

# BALANCE OF COKING COAL MARKET IN UKRAINE



2024



Pre-war, Ukraine was one of the four countries globally that was self-sufficient with raw materials for steel production (coal, coke, iron ore, manganese ore, ferroalloys). Currently, ferroalloy plants are almost stopped. The suspension of part of the coking coal capacities at the one of the country's largest coal enterprise has been announced.

## Balance of coke and coking coal market in Ukraine

	2021	2022	2023	11m 2024
Coke consumption in Ukraine*, ths tons	10,253	3,096	2,892	3,167
Incl. - imports	790	359	329	622
Imports share	7.7%	11.6%	11.4%	19.6%
Coke production in Ukraine**, ths tons	9,658	2,740	2,567	2,546
Coking coal consumption in Ukraine, ths tons	14,487	4,111	3,851	3,819
Incl. - imports	11,484	2,802	439	1,050***
Imports share	79.3%	68.2%	11.4%	27.5%
Domestic supplies of coking coal concentrate, ths tons	3,003	1,309	3,412	2,769***

\* calculated basing on the rate of coke consumption per ton of pig iron and ferroalloys

\*\* calculated value (consumption + net exports)

\*\*\* assessment, based on 9M numbers

After the loss of some coal and coke capacities in 2014, Ukraine experienced a shortage of certain coal grades, which are necessary for the production of coke, as well as shortage of coke capacities. Therefore, even before the large-scale invasion, imports of coke and coking coal were substantial.

To maintain the production at the current level (6.5 million tons of crude steel in BF-BOF and BF-OHF routes and 1.3 million tons of merchant pig iron), Ukraine needs 3.2 million tons of coke per year, of which up to 20% will be imported in 2024. Also, such volumes of coke production require 3.8 million tons of coking coal concentrate, of which 3.1 million tons were locally produced in 2024.

The share of domestic coal in the market balance is 72.5% for 11 months of this year. But before the large-scale invasion, on the contrary, the share of imports was up to 80%. The focus on domestic coal supply occurred as a result of the hostilities, when iron and steel production decreased, and abilities for coal import worsened.

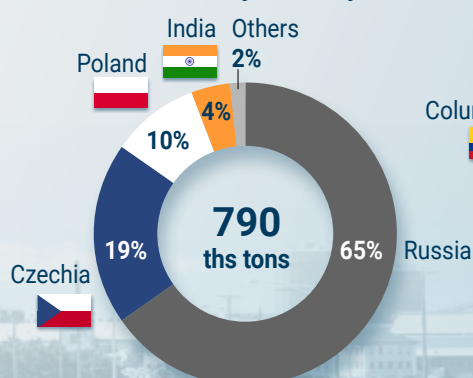
Currently, the industry faces a significant risk - the loss of major part of local coking coal supply. Ukrainian domestic supply of coking coal is highly concentrated, which is risky. According to our calculations, the share of Pokrovske Mine on the local market amounted to 66% in 2024. Ukrainian iron & steel industry may face the issue of finding sources for supplies of up to 2.5 million tons of coking coal or coke.

In 2021, Ukraine imported 0.79 million tons of coke. In 2024, imports may amount to 0.7 million tons. Currently, Poland is the main supplier of coke to Ukraine with a share of 85%. Poland is also one of the largest global exporters of coke and has the potential to increase supplies to Ukraine. For example, last year Poland sent 1 million tons of coke to India.

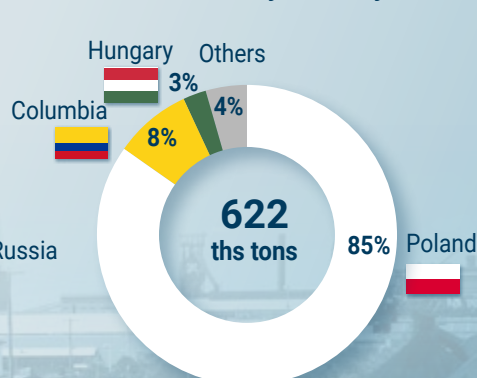
Prior to the full-scale invasion, coking coal imports into Ukraine amounted

## Structure of coke imports in Ukraine

Coke imports to Ukraine in 2021 by country

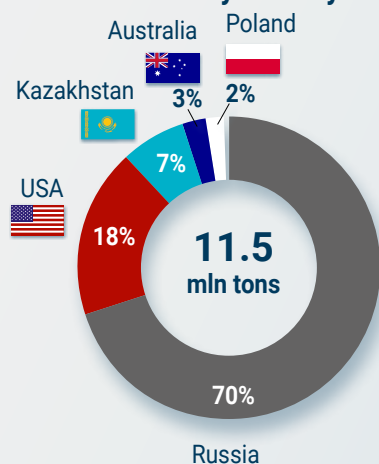


Coke imports to Ukraine in 11M 2024 by country



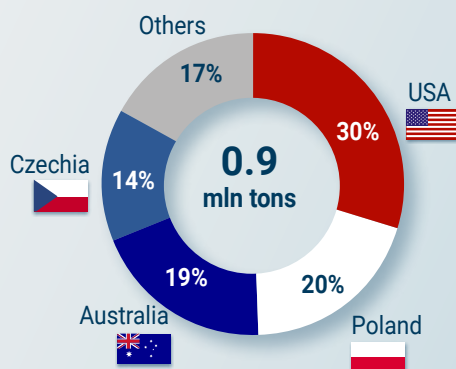
## Structure of coking coal imports to Ukraine

Coking coal imports to Ukraine in 2021 by country



**2.4 mln tons**  
Imports by sea in 2021

Coking coal imports to Ukraine in 9M 2024 by country



**0.58 mln tons**  
Imports by sea in 9M 2024

to 11.5 million tons, of which 2.4 million tons came by sea. So, we can talk about the physical possibility of importing 2-3 million tons of coking coal from such destinations as Australia, the USA or Canada if seaports operation in Ukraine is safe.

Poland is also a significant player on the global market, exporting 3.1 million tons of coking coal in 2023 to neighboring EU countries.

In other words, theoretically, Ukraine can increase coke imports approximately by 1 million tons from Poland and other countries, as well as the imports of coking coal by 2-3 million tons, which can meet the current needs of iron & steel production.

It's possible to physically ensure the work of iron and steel using imported coal. But economic feasibility of such supplies is under question. Coal from Australia (hard coking coal) will cost by approximately \$50 more, incl. transport costs. It will add 11% to the production costs of crude steel.

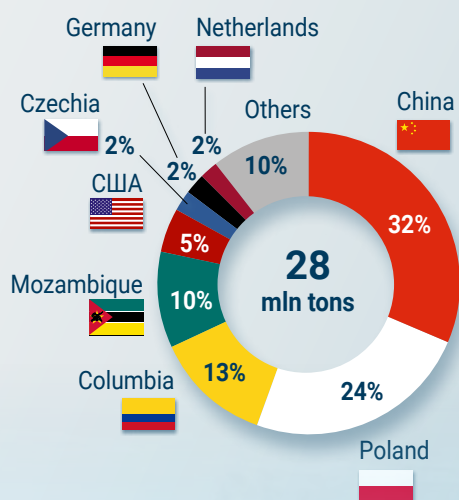
Currently, steelmakers do not have such a margin. According to our estimates, the EBITDA margin of steel production in Q4 2024 is negative. Next year, we expect a further decrease in the average price of flat rolled products by 5% on European market, due to weak demand and excess capacities. Therefore, Ukrainian producers will have to limit the exports of steel products to certain regions, associated with higher transport costs. So, as a result, steel production in Ukraine will reduce.

The use of imported raw materials in Ukraine also leads to the loss of the advantages associated with vertical integration, which supported the competitiveness of domestic steelmakers. Last year, the price of coking coal (hard coking coal) exceeded \$300, which allowed Ukrainian companies to maintain their activities and investments. The transition to imported raw materials will significantly worsen financials of steel companies, their ability to support business, investments and social initiatives.

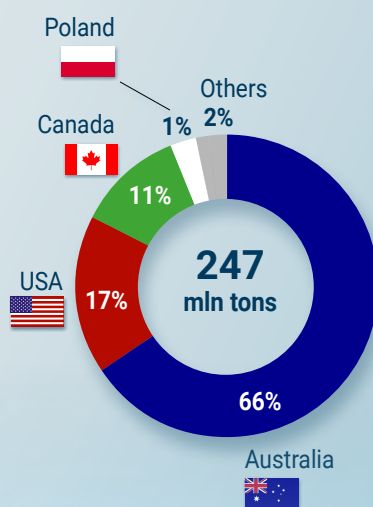
So, transition to imported coal will not lead to complete stop of iron and steel production in Ukraine, but a decrease in production volumes is likely, in particular due to a reduction in exports.

## From where Ukraine can import coke and coal

Global coke exports in 2023



Global coking coal exports in 2022



**Coke** is a solid fuel obtained from hard coal by heating it to high temperatures in the absence of air. Coke is used in blast furnaces producing pig iron as a fuel for melting blast furnace charge, as well as for recovery of iron from ore. In addition to the production of pig iron, coke is used in foundry, chemical and ferroalloy industries.

**Coking coal** is a specific coal brand, which unlike thermal coal, has a lower content of sulfur, ash and volatile substances. In the Ukrainian classification, coking coal includes grades G, GZh, Zh, KZh, K, PS and P. The international classification divides coal grades into hard coking coal, medium coking coal, and semi-soft coking

coal. Coal concentrate, the result of coal beneficiation, is used for the production of coke. The concentrate of different grades is mixed together in a coke production plant. When coal is heated in coke ovens to temperatures above 300°C without access of air, it becomes plastic, sinters, and turns into a solid carbon product – coke.

In 2023, **coke was produced by 5 plants**: Yuzhkoks, Kamet-Steel, Dnipro Metallurgical Plant, Zaporizhkoks, ArcelorMittal Kryvyi Rih. Production output was 3.4 million tons of coke (based on 6% moisture content). This is 64.2% less than in 2021, when 7 plants were operating, including Avdiyivka Coke Plant and Azovstal. Avdiyivka

Coke Plant was the largest plant, which produced 2.6 million tons of coke in 2021.

**Pokrovske Mine** (Donetsk region, Pokrovske), **the only large producer of coking coal in Ukraine**, produces coal of the K grade (hard coking). In 2023, Pokrovske produced 5.6 million tons of coal. In 5 months of 2024, the enterprise mined 2 million tons of coal. For comparison, in 2021, production amounted to 6.2 million tons. Industrial coal reserves amount to more than 200 million tons.

The largest consumers of coke in Ukraine are the four steel plants: ArcelorMittal Kryvyi Rih, Zaporizhstal, Kamet-Steel, and Dnipro Metallurgical Plant (idle).

