



CENTRE FOR AIR POWER STUDIES

In Focus

New Delhi

CAPS InFocus: 21/2022

21 March 2022

Ukraine's Geo-Economic Significance: Critical Minerals and Resources

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Keywords: Ukraine Crisis, Geo-Economics, Foreign Policy, Minerals



Image Source: Mining Weekly



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The increasing significance of critical minerals in the clean energy transition and technological advancement has been shaping the new variant of geopolitical tension among countries. In the past decade, countries with such critical minerals have emerged as the investment centres for the world, around which all the geostrategies get going. The ongoing Russian-caused crisis in Ukraine is being seen as a geopolitically driven event, but the logic of commerce (geo-economics) is a more determining factor here than the logic of conflict. The geo-economic magnitude of Ukraine has been central to the US-Russia post-cold war interaction, making it the buffer zone of influence between these two cold war protagonists. This article is an analysis of the geo-economic significance of Ukraine in terms of critical minerals and how the ongoing crisis will affect its geo-economic interaction

Ukraine as the Geo-Economic Buffer Zone

Due to its strategic and geopolitical position, Ukraine is currently the major buffer point in the crisis between Russia and the West. However, the economy and rich resources of Ukraine are being seen as the hidden driving factors of the crisis. The geo-economic significance of Ukraine is intrinsically reflected in its industrial capabilities that serve aerospace, shipbuilding, and other military hardware needs; its advanced high-technology, IT sector, and cybersecurity; and its large reserves of several rare and critical minerals.¹

Besides the geopolitical factors, Russia has a major reliance on the Ukrainian transit route for its commercial purposes, which has started facing a risk with European access to Ukrainian resources. The US, Europe, and other western allies chose Ukraine to maintain their effective presence and block Russian assertiveness in a geo-economic strategy that continued to be driven by NATO deterrence. In fact, Denys Shmyhal, Ukrainian PM, said, "Ukraine can work with the European Union to harness Ukraine's potential in the extractive industry to build the globally competitive value-added production chains".²

Minerals and Resources in Ukraine

According to the Energy Information Administration analysis, Ukraine is an important transit country for all Russian supplies of natural gas and oil from Russia to Europe and other countries. The Dnieper-Donetsk region in the east, the Carpathian region in the west, and the Black sea of the Azov region in the south area of Ukraine have a high amount of hydrocarbon resources. Ukraine has more than 400 million barrels of proven oil reserves as of 2021.³

Despite having the second-largest natural gas reserves in Europe, Ukraine's export capacity is limited and insufficiently developed. The gas reserves have been remained unexplored due to the

disturbance by the USSR in Serbia during the 1970s, as a result of which all the exploration and gas production were transferred to Russia, leaving Ukraine's resources untapped. The Ukrainian gas transit system constituted an important corridor for Soviet energy expansion into Europe, which continued to be used by Russia and Central Asian countries for the same purpose. Besides gas, the hydrogen capacity of Ukraine is also underdeveloped, along with its biogas and biomethane sector, which have high energy potential but low development.⁴

Researchers have speculated that over 50,000 tonnes of lithium oxide are available in the eastern region of Ukraine, and if this assessment is proven correct, then Ukraine will have the world's largest lithium reserves. In terms of critical minerals, Ukraine has a large untapped concentration of rare minerals in the subsoil of the earth's crust, that requires financial assistance to reach its producing and exporting potential. The National Atlas of Ukraine, World Data Center, reported that "Ukrainian resources of rare minerals are unique and the largest in Europe." The most significant is the Ukrainian Shield with its 22 rare metal formations and deposits like Perha (Beryllium), Azov (Zirconium), rare earth series in Polokhivka, Stankuvate, Lithium (Shevchenko), and Tantalum-niobium-zirconium (Mazurivka).⁵ Besides geopolitical tensions, the ongoing Russia-Ukraine crisis is affecting the rare earth market, semiconductors, electric vehicles manufacturing, and gold industry, leading to hike in their prices.⁶

Figure 1: Total Energy Supply by source, Ukraine 1990-2019

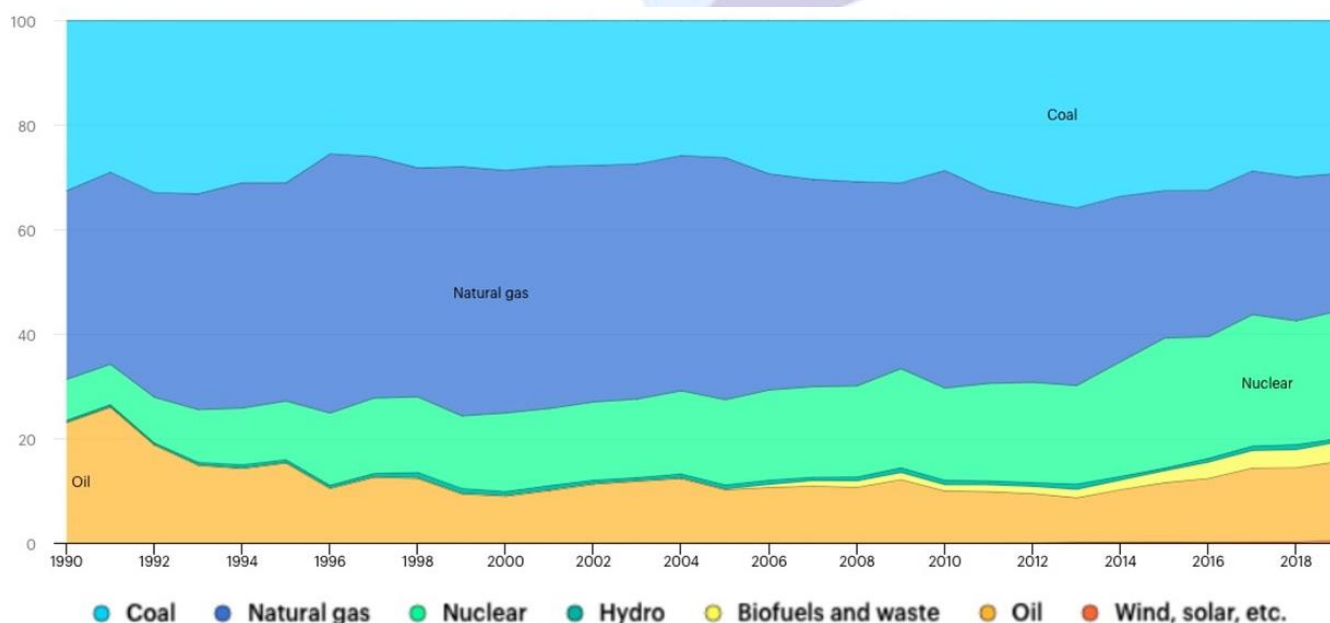


Image Source: Ukraine Energy Data and Statistics, International Energy Agency (IEA),

<https://www.iea.org/data-and-statistics/data-browser?country=UKRAINE&fuel=Energy%20supply&indicator=TESbySource>

Geo-Economic Engagements of Ukraine with Russia and the West

In 2019, Moscow and Kyiv signed a transit agreement to facilitate a smooth transfer of Siberian gas to the European Union using Ukraine's large gas transportation system. The two major pipeline systems that carry Russia's natural gas through Ukraine to Western Europe are:

- a) The Bratstvo (Brotherhood) pipeline that originates from Urengoy natural gas field—crosses from Ukraine to Slovakia, and splits into two directions to supply northern and southern European countries;
- b) The Soyuz (Union) pipeline originates from Orenburg natural gas field that links Russia's pipelines to natural gas networks in Central Asia, and supplies countries such as Slovakia, Hungary and Romania;
- c) A third pipeline from Russia via Ukraine to Balkan countries and Turkey.⁷

Russia, being a mineral powerhouse, has a great influence over the global supply chain of oil, gas, and even critical minerals. In comparison, the US is heavily dependent on critical minerals import for its defence use, clean energy transition and critical infrastructure. It even imports titanium, palladium, chromium, niobium, germanium, and scandium from Russia. The supply chain import of the US is going through a high struggle as a result of its trade war with high exporting China and now with high critical mineral source Russia, which is adding to the US's vulnerability. This made US President Biden announce new measures to strengthen and secure the mineral supply chain.⁸

The resources of Ukraine are perceived as one of the hidden driving factors of the Russian invasion that is geo-economic in nature. Ukrainian President Volodymyr Zelensky also said, "The Russian invasion came when Ukraine's critical minerals industry was trying to develop into a major player in the clean energy transition." The Russian action spurred majorly after "Ukraine beginning to the auction of the permit for exploration of its lithium reserves and other critical minerals, which can enhance the strategic importance of Ukraine on the global stage" as said by Roman Opimakh, head of state geological service of Ukraine. Moreover, the rising global attention to Ukraine's mineral deposits is also a concern, as Australia's European Lithium started securing rights in two promising lithium deposits in Ukraine, such as the Donetsk region (Eastern Ukraine) and Kirovograd (Central Ukraine). Even Chinese company Chengxin Lithium also applied to get its rights in these deposits.⁹ According to a Ukrainian survey, 20% of proven world reserves of titanium ores are located in Ukraine. In fact, China was the largest importer of titanium iron ores from Ukraine, followed by Russia and Turkey in 2021.¹⁰

Way Ahead

Even The logic of commerce in determining the logic of politics in the ongoing Russia-Ukraine crisis represents the growing role of geo-economics as a determinant of international relations and foreign policies. Does this mean a country with critical minerals and resources invites both investments and geopolitical tensions at the same time? The instances of Venezuela, Iran, Afghanistan, and now Ukraine are proving the case.

NOTES

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³ U.S. Energy Information Administration (EIA), “Ukraine Overview”, <https://www.eia.gov/international/analysis/country/UKR>. (Accessed on March 5, 2022).

⁴ Ibid.

⁵ Ibid.

⁶ Abizer Shaikhmahmud, “Rare earth metal prices will skyrocket as Ukraine-Russia tensions continue”, *Future Market Insights E&T*. <https://eandt.theiet.org/content/articles/2022/03/rare-earth-metal-prices-will-skyrocket-as-ukraine-russia-tensions-continue/>. (Accessed on March 6, 2022).

⁷ U.S. Energy Information Administration (EIA), “Ukraine Overview”, <https://www.eia.gov/international/analysis/country/UKR>. (Accessed on March 5, 2022).

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⁹ Hiroko Tabuchi, “Before invasion, Ukraine’s lithium wealth was drawing global attention”, *The New York Times*, March 2, 2022. <https://www.nytimes.com/2022/03/02/climate/ukraine-lithium.html>. (Accessed on March 5, 2022).

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