

Energy efficiency in the years 2013–2023

12.06.2025

↑ 1.5%

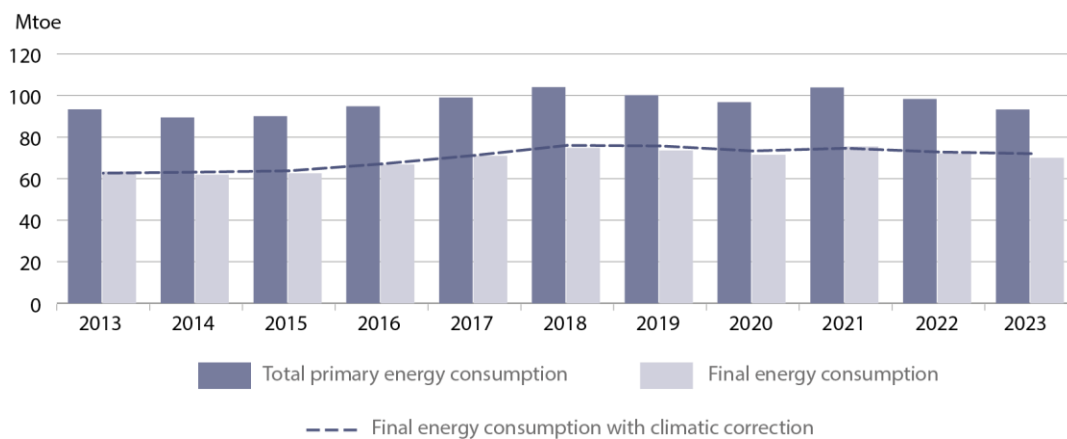
An increase of energy efficiency in Poland in 2023 compared to 2022.

Poland's energy efficiency increased by 1.5% in 2023 compared to 2022. Between 2013 and 2022, the annual cumulative growth rate of energy efficiency amounted to 1.1%. Primary energy intensity of GDP decreased by an average of 3.8% per year during this period, while final energy intensity of GDP decreased by 2.8% per year. The fastest rate of energy efficiency improvement was observed in industry (by 2.6% per year).

Total primary energy consumption decreased between 2013 and 2023 from 93.4 Mtoe to 93.3 Mtoe (cumulative annual growth rate - 0.1%). In contrast, **final energy consumption** increased from 63.5 to 70.0 Mtoe during the analysed period (a cumulative annual growth rate of - 1.0%). Total consumption reached its peak in 2018 (104.1 Mtoe), final energy consumption in 2021 (75.5 Mtoe).

In 2023, both total primary energy consumption and final energy consumption were lower than in 2022.

Chart 1. Total primary energy consumption and final energy consumption



Primary energy intensity of GDP in 2023 decreased by 6.1% compared to the previous year, while **final energy intensity of GDP** decreased by 3.0%.

Compared to 2013, the primary energy intensity of GDP in 2023 decreased by 31.8% and final energy intensity of GDP by 23.8%. The rate of improvement for primary intensity with climatic corrections was slightly lower (30.3%) and for final energy intensity of GDP was also slightly lower (21.2%).

Table 1. The annual cumulative growth rate of energy efficiency of GDP

Rate of improvement	2014–2018	2019–2023	2014–2023
	% / year		
Primary energy intensity of GDP	-2.4	-5.1	-3.8
Primary energy intensity of GDP with climatic corrections	-2.0	-5.0	-3.5
Final energy intensity of GDP	-1.3	-4.0	-2.7
Final energy intensity of GDP with climatic corrections	-0.8	-3.9	-2.4

Households

In 2023 household energy consumption accounted for 28.8% of final energy consumption. The most commonly consumed energy carrier was natural gas with a share of 21.1% in 2023. This was followed by solid fossil fuels (20.6%), heat (17.5%) electricity (12.5%) liquid fuels (2.8%). The consumption of other energy carriers, which included solid biofuels and ambient heat, was 25.5%.

The most important direction of energy use was space heating, with a 62.1% share in 2023. Water heating consumed 18.6% of energy, lighting and electrical appliances 10.2% and preparing meals 9.1%.

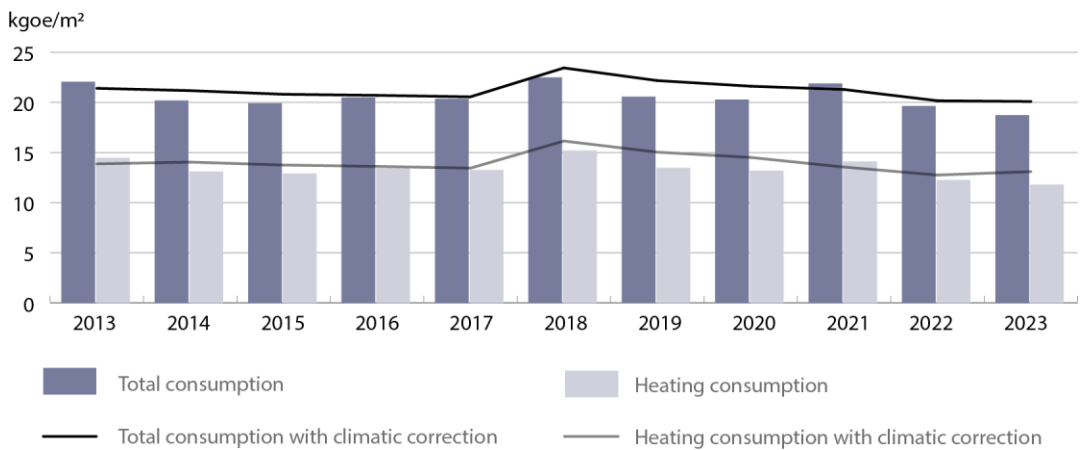
Table 2. Structure of energy consumption in households by directions of use

Specification	2018	2019	2020	2021	2022	2023
	%					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Space heating	68.4	66.4	66.1	65.4	63.1	62.1
Water heating	15.5	16.2	16.3	17.1	18.0	18.6
Cooking	7.4	8.1	8.1	8.3	9.1	9.1
Lighting and electrical appliances	8.7	9.3	9.5	9.2	9.8	10.2

The share of energy used for space heating in 2023 decreased by 6.3 percentage points compared to 2018.

The household energy consumption rate per m² showed a decreasing trend. The volume of consumption in 2023 amounted to 18.7 kgoe/m², compared with 22.1 kgoe/m² in 2013 (cumulative annual decrease of 1.6% per year). Adjusted for climatic corrections, consumption per m² decreased by 0.6% per year.

Chart 2. Energy consumption in households per m²



Industry

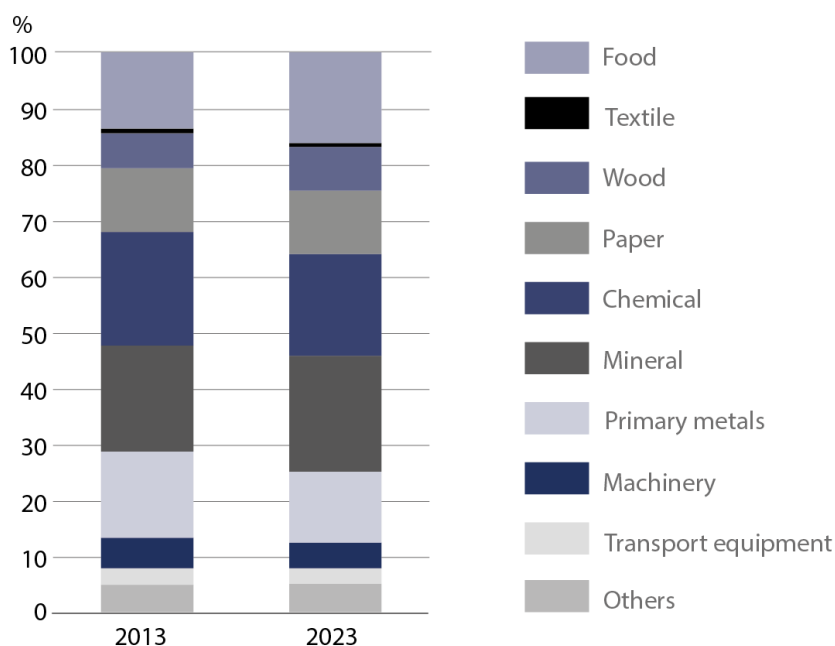
Between 2013 and 2015, final energy consumption in industry showed slight fluctuations, followed by a clear increase starting in 2016, reaching a peak of 18.2 Mtoe in 2019. Since 2021, a steady decline in consumption has been observed, amounting to 14.7 Mtoe in 2023. This represents a decrease of 9.7% compared to the previous year and marks the lowest level in the analysed period.

Between 2013 and 2023, a decrease in consumption was observed for manufactured gases (by 38.2%), solid fossil fuels (by 34.8%), and electricity (by 11.0%). On the other hand, consumption increased for liquid fuels (excluding biofuels) by 29.0%, heat by 16.9%, natural gas by 13.3%, energy from renewable sources (RES) and biofuels by 23.5%, and non-renewable waste by 69.2%.

Within the structure of final energy consumption in the manufacturing industry, three energy-intensive sectors dominated: the food, chemical, and mineral industries, which together accounted for 55.1% of total energy consumption in this sector in 2023 (compared to 52.9% in 2013).

Final energy consumption in the industrial sector has continued to decline.

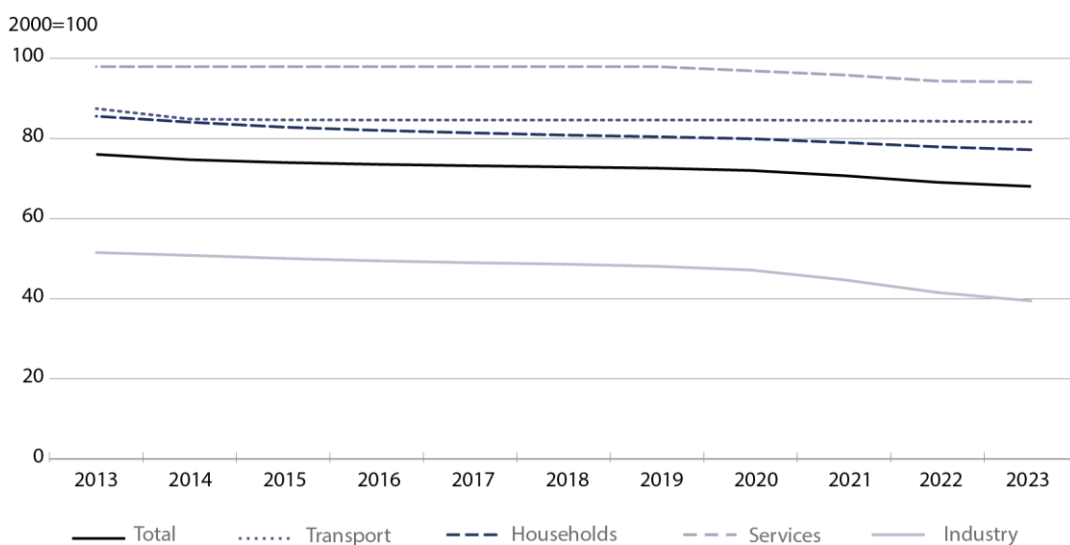
Chart 3. Structure of final energy consumption in manufacturing by branch



ODEX indicator

The ODEX index, which measures progress in energy efficiency for the entire economy (base year 2000 = 100), decreased from 76.0 to 68.1 between 2013 and 2023, indicating a 10.5% improvement in energy efficiency during the analysed period. The cumulative improvement rate was 1.1% per year. The fastest rate of improvement was recorded in industry, with an annual increase of 2.6%. For this sector, the index value reached 39.5 in 2023, representing a 23.4% improvement in energy efficiency compared to 2013. The slowest progress was observed in the transport sector, where the annual improvement rate was 0.4% between 2013 and 2023. In the household sector, the average improvement rate was 1.0% per year, resulting in a 9.8% increase in energy efficiency over the period.

Chart 4. ODEX indicator



Decomposition of energy consumption

Between 2013 and 2023, final energy consumption in the economy increased by 6.3 Mtoe. This increase was mainly driven by factors related to economic activity (15.1 Mtoe), particularly in industry (7.3 Mtoe) and transport (4.3 Mtoe). The increase in consumption was also influenced by the growing number of households (1.6 Mtoe) and changes in lifestyle (0.8 Mtoe). The most significant factor limiting energy consumption was the implementation of energy-saving measures, which reduced consumption by 7.7 Mtoe, especially in industry (4.8 Mtoe) and households (2.3 Mtoe). Additionally, favourable weather conditions contributed to a reduction of 2.9 Mtoe. The transport sector recorded the largest increase in energy consumption (8.0 Mtoe), whereas in agriculture, consumption remained unchanged, and in industry and services, it declined slightly.

Energy efficiency of the economy improved during the 2013–2023 period. The fastest rate of improvement (2.6% per year) was recorded in industry, while the slowest was in the transport sector (0.4% per year).

Economic activity had the greatest impact on the increase in energy demand

Table 3. Influence of factors on the change in final energy consumption

Specification	Industry	Households	Transport	Services	Agriculture	Total
	Mtoe					
Consumption change	-0.5	-1.1	8.0	-0.1	0.0	6.3
Factors:						
Activity	7.3	—	4.3	3.5	0.1	15.1
Stock of dwellings	—	1.6	—	—	—	1.6
Lifestyle	—	0.8	—	—	—	0.8
Structural changes	-2.4	—	0.5	—	—	-1.9
Energy savings	-4.8	-2.3	-0.2	-0.4	—	-7.7
Weather conditions	—	-2.0	—	-0.8	—	-2.9
Others	-0.6	0.9	3.4	-2.3	-0.1	1.2

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Terms used in official statistics

[Primary energy](#)

[Derived energy](#)

[Energy consumption](#)