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Commodity shortages and fragile supply chains indicate price spikes ahead for "future facing" metals

Can end-users and governments ensure a supply of speciality metals for the green revolution?

Baker Steel Capital Managers LLP

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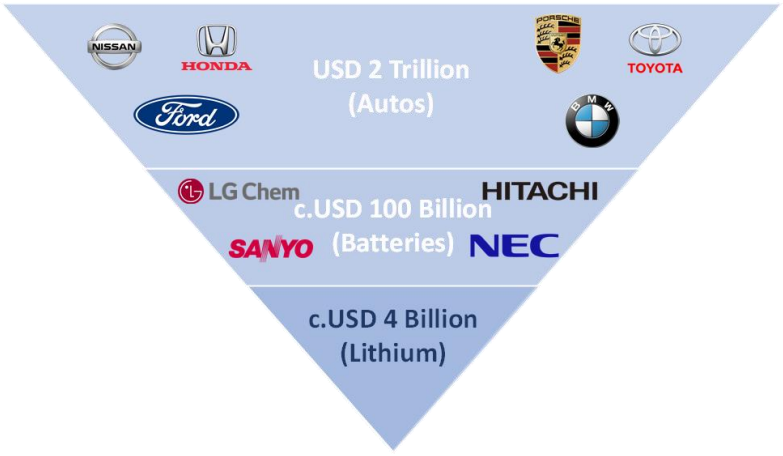
The recovery of economic activity around the world in the wake of the COVID-19 crisis offers a return to prosperity for businesses and consumers, as well as a chance for governments to "build back better". Yet as optimism grows, a fast-developing shortage of critical materials threatens a reality-check for executives and policymakers. The current global shortage of semiconductor chips is a prime example of such supply-side issues, having resulted in 1.4m fewer cars being produced worldwide during Q1 2021, and seems likely to persist given the higher volumes of semiconductors required for electric vehicles ("EVs"). We believe the semiconductor shortage can be seen in the context of a much larger issue for green technology manufacturers and governments around the world, in terms of supply chain management in an increasingly uncertain and polarised world.

We believe that a transformational bull market is underway for speciality metals, as the green revolution gains pace and the "green recovery" from the COVID-19 crisis offers the sector a boost from stimulus and regulation. Commodity prices appear well-supported as economic recovery, vaccine-rollout and rising inflationary pressure put upwards pressure on raw material prices. However, as the recover progresses certain sub-sectors appear poised to benefit disproportionately, most notably those with "future facing" applications in green technology, renewable energy and the broader shift towards sustainability. In particular, battery metals, along with copper, are supported by expanding demand forecasts, driven by the development and adoption of green technology.

As long-term value investors in the speciality metals sector, we consider how certain metals markets are likely to be impacted from a shift to a "just in case" manufacturing philosophy. Alongside this, we look at the impact of a more competitive and less collaborative relationship between the US and China on the sourcing of these raw materials and downstream products.

Importantly, these supply-side changes are taking place within the context of unprecedented forecast increases in demand for these metals, the implications of which range from potential price spikes in some cases, to sustainably higher prices in others. Both scenarios offer opportunities for the Electrum Fund, which invests in producers of these "future facing" metals.

Figure 1 - Supply/value chain for a lithium-ion battery

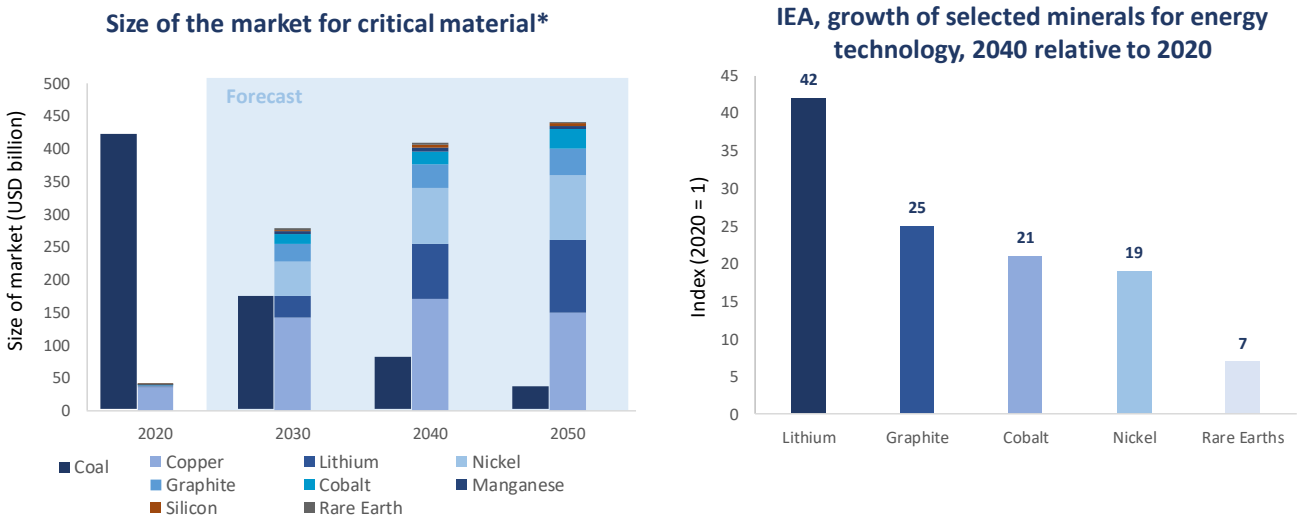


Source: Baker Steel Capital Managers LLP, Grand View Research, PR Newswire

Demand forecasts for the adoption of many green technologies have soared over the past year, though largely as a result of COVID-related stimulus spending. So far, the market has not reflected the extent of the change in

demand expectations either in the price of the enabling commodities or the equity valuations of the mining companies.

Figure 2 - Speciality metals face soaring demand forecasts for energy technology uses



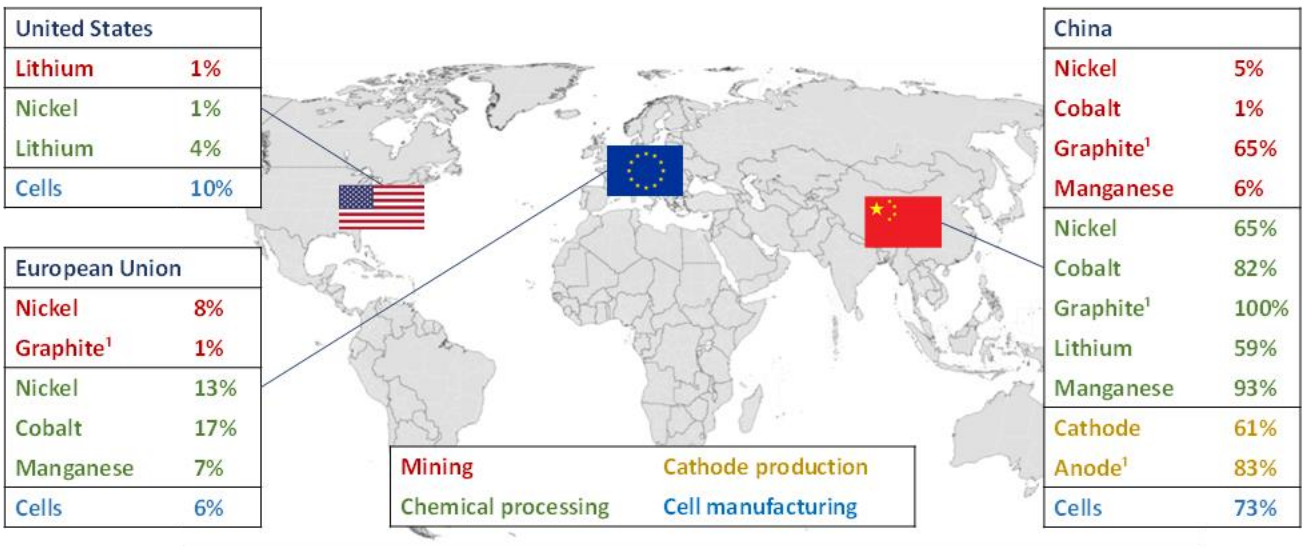
Source: International Energy Agency ("IEA"), The Economist. *In "net zero by 2050" scenario

Mining is an inherently cyclical and capital-intensive business with long lead times to production and with multiple stakeholders. As an example, the most recent copper mine of global significance has taken 24 years from discovery to first production and just days after starting up, the mine was subject to an export ban. While that situation is now resolved, it does highlight the fact the location of a mine is dictated by geological happenstance foremost rather than transportation links or the generosity of tax breaks. While not even the most powerful governments can create mineral deposits within its borders, they can have some strategic influence over the production from the mines, either by owning them directly or encouraging foreign investments from companies with domestic operations.

We note the recent report written by the US administration on building supply chain resilience in these areas. The desire to 'encourage sustainable domestic extraction of lithium and support production and refining of cobalt and nickel both within the US and working with allies…' is highlighted but with no pathway laid out.

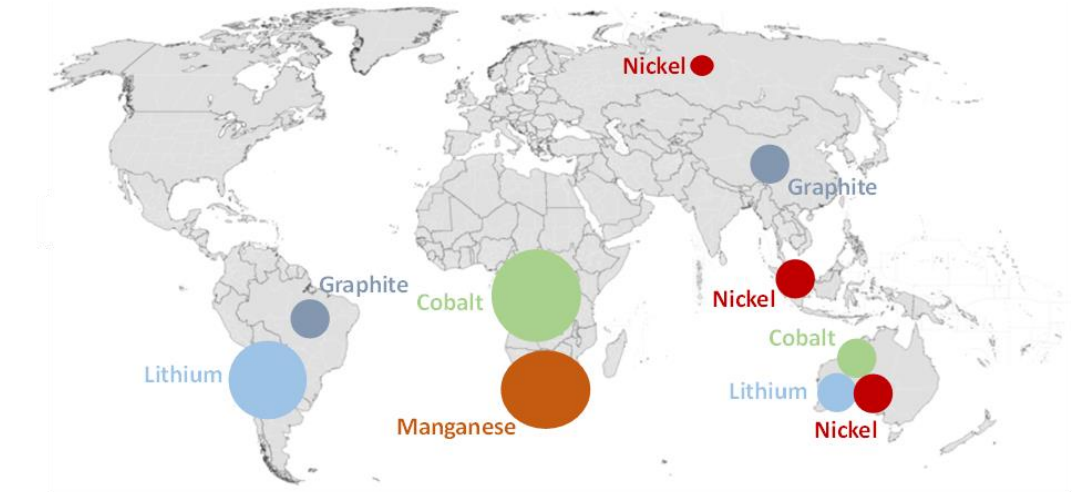
Figure 3 - Lithium-ion battery to EV supply chain in 2020

Global share of production (%) in 2019



[1] Flake graphite feedstock, all anode natural and synthetic.
Source: Benchmark Mineral Intelligence, USGS, Baker Steel Capital Managers LLP.

Figure 4 – Speciality metals reserves are geographically concentrated

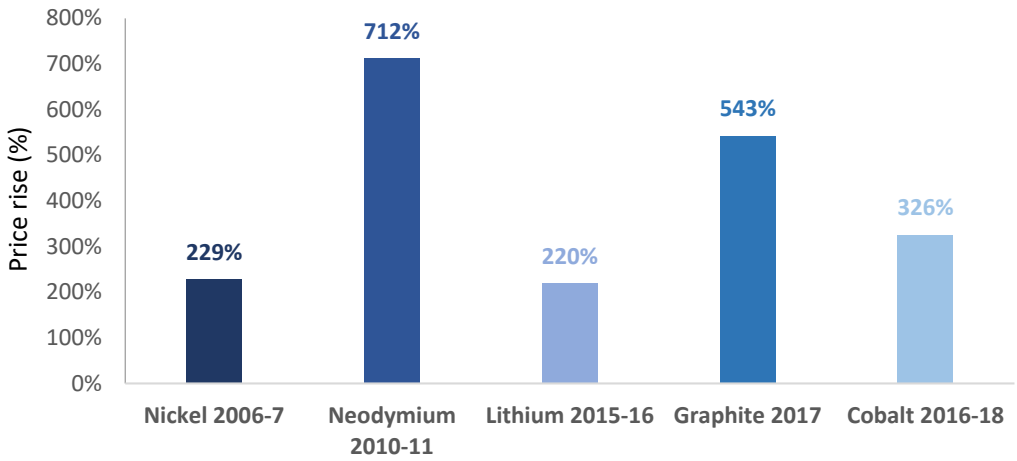


Source: USGS, Baker Steel Capital Managers LLP.

Figures 3 and 4 highlight that the supply chains for lithium-ion batteries and many green tech manufacturers from wind turbines to solar cells are complex and elongated, with production and reserves of critical metals geographically concentrated. This vulnerability is increasingly of concern for governments and other end users as they audit their supply chains and understand the risks. The Chinese are a long way ahead in securing the necessary feedstocks with about 90% of Australian lithium going into China (Austrade) as well as most of the Indonesia nickel, DRC cobalt and nearly all the world's natural graphite and manganese being processed there.

We should not think of the fragility of supply chains themselves as new and nor should we think of the price volatility of many of these opaque commodity markets as new either. What is different this time is the consequences of such inefficient price spikes, driving commodity prices to demand destruction levels, will be much more costly as the end markets are substantially larger and growth forecasts higher still. Strategic stockpiles of these metals (highlighted in the recent US review as a potential mitigating factor) will not be possible to achieve on a sufficient scale. Recycling (another area highlighted) is the longer-term answer, but the products need to be built first before they can be recycled and there needs to be an increase in the amount of metal available to meet that demand. This can only come from mining in the first instance.

Figure 5 - Speciality metals price spikes



Source: Bloomberg, Baker Steel Capital Managers LLP.

Increasingly we are seeing the polarisation between China and the USA starting to be played out in the production of these "future facing" metals and downstream products. Sustainability is often becoming the differentiating factor between a Chinese or western sourced product. Developments such as the copper mark for sustainable production could in future be paired with blockchain inspired sourcing models currently being used in diamonds and trialled in cobalt.

As the anonymity and fungibility of goods erodes, it is much easier to implement a global price for carbon or imagine an environmental, social and governance ("ESG") premium for green metals (anecdotally, we hear already of green premiums paid for ESG friendlily copper and cobalt). At the same time, as political tensions rise between the west and China the bifurcation of supply chains looks both more possible and likely.

Clearly the western world has had plenty of warning around the fragility of supply chains in relation to metal availability. More than a decade on from the rare earth spike in 2010, no integrated mine to market solution for the full range of these crucial components exists outside of China.

For several of the commodity markets we analyse, there are looming fundamental deficits and price spikes look highly likely at some point. We expect some of the existing producers to benefit greatly in the near-term from such increases, as higher metal prices boost the miners' valuations, and we hope they will be able to work with end users and others across the supply chain to make the markets they operate in more sustainable for all. We believe the coming months and years will see a bull market for speciality metals equities, offering some compelling opportunities for those invested in the mining sector as it undergoes enormous change. We continue to work diligently, searching for the best opportunities investing in equities with assets outside of China, most of which have fully integrated production capabilities, and that operate in an ethical and sustainable manner in line with our own ESG principles.

Active management and the bull market for speciality metals equities

The supply-side issues for speciality metals which we have highlighted here appear likely to resurge and grow in significance, as governments and businesses strive to achieve their green objectives. The development of sustainable supply chains is critical for green industries, yet the path to achieving this is likely accompanied by higher prices across a range of metals, including price spikes in some cases. Furthermore, the prospect that we may be entering a period of increased inflation may also contribute to stronger pricing for speciality metals as well as exacerbating supply growth constraints through higher capital costs.

BAKERSTEEL Electrum Fund offers exposure to the transformational bull market underway for speciality metals and is positioned to benefit from both the longer-term growth of green industries, as the green revolution gains pace, as well as from shorter-term price movements and price spikes. As active investment managers, our team allocates strategically across sub-sectors of the mining industry to achieve exposure to these long-term themes which drive metals and mining.

About Baker Steel Capital Managers LLP

Baker Steel has a strong track record of outperformance relative to its peers and relative to a passive holding in gold or gold equities. Fund Managers Mark Burridge and David Baker have been awarded ***two Sauren Gold Medals for 2020*** *and were awarded* ***Fund Manager of the Year*** *at the* ***2020 & 2019 Mines & Money Awards****.*

BAKERSTEEL Precious Metals Fund is a ***2021 winner*** *for the fourth year running of the* ***Lipper Fund Awards*** *while Baker Steel Resources Trust has been named* ***Investment Company of the Year 2020 & 2019****, Natural Resources, by Investment Week.*

Baker Steel Capital Managers LLP manages the ***ES Baker Steel Gold & Precious Metals Fund, Baker Steel Gold Fund****,* ***BAKERSTEEL Precious Metals Fund, BAKERSTEEL Electrum Fund****, and* ***Baker Steel Resources Trust****.*

Sources: Bloomberg, Refinitiv, USGS, Benchmark Mineral Intelligence, IEA, Economist, Australian Government, "The Lithium-Ion Battery Value Chain – New Economy Opportunities for Australia"