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ESG: The Canary in the Metal Mine

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The push toward electrical vehicles (EVs) and their infrastructure supports the demand for several metals, and we believe the metals we call commodities of the future—lithium, nickel, aluminum, and copper—are well positioned to benefit from this demand surge. And although mining is perceived to have negative environmental consequences, there are ways to reduce the environmental impact of the extraction of minerals.

Companies are striving to improve the sustainability of their operations by switching to renewable energy sources and recycling water.

Developed markets and EMs alike are joining the UN's "Race to Zero," committing to achieving net-zero carbon emissions by 2050 at the latest. And governments around the world are mapping out sizable investment plans earmarked for transition to more sustainable economies. For example, the European Green Deal Investment Plan, set forth by the EU, stated it will mobilize at least €1 trillion in sustainable investments over the next decade.

As industrialized economies look to transition to a sustainable future, they will need to make investments in infrastructure, which, apart from government commitments, will need resources and materials. In this regard, mining or recycling metals is necessary.

From an environmental, social, and governance (ESG) perspective, mining for metals can be a controversial topic requiring in-depth exploration.

On one hand, mining can have adverse environmental consequences; it often requires large surface areas, potentially damaging biodiversity, and processing can cause high emissions as well as water and soil pollution. On the social side, employee safety and working conditions have been an increasingly important topic for mining companies to address.

However, mining can have positive externalities as well. In many EM countries mining is a source of employment, providing higher income to communities, thereby contributing to higher standard of living. Mining also attracts foreign direct investments (FDI). Both those externalities contribute to higher social standards.

Like many industries, the mining industry is evolving. The European Copper Institute found that the copper industry reduced CO_2 emissions by 60% from 1990 to 2020 by investing in efficiency and reducing energy consumption. But the green initiatives have just started: nowadays, mining of "green" metals (which are metals produced with renewable energy sources and sustainable practices) is a new way to address emissions in the sector.

Low-carbon aluminum is one example of a green metal. Produced using mostly renewable energy sources such as hydropower, it typically emits about four metric tons of CO_2 equivalent per ton of aluminum produced. This is roughly three times below the industry's global average emission rate of 11 metric tons of CO_2 equivalent per ton of aluminum produced. Recently, a different labelling [1] but also trading [2] of the metal has been discussed, highlighting the focus on sustainable mining.

Companies have also been introducing low-carbon nickel, which will emit less than four metric tons of CO_2 equivalent per metric ton of nickel equivalent produced. This is a substantial reduction from the global industry average of 29 metric tons of CO_2 equivalent per ton of nickel equivalent produced.

So, while mining can have a sizable environmental footprint, metals extracted by mining companies are crucial to transition to cleaner economies and address climate change. The overall cost or benefit of mining to economies and societies will depend on how companies, investors, and consumers adjust and contribute to the world transition to a sustainable future.

Commodities of the Future Series
Part 1: Electric Vehicles Drive Commodity Demand
Part 2: Electric Vehicles Give Dr. Copper a Facelift
Part 3: The Canary in the Metal Mine

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[1] “Green aluminum needs common standard, labeling plan: Carbon Trust, Reuters, June 2020.

[2] “London Metal Exchange plans ‘low-carbon’ aluminium trading”, Financial Times, June 2020.

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