**Russia-Ukraine war impacts rare earths and critical materials supply**

**None 'None** [None; None; None; Russia-Ukraine War: Potential Implications for Rare Earths; None; https://www.critetf.com/posts/russia-and-critical-materials; Accessed 06-17-2024; cut by AI] \*double quotes converted to single quotes

Although not on the scale of China, Russia is a major player in the rare earths and critical materials industries.  As such, the current **war** in **Ukraine** could have potential **implications** for the **rare** **earths** and **critical** **materials** industries, including **impeding** the transition to **green** **energy**.  It may also present an investment opportunity for companies involved in these industries. **Russia** and Rare Earths and Critical Materials Russia **mines** a **significant** **amount** of rare earths and critical materials.  In 2021, Russia produced nearly 11% of the world’s nickel supply.[1]  Russia also supplies almost 37% of the world’s palladium, which is used in the automotive and semiconductor industries, and is a significant supplier of aluminum, cobalt, copper, chromium, palladium, and titanium.  Russia is one of the three largest producers of scandium.[2]  Trying to Gain Control of Ukrainian Resources The areas in Ukraine where Russia is currently centering its military operations are home to some of Europe’s largest supply of **recoverable** **rare** **earth** **resources**, although much of these are undeveloped.  Minerals and metals currently account for more than 30% of exports from Ukraine.  The country produces around $15 billion annually in natural resources, and the estimated value of recoverable reserves could be as high as $7.5 trillion.[3]  Ukraine holds 20% of the world’s titanium resources and the largest uranium deposit in Europe.[4] Potential **sanctions** on **exports** of critical materials from Russia, and Russian control of Ukraine, could **hinder** Europe’s **goal** of diversifying away from Chinese supply. As Well as Africa Africa has large reserves of natural resources, including rare earths and critical materials, and both China and Russia are trying to gain access to these.  China has provided billions of dollars of funding to gain access to African natural resources.  Russia, through private security groups, is providing military backing during times of conflict in return for access to lucrative mining deals.  China is also active in Latin America.[5] These initiatives may further China and Russia’s stranglehold on critical materials to the detriment of Western governments. What About Green Energy? Without rare earths and critical materials, the **transition** to green energy cannot occur.  Many of these **essential** **materials** are produced by Russia.  Potential sanctions on Russian **output** may **tighten** the already tight supply of these minerals.  Russian **control** over resource-rich areas of Ukraine could further constrict supply.  The fallout from the Russian-Ukrainian war could also intensify reliance on China for these critical materials – a undesirable scenario for Western governments. Investment Opportunity Prices of many materials, nickel being a prominent example, **spiked** at the onset of the war in Ukraine, highlighting the world’s concern over possible sanctions or Russia using these resources as a **political** **weapon**.  This highlights the need for Western government to secure their supply of rare earths and critical materials. Companies involved in the rare earths and critical material industries may present an attractive investment opportunity for investors. How may investors gain exposure to companies involved in the rare earths supply chain? The Optica Rare Earths & Critical Materials ETF (CRIT) The Optica Rare Earths & Critical Materials ETF seeks to provide investment results that, before fees and expenses, correspond generally to the total return performance of the EQM Rare Earths & Critical Materials Index. The Index is comprised of global public companies deriving significant revenue from rare earths or critical materials in the production, recycling, processing, or refining of rare earths or critical materials.     [1] The Role of Critical Minerals in Clean Energy Transitions, International Energy Agency (IEA), May 2021 [2] Johnston, Robert, Supply of Critical Minerals Amid the Russia-Ukraine War and Possible Sanctions, Columbia/SIPA Center on Global Energy Policy, April 2022 [3] Brewster, Murray, Natural Gas, Rare Earth Minerals: What’s At Stake for Ukraine in the Territory Russia Is Trying to Conquer, CBC, 5/27/22 [4] System Shock: Russia’s War and Global Food, Energy, and Mineral Supply Chains, Wilson Center, 4/13/22 [5] Cohen, Ariel, China and Russia Make Critical Minerals Grab in Africa While the US Snoozes, Forbes, 1/13/22 CRIT WHY CRIT? ABOUT CONTACT SUBSCRIBE > INVEST NOW > Follow @CRIT-ETF Follow @CRIT\_ETF Carefully consider the Fund's investment objectives, risk factors, charges and expenses before investing. This and additional information can be found in the Fund's full or summary prospectus, which may be obtained by visiting www.critetf.com. Read it carefully before investing or sending money.

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