Opinion **The Commodities Note**

The mining sector's conundrum around the energy transition

Can the industry balance decarbonisation, ESG rules and mining asset investments?

Copper's use is fundamental to the electric vehicle story © Bloomberg

Julian Kettle 3 HOURS AGO

The starting gun has been fired. But the shift to cleaner forms of energy is going to be a marathon rather than a sprint, primarily because of huge inertia on both the demand and supply side of the metals equation.

According to Wood Mackenzie's analysis, the metals and mining industry will need to invest $240bn in base metals and gold over the next five years to meet energy transition and other end-use sector requirements.

More funding, however, is conditional on meeting environmental, social and governance (ESG) guidelines, burdening operators with extra investment. Will investors accept lower returns? I think it's a

conundrum that will cause some head scratching around the industry as public pressure mounts.

The electrification of transport is redefining several metals markets. As we see demand for batteries grow at an unprecedented rate, battery metals — cobalt and nickel — could face a supply crunch by the mid-2020s.

The story is similar for copper. Global wind technologies are expected to require an average of 450,000 tonnes per annum of the metal per year between 2018 and 2022, increasing to 600,000 tonnes per annum out to 2028. Offshore wind turbines will command an increasing share of copper consumption as larger turbines become commonplace.

Our figures show that more than 20m electric vehicle (EV) charging points are expected to be deployed globally by 2030, consuming over 250 per cent more copper than in 2019. Additionally, copper's use is fundamental to the EV story, each unit typically consuming anywhere between 50kg and 80kg.

For lithium, the story is somewhat different. With too much, much too soon, and a response to high prices, as well as unfulfilled hype around EVs, there is no need for additional supply until the mid 2030s.

So, where will the required supply come from? Some commentators have suggested substitution as a solution.

Aluminium is the only alternative to copper. However, despite it being lighter and almost three times cheaper, copper wins on size and efficiency. There is no magic bullet, silver or otherwise.

Unless the sector can provide the sufficient and timely supply of critical commodities, while delivering the 'necessary' financial returns, meeting the ESG-related performance expected of it while minimising the carbon burden being placed on the planet, metals will rapidly become the disabler rather than enabler of the energy transition story.

The social awakening around the long-term damage plastic has on our environment was sudden and severe. It is undeniable that, when viewed from pit to population, producing metal also produces carbon. As greater transparency is created, and demanded, around what that carbon contribution is, there may be a corresponding reluctance to consume the amount of metal we do.

And will the shifting goalposts of domestic mining and fiscal legislation, along with rising civil challenges, push western investors to prioritise near-term dividends over long-dated cash flows? While governments are increasingly talking about the need to secure critical minerals, the rhetoric has not yet been backed up with strategies that will facilitate investment from those producers who will need to develop resources.

The exception to this is, of course, China. With its long-term perspective, a desire to wean itself off imported oil, access to cheap capital and a willingness to turn a blind eye to ESG issues that others cannot, the country is racing ahead and dominating ownership of the necessary raw materials to create a self-sufficient supply chain.

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The Commodities Note is an online commentary on the industry from the Financial Times