Why does cobalt supply need to move out of Africa?[1]

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Abstract: Over the years, cobalt's applications have evolved from making blue pigment to building blocks for a green economy. Cobalt forms an important part of the now ubiquitous lithium-ion batteries that power cell phones, laptops, a small but growing fleet of electric vehicles, and large-scale energy storage systems. As societies around the world set ambitious targets for harmonizing wind and solar energy with energy storage systems, as well as moving towards battery-powered transportation, the demand for lithium-ion batteries will increase rapidly. Batteries account for more than 40% of the total cobalt usage and will therefore, have a proportional impact on cobalt demand unless alternative battery chemistries emerge as commercial alternatives. Currently, Africa produces 71% and the Democratic Republic of Congo (DRC) alone, produces 62% of the world's cobalt ore, but contribute very little in the refined cobalt production. Chinese smelters, on the other hand, import more than 90% of the cobalt produced in Africa and dominate world supply of refined cobalt products. We investigate the policies and commercial frameworks across key countries that have led to this concentration of market power and its implications for the global cobalt supply chain. Preliminary results show that the reasons behind the near-monopsony of China on cobalt exports from Africa include commodity-backed loans to Africa by China, Chinese ownership of trading houses, and direct ownership of African mines. Focusing on North America, we further examine policy changes like zoning mineral bearing areas, streamlining permitting process, R&D investments to reduce mining and processing costs, and brining transparency around existing supply chains, that would encourage the development of domestic cobalt resources, including the Idaho cobalt belt in the US, and the Kings Bay in Canada.

Additional keywords: mineral supply chain; commercial framework; critical metals; lithium ion batteries

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