitted to Eurostat.	Not applicable. We do not plan any revision.
SI	Data on electricity prices are considered as final when reported and published. There are no planned revisions. Standard procedures applied for revisions are available online in document <a href="#">Methodological explanations - revision of statistical data.</a>	Are reported data have a status of final data. No revisions are planned.
SK	Revisions are described in decision ROZ-3/2018 The Revision Policy of the SOSR.	The primary source of revisions are new data received from reporting units.
FI	Revisions in statistical data primarily aims to guarantee the use of correct data and ensure that erroneous data are corrected as efficiently as possible. Information on errors in the statistics is also given (and changed data are retained permanently). In addition, transparent correction procedures help maintain users' confidence in the producer of the statistics. Statistic Finland's revision policy is described in <a href="#">Release guidelines.</a>	The revisions are done in case of value or content corrections. Usually the changes are due to the data sources. Occasionally the survey respondents send corrections to the data. The erroneous data observed are corrected as promptly as possible.
SE	The data is revised during semester 2. Statistics Sweden has a revision policy (in Swedish): <a href="#">link</a>	The main reasons for revisions are manual errors.

Table 7. Overview of national revision policies and practice for natural gas

Country	17.1 Data revision - policy	17.2 Data revision - practice
BE	<p>There are 3 types of revisions:</p> <ol style="list-style-type: none"> <li>1. Revisions of provisional figures: carried out, according to a predefined scheme, following the availability of new (more complete) figures.</li> <li>2. Revisions as a consequence of changes in methodology. (much less frequent) (Generally result in a rupture of time series. Such revisions can be necessitated by: changes of concepts, definitions, classifications or de international norms; modification of a legal base; modification of methodology or approach; new data sources; technical or managerial changes; actualisation of a reference weight scheme.</li> <li>3. Corrections of errors (errors in survey or administrative data, wrong hypotheses, calculation errors, etc...) are ad hoc revisions.</li> </ol> <p>A planning of revisions is established conform the European legislation and the annual work programme.</p>	<p>At the same time that semester statistics are compiled there is a relatively high probability of revising the statistics of the previous semester. This is because of the fact that the actual data will always be compared with the data of the previous 2 semesters. If there would have been undetected errors or "arbitrary quality decisions" that are not upheld in the following semester, then the figures of the previous semesters will be revised. The clear advantage of this process is that the information relevance of the actual statistics will be enhanced if they can be compared with previous data in a reliable way.</p>
BG	<p>No revision policy is established for the organisation regarding this data.</p>	<p>No planned revisions of data. Unplanned revisions are made in case of detecting different types of errors - technical errors, discrepancies with previous periods.</p>
CZ	<p>For general revision policy, see Key documents Data are final when first released and are not subject to revision. Preliminary data are not published. All figures are final when first published.</p>	<p>Only minor revisions were submitted.</p>
DK	<p>Data for the first half year are revised when submitting the data for the second half year in order to ensure consistency between semestrial and annual prices.</p>	<p>Data is revised in case of errors or new information.</p>
DE	<p>There are no regular data revisions, because the results are covered 100% by the survey. Revisions are only made, if obvious implausibilities become obvious after data dissemination.</p>	<p>There are no regular data revisions, because the results are covered 100% by the survey. Revisions are only made, if obvious implausibilities become obvious after data dissemination.</p>
EE	<p>The data revision policy and notification of corrections are described in the dissemination policy of Statistics Estonia at <a href="https://www.stat.ee/dissemination-policy">https://www.stat.ee/dissemination-policy</a>.</p>	<p>The published data may be revised if the methodology is modified, errors are discovered, and new or better data become available.</p>
IE	<p>Data may be revised if a supplier submits data after the deadline or revises historic data. If possible, Eurostat are informed of these revisions and pre-announcements are made.</p>	<p>Provisional data might be sent to Eurostat in case not all natural gas suppliers have sent their micro data.</p>
EL	<p>Whenever data is submitted as provisional, a revision follows as soon as</p>	<p>Revision practice is described in S.17.1.</p>

	the final data is available. In case one or more data providers submit a revision, prices are recalculated and submitted as soon as it is possible and no longer than a month after the change occurs. If the revision refers to more than 2 semesters backwards, a preannouncement takes place. When necessary, the semester 1 data is revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.	
ES	Data is revised only if new relevant information is submitted by relevant retailers after the submission deadline with a sensible impact on average price.	Version 3 of the natural gas price questionnaire for non-households for the 1st semester of 2017 was sent 171 days after the reference period. Revision affected gas prices for I3, I4 and I6 bands due to new prices received and corrected after submission deadline.
FR	We have informed suppliers that it will be possible to modify the data for the first semester when entering the data for the second semester and the annual; this will promote coherence between half-year prices and annual prices. As a result, online Semester 1 questionnaires will be automatically opened for online collection during the second semester collection. Suppliers will have to revalidate the online questionnaire of the first semester during the collection of the second semester with modifications or not.	See 17.2
HR	A revision policy is covering this data collection at national level. In case of revision, the revised data is sent to Eurostat. The semester 1 data are revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.	Preliminary data is not published in this survey so there is no data revision.
IT	Revisions are requested to the suppliers immediately after the delivery of the data, when data are inconsistent with those previously submitted or when the values are very distant from the average values.	Revisions are requested to the suppliers immediately after the delivery of the data, when data are inconsistent with those previously submitted or when the values are very distant from the average values.
LV	If errors are found, the primary data are verified by contacting the respective respondent and, if error is approved, the data are corrected.	Historical data are reviewed regularly. In practice, the data and calculations on the previous periods are checked when producing price statistics for the current period. Availability of new source data or measurement error are the main reasons for revisions.
LT	Statistics Lithuania's revision policy is provided in the document General Principles behind the Performance, Analysis and Announcement of Revisions of Statistical Indicators.	The results published are final and not revised later.
LU	no data revision policy	Revisions are applied in case of calculation errors
		The HEA collects full-scale

HU	There is no systematic revision, if needed, data is updated with the next upload cycle.	administrative data from its licensees, which provide high quality outputs. There was a complete methodology supervision in 2013, since then the forms have guidelines for completing. This guidelines were discussed with the data suppliers.
NL	There are no planned revisions for this statistic and there is no written policy for it. Unplanned revisions occur when new insights and better data cause time series to be revised. These are to be pre-announced internally and externally.	In 2016 a revision was implemented, resulting in a revised time series from 2009 onwards. new insights in methods for calculation of taxes and network prices have led to higher quality of the output.
AT	Usually the last period will be revised, if companies have sent new data for this period in the meantime.	Data are revised if suppliers are sending the prices after the deadline or they are revising the prices. In this case the revision is sent with the next data transmission.
PL	The semester 1 data are revised when submitting the semester 2 data for consistency reason between semestrial and annual prices.	1. Revision data by comparing with data from previous reference period, 2. Revision data to ensure consistency of annual data with data from both semesters, 3. Revision data in case of some changes (in source data, in methodology of calculation).
PT	The main revisions result of new information or data correction provided by the operators. Every time a revision occurs, a new document (with the last revision date) replaces the old version.	We make revision when the operators send new information changing the data sent.
RO	Data revision policy follow the Revision Policy of the NIS romania, which represent one of the key documents of the office. The same revision policy is applied to all data released nationally and transmitted to Eurostat.	We do not plan any revision.
SI	Data on electricity prices are considered as final when reported and published. There are no planned revisions. Standard procedures applied for revisions are available online in document <a href="#">Methodological explanations - revision of statistical data.</a>	Are reported data have a status of final data. No revisions are planned.
SK	Revisions are described in decision ROZ-3/2018 The Revision Policy of the SOSR.	The primary source of revisions are new data received from reporting units.
FI	Revisions in statistical data primarily aims to guarantee the use of correct data and ensure that erroneous data are corrected as efficiently as possible. Information on errors in the statistics is also given (and changed data are retained permanently). In addition, transparent correction procedures help maintain users' confidence in the producer of the statistics. Statistic Finland's revision policy is described in Release guidelines.	The revisions are done in case of value or content corrections. Usually the changes are due to the data source. The erroneous data observed are corrected as promptly as possible. The most common reasons for the correction are measurement errors due to the specific reporting unit (i.e. price data shall exclude use in electricity and CHP generation of power plants and use for non-energy purposes).
SE	The data is revised during semester 2.	The main reasons for revisions are manual

Statistics Sweden has a revision policy (in Swedish): <a href="#">link</a>	errors.
---	---------

## ANNEX 6 (REVISIONS)

For quantifying revisions, we used Relative Mean Absolute Revision (RMAR) indicator. It calculated as:

$$\text{RMAR} = \frac{\sum_{t=1}^n |X_{Lt} - X_{Pt}|}{\sum_{t=1}^n |X_{Lt}|}$$

- $X_{Lt}$  is the latest available published estimate for reference semester t;
- $X_{Pt}$  is the first published estimate for reference semester t;
- n = Number of successive reference semester in the time series considered;

Table 8. Overview of national revisions for electricity (17.2.1 Data revision - average size)

	<b>Electricity households datasets</b>	<b>Electricity non-households datasets</b>
BE	0	0
BG	0	0
CZ	0.002359	0.001571
DK	2.36E-05	7.754088
DE	0.019894	0.200768
EE	0.017462	4.052543
IE	0.005228	0.034203
EL	0.003024	0.015252
ES	0.011312	0.014135
FR	0.025691	0.002319
HR	0	0
IT	0	0.007397
CY	0.001717	0.001753
LV	0	0
LT	0.020538	0.017789
LU	0	0
HU	0	0.000315
MT	0.013456	0.005632
NL	0.001713	0.013109
AT	0.000353	0.00049
PL	1.02E-05	0.00015
PT	0.010843	0.00143
RO	0	0
SI	0	0.000323
SK	0.003045	0
FI	0.00197	0.056525
SE	4.031697	161.3566

For quantifying revisions, we used Relative Mean Absolute Revision (RMAR) indicator. It calculated as:

$$\text{RMAR} = \frac{\sum_{t=1}^n |X_{Lt} - X_{Pt}|}{\sum_{t=1}^n |X_{Lt}|}$$

- $X_{Lt}$  is the latest available published estimate for reference semester t;
- $X_{Pt}$  is the first published estimate for reference semester t;
- n = Number of successive reference semester in the time series considered;

Table 9. Overview of national revisions for electricity (17.2.1 Data revision - average size)

	<b>Natural gas households datasets</b>	<b>Natural gas non-households datasets</b>
BE	0	0
BG	0.001579	0.008938
CZ	2.06E-05	0
DK	0.000526	0.102764
DE	0.09486	0.219831
EE	0.014086	0.028199
IE	0.01468	0.031635
EL	0.022842	0.01758
ES	0.01444	0.013049
FR	0.004012	0.001537
HR	0	0
IT	0	0
CY	0	0
LV	0	0.001419
LT	0.001336	0.00035
LU	0	0
HU	0.000657	0.021911
MT	0	0
NL	0	0.011173
AT	0	0.002957
PL	28.39981	0.003856
PT	0.019929	0.011628
RO	2.744266	0.000302
SI	2.76E-05	0.000524
SK	0	0.000201
FI	0	0
SE	0	0

## ANNEX 7 (TIMELINESS)

Table 10a. Overview of timeliness (reference periods 2019S1, S2)

	2019							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	89	89	89	89	91	91	92	92
BG	89	89	89	89	89	89	90	90
CZ	46	46	46	46	71	72	71	71
DK	92	92	92	92	79	79	79	79
DE	100	100	100	100	90	90	90	90
EE	88	88	88	88	90	90	90	90
IE	92	92	92	92	90	90	90	90
EL	89	89	89	89	90	90	90	90
ES	88	88	95	95	90	90	90	90
FR	92	92	92	92	90	90	90	90
HR	86	86	86	86	76	76	76	76
IT	106	106	99	99	94	94	94	94
CY	85	85	92	92	89	89	90	90
LV	89	89	89	89	90	90	90	90
LT	92	92	92	92	90	90	90	90
LU	89	89	89	89	90	90	90	90
HU	92	92	92	92	90	90	90	90
MT	92	92	92	92	97	97	90	90
NL	88	88	88	88	89	89	89	89
AT	92	92	92	92	89	89	89	89
PL	79	79	79	79	86	86	99	99
PT	92	92	92	92	89	89	89	89
RO	92	92	92	92	92	92	92	92
SI	86	86	86	86	99	99	99	99
SK	87	87	87	87	86	86	86	86
FI	92	92	92	92	86	86	90	86
SE	88	88	88	88	89	90	89	89



Table 10b. Overview of timeliness (reference periods 2020S1, S2)

	2020							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	92	92	92	92	89	89	89	89
BG	91	91	92	92	89	89	90	90
CZ	80	80	80	80	76	76	76	76
DK	92	92	92	92	76	76	76	76
DE	108	108	108	108	90	90	90	90
EE	92	92	92	92	89	89	89	89
IE	92	105	92	99	89	89	90	90
EL	90	90	101	101	88	88	105	105
ES	90	90	85	85	90	90	90	90
FR	92	92	92	92	90	90	90	90
HR	87	87	87	87	85	85	85	85
IT	100	100	100	100	92	92	92	92
CY	78	78	92	92	75	75	90	90
LV	92	92	92	92	89	89	89	89
LT	92	92	92	92	76	76	76	76
LU	91	91	91	91	90	90	90	90
HU	92	92	92	92	90	90	90	90
MT	93	93	92	92	83	83	90	90
NL	92	92	92	92	85	85	85	85
AT	97	97	97	97	89	89	89	89
PL	90	90	86	86	88	88	81	81
PT	92	92	92	92	90	90	90	90
RO	91	91	91	91	89	89	89	89
SI	87	87	87	87	90	90	90	90
SK	92	92	92	92	90	90	90	90
FI	92	92	92	92	90	90	90	90
SE	91	91	91	91	90	90	90	90

Table 10c. Overview of timeliness (reference periods 2021S1, S2)

	2021							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	92	92	92	92	90	90	90	90
BG	91	91	91	91	90	90	90	90
CZ	78	78	78	78	83	82	83	82
DK	92	92	92	92	81	81	81	81
DE	92	92	92	92	90	90	90	90
EE	90	90	90	90	89	89	89	89
IE	92	92	92	92	90	90	90	90
EL	91	91	92	92	89	89	95	95
ES	91	91	93	93	90	90	90	90
FR	92	92	92	92	90	90	90	90
HR	91	91	91	91	87	87	87	87
IT	93	93	93	93	91	91	91	91
CY	85	85	92	92	81	81	90	90
LV	92	92	92	92	90	90	89	90
LT	78	78	78	78	66	66	66	66
LU	92	92	92	92	90	90	90	90
HU	92	92	92	92	90	90	90	90
MT	90	90	92	92	84	84	90	90
NL	86	86	86	86	83	83	83	83
AT	90	90	90	90	90	90	90	90
PL	78	78	76	76	88	88	89	89
PT	92	92	92	92	89	89	89	89
RO	91	91	91	91	88	88	88	88
SI	90	90	90	90	76	76	76	76
SK	86	86	86	86	83	83	83	83
FI	92	92	92	92	89	89	90	89
SE	118	118	118	118	90	90	90	90

## ANNEX 8 (NATIONAL DEADLINES)

Table 11. Overview of the national deadlines for national statistical institutes' data providers

Country	Electricity		Natural gas	
BE	2 months	62	2 months	62
BG	1 month	31	1 month	31
CZ	?		1 month	31
DK	2 months	62	2 months	62
DE	2 months	62	2 months	62
EE	1 month	31	1 month	31
IE	2 months	62	2 months	62
EL	2 months	62	2 months	62
ES	1.5 months	46	1 month	31
FR	2,5 months	77	2,5 months	77
HR	6 weeks	42	6 weeks	42
IT	45 days	45	45 days	45
CY	3 months	92		
LV	2 months	62	2 months	62
LT	1.5 months	46	1.5 months	46
LU	3 months	92	3 months	92
HU	25 days	25	30 days	30
MT	3 months	92		
NL	2 months	62	2 months	62
AT	51 days	51	51 days	51
PL	3 weeks	21	3 weeks	21
PT	2 months	62	2 months	62
RO	6 weeks	42	6 weeks	42
SI	1 months	31	1 month	31
	45 days for administrative data	45		
SK	1 month	31	1 months	31
FI	3 weeks	21	6 weeks	42
SE	4 weeks	28	1 month	31

## ANNEX 9 (PUNCTUALITY)

Table 12a. Overview of punctuality (reference periods 2019S1, S2)

	2019							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	-3	-3	-3	-3	1	1	2	2
BG	-3	-3	-3	-3	-1	-1	0	0
CZ	-46	-46	-46	-46	-19	-18	-19	-19
DK	0	0	0	0	-11	-11	-11	-11
DE	8	8	8	8	0	0	0	0
EE	-4	-4	-4	-4	0	0	0	0
IE	0	0	0	0	0	0	0	0
EL	-3	-3	-3	-3	0	0	0	0
ES	-4	-4	3	3	0	0	0	0
FR	0	0	0	0	0	0	0	0
HR	-6	-6	-6	-6	-14	-14	-14	-14
IT	14	14	7	7	4	4	4	4
CY	-7	-7			-1	-1		
LV	-3	-3	-3	-3	0	0	0	0
LT	0	0	0	0	0	0	0	0
LU	-3	-3	-3	-3	0	0	0	0
HU	0	0	0	0	0	0	0	0
MT	0	0			7	7		
NL	-4	-4	-4	-4	-1	-1	-1	-1
AT	0	0	0	0	-1	-1	-1	-1
PL	-13	-13	-13	-13	-4	-4	9	9
PT	0	0	0	0	-1	-1	-1	-1
RO	0	0	0	0	2	2	2	2
SI	-6	-6	-6	-6	9	9	9	9
SK	-5	-5	-5	-5	-4	-4	-4	-4
FI	0	0		0	-4	-4		-4
SE	-4	-4	-4	-4	-1	0	-1	-1

Table 12b. Overview of punctuality (reference periods 2020S1, S2)

	2020							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	0	0	0	0	-1	-1	-1	-1
BG	-1	-1	0	0	-1	-1	0	0
CZ	-12	-12	-12	-12	-14	-14	-14	-14
DK	0	0	0	0	-14	-14	-14	-14
DE	16	16	16	16	0	0	0	0
EE	0	0	0	0	-1	-1	-1	-1
IE	0	13	0	7	-1	-1	0	0
EL	-2	-2	9	9	-2	-2	15	15
ES	-2	-2	-7	-7	0	0	0	0
FR	0	0	0	0	0	0	0	0
HR	-5	-5	-5	-5	-5	-5	-5	-5
IT	8	8	8	8	2	2	2	2
CY	-14	-14			-15	-15		
LV	0	0	0	0	-1	-1	-1	-1
LT	0	0	0	0	-14	-14	-14	-14
LU	-1	-1	-1	-1	0	0	0	0
HU	0	0	0	0	0	0	0	0
MT	1	1			-7	-7		
NL	0	0	0	0	-5	-5	-5	-5
AT	5	5	5	5	-1	-1	-1	-1
PL	-2	-2	-6	-6	-2	-2	-9	-9
PT	0	0	0	0	0	0	0	0
RO	-1	-1	-1	-1	-1	-1	-1	-1
SI	-5	-5	-5	-5	0	0	0	0
SK	0	0	0	0	0	0	0	0
FI	0	0		0	0	0		0
SE	-1	-1	-1	-1	0	0	0	0

Table 12c. Overview of punctuality (reference periods 2021S1, S2)

	2021							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	0	0	0	0	0	0	0	0
BG	-1	-1	-1	-1	0	0	0	0
CZ	-14	-14	-14	-14	-7	-8	-7	-8
DK	0	0	0	0	-9	-9	-9	-9
DE	0	0	0	0	0	0	0	0
EE	-2	-2	-2	-2	-1	-1	-1	-1
IE	0	0	0	0	0	0	0	0
EL	-1	-1	0	0	-1	-1	5	5
ES	-1	-1	1	1	0	0	0	0
FR	0	0	0	0	0	0	0	0
HR	-1	-1	-1	-1	-3	-3	-3	-3
IT	1	1	1	1	1	1	1	1
CY	-7	-7			-9	-9		
LV	0	0	0	0	0	0	-1	0
LT	-14	-14	-14	-14	-24	-24	-24	-24
LU	0	0	0	0	0	0	0	0
HU	0	0	0	0	0	0	0	0
MT	-2	-2			-6	-6		
NL	-6	-6	-6	-6	-7	-7	-7	-7
AT	-2	-2	-2	-2	0	0	0	0
PL	-14	-14	-16	-16	-2	-2	-1	-1
PT	0	0	0	0	-1	-1	-1	-1
RO	-1	-1	-1	-1	-2	-2	-2	-2
SI	-2	-2	-2	-2	-14	-14	-14	-14
SK	-6	-6	-6	-6	-7	-7	-7	-7
FI	0	0		0	-1	-1		-1
SE	26	26	26	26	0	0	0	0

## ANNEX 10 (NUMBER OF REVISIONS)

Table 13a. Overview of the number of revised questionnaires submitted (reference periods 2019S1, S2)

	2019							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
Total	25	27	13	25	29	38	19	34
Nbr countries	13	15	7	14	18	20	14	21
BE	1	1	2	2	1	1	2	2
BG							1	3
CZ	3	2	2	1	2	1	1	1
DK					3	3	1	2
DE					3	3	3	3
EE						1		
IE	2	3		2	1	4	1	3
EL	2	1		2	1	1	1	1
ES	2	2	1	1	1	1	1	1
FR	3	3	3	3	1	1	1	1
HR						2		2
IT		1	1	1		1		
CY	1	1			1	1		
LV	1	1		2				1
LT					1	6	1	1
LU					1	1	2	2
HU		1		1		1		1
MT	1	1			2	1		
NL	2	1	1	1	1			
AT				2	1			1
PL	2	3			1		1	1
PT	3	4	3	5	1	3	2	3
RO								1
SI				1		1		2
SK								
FI				1	3	3		1
SE	2	2			4	2	1	1

Table 13b. Overview of the number of revised questionnaires submitted (reference periods 2020S1, S2)

	2020							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
Total	10	13	11	13	10	13	11	17
Nbr countries	8	11	10	12	6	9	9	13
BE			1	2				
BG								1
CZ								1
DK						1		1
DE							1	1
EE					2	3	2	4
IE					3	2	1	1
EL	1	3	1	1		2		
ES			1	1			1	
FR	1	1	1	1	1	1	1	1
HR						1		
IT	1	1	1	1				
CY								
LV			1					
LT							2	2
LU	1	1	1	1			1	1
HU		1	1	1				
MT	1	1			1	1		
NL		1		1				
AT	1	1		1				
PL		1		1			1	1
PT			1					1
RO	3	1	2		2			
SI						1	1	1
SK				1	1			1
FI						1		
SE	1	1		1				



Table 13b. Overview of the number of revised questionnaires submitted (reference periods 2021S1, S2)

	2021							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
Total	4	11	4	4	5	6	3	3
Nbr countries	4	9	4	4	4	6	3	3
BE								
BG								
CZ		1						
DK		1	1	1		1		
DE					1	1	1	1
EE								
IE		2	1	1	1			
EL	1	1						
ES			1	1				
FR	1	1	1	1	1			
HR								
IT								
CY								
LV							1	1
LT						1		
LU								
HU								
MT	1	1						
NL								
AT								
PL		2				1		
PT						1	1	1
RO								
SI		1						
SK								
FI					2	1		
SE	1	1						

## ANNEX 11 (DELAY TO FINAL DATA)

Table 14a. Overview of the delay between submission deadline and last correction (reference periods 2019S1, S2).

	2019							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	-3	-3	-3	-3	3	3	7	7
BG	-3	-3	-3	-3	-1	-1	0	7
CZ	-18	-18	-18	-18	24	23	22	-19
DK	0	0	0	0	0	0	0	0
DE	8	8	8	8	37	37	37	37
EE	-4	-4	-4	-4	0	8	0	0
IE	4	0	0	0	16	27	16	27
EL	-3	-3	-3	-3	16	16	27	27
ES	-4	-4	3	3	0	0	15	15
FR	36	36	36	36	24	24	24	24
HR	-6	-6	-6	-6	-14	6	-14	6
IT	14	14	7	7	4	21	4	4
CY	-7	-7			9	9		
LV	0	0	-3	-3	0	0	0	1
LT	0	0	0	0	22	28	2	22
LU	-3	-3	-3	-3	9	9	9	9
HU	0	0	0	0	0	23	0	23
MT	0	0			7	7		
NL	-3	-3	-3	-3	24	-1	-1	-1
AT	0	0	0	0	3	-1	-1	3
PL	-13	16	-13	-13	3	-4	9	9
PT	0	0	0	2	-1	16	15	16
RO	0	0	0	0	2	2	2	24
SI	-6	-6	-6	-6	9	9	9	22
SK	-5	-5	-5	-5	-4	-4	-4	-4
FI	0	0		21	7	24		-1
SE	-4	-4	-4	-4	24	24	24	24

Table 14b. Overview of the delay between submission deadline and last correction (reference periods 2020S1, S2).

	2020							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	0	0	1	1	-1	-1	-1	-1
BG	-1	-1	0	0	-1	-1	0	0
CZ	-12	-12	-12	-12	-14	-14	-14	-14
DK	0	0	0	0	-14	-14	-14	-14
DE	16	16	16	16	0	0	0	0
EE	0	0	0	0	9	9	9	9
IE	0	13	0	7	14	-1	0	0
EL	-2	-2	9	9	-2	42	15	15
ES	-2	-2	-7	-7	0	0	0	0
FR	0	0	0	0	8	8	8	8
HR	-5	-5	-5	-5	-5	-5	-5	-5
IT	12	12	12	12	2	2	2	2
CY	-14	-14			-15	-15		
LV	0	0	0	0	-1	-1	-1	-1
LT	0	0	0	0	-14	-14	-14	13
LU	-1	-1	-1	-1	0	0	0	0
HU	0	19	6	0	0	0	0	0
MT	1	1			-7	-7		
NL	0	0	0	0	-5	-5	-5	-5
AT	5	5	5	5	-1	-1	-1	-1
PL	-2	-2	-6	-6	-2	-2	16	16
PT	0	0	56	0	0	0	0	0
RO	1	0	1	-1	9	-1	-1	-1
SI	-5	-5	-5	-5	0	0	14	0
SK	0	0	0	0	0	0	0	0
FI	0	0		0	0	0		0
SE	22	22	-1	0	0	0	0	0

Table 14c. Overview of the delay between submission deadline and last correction (reference periods 2021S1, S2).

	2021							
	Semester 1				Semester 2			
	Ele HH	Ele nHH	Gas HH	Gas nHH	Ele HH	Ele nHH	Gas HH	Gas nHH
BE	0	0	0	0	0	0	0	0
BG	-1	-1	-1	-1	0	0	0	0
CZ	-14	-7	-14	-14	-7	-8	-7	-8
DK	0	5	4	4	-9	-2	-9	-2
DE	0	0	0	0	4	4	4	4
EE	-2	-2	-2	-2	-1	-1	-1	-1
IE	0	14	14	14	1	0	0	4
EL	-1	-1	0	0	-1	-1	5	5
ES	-1	-1	1	1	0	0	0	0
FR	0	0	0	0	0	0	0	0
HR	-1	-1	-1	-1	-3	-3	-3	-3
IT	1	1	1	1	1	1	1	1
CY	-7	-7			-9	-9		
LV	0	0	0	0	0	0	0	0
LT	-14	-14	-14	-14	-24	4	-24	-24
LU	0	0	0	0	0	0	0	0
HU	0	0	0	0	0	0	0	0
MT	-2	-2			-6	-6		
NL	-6	-6	-6	-6	-7	-7	-7	-7
AT	-2	-2	-2	-2	0	0	0	0
PL	-14	-1	-16	-16	-2	-1	-1	-1
PT	0	0	0	0	-1	7	6	-1
RO	-1	-1	-1	-1	-2	-2	-2	-2
SI	-2	-2	-2	-2	-14	-14	-14	-14
SK	-6	-6	-6	-6	-7	-7	-7	-7
FI	0	0		0	0	-1		-1
SE	26	26	26	26	0	0	0	0

## ANNEX 13 (METHODOLOGICAL GUIDANCE)

Table 15. Overview of the documentation on methodology available in the countries for electricity.

Country	Documentation on methodology
BE	The documentation on methodology is available in a manual in Dutch. <a href="https://ec.europa.eu/eurostat/cache/metadata/Annexes/nrg_pc_204_sims_be_an6.docx">https://ec.europa.eu/eurostat/cache/metadata/Annexes/nrg_pc_204_sims_be_an6.docx</a>
BG	Methodology and metadata files are available at the NSI website, section Energy: <a href="http://www.nsi.bg/en/content/5035/electricity-prices-final-non-household-customers">http://www.nsi.bg/en/content/5035/electricity-prices-final-non-household-customers</a>
DK	Documentation on the methodology is available on Statistics Denmark's website; <a href="https://www.dst.dk/en/Statistik/dokumentation/statistikdokumentation/el--og-naturgaspriser">https://www.dst.dk/en/Statistik/dokumentation/statistikdokumentation/el--og-naturgaspriser</a>
CZ	Electricity non-households: Description of methodology is a part of publication “Industrial Producer Price Indices”.
DE	A short methodological description is available on the FSO website: <a href="https://www.destatis.de/DE/Themen/Wirtschaft/Preise/Erdgas-Strom-Durchschnittspreise/inhalt.html">https://www.destatis.de/DE/Themen/Wirtschaft/Preise/Erdgas-Strom-Durchschnittspreise/inhalt.html</a>
EE	National metadata: <a href="https://www.stat.ee/en/find-statistics/methodology-and-quality/esms-metadata/20409">https://www.stat.ee/en/find-statistics/methodology-and-quality/esms-metadata/20409</a> <a href="https://www.stat.ee/esms-metadata?code=20409">https://www.stat.ee/esms-metadata?code=20409</a> Instructions on the questionnaire variables (in PDF format) and questionnaire for printing (in PDF format): <a href="https://www.stat.ee/en/questionnaires?combine=1385">https://www.stat.ee/en/questionnaires?combine=1385</a>
IE	Methodology is published in Appendix 2 of the bi-annual publication. Electricity & Gas Prices in Ireland. Electricity & Gas Prices in Ireland - 2nd Semester (July – August) 2020, Sustainable Energy Authority of Ireland, 2021. <a href="https://www.seai.ie/publications/Price-Directive-2nd-Semester-2020-(ver2).pdf">https://www.seai.ie/publications/Price-Directive-2nd-Semester-2020-(ver2).pdf</a> Regulation (EU) 2016/1052 <a href="http://eur-lex.europa.eu/eli/reg/2016/1952/oj">http://eur-lex.europa.eu/eli/reg/2016/1952/oj</a> Eurostat Compiler guide <a href="http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-16-106">http://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/KS-GQ-16-106</a>
EL	Being a member of the Hellenic Statistical System Greece implements the national quality assurance framework of statistics. Regulation on the Statistical Obligations of the Agencies of the Hellenic Statistical System
ES	There is no documentation on methodology.
FR	Description of the survey, Methodology, Data collection, Questionnaire, Results are described on the following web page: <a href="https://www.statistiques.developpement-durable.gouv.fr/enquete-semestrielle-sur-la-transparence-des-prix-du-gaz-et-de-lelectricite-en-europe?list-enquete=true">https://www.statistiques.developpement-durable.gouv.fr/enquete-semestrielle-sur-la-transparence-des-prix-du-gaz-et-de-lelectricite-en-europe?list-enquete=true</a> A methodological notice is included in the publication : Datalab essential “Electricity prices in France and the European Union in 2020” A methodology is attached (in a separate file) to the publication Datalab essential “Electricity prices in France and the European Union in 2019”
HR	Statistical standards for electricity prices survey is published on-line, the link to methodology documentation: <a href="https://www.dzs.hr/Hrv/important/Nomen/Standardi/Statisticki%20standardi%20za%20ERG-3E.pdf">https://www.dzs.hr/Hrv/important/Nomen/Standardi/Statisticki%20standardi%20za%20ERG-3E.pdf</a>

IT	A handbook with instructions to fill in web questionnaires for submitting data is provided to suppliers: <a href="https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2021/PrezziMediEE21.pdf">https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2021/PrezziMediEE21.pdf</a> , <a href="https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2021/PrezziMediGAS21.pdf">https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2021/PrezziMediGAS21.pdf</a> .
CY	No documentation available.
LV	Regulation (EU) 2016/1952, Annex II. Compilers guide on European statistics on natural gas and electricity (Eurostat, 2017) CSB website: <a href="https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-electricity-prices">https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-electricity-prices</a> , <a href="https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-natural-gas-prices">https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-natural-gas-prices</a> .
LT	The statistical survey on electricity prices is based on the Directive 2008/92EC of the European Parliament and of the Council of 22 October 2008 concerning Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users (recast). A complete description of the methodology used to compile the Electricity prices is published on the Official Statistics Portal: Methodological documentation (only in Lithuanian).
LU	No documentation available.
HU	Internal national documentation: these documents contain the approved methodology for the reports, which is in line with EUROSTAT guidelines, as well as the approved explanatory texts for the actual reports, guiding the data providers. These documents did not change since 2014, as the changes of the EUROSTAT guidelines in 2017 only changed the compilation methods of the Authority.
MT	The definitions and methodology of Eurostat's Compilers guide on European Statistics on natural gas and electricity prices have been followed.
NL	Documentation on methodology for the electricity prices of Statistics Netherlands (Dutch) Regulation (EU) 2016/1052 Eurostat Compiler guide
AT	No metadata available at national level.
PL	Public methodological instructions for statistical surveys have been developed and every year are updated and supplemented. Questionnaires and instructions are available on websites: <a href="https://www.are.waw.pl/images/badania-statystyczne/2019/G-11e-for-2019.pdf">https://www.are.waw.pl/images/badania-statystyczne/2019/G-11e-for-2019.pdf</a> <a href="https://www.are.waw.pl/images/badania-statystyczne/2019/G-11e-obj-2019.pdf">https://www.are.waw.pl/images/badania-statystyczne/2019/G-11e-obj-2019.pdf</a> <a href="https://www.are.waw.pl/images/badania-statystyczne/2020/G-11e-for-2020.pdf">https://www.are.waw.pl/images/badania-statystyczne/2020/G-11e-for-2020.pdf</a> <a href="https://www.are.waw.pl/images/badania-statystyczne/2020/G-11e-obj-2020.pdf">https://www.are.waw.pl/images/badania-statystyczne/2020/G-11e-obj-2020.pdf</a> <a href="https://www.are.waw.pl/images/badania-statystyczne/2021/G-11e-for-2021.pdf">https://www.are.waw.pl/images/badania-statystyczne/2021/G-11e-for-2021.pdf</a> <a href="https://www.are.waw.pl/images/badania-statystyczne/2021/G-11e-obj-2021.pdf">https://www.are.waw.pl/images/badania-statystyczne/2021/G-11e-obj-2021.pdf</a> and on the Statistics Poland website: <a href="http://form.stat.gov.pl/formaty/zestaw.php?rok-pbssp=2019&amp;idzst=99">http://form.stat.gov.pl/formaty/zestaw.php?rok-pbssp=2019&amp;idzst=99</a>
PT	DGEG prepares (and updates) written methodological documents for each delegated statistical operation, based on standard methodological documents defined according to the National Statistical System. These documents present a detailed description of the statistical methodology (transmission, treatment, analysis and dissemination of data), applied regulation and legislation, concepts, definitions and classifications of each statistical operation. All documents, after approval by Statistics Portugal, are published on our webpage (DGEG). Webpage: <a href="http://www.dgeg.gov.pt">www.dgeg.gov.pt</a> - Planning and statistics - Statistics and prices - Methodological documents - Energy - Statistics on Prices Relative to Natural Gas and Electricity
RO	No documentation regarding methodology for this statistical domain is available.
SI	Methodological explanation: <a href="https://www.stat.si/statweb/File/DocSysFile/8313/18-143-ME.pdf">https://www.stat.si/statweb/File/DocSysFile/8313/18-143-ME.pdf</a>
SK	Methodology is available in legal acts (see 6.1 Institutional Mandate) and in Statistical Questionnaire.
FI	Documentation on methodology is internal.



Table 16. Overview of the documentation on methodology available in the countries for natural gas.

Country	Documentation on methodology
BE	The documentation on methodology is available in a manual in Dutch.
BG	Metadata and methodology files are available at the NSI website, section Energy: <a href="http://www.nsi.bg/en/content/5041/natural-gas-prices-final-non-household-customers">http://www.nsi.bg/en/content/5041/natural-gas-prices-final-non-household-customers</a>
CZ	Natural gas non-households: Description of methodology is a part of publication “Industrial Producer Price Indices”.
DK	Documentation on the methodology is available on Statistics Denmark's website; <a href="https://www.dst.dk/en/Statistik/dokumentation/statistikdokumentation/el--og-naturgaspriser">https://www.dst.dk/en/Statistik/dokumentation/statistikdokumentation/el--og-naturgaspriser</a>
DE	None
EE	Price of electricity and natural gas (ESMS METADATA) <a href="https://www.stat.ee/esms-metadata?code=20409">https://www.stat.ee/esms-metadata?code=20409</a> Instructions on the questionnaire variables (in PDF format): EST   ENG Questionnaire for printing (in PDF format): EST   ENG <a href="https://www.stat.ee/?id=38932&amp;lang=en">https://www.stat.ee/?id=38932&amp;lang=en</a>
IE	Methodology is published in Appendix 2 of the bi-annual publication. Electricity & Gas Prices in Ireland. Electricity & Gas Prices in Ireland - 1st Semester (January – June) 2018, Sustainable Energy Authority of Ireland, 2019. <a href="https://www.seai.ie/publications/Electricity_Gas_Prices_January_June_2017">https://www.seai.ie/publications/Electricity_Gas_Prices_January_June_2017</a>
EL	Not available.
ES	No documentation on methodology apart from what is published by Eurostat.
FR	Description of the survey, Methodology, Data collection, Questionnaire, Results are described on the following web page: <a href="https://www.statistiques.developpement-durable.gouv.fr/enquete-semestrielle-sur-la-transparence-des-prix-du-gaz-et-de-lelectricite-en-europe?list-enquete=true">https://www.statistiques.developpement-durable.gouv.fr/enquete-semestrielle-sur-la-transparence-des-prix-du-gaz-et-de-lelectricite-en-europe?list-enquete=true</a> A methodology is attached (in a separate file) to the publication Datalab essential “Electricity prices in France and the European Union in 2016”
HR	Statistical standards for gas prices survey is published on-line, here is the link to methodology documentation: <a href="https://www.dzs.hr/Hrv/important/Nomen/Standardi/Statisticki%20standardi%20za%20ERG-3P.pdf">https://www.dzs.hr/Hrv/important/Nomen/Standardi/Statisticki%20standardi%20za%20ERG-3P.pdf</a>
IT	A handbook with instructions to fill in web questionnaires for submitting data is provided to suppliers. The handbook is available here: <a href="https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2018/CondizioniMedieGAS18.pdf">https://www.arera.it/allegati/operatori/raccolte_dati/manuali/2018/CondizioniMedieGAS18.pdf</a>
LV	Regulation (EU) 2016/1952, Annex I. Compilers guide on European statistics on natural gas and electricity (Eurostat, 2017) CSB website: <a href="https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-natural-gas-prices">https://www.csb.gov.lv/en/statistics/statistics-by-theme/environment-energy/energy/tables/metadata-natural-gas-prices</a>
LT	The statistical survey on gas prices is based on the Directive 2008/92EC of the European Parliament and of the Council of 22 October 2008 concerning Community procedure to improve the transparency of gas and electricity prices charged to industrial end-users (recast). A complete description of the methodology used to compile the Natural gas prices is published on the Official Statistics Portal: Methodological documentation (only in Lithuanian).
LU	no documentation
HU	Internal national documentation: these documents contain the approved methodology for the reports, which is in line with EUROSTAT guidelines, as well as the approved explanatory texts for the actual reports, guiding the data providers. These documents did not change since 2014, as the changes of the EUROSTAT guidelines in 2017 only changed the compilation methods of the Authority.
NL	Documentation on methodology for the electricity prices of Statistics Netherlands (Dutch) Regulation (EU) 2016/1052 Eurostat Compiler guide
AT	No metadata available at national level.



PL	<p>Public methodological instructions for statistical surveys have been developed and every year are updated and supplemented.</p> <p>Questionnaires and instructions are available on websites:  <a href="https://www.are.waw.pl/images/badania-statystyczne/2019/G-11g-for-2019.pdf">https://www.are.waw.pl/images/badania-statystyczne/2019/G-11g-for-2019.pdf</a>  <a href="https://www.are.waw.pl/images/badania-statystyczne/2019/G-11g-obj-2019.pdf">https://www.are.waw.pl/images/badania-statystyczne/2019/G-11g-obj-2019.pdf</a>  <a href="https://www.are.waw.pl/images/badania-statystyczne/2020/G-11g-for-2020.pdf">https://www.are.waw.pl/images/badania-statystyczne/2020/G-11g-for-2020.pdf</a>  <a href="https://www.are.waw.pl/images/badania-statystyczne/2020/G-11g-obj-2020.pdf">https://www.are.waw.pl/images/badania-statystyczne/2020/G-11g-obj-2020.pdf</a>  <a href="https://www.are.waw.pl/images/badania-statystyczne/2021/G-11g-for-2021.pdf">https://www.are.waw.pl/images/badania-statystyczne/2021/G-11g-for-2021.pdf</a>  <a href="https://www.are.waw.pl/images/badania-statystyczne/2021/G-11g-obj-2021.pdf">https://www.are.waw.pl/images/badania-statystyczne/2021/G-11g-obj-2021.pdf</a>  and on the Statistics Poland website: <a href="http://form.stat.gov.pl/formaty/zestaw.php?rok-pbssp=2019&amp;idzst=99">http://form.stat.gov.pl/formaty/zestaw.php?rok-pbssp=2019&amp;idzst=99</a></p>
PT	<p>DGEG prepares (and updates) written methodological documents for each delegated statistical operation, based on standard methodological documents defined according to the National Statistical System. These documents present a detailed description of the statistical methodology (transmission, treatment, analysis and dissemination of data), applied regulation and legislation, concepts, definitions and classifications of each statistical operation. All documents, after approval by Statistics Portugal, are published on our webpage (DGEG).</p> <p>Webpage: <a href="http://www.dgeg.gov.pt">www.dgeg.gov.pt</a> - Planning and statistics - Statistics and prices - Methodological documents - Energy - Statistics on Prices Relative to Natural Gas and Electricity</p>
RO	Romania does not have public available documentation on methodology for this statistical domain.
SI	<p>Methodological explanation:  <a href="https://www.stat.si/statweb/File/DocSysFile/8313/18-143-ME.pdf">https://www.stat.si/statweb/File/DocSysFile/8313/18-143-ME.pdf</a></p>
SK	Methodology is available in legal acts (see 6.1 Institutional Mandate) and in Statistical Questionnaire
FI	Internal documentation exists.
SE	No metadata available