Final energy consumption in services - detailed statistics

Statistics Explained

Data extracted in September 2024
Planned article update: 17 July 2025

Highlights

" In 2022, the services sector accounted for 13.4% of final energy consumption in the EU. "

" Within the services sector, the largest energy consumers in the EU in 2022 were wholesale and retail trade activities, professional, scientific and technical activities, accommodation and food services activities, and human health and social work activities. "

" In 2022, electricity (50.6%) and natural gas (26.9%) together accounted for more than three quarters of the final energy consumption of the EU's services sector. "

With a consumption of 5 080 petajoules (PJ)[1] in 2022 and a share of 13.4 % of final energy consumption in the European Union (EU) , the services sector has a far smaller energy consumption than transport activities (31.0%), households (26.9%) and the industry sector (25.1%), only exceeding agriculture, forestry and fishing (3.6%). However, behind its relatively small size, the services sector hides an impressive diversity of activities, from hospitals to hotels and from schools to stadiums. This article presents data on final energy consumption in services in the EU, broken down by activities and specific energy products, for the year 2022.[2] The term energy product refers to primary and secondary fuels or fuel groups such as natural gas, electricity, renewables, etc.[3]

Energy products used in the services sector

Electricity (50.6%) and natural gas (26.9%) accounted together for more than three-quarters of the final energy consumption in the EU's services sector in 2022. Following these two main fuels, renewable energy sources accounted for 8.0% of consumption, followed by heat at 7.6%, and then oil and petroleum products at 6.3%. The remaining 0.6% were taken by other energy products such as coal or waste (see Figure 1).

[1] Petajoule is a unit of energy equal to 1015joules.

[2] Data for 2022 are available for all EU Member States except Spain, Cyprus, Romania and Finland, who were granted a full derogation for the collection on disaggregated final energy consumption in services. Belgium and Greece were granted a partial derogation: for Belgium, only data on electricity and natural gas are available; for Greece, only data on solid fossil fuels are available. Commission Implementing Decision (EU) 2023/2199 of 17 October 2023 granted derogations for the entire collection to Spain, Romania and Finland for reference years 2022 and 2023, and to Cyprus for reference years 2022, 2023 and 2024. The Implemented Regulation also granted partial derogations to Belgium and Greece for several families of fuels for reference years 2022, 2023 and 2024.

[3] For the full list of energy products, please refer to Annex A of Regulation (EC) No 1099/2008 on energy statistics.

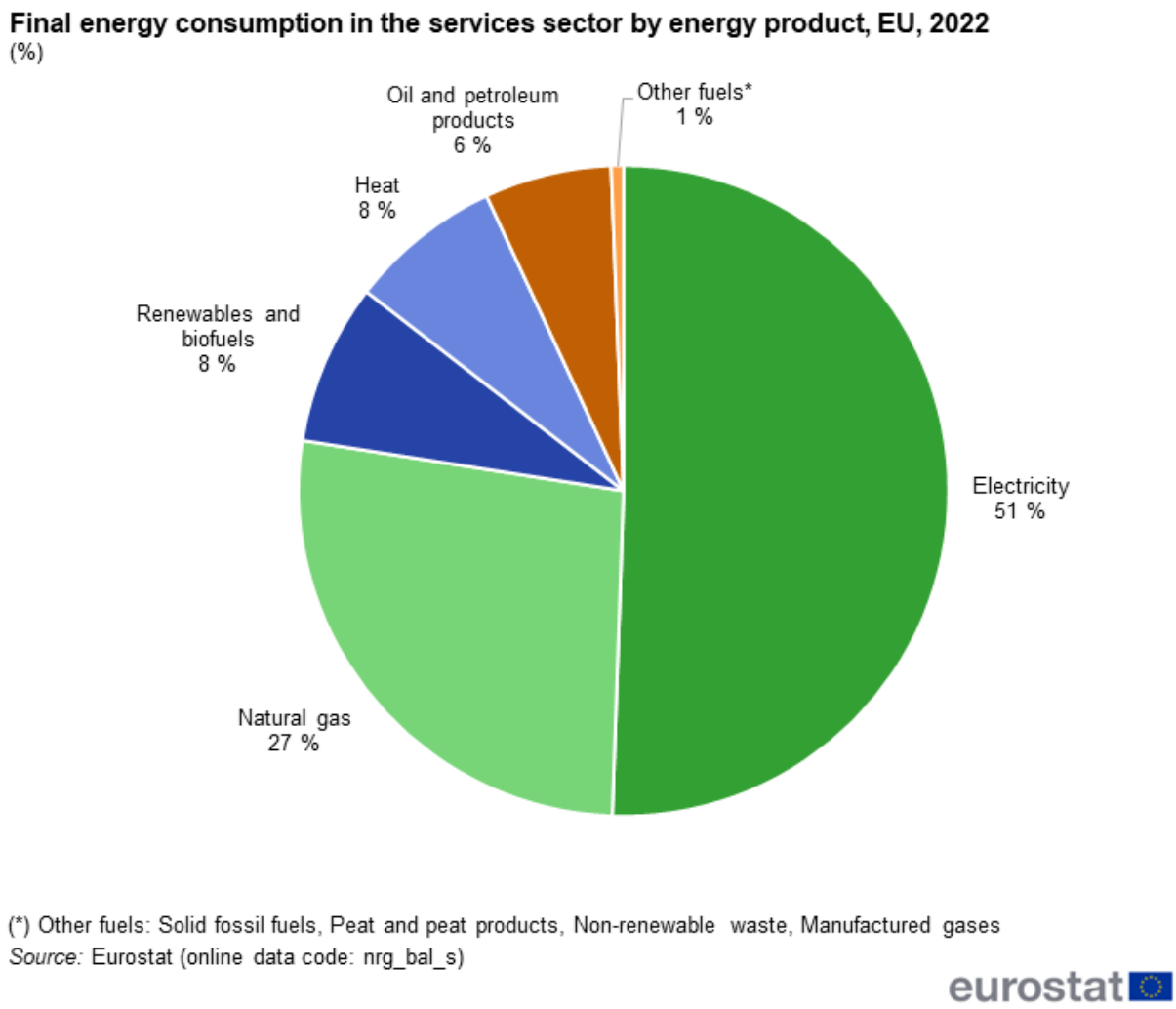

Figure 1: Final energy consumption in the services sector by energy product, EU, 2022 (%) Source: Eurostat (nrg_bal_s)

Over the entire period from 1990-2022, total final energy consumption in services rose by 28%, from 3 969 PJ in 1990 to 5 080 PJ in 2022. Hovering around 4 000 PJ in the first half of the 1990s, consumption then rose steadily from 1996, reaching a consumption peak of 5 860 PJ in 2010. Afterwards, consumption remained between 5 000 and 5 600 PJ, with low points in 2014 and 2020.

Figure 2 shows the evolution of different energy products used for energy purposes in the services sector in the EU. Electricity remained the largest energy source for services and rose in significance during the same period. From 1 344 PJ in 1990, the consumption of electricity in the services sector increased continuously until 2010, before stabilising at around 2 600 PJ. Electricity went from supplying a third of consumption in services in 1990 (33.9%) to around a half in 2022 (50.6%). In contrast, from 1990 to 2006, the consumption of oil and petroleum products by services hovered around 1 000 PJ, with the sector's share decreasing from 25.3% to 16.0%; but after 2006, consumption declined, reaching 321 PJ in 2022. Natural gas overtook oil and petroleum products as the second largest energy source for services in 1993: consumption rose from 856 PJ in 1990 to 1 642 PJ in 2006, and has since been hovering around 1 500 PJ, with a share of between 25% and 30%. Services' consumption of renewables steadily increased, with a notable jump in 2017: between 1990 and 2022, the consumption of renewables by services had multiplied by 17. Finally, solid fossil fuels, the fourth largest source of energy for services in 1990, saw consumption fall drastically in the 1990s, remaining low from then on.

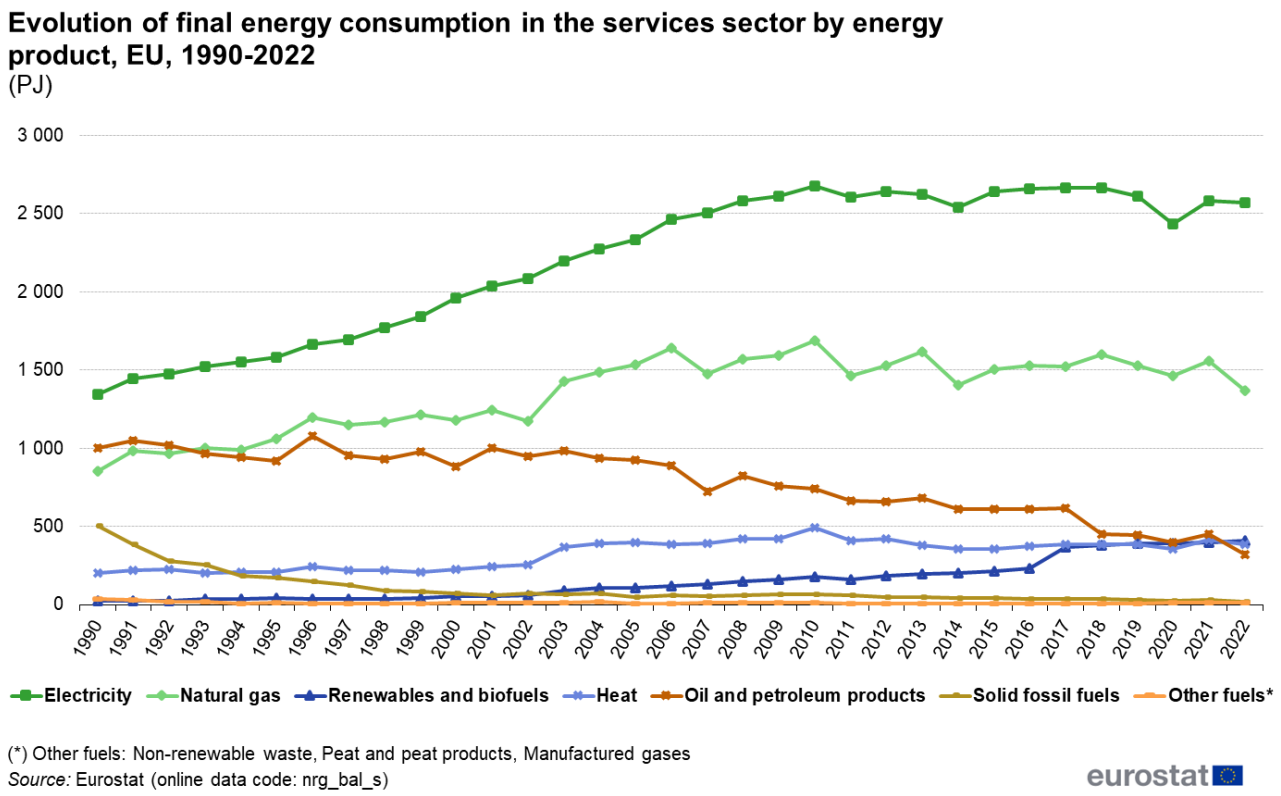

Figure 2: Evolution of final energy consumption in the servicessector by energy product, EU, 1990-2022 (PJ)
Source: Eurostat (nrg_bal_s)

Largest energy consumers in services

In 2022, half of the energy consumption of services in the EU was taken up by just four sub-sectors. Wholesale and retail trade consumed 896 PJ of energy, making up more than a fifth of energy consumption (21.1%) of all services. Professional, scientific and technical activities, also including minor other types of services, represented 11.2% of the consumption (476 PJ). Accommodation and food service activities (463 PJ, 10.9%) and human health and social work activities (448 PJ, 10.6%) followed by a small margin.

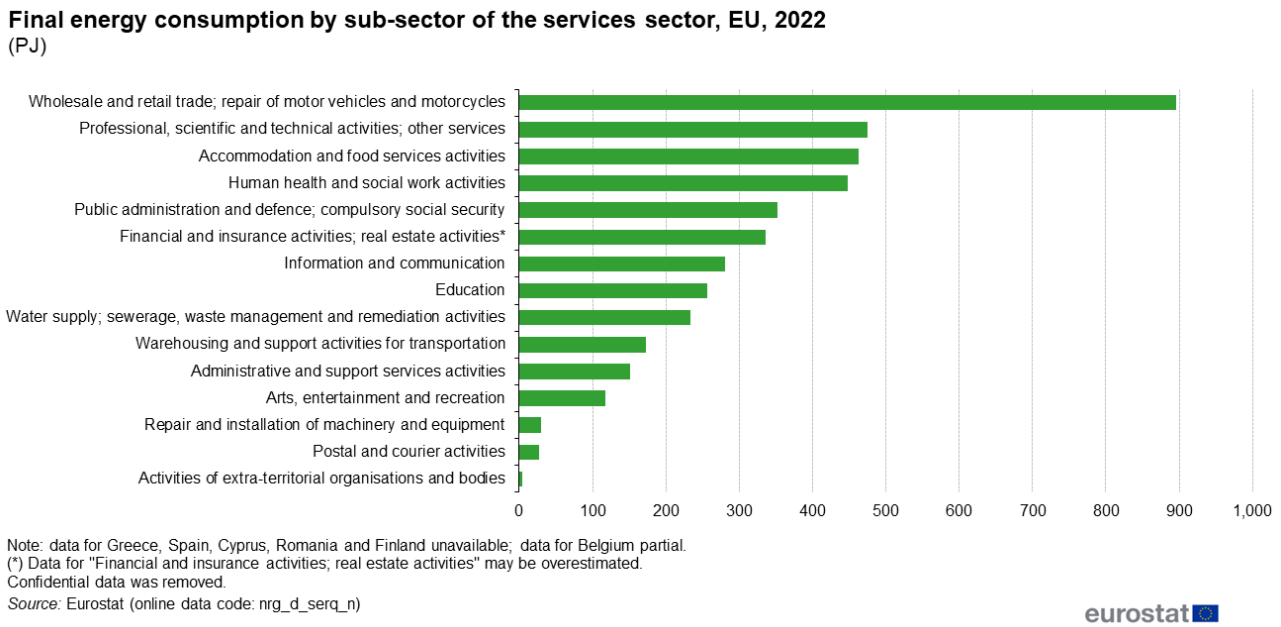

Figure 3: Final energy consumption by sub-sector of the services sector, EU, 2022 (PJ) Source: Eurostat (nrg_bal_s)

The article will now focus on these four main sub-sectors. It will present the composition of their energy consumption and compare it to the shares of energy products in the services sector as a whole. We see similarities in energy product use among sub-sectors and compared to the overall energy mix of the sector, but also some striking differences.

Wholesale and retail trade made up the largest part of final energy consumption in the services sector in the EU. Its shares of energy products were similar to the services sector as a whole, with electricity and natural gas accounting for 52.8% and 26.6%. However, compared with other activities, the share of heat consumption of wholesale and retail trade was smaller (5.1% in 2022).

The largest portion of this sub-sector was taken up by retail trade, with a consumption of 582 PJ in 2022, a consumption larger than the second largest sub-sector of services (professional, scientific and technical activities). Retail trade followed the same order in shares of energy products as the services sector itself. In contrast, the smaller wholesale trade activities (261 PJ in
2022) consumed slightly less electricity and slightly more natural gas and heat compared with other service activities.

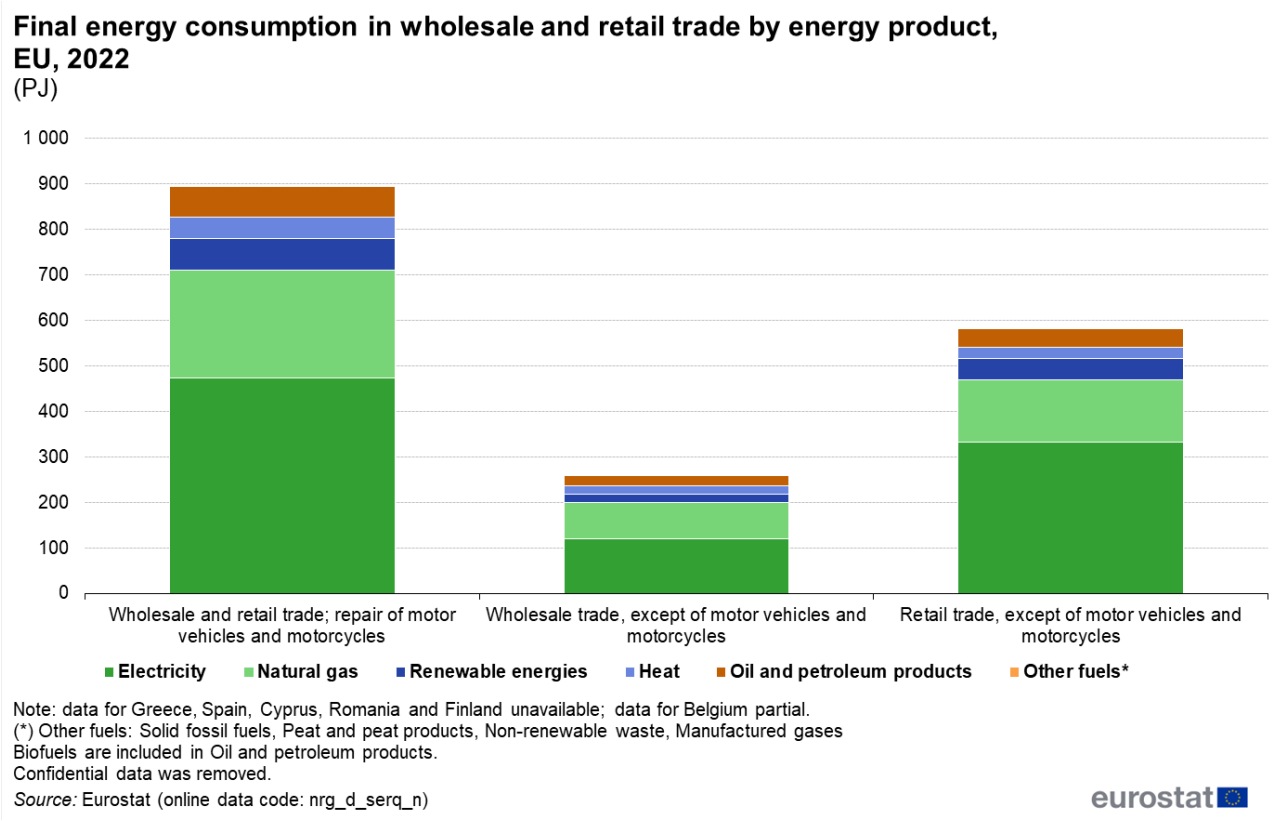

Figure 4: Final energy consumption in wholesale and retail trade by energy product, EU, 2022 (PJ) Source: Eurostat (nrg_d_indq_n)

Comprising various activities such as legal, consultancy, architectural, engineering, research and development, advertising, veterinary or membership organisations activities, the “Professional, scientific and technical activities and Other service activities” sub-sector consumed 476 PJ of energy in 2022. This sub-sector displayed a relatively large share of electricity (56.5%) in its energy consumption.

Accommodation and food services activities, including hotels and restaurants, stood out with their large consumption of renewable energies; with 79 PJ of the 463 PJ total consumption in 2022, renewable energies made up 17.1% of the sub-sector’s energy consumption. Most of these renewables were consumed by accommodation activities, which also used more natural gas than electricity. In contrast, more than 60% of the consumption of food and beverage service activities was taken up by electricity alone. Overall, in 2022, the energy consumption of accommodation activities was slightly higher than the one of food and beverage service activities (respectively 260 and 203 PJ).

Human health and social work activities, including hospitals and residential care activities, consumed 448 PJ of energy in 2022. They also stood out by consuming more natural gas than electricity in 2022, with shares of 42.2% for natural gas and 35.7% for electricity. With a consumption of 55 PJ, heat made up 12.3% of the energy consumption of this sub-sector, an unusually high share among the services sector.

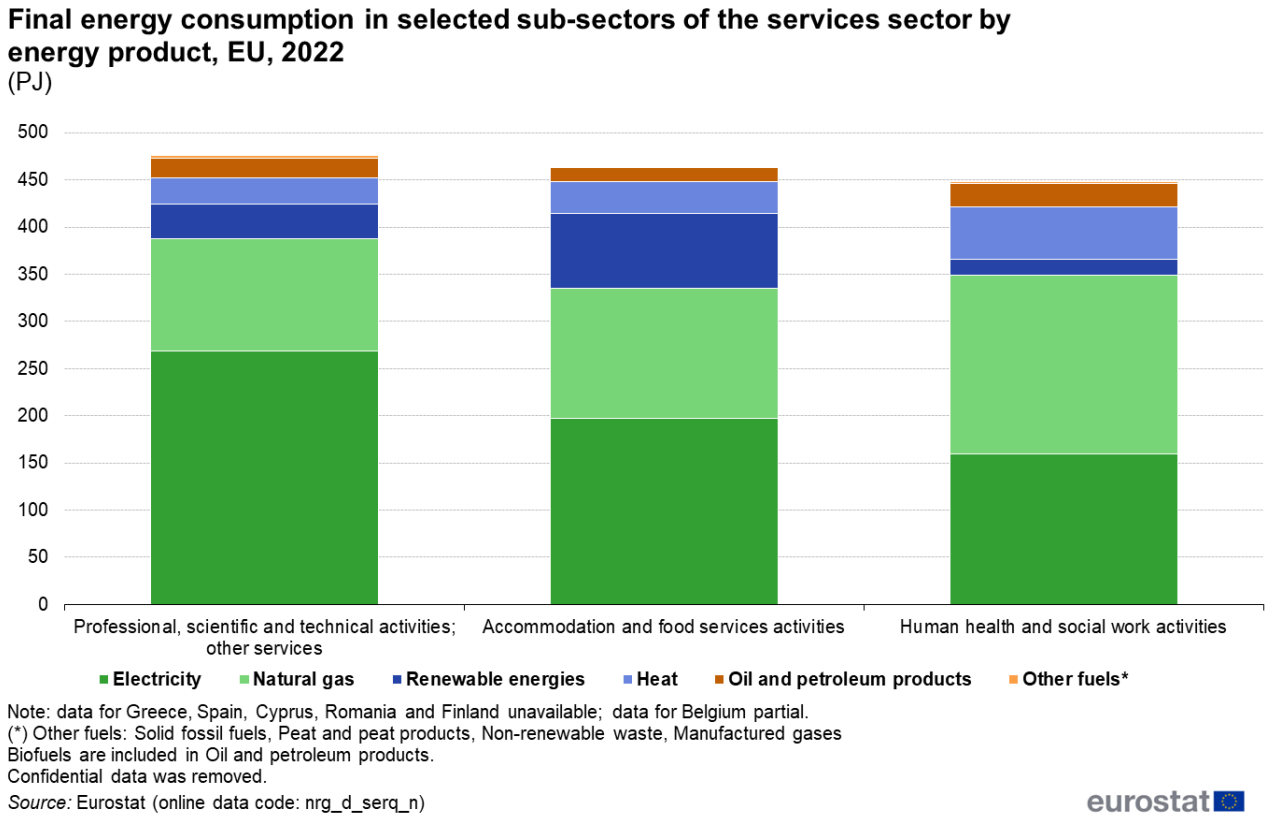

Figure 5: Final energy consumption in selected sub-sectors of the services sector by energy product, EU, 2022 (PJ) Source: Eurostat (nrg_d_indq_n)

Source data for tables and graphs

- Final energy consumption in services - tables and figures

Methodological notes

In this article, the “services sector” includes the energy consumed by businesses and offices in the public and private sectors, according to its definition in Regulation (EC) No 1099/2008 on energy statistics. The “disaggregated data on final energy consumption in services” includes 48 Divisions from the Statistical Classification of Economic Activities (NACE) defined in Annex A Article 2.6.3.1. of Regulation (EC) 1099/2008 and defined as “sub-sectors” in this article. These Divisions are:

- All the Divisions from NACE Sections E, G, I, J, K, L, M, N, O, P, Q, R, S and U
- Divisions C33, H52 and H53

Out of these 48 Divisions, one NACE Class is excluded (NACE 84.22 – defence activities).

The services sector as defined in energy statistics excludes the energy consumed by transport activities, transformation activities and activities of the energy sector. Transport activities are reported under their own collection (Final energy consumption in transport). Transformation activities and activities of the energy sector are reported under their own categories in the energy balances. For this reason, differences with other data sources, such as energy flow accounts, are expected.

In some Member States, the energy consumption of a commercial tenant is filed to the name of the landlord, and therefore under the category “real estate activities”, instead of the real activity of the commercial tenant. This means many sub-sectors of services may be slightly underestimated, whereas the “Financial and insurance activities; real estate activities” sub-sector may be overestimated. With both, Eurostat and Member States aware of this issue, Eurostat expects the quality of the data to improve in future years.

Data sources and availability

The statistics presented in this article are based on the annual data submitted to Eurostat in line with Regulation (EC) 1099/2008 on energy statistics. Complete disaggregated data on final energy consumption in services are available for 2022 for all but six EU Member States. In line with the derogations granted to them, Spain, Cyprus, Romania, and Finland did not report disaggregated data on final energy consumption in services for 2022, and Belgium and Greece reported this data only partially. For several countries, the data are also available for the period 2020-2021, during which the reporting was voluntary. As of reference year 2022, the reporting is mandatory with a deadline of 31 March of the second year following the reference year. The methodology is harmonised for all reporting countries, resulting in a high level of comparability across countries.

Context

Disaggregation of statistics on final energy consumption is crucial for policy makers to monitor and further develop energy policies. Regulation (EC) No 1099/2008 on energy statistics put in place four collections to gather detailed data on final energy consumption. Mandatory reporting of final energy consumption started in 2017 (reference year 2015) for the residential sector (households), in 2022 (reference year 2020) for the industry sector, and in 2024 (reference year 2022) for both the services sector and transport activities.

Notes

Explore further

Other articles

- All articles on energy

Database

- Energy - detailed datasets (t_nrg) , see:

Energy statistics - quantities, annual data (nrg_quanta)

Disaggregated final energy consumption (nrg_d)

Disaggregated final energy consumption in services - quantities by NACE Rev. 2 activity (nrg_d_serq_n)

Disaggregated final energy consumption in services - calorific values (nrg_d_sercv)

Thematic section

- Energy

Publications

- Energy, transport and environment statistics - 2020 edition
- Energy data - 2020 edition
- Sustainable development in the European Union — 2022 edition
- Shedding light on energy in the EU — 2023 interactive edition

Selected datasets

- Energy - selected datasets (t_nrg) , see:

Energy statistics - main indicators (t_nrg_indic)

Sustainable Development indicators Goal 7 - Affordable and clean energy (t_nrg_sdg_07)

Methodology

- Energy balances (ESMS metadata file — nrg_bal_esms)
- Energy statistics - quantities (European and national ESMS metadata file — nrg_quant_esms)
- Supply, transformation and consumption — commodity balances (ESMS metadata file — nrg_cb_esms)

External links

- A European Green Deal

Legislation

- Regulation 1099/2008

Visualisation

- Explore annual energy data - This interactive tool helps you to obtain an overview of key energy trends.
- Sankey diagram - Energy flows