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Jacob Bourne

KoBold Metals starts ML mining operation in Greenland

Article

The news: The global rush to secure critical minerals for clean energy technologies has prompted a group of billionaire investors to back a mining endeavor in Greenland.

- **Bill Gates**, **Jeff Bezos**, and **Michael Bloomberg** are funding **KoBold Metals**, which will be exploring Greenland for cobalt, nickel, and other minerals. The company's recent funding round garnered **$192.5 million**, per Vanity Fair.

- In 2019, KoBold also raised funding for Greenland exploration from **Andreessen Horowitz** and **Breakthrough Energy Ventures**.
- KoBold announced Thursday that it will begin drilling on Greenland's west coast, having gained a **51% stake in the Disko-Nuussuaq project operated by Bluejay Mining**, per Reuters.
- KoBold's unconventional mining approach uses **machine learning (ML) algorithms to predict productive mining locations**, reportedly for both cost-savings and environmental benefits.

How we got here: Cobalt and nickel are important components of EV batteries and consumer electronics. However, availability of such minerals is becoming scarcer, fueling a race to secure supplies by diversifying where they're sourced.

- Human rights violations associated with cobalt mining activities in the Democratic Republic of Congo, including the deaths of child laborers, have spurred companies to look elsewhere for the metal, dubbed "green gold."
- Supply chain challenges have sent cobalt and nickel prices soaring. In March 2022, **cobalt leapt to $82,000 per metric ton, up from $29,000 per ton** in July 2020, per Vanity Fair. Demand for cobalt is predicted to swell at least threefold by the end of the decade.
- While a smartphone only uses a few cents worth of cobalt, an EV battery uses several thousands of dollars' worth, according to Vanity Fair. **A global clean energy transition would cost about $10 trillion** in cobalt, nickel, lithium, copper, and rare earth elements.

The problem: Diversifying cobalt and nickel supplies might help meet demand in the short term, but the long-term return on investments in new mining operations is less clear. Without question, however, it will be politically controversial.

- **Tesla**, which leads the global EV market, used lithium iron phosphate (LFP) batteries with no cobalt or nickel in nearly **50%** of its EVs manufactured in Q1 2022, per Electrek.
- With LFP batteries in the **Model 3** Tesla achieving a **267-mile range**, we'll increasingly see interest in the battery type, especially with more public charging stations on the way to help with range anxiety.
- R&D efforts to develop solid-state batteries, in addition to ramping up EV-battery and **e-waste** recycling efforts, can help diminish the need for more mining.
- Given Greenland's already ecologically fragile landscape due to climate change, scientists are concerned that mining could cause further damage despite KoBold's high-tech strategy.

Internet Users in Select Countries Who Are Willing to Pay Extra for Sustainable Goods, by Initiative, May 2021

% of respondents

	Products made in country	Organic products	More sustainable goods and services	Ethically sourced products	Brands that contribute to the community
France	47%	31%	30%	29%	20%
Germany	35%	34%	30%	23%	23%
India	33%	39%	32%	22%	26%
UK	33%	22%	33%	32%	22%
Brazil	30%	41%	48%	34%	38%
China	28%	39%	32%	30%	24%
US	27%	21%	18%	18%	18%
Total	**37%**	**31%**	**30%**	**27%**	**25%**

Note: ages 18+; worldwide figures includes countries not shown
Source: EY, "EY Future Consumer Index: 7th Edition," June 24, 2021

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