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Carmakers switch to direct deals with miners to power electric vehicles

By Harry Dempsey

In the 1920s Henry Ford set up rubber plantations in the Amazon, a steel mill in Michigan and coal mines across the US to supply his growing automotive empire. A century later, car groups are again looking to take greater control of their raw material supply chains in the race to electrify the global car fleet.

Demand for electric cars is taking off but the bottleneck of raw materials for batteries such as lithium, nickel and cobalt is threatening to slam the brakes on their rollout — a problem that could lead to factory shutdowns and land carmakers with billion-dollar fines for missing emissions targets.

“We’re absolutely convinced that this is a race, a zero-sum game and resources are a finite limit,” Tanya Skilton, director of purchasing for electric vehicle critical materials at General Motors, told the FT Mining Summit last month.

The International Energy Agency forecasts that soaring EV battery demand will require 50 new lithium projects, 60 nickel mines and 17 cobalt developments by 2030, a huge challenge for an industry that typically takes 15 years or more to develop a project.

The threat to carmakers has led to a shift in attitude towards the mining sector and a realisation the motor industry can no longer approach sourcing raw materials as off-the-shelf procurement.

Mercedes-Benz is among car companies to have signed offtake agreements — promises to buy future output that help suppliers raise financing — with miners, and has begun work on its own processing facilities.

“If you asked me five years ago, I would have said this was the job of the commodity markets,” said the German group’s chief executive Ola Källenius, adding that it now “makes sense” to do direct deals because of the coming squeeze.

“If you do the maths of what we would need at the end of the decade, and you see where we are now, it’s a factor of X in terms of scaling,” he said. “The issue is not that there’s not enough

lithium on this planet — there is. But it needs to be mined and it needs to be refined and go through all the steps."

Skilton forecasts that the industry will be divided into winners and losers based on which companies will have the minerals to fulfil their "electrified dreams".

The change marks a reversal of a decades-old practice under which carmakers manage their direct suppliers, which in turn work with tier-two suppliers, and so on down the chain, with each business dealing only with the company that feeds directly into them. In the EV supply chain, battery producers, cathode manufacturers and mineral processors sit between the car companies and miners.

Now carmakers are going right down the chain to the mines themselves, both to secure the supplies cheaply and to ensure ethical and emissions standards are met. Stellantis, owner of the Peugeot and Fiat brands, and GM are among those that have invested in early-stage mining companies in an attempt to secure resources.

"The carmakers have woken up to this," said Doug Johnson-Poensgen, chief executive of Circulor, a technology group that uses a distributed database to track parts and material through the supply chain. "That's why quite a number of the auto groups have direct supply deals."

Chinese EV companies have been pursuing this strategy for some time. BYD, the world's largest EV producer, has been trying to secure access to lithium mines in Africa and Chile. The world's largest battery maker CATL agreed last month to buy a near 25 per cent stake in cobalt producer CMOC for about $3.7bn.

Tesla has been the most aggressive western carmaker in signalling it will become directly involved in the mining and processing of critical raw materials when the supply chain is unable to meet its needs.

The company held talks with Glencore about taking a stake in the Swiss commodities group, although Tesla's chief executive Elon Musk has denied his company contemplated such a move. Two people familiar with Musk's thinking said he would prefer the carmaker to develop in-house capabilities, disliked giving away capital without having operational control and was concerned about the heightened scrutiny a Tesla-backed mining project would face.

Musk told the Financial Times's Future of the Car Summit this year that the company would only invest in mines if "we think we can change that mining company's trajectory significantly".

Tesla is pushing ahead with plans to build a lithium refinery on the Gulf coast in Texas with equipment set to arrive next year, according to a person familiar with the project.

Some of the feedstock for the refinery was supposed to come from Piedmont Lithium's project in North Carolina, but the US mining group delayed delivery indefinitely last year after falling behind with permitting applications. That reflects a broader lament among mining executives who say permitting has become tougher, pushing mine development timeframes from five to seven years a few decades ago to well over 10 years now.

Lithium is particularly problematic. Prices have surged ninefold in less than two years to $74,500 per tonne of battery-grade material. The industry is still maturing and lacks experience in scaling up production quickly.

To meet the forecast increase in demand for EVs, the lithium industry is relying on early-stage mining companies, often with unproven technologies, to deliver every single tonne of supply promised.

GM's Skilton said new entrants could unlock resources sooner or in cleaner ways. But she recognised the risk "that the tonnes will show up on a different timescale to what we want them to".

Eric Norris, president of lithium at the world's highest-valued producer and key Tesla supplier Albemarle, said securing sufficient quantities of hard rock containing the metal to feed into the lithium refinery would be the key challenge for Musk's company, which aims to sell 20mn electric vehicles a year by 2030.

"The bottom line is they need resources to execute their strategy," he said. "They may have a few deals here and there but they will amount to a small fraction of what their growth aspirations are. I think they need the industry and companies with access to these large world-class resources to drive their agenda."
The critical minerals needed to meet global battery demand by 2035

Large mining groups diverge significantly from early-stage developers on the need to go beyond the traditional model of offtake agreements to have supply delivered when needed.

"We need to raise a lot of money," said Keith Phillips, chief executive of Piedmont Lithium, adding that $600mn was required for a lithium refinery in Tennessee and approximately $1bn for a proposed mine and refinery in North Carolina. "The best way for us to do that and for the auto and battery companies to secure their supply is to co-invest with us."

By contrast, Norris said Albemarle generated "significant cash flow" to fund future growth and had no need for funds from carmakers. It would only explore investment from a car company if there were strategic benefits such as helping it innovate more rapidly, develop new products or expand its recycling business, he added.

An executive at another large producer of battery metals also said "we don't need a carmaker to hold our hand" for any assets it wanted to develop.

The interests of mining and automotive companies are fundamentally at loggerheads — miners want the higher prices that come with limited supply and car companies want low prices with ample availability. More practically, the multi-decade investment horizon for the mining industry is a far cry from the shorter cycles on which carmakers operate.

Henk de Hoop, chief executive of battery metal consultancy SFA, said the rationale for a car company to take a stake in a large miner was unclear. "If you invest in a Rio Tinto or Anglo American, then it's a regulated shareholder relationship so it doesn't give you a right to 20 per cent of the nickel or other metals," he said.
Instead of the full-blooded conglomerate model of Ford a century ago, according to de Hoop, the carmakers' strategies bring them closer to behaving somewhat like a bank or Japanese trading house.

"They are acting far more like alternative capital providers to accelerate projects deemed too risky by traditional lenders, while gaining supply security as compensation," he said.