

Energy balance

REVIEW OF THE STATE OF BELARUS' ENERGY
INFRASTRUCTURE UP TO 2023



Analytical Report

Introduction

The main source of energy statistics in Belarus has been the statistical digest “Energy Balance” (hereinafter referred to as the Digest), which the National Statistical Committee has published annually. The information is presented in the form of tables of time series and energy balances.

But starting in 2021, Belstat stopped publishing the digest. Therefore, the data after 2020 are not official and are the result of collection from unofficial sources. Data is collected from various sources and often do not correspond to one other. This explains the discrepancy in the graphs and balance of energy resources. In addition, various sources provide data at different times, so some data is available until 2023, and some only until 2022.



Main conclusions

The general background for the analysis of 2023 in macroeconomic terms is GDP growth by 3.9% and a population decline of almost 60,000 people.

In 2020, the heating season was the mildest, and in 2021, on the contrary, the coldest. The 2022 heating season was closer to average values. In 2023, it can be said that the heating season was normal for our latitudes, but slightly warmer than in 2022. Therefore, a reduction in the consumption of some types of fuel used in heating is likely.

Belarus' energy intensity continues to stagnate, with no visible progress in the long term (virtually no change since 2015). Usually, as GDP increases, energy intensity decreases, but this did not happen in 2023. This situation can be explained by the fact that the main driver of GDP was industry as a more energy-intensive sector of the economy.

The SDG 7.2.1 achievement indicator – renewable energy consumption as a percentage of total final energy consumption – has significantly decreased and returned to 2019 values. It seems that with the shutdown of new projects using renewable energy sources, the authorities have returned to using existing equipment.

The installed capacity of energy production from renewable sources (in watts per capita) also remains virtually unchanged. A small increase is more likely due to a decrease in the population than the introduction of new capacities. The increase in capacity in 2022 was almost entirely determined by the Rechitsa solar power plant, which was launched and then seized, nationalized, and now essentially has capacity, but is not producing electricity. In reality then this indicator has remained unchanged since 2020.

After the launch of the nuclear power plant, the energy self-sufficiency indicator has increased sharply and already reaches almost 30%. However, if we do not consider nuclear power plants as a local source of energy (fuel for nuclear power plants is imported), then it can be said that efforts to strengthen energy independence have practically ceased.

In 2023, GDP growth concentrated in the most energy-intensive sectors led to an increase in electricity consumption to 41.1 billion kWh. However, even taking this into account, electricity consumption compared to 2021 increased mainly due to the population's use of electricity for electric heating.

Data on electricity consumption for electric transport is also known – 17 million kWh. In terms of electricity consumption, this is still an insignificant figure.

Starting in 2021, the volume of imports has been decreasing annually. This is primarily due to the launch and increase in electricity production at nuclear power plants.

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General socio-economic and meteorological indicators

Socio-economic indicators

To perform an analysis of energy consumption, the general context of the country's socio-economic status must be understood. The main indicator characterizing the change in the general level of economic development is the gross domestic product (hereinafter referred to as GDP).

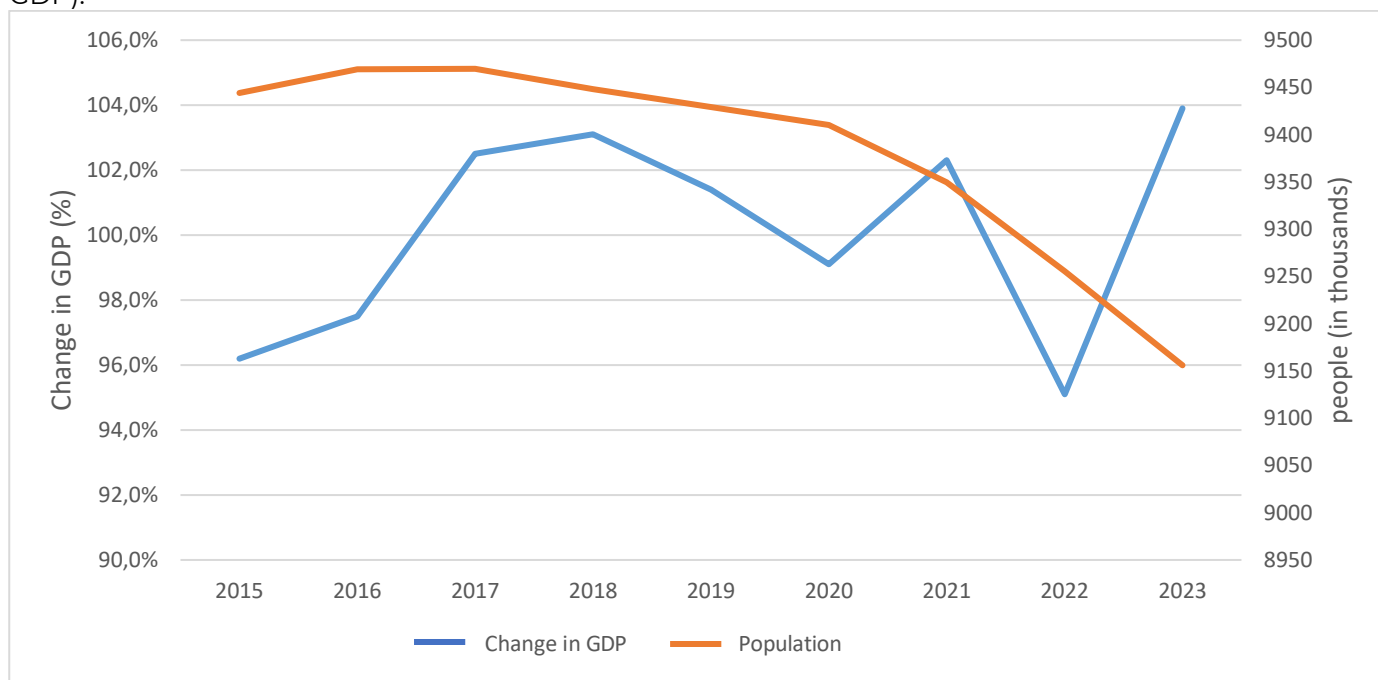


Figure 1 – Change in GDP

In 2020, GDP declined amid the COVID-19 pandemic and the political crisis following the elections and seizure of power. In 2021, GDP grew, largely attributed to the global recovery growth after the end of the pandemic. In 2022, GDP declined again as a result of the loss of the Ukrainian market, restrictions on trade with the EU, and sanctions imposed for supporting Russia in the war against Ukraine. In 2023, GDP increased significantly compared to 2022, influenced by a number of factors, including increased demand for Belarusian products in Russia after other companies left, an increase in military contracts, financial stimulus for the economy, and favorable conditions on the oil market, among other factors.

The population has been steadily declining over the past 5 years. In recent years, this decline has only accelerated.

Meteorological indicators for the heating season

Meteorological indicators for the heating season are also important for assessing energy consumption. The most comprehensive indicator is the degree-day value of the heating period. Degree-day is a parameter that shows how cold the weather was during the heating season.



Figure 2 – Number of degree days

In 2020, the heating season was the mildest, and in 2021, on the contrary, the coldest. The heating season of 2022 was closer to average values. In 2023, it can be said that the heating season was normal for our latitudes, but somewhat warmer than in 2022. Therefore, a reduction in the consumption of some types of fuel used in heating is expected.

Indicators characterizing the level of consumption of fuel and energy resources

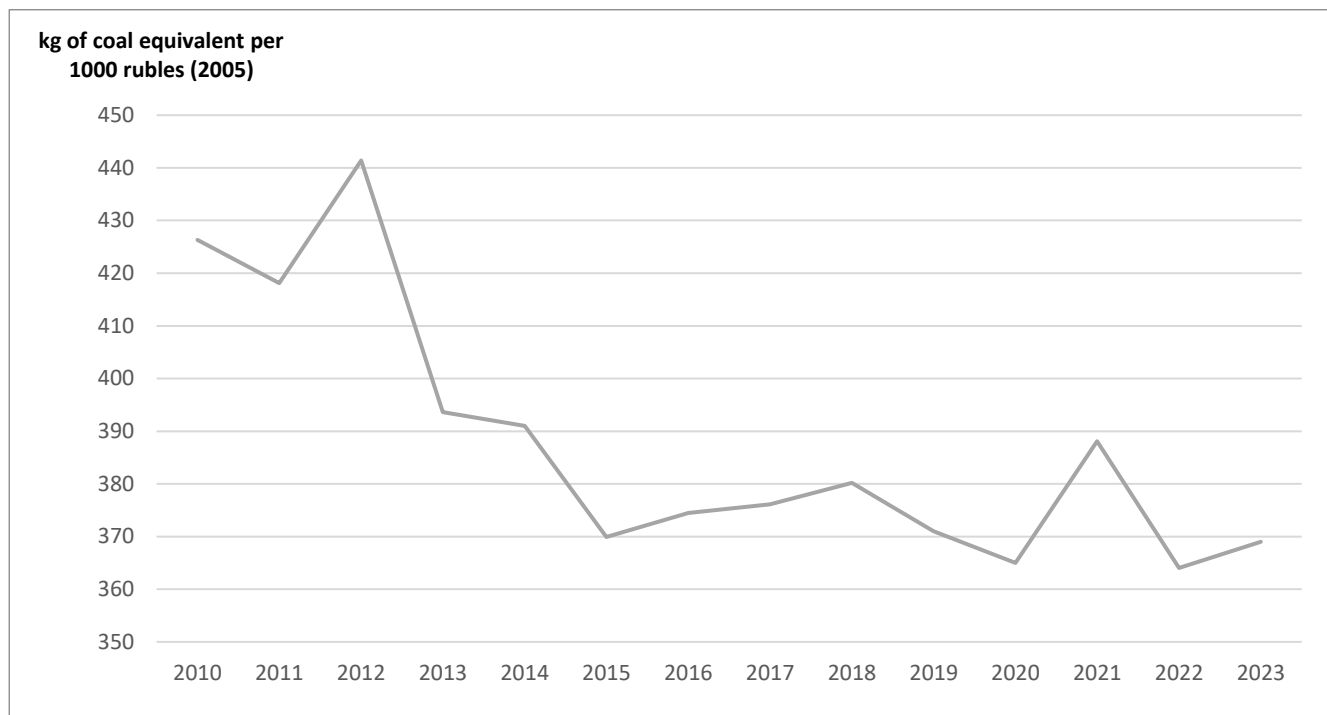


Figure 3 – Energy intensity

Belarus' energy intensity continues to stagnate, with no visible progress in the long term (virtually no change since 2015). Compared to 2022, energy intensity has even increased slightly. Usually, as GDP increases, energy intensity decreases (due to investments in more modern equipment or due to increased efficiency owing to more complete equipment utilization), but this did not happen in 2023. This situation can be explained by the fact that the main driver of GDP growth was industry, which is a more energy-intensive sector of the economy.

Sustainable Development Goals

In terms of achieving the SDGs, it can also be said that progress has either stalled or is regressing.

This paper presents indicators for targets 7.2.1 and 7.b.1. Indicator 7.1.1 (“Proportion of population with access to electricity”) reached 100% many years ago and has not changed since then. Indicator 7.1.2 (“Proportion of population with primary reliance on clean fuels and technologies”) requires further research and is not updated annually. The latest available data is for 2019.

Indicator 7.3.1 Energy intensity of GDP was provided above.

SDG 7.2.1 Renewable energy share in the total final energy consumption

For example, the growth of the indicator “Renewable energy share in the total final energy consumption” (SDG 7.2.1) looks like this:

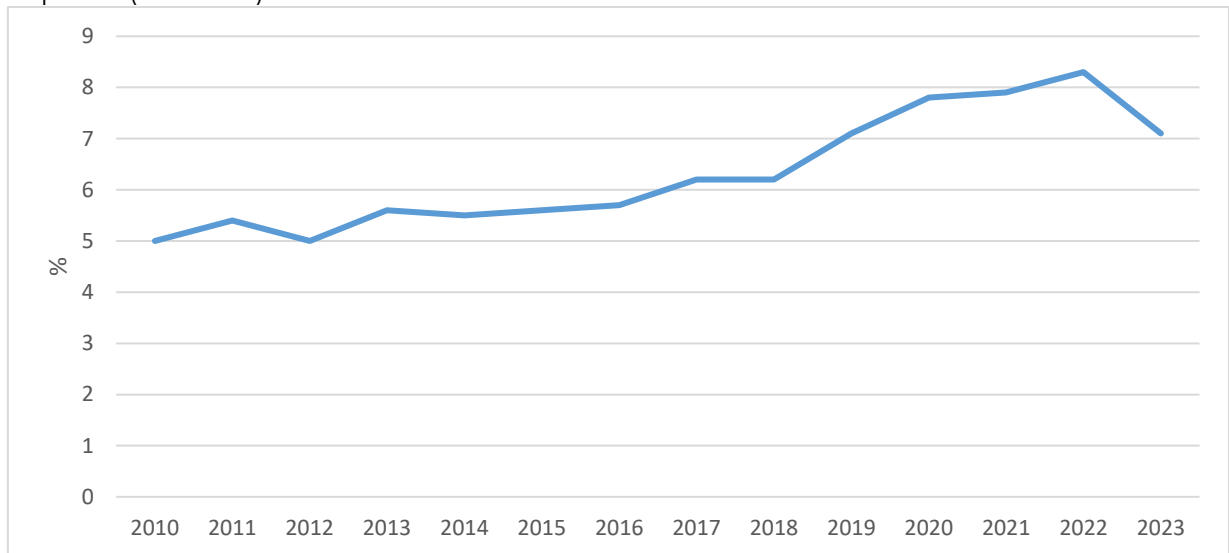


Figure 2 – Share of RES in total energy consumption

The indicator returned to 2019 levels. It seems that, having achieved the halt of new projects using renewable energy sources, the authorities have turned their attention to existing installations.

SDG 7.b.1 Installed renewable energy-generating capacity

The installed capacity of energy production from renewable sources also remains virtually unchanged.

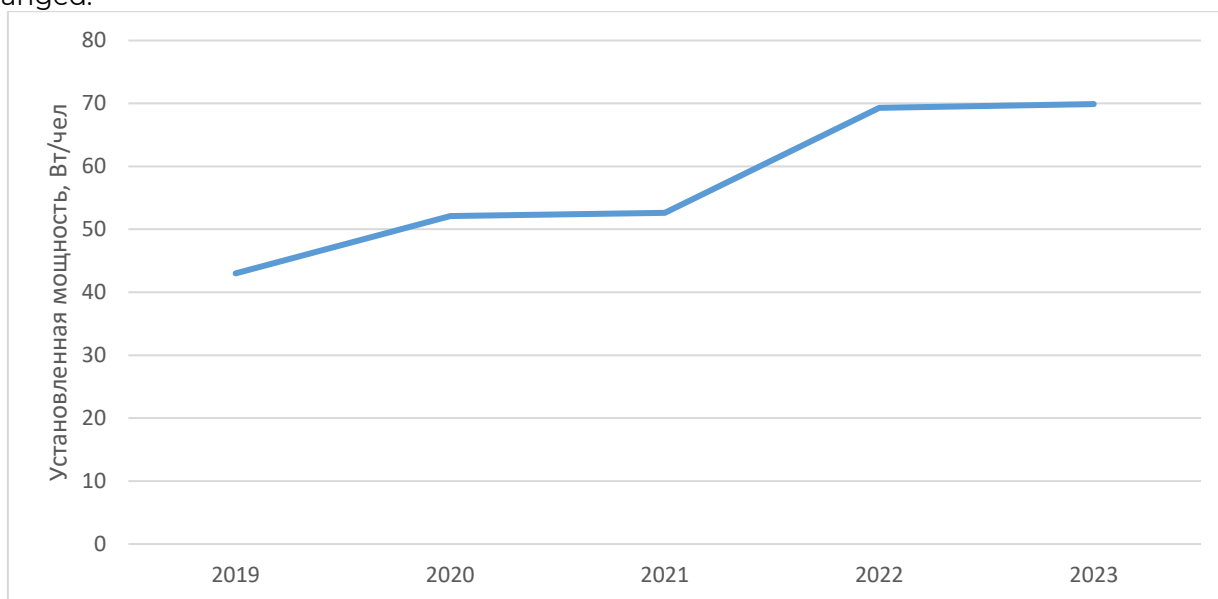


Figure 3 – RES capacity per capita.

This graph shows that practically no new capacities producing electricity from renewable energy sources were introduced in 2023. The slight increase in the indicator is due not to the growth of installed capacity, but to a reduction in population. The increase in capacity in 2022 was almost entirely determined by the Rechitsa solar power plant, which was launched and then seized, nationalized, and now has capacity, but does not produce electricity. In reality, this indicator has remained unchanged since 2020.

Energy security indicators

Energy independence

The state of energy security is similar to other areas.

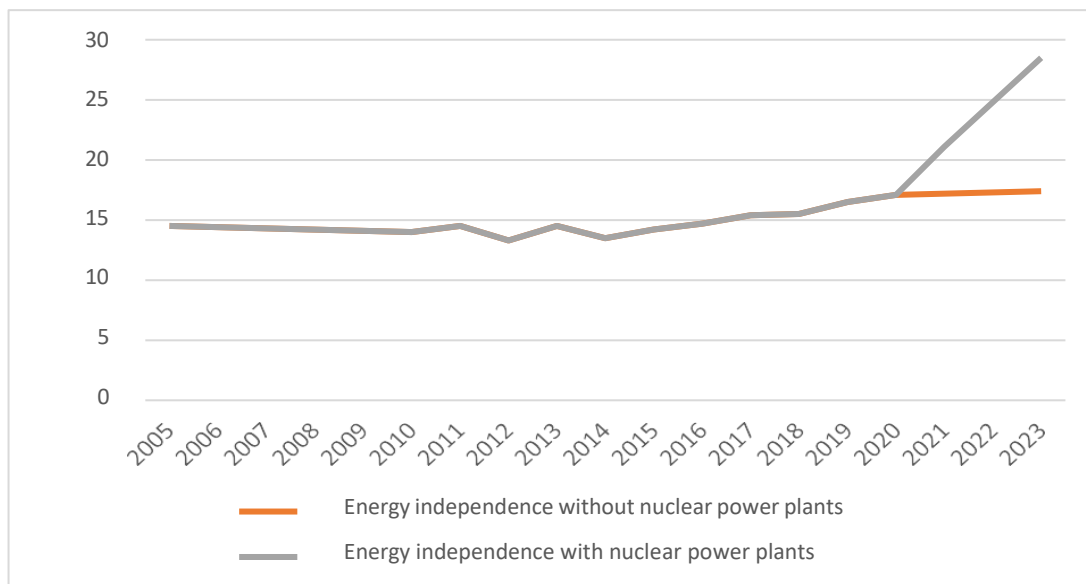


Figure 4 – Belarus' energy independence

Energy generated at a nuclear power plant is interpreted according to the rules of international statistics as produced on the territory of the country in which the nuclear power plant is located. The launch of the nuclear power plant and the production of electricity according to general rules leads to an increase in energy independence. Essentially, the energy produced is not a local source, but is imported.

The authorities themselves understand this and in their statements therefore often cite two figures at once - those with and without taking into account the nuclear power plant. The graph shows that after the launch of the nuclear power plant, energy independence, taking into account the nuclear power plant, has sharply increased and has already reached almost 30%. However, it is clear that without taking into account the nuclear power plant, the trend has changed towards reducing efforts to increase energy independence.

Balances of individual types of fuel and energy

Electricity

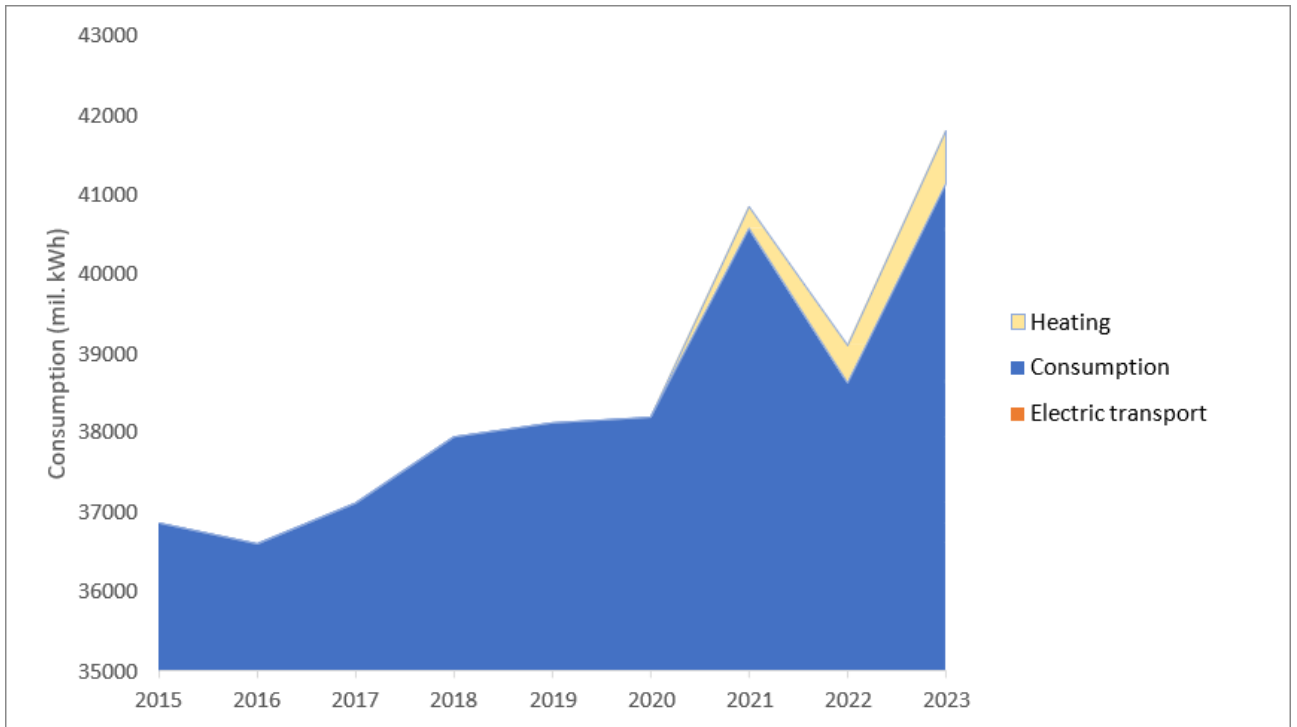


Figure 5 – Electricity consumption

After 2020, it is impossible to talk about trends in electricity consumption. The graph shows an increase in consumption in 2021, which is primarily due to the post-COVID recovery of the global economy. But support for Russia in the war against Ukraine and the sanctions imposed for this led to a reduction in GDP and electricity consumption. In 2023, GDP growth again was seen in the most energy-intensive sectors. However, even taking this into account, electricity consumption relative to 2021 increased mainly due to the growth in consumption by the population for electric heating.

Data on electricity consumption for electric transport is also known – 17 million kWh. In terms of electricity consumption, this is still an insignificant figure, indistinguishable on the graph.

Natural gas, including associated gas

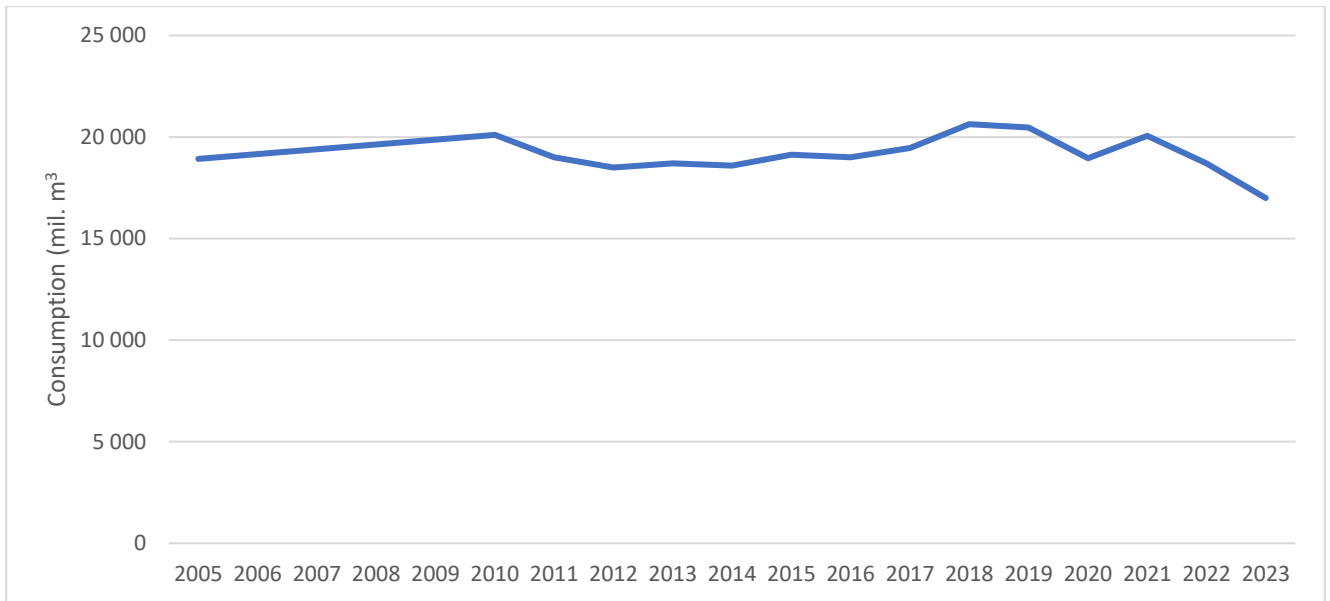


Figure 6 – Balance of natural gas

The gas being consumed is almost entirely imported. There is no natural gas production in Belarus. There is limited production (extraction) of associated gas during oil production. In 2021, 230 million m³ of natural gas were produced. Since then, the production volume has remained virtually unchanged. Since 2021, the volume of imports has been decreasing annually. This is primarily due to the launch of and increase in electricity production at nuclear power plants.