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Battery Minerals in the Democratic Republic of Congo: Overcoming Challenges to Discover a New World-Class Lithium Deposit in the Kasese-Lulingu Pegmatitic Belts (KLP)

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Battery metals have experienced a surge since last year because of the need for the globe to transition to a green and low-carbon environment by creating electric vehicles, despite COVID-19's effects on the mining industry. The greatest outstanding reserves of critical metals, such as cobalt and lithium, which are crucial for the energy transition, are found in the Democratic Republic of the Congo, making it a strategically important country for the energy transition. The nation produced 115,371.91 tons of cobalt in 2022 as opposed to 93,010.53 tons the year before in 2021. There is a proven resource of around 44.6 million metric tons of lithium in the Manono deposit. The richest mining firms presently travel to the DRC to acquire mining permits of cited minerals for the aforementioned reasons. The Katanga area in the country's southeast is home to the battery mineral deposits that have been researched and recorded along with huge exploitation activities. Due to the increased demand for licenses, issues and disagreements have been taking part of the business in the country. Exploring and finding new deposits for transition metals for green energy thus becomes urgently necessary in DRC. Here, we describe a prospective larger pegmatitic zone that is located in South-Kivu province. The KLP belt was the world's greatest tantalum and third-largest niobium producer in the 1950s. According to early exploration results, the spodumene-bearing pegmatite in the KLP belt is significantly richer than the spodumene pegmatite in Manono. The granite-pegmatite rocks extend to over 500 km in the belt with the accessory minerals of pegmatite being 60 to 70% spodumene and amblygonite. The chance of finding a new world-class lithium deposit in this zone is still plausible, but the absence of infrastructures along with technological and environmental difficulties keep these enormous lithium reserves hidden and unexplored.