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## Strategic Minerals; the new global battleground By Ian R. Coles

Nothing seems more fascinating to the minerals sector currently than electric vehicles (EVs) and battery metals. It's a melting pot of ideas, speculation and, most recently, global economic warfare.

The push towards EVs seems unstoppable. The Netherlands has pledged to ban the sale of petrol and diesel cars by 2025 and the UK and France by 2040. China is targeting zero-emission cars as 12% of new car sales by next year. EVs need batteries and batteries need metal. While the winning battery technology is not yet declared by common consent, lithium and cobalt will be key.

Only eight countries currently produce lithium. On the latest available figures four of those account for 93.5% of global production. There is, however, no shortage of lithium. It is just that most of it is in the ground. The future price curve is challenging. New projects take time to develop. The foreseeable level of development will not be able to keep pace with the demand curve. Volkswagen expects global demand for lithium to double by 2023. As a result prices in the short term are expected to rise. However prices will in time start to decline - possibly precipitously - as more projects come on line. This pricing dynamic makes the decision to fund

the development of a lithium project a very difficult one.

Cobalt production presents a greater challenge. Current production levels - as well as reserves - are dominated by one country - the DRC. The DRC currently accounts for something in the region of 55% of global production and more than 50% of accessible reserves. DRC is of course plagued with well documented issues from child labour to sudden changes in mining policy and taxation. Cobalt also appears principally as a by-product of copper and nickel mines. However, cobalt revenues only account for a negligible amount of a nickel or copper miner's revenue. As a result it is difficult to source financing for projects based on cobalt prices alone.

Batteries and EVs require rare earths. The 17 rare earth elements are also widely utilised in magnets, telecoms devices, lasers and other strategic products. While actually not rare, China currently supplies more than 90% of global rare earth production although it probably has no more than 30% of global reserves. China can therefore flood the market and skew the economics of developing new projects.

The market for EVs and batteries will be dominated by Asia (particularly China), Europe and North America. Given the lumpy supply dynamics the jockeying



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for position by industrial companies in these regions to secure supply is intense. Chinese companies in particular have been highly acquisitive, acquiring stakes in lithium projects in Argentina, Chile, Mexico, Australia and Ireland. China is building and financing the largest South American solar farm in order to pump subterranean brine in Argentina.

The statistics comparing the share of global supply of each of China and the US in stages of the lithium battery chain are truly breathtaking. A recent BMI study estimated that China produced more than 60% of global lithium in April, 2019. The comparable figure for the US was 1%. The US neither mines nor produces any appreciable amount of graphite, nickel or cobalt. The Chinese share of some of these commodities is in excess of 50%. China is in the lithium market for reasons beyond its domestic economy. The companies there which have spent big in investing in overseas projects have done so with a view to becoming global players.

These imbalances in global resource, supply and demand have been thrown into stark relief by the current US/China trade spat. The imbalance offers a readily available weapon to China as it seeks to respond to the imposition of tariffs by the Trump administration. Beijing has started to play the card. Towards the end of May President Xi made the point of publicly visiting a rare-earths magnet manufacturer. In the past month the price for magnet rare earths (used in over 90% of hybrid and electric cars) has risen by a third. The last time rare earth pricing was utilised as a proxy for other disputes (in 2010 between China and Japan in connection with an East China Sea dispute)) the price peaked at almost four times the current market price.

On 4 June the urgency of the situation was underscored when the Commerce Department released a report on US access to strategic minerals. This was in response to reports that the main planning body in China indicated it was looking at proposals to establish export controls on rare earths (in fact easier said than done). The report vowed that the US would take "unprecedented action" to address the supply chain issues with these strategic minerals, detailing multiple policy measures to achieve its goal. Steps include the expansion of rare earth trading with countries such as Canada, the European Union and Japan, and controversially, lifting the ban on exploring for uranium and other minerals in environmentally sensitive areas.

The report identified 35 minerals deemed critical to national security. The US is currently dependent on imports for more than 50% of domestic demand for 29 of these 35 minerals. In addition the US lacks any domestic production for 14 of them and has no domestic access to processing and manufacturing capabilities for many of them. Virtually none of various actions described in the report are capable of being implemented in the near future.

In the short term the supply of these minerals is set to play a key role in global trade. In the longer term industrial economies will need to think strategically to avoid being subject to the mercy of foreign competitors.

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