

Energy efficiency in years 2010-2020

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↑ 0,7%
Increase of energy efficiency in Poland in 2020 compared to 2019

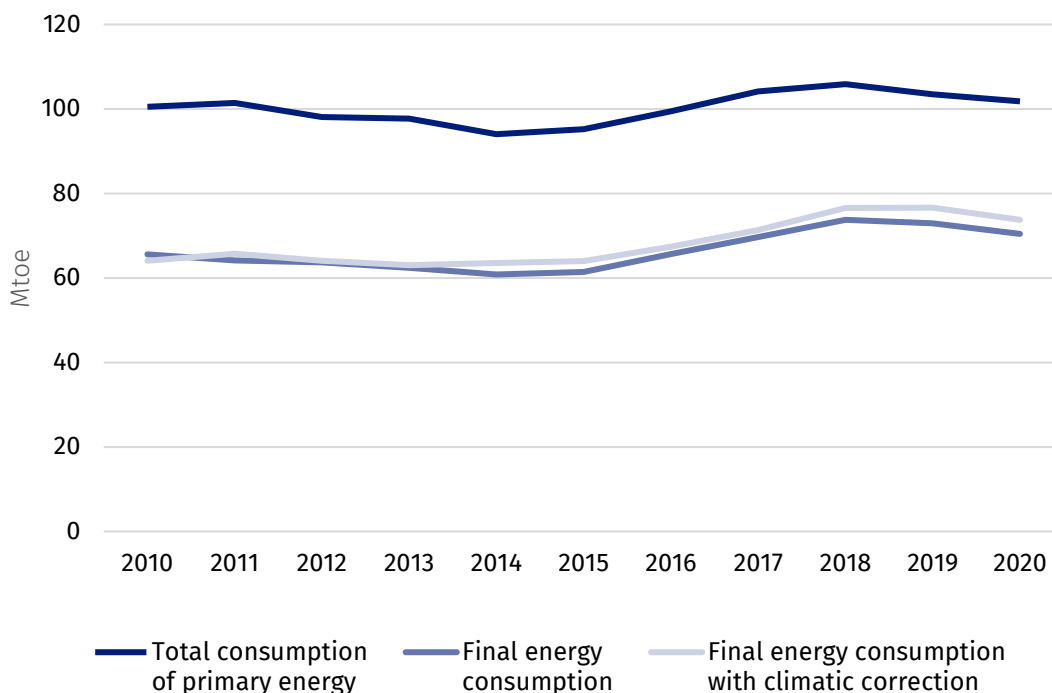
In Poland, in 2020, energy efficiency increased by 0.7% compared to 2019. In years 2011-2020, the annual growth rate of energy efficiency amounted to 1.5%. Primary energy intensity decreased during this period by an average of 2.8% per year, and the final energy intensity by 2.2%. The fastest rate of improvement in energy efficiency was recorded in transport (by 2.3%/year).

The **total primary energy consumption** increased between 2010 and 2020 from 100.5 Mtoe to 101.8 Mtoe (0.1%/year). The highest consumption was in 2018 (105.9 Mtoe).

Final energy consumption increased in the analyzed period from 65.6 to 70.5 Mtoe, which means an average annual growth rate of 0.7%.

Total primary energy consumption in 2010-2020 increased by 1.3 Mtoe (0.1% annually)

Chart 1. Total primary energy consumption and final energy consumption



The **primary energy intensity of GDP** decreased in 2020 by 1.2% compared to the previous year, while the **final energy intensity of GDP** decreased by 0.9%.

Compared to 2010, the energy intensity of GDP in 2020 decreased by 24.7% (primary) and 20.3% (final), after taking into account the climatic correction, the pace of improvement was slightly lower (21.1% and 14.5% respectively). The pace of improvement in 2016-2020 was lower than in the first half of the presented period.

Table 1. Rate of change of energy intensity of GDP (%/year)

Rate of change	2011–2015	2016–2020	2011–2020
Primary intensity of GDP	-3.97	-1.62	-2.80
Primary intensity of GDP with climatic correction	-3.15	-1.51	-2.34
Final intensity of GDP	-4.16	-0.28	-2.24
Final intensity of GDP with climatic correction	-2.91	-0.18	-1.56

Households

The share of energy consumption in households in the final energy consumption was 25.6% in 2020. The most important end-use was space heating, the share of which was 66.0% in 2020. 16.1% of energy was used for water heating, 9.6% for lighting and electrical appliances, and 8.2% for cooking.

Table 2. Structure of energy consumption in households by end-uses (%)

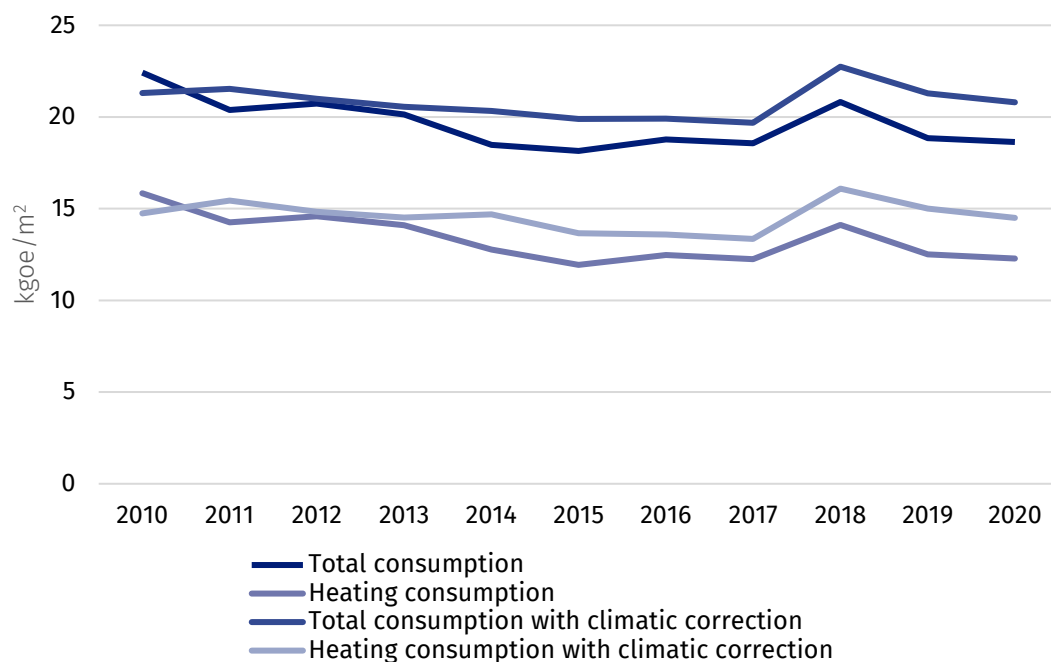
Specification	2015	2016	2017	2018	2019	2020
Total	100.0	100.0	100.0	100.0	100.0	100.0
Space heating	65.5	66.2	65.8	68.4	66.4	66.0
Water heating	16.2	16.0	16.3	15.3	16.1	16.1
Cooking	8.5	8.3	8.3	7.5	8.0	8.2
Lighting	9.8 ^{*)}	9.6 ^{*)}	9.6 ^{*)}	8.7 ^{*)}	9.4 ^{*)}	9.6 ^{*)}
Electrical appliances						

^{*)} including lighting and electrical appliances

Energy consumption in households per m² showed a downward trend; an increase in consumption was observed in 2012, 2016 and 2018, in the remaining years (including 2020) a decrease in consumption was recorded. The amount of consumption in 2020 was 18.6 kgoe / m², compared to 22.4 kgoe / m² in 2010 (a decrease of 1.8% / year). After taking into account the climate correction, consumption per m² decreased by 0.2% / year.

In 2020, 66.0% of energy consumed by households was allocated to space heating

Chart 2. Energy consumption in households per m²



Industry

Final energy consumption in industry reached the lowest value in 2010 (14.3 Mtoe). In the following years, slight fluctuations in consumption were observed, and since 2016 there has been a significant increase to the level of 18.2 Mtoe in 2019. In 2020, energy consumption decreased by 6.1% compared to the previous year.

In 2020, compared to 2010, consumption increased in case of electricity (by 40.6%), natural gas (by 15.8%), heat (by 27.7%) and other carriers (by 116.9%). Consumption decreased in the case of liquid fuels (decrease by 28.7%) and coal (by 16.2%).

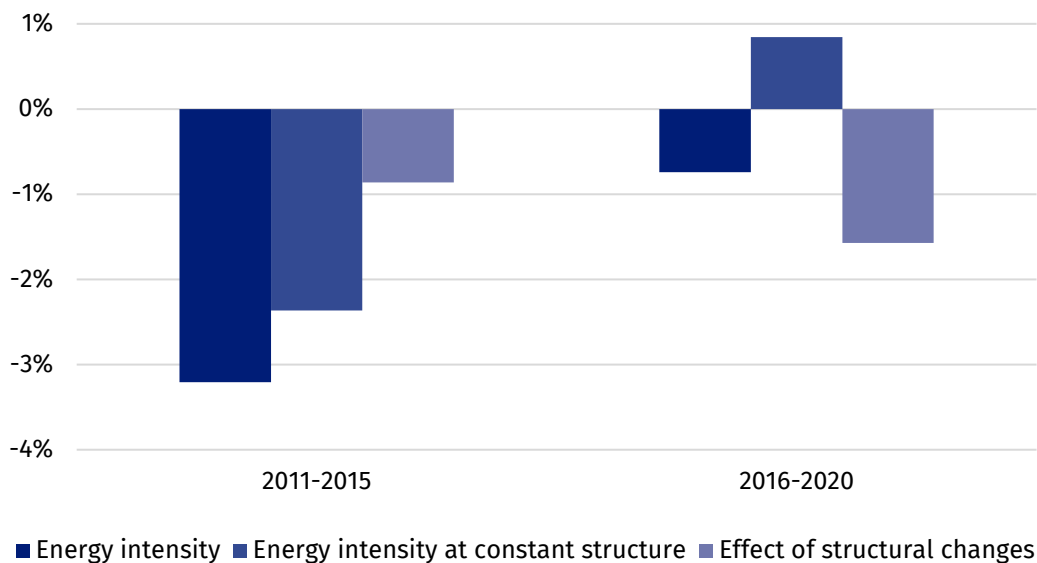
The highest rate of decrease in energy consumption of added value in 2020 compared to 2010 was recorded in the machinery and textile industries, while in the steel, food, paper and transport means industries an increase in energy consumption was observed.

Table 3. Average annual change of energy intensity of value added in years 2011–2020

Industry	Average annual change
Food	0.9%
Textile	-3.9%
Wood	-0.2%
Paper	0.3%
Chemical	-0.7%
Mineral	-2.6%
Primary metals	0.4%
Machinery	-5.7%
Transport means	2.9%
Others	-0.7%

In 2016-2020, the rate of decline in energy consumption in manufacturing amounted to 0.7% / year, structural changes contributed to a decline by 1.6% / year, while energy consumption in a fixed structure, i.e. after eliminating the impact of changing shares of individual industries in the overall size of the processing industry increased by 0.8% / year.

Chart 3. Energy intensity of manufacturing – impact of structural changes (%/year)



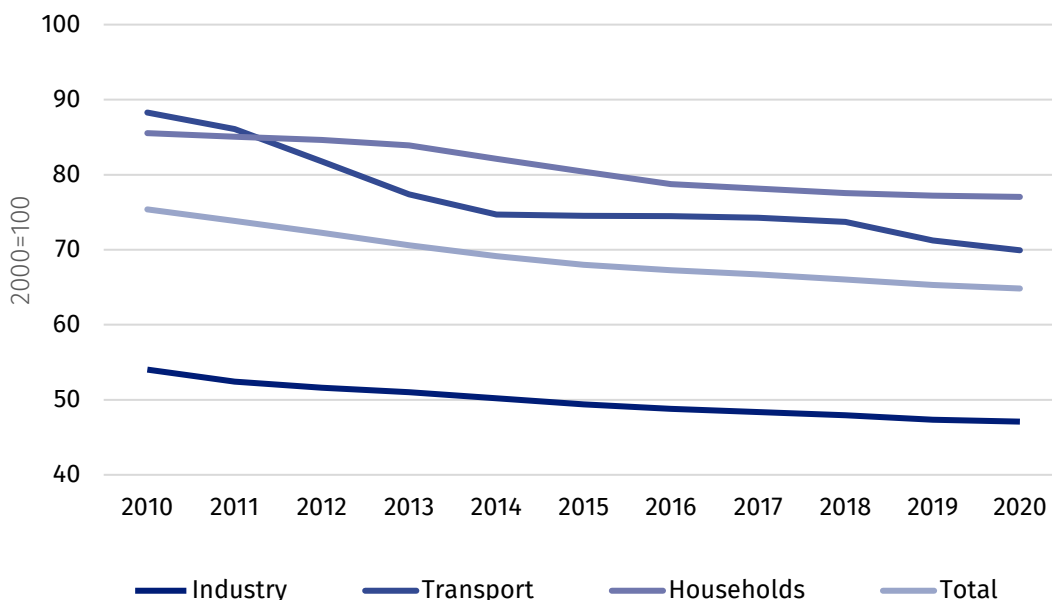
Structural changes reduced the energy consumption in manufacturing by 1.6% / year in 2016-2020

ODEX indicator

The ODEX index calculated on the basis of 2000 = 100 decreased in 2010-2020 from 75.4 to 64.8 points. The average rate of improvement was 1.5% / year. The fastest rate of improvement (2.3% annually) was recorded in transport, for which the value of the index was 69.9 points in 2020. The slowest pace of improvement took place in the household sector, where the annual improvement in 2011-2020 amounted to 1.0%. In the industrial sector, the average pace of improvement was 1.4%, and the value of the indicator in 2020 was 47.1 points.

The fastest rate of improvement (2.3% per year) was recorded in transport, the slowest - in households (1.0% per year)

Chart 4. ODEX indicator



Decomposition of energy consumption

Economic activity had the greatest impact on the change in consumption, the increase of which contributed to an increase in energy demand by 13.7 Mtoe in 2020 compared to 2010.

In the case of households, the factors influencing the increase in energy demand were the increase in the number of dwellings and the change in lifestyle (larger apartments). Structural changes in industry reduced energy consumption by 1.2 Mtoe and in transport increased by 1.9 Mtoe. Energy savings totaled 9.6 Mtoe, the largest were achieved in transport (5.1 Mtoe). Weather conditions reduced energy consumption by 4.8 Mtoe, and other factors increased by 1.6 Mtoe.

Table 4. Impact of selected factors on final energy consumption in years 2010–2020 (Mtoe)

Specification	Industry	Households	Transport	Services	Agriculture	Total
Consumption change	2.8	-1.0	4.6	-1.6	0.1	4.8
FACTORS						
Activity	5.4	-	5.7	2.7	-0.1	13.7
Stock of dwellings	-	2.4	-	-	-	2.4
Lifestyle	-	0.8	-	-	-	0.8
Structural changes	-1.2	-	1.9	-	-	0.7
Energy savings	-2.2	-2.2	-5.1	0.0	0.0	-9.5
Climate	-	-3.5	-	-1.3	-	-4.8
Others	0.8	1.7	2.0	-3.0	0.2	1.6

In the case of quoting data from the Statistics Poland, please provide information: "Statistics Poland data source", and in the case of publishing calculations made on data published by the Statistics Poland, please provide information: "Own study based on Statistics Poland data".

Prepared by:
Enterprises Department
Director Katarzyna Walkowska
Tel: (+48 22) 608 31 25

Issued by:
The Spokesperson for the President
of Statistics Poland
Karolina Banaszek
Phone: (+48) 695 255 011

Press Office

tel.: (+48 22) 608 38 04

e-mail: obslugaprasowa@stat.gov.pl



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[Energy consumption](#)