China controls the minerals critical to the modern economy. Is the West's fightback too late? By *Jon Yeomans* and *Fred Harter*

Who owns the earth?

Passengers passing through the new, £300 million terminal of Addis Ababa airport in Ethiopia are greeted by an array of signs in Chinese, directing them to their connecting flights across the continent.

Groups of transiting Chinese workers and engineers traipse through the arrivals and departures areas, often wearing matching hazmat suits and plastic goggles to guard against Covid-19.

They, and the Chinese-built airport, are a fitting symbol of the billions of dollars that China has ploughed into Ethiopia – and Africa – in the past 20 years to fund giant infrastructure projects.

Addis is just one hub in a global web of Chinese influence, control and money that has arisen as the world's second largest economy races to secure the minerals needed for the future generations of electric cars, wind turbines and batteries tol drive the green revolution.

To a great extent, it is a race Beijing has already won.

For the past 20 years, China has been buying up valuable resources around the world to supply its vast manufacturing industry. More critically still, even where it does not own the mines outright, it has secured deals that mean nearly 80 per cent of the planet's supply of these crucial raw minerals is sent to China for cleaning up and processing into usable metals. From the Chinese refineries, the metals not needed by China's own plants are then shipped off to factories in Europe, America and elsewhere.

This means that, theoretically at least, in the most important minerals for the future green economy – nickel, cobalt, graphite, lithium and so-called rare earth metals – China could effectively turn on, and turn off, the world's supply at will.

The war in Ukraine has shown how vulnerable the West's supply chains are if a big supplier turns hostile. Russia's control over European gas supplies has led to inevitable questions about how beholden the western world is to China. Nato has been able to take a tough stance against the Kremlin's aggression, many are now arguing. But what if Beijing decided to take Taiwan?

"It is a vital part of national security to get our hands on critical minerals," said Alex Stafford, the Tory MP who is vice-chairman of the all-party parliamentary group for critical minerals. "Although the UK has some minerals, we really do not have enough to be self-sufficient."

He cited Russia's move last week to throttle gas supplies to Poland and Bulgaria as an example of how countries could not afford to become dependent on a single supplier. "When we are dealing with countries that are not democracies, like China, we cannot rely on them to fulfil their obligations."

There is a sense that, as China's economy boomed and its thirst for metals grew, western nations sleepwalked into this predicament.

"Over the past couple of decades, the US has allowed the supply chain of these critical minerals to move from our shores to … China," said Republican congressman Michael McCaul, chairman of the US Foreign Affairs Committee.

"The US must be quicker in responding … to better secure the supply chain of these minerals."

> **To an extent, it is a race Beijing has already won**

RACE FOR METAL

The metals needed for the green revolution include copper, the reddish metal prized for its conductivity; lithium, a silvery metal that is crucial in keeping batteries lightweight; and rare earths, a disparate collection of exotic minerals that contribute to the chemistry of batteries.

Demand for these metals is accelerating as sales of electric cars take off; lithium prices are up 500 per cent in the past year alone. This could be the tip of the iceberg: electric cars use six times the amount of battery metals that a conventional car needs, according to the International Energy Agency; an onshore wind farm requires nine times more than a gas plant. For the world to reach net-zero emissions by 2050, the World Bank has estimated that production of these key metals would need to rise by 500 per cent by mid-century.

For manufacturers, securing supply has become an existential challenge. Elon Musk, chief executive of Tesla, bemoaned the "insane" cost of lithium last month, adding: "Tesla might actually have to get into the mining and refining directly at scale, unless costs improve."

Last year, he singled out supplies of nickel, used to improve the energy density of EVs, as his "biggest concern"; this month he reportedly held talks with mining executives from Indonesia, a region blessed with ample nickel deposits. Carmakers are working directly with mining giants to lock in supply: last month, General Motors struck a multi-year deal with FTSE 100 miner Glencore for supplies of cobalt, a bluish metal that helps keep batteries stable.

Western governments have been slow to spot a disaster in the making, despite the EU starting a list of critical minerals back in 2011, and the US in 2018. Last year, the UK formed the critical minerals expert group, and is due to publish a "strategy" on minerals soon.

China is many steps ahead, having realised in the 1990s that its fast-growing economy simply did not have all the minerals it needed to support its boom. "Traditionally, the Chinese mining industry was very small scale and working on very low-grade ores. And so they started to look outside China to do direct foreign investments," said Magnus Ericsson, a minerals analyst at RMG Consulting, a Swedish firm that has investigated Chinese mining investment globally.

What began as a trickle of overseas deals gathered steam in the 2000s under the "Going Out" strategy, whereby Chinese firms were encouraged to buy up foreign assets. The Chinese economy was then expanding by about 10 per cent a year, and consuming vast amounts of iron ore – the key ingredient in steel – to support its rapid urbanisation. The problem, Ericsson noted, was that "the very best deposits were already taken".

It seems China vowed never to be placed in such a position again.

DIRTY WORK

Not all metals are created equally. Some, such as lithium, are sprinkled liberally through the Earth's crust. Others are found in just a handful of countries: the Democratic Republic of the Congo (DRC) produces about two-thirds of the world's cobalt, a rare metal particularly abundant in the copperbelt of central Africa.

The biggest iron ore mines are found in Australia and Brazil and are owned by giant corporations from those countries: among them BHP, Rio Tinto, and Brazil-based Vale. Copper is more prevalent in South America, where mines are mostly owned by a combination of western and Japanese mining companies, and state-owned miners such as Codelco of Chile.

"Though China's share of global mine production has grown rapidly in the past 20 years, it is still reliant on others for many metals, particularly iron ore," Ericsson noted.

Where China has been exerting a particularly fast-growing control is in cobalt and graphite, a crystalline form of carbon used in anodes for lithium-ion batteries. Two of the biggest cobalt mines in the DRC are in Chinese hands, while China also accounts for an estimated 68 per cent of global production of graphite.

In total, China spent $108 billion in the 10 years to 2018 on foreign mines, according to RMG's research. Its investments ranged from platinum mines in South Africa to gold mines in Tajikistan. They include 24 mines in Australia, many of them containing iron ore, gold and copper. Not all are active, and some, such as the giant and controversial Simandou iron ore project in Guinea, West Africa, may never see the light of day because of the logistical challenges involved.

Despite a Covid-induced economic slowdown in China, the deal-making continues. In recent months, Chinese firms have invested in lithium mines in Zimbabwe, Mali and Canada. Last year, Ganfeng, a Chinese producer of lithium, took control of London-listed Bacanora Minerals for £285 million. Risk-averse London investors had previously rejected Bacanora's efforts to raise money to develop a deposit in Mexico, leaving the door open for Ganfeng to take over.

Control of mines is one part of the puzzle, but it is in the processing and refining of metals that China truly dominates.

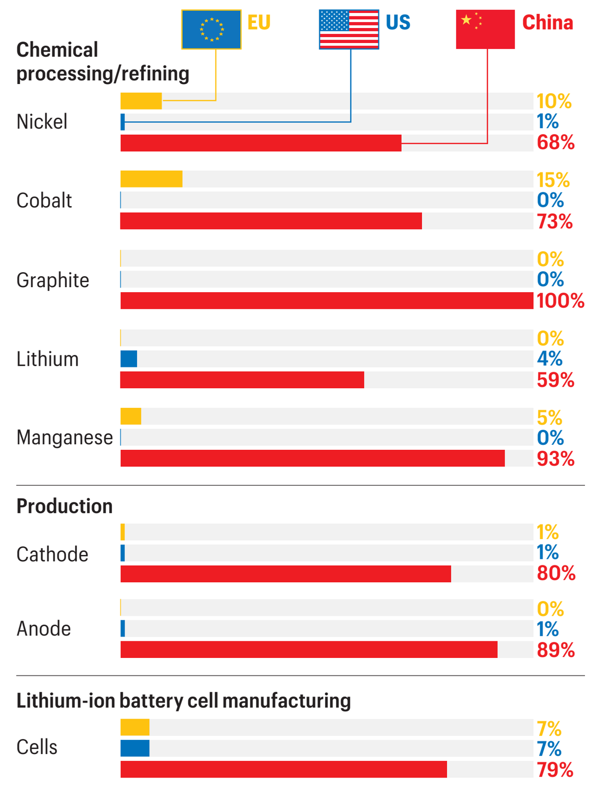
Refining is the mucky process of cleaning up metals for use in industry. China refines 68 per cent of the world's nickel, 73 per cent of its cobalt, 59 per cent of lithium, 93 per cent of manganese – used in some Lithium-ion battery cathodes – and 100 per cent of its graphite, according to Benchmark Mineral Intelligence.

"China sucks in all the world's raw materials." said Henry Sanderson, executive editor at Benchmark. "If something's dug up in Australia or in Africa, most often it goes to China for processing." To boot, 80 per cent of lithium-ion batteries are made in China.

As well as the political risk for the West of China's ability to control supplies, it is also widely seen as bad for the environment, as its coal-fired refineries belch emissions into the atmosphere.

Ben Stoikovich, chairman of Aim-listed graphite miner Sovereign Metals, noted the contradiction in using China to process metals intended to drive the net-zero agenda. "We don't know how it's produced, we don't know what chemicals they use, we don't know just how polluting it is. So the upshot is our very clean ambitions are driven by quite dirty production methods," he told a parliamentary meeting earlier this year.

CHINA DOMINATES THE PROCESSING OF KEY MINERALS



Source: Benchmark Mineral Intelligence

FIGHT BACK

Belatedly, the response from the West has been to go shopping for assets – or to throw money at smaller miners. In 2019 the US merged its international development arms into the International Development Finance Corporation (DFC), charged with investing in projects across the globe and furthering US foreign policy, with the power to lend $100 billion.

One of its investments was in TechMet, a private company that backs critical minerals miners. Algene Sajery, DFC's vice-president for external affairs, said it would continue to hunt for opportunities in metals "that contribute to the US national security imperative for transparent, high-standards supply chains for energy, transportation, and medical uses". Separately, in February, the Biden administration announced a package of measures to galvanise production and processing of critical minerals in the US.

The large miners are also looking for ways to buy into battery metals. Last year, Rio Tinto splashed $825 million on a lithium mine in Argentina. In January, BHP invested $100 million in a nickel project in Tanzania. Projects are under way to exploit lithium and tin deposits in the UK. TechMet has backed a start-up, Cornish Lithium, with a $25 million investment. Earlier this year, a fund controlled by Mick Davis, the ex-Tory Party treasurer and former boss of miner Xstrata, invested in Cornish Metals, which hopes to revive a tin mine.

Battery metal producers are now exploring ways of processing their materials outside China. Tirupati Graphite, which listed in London in 2020, is lobbying the government for tax incentives to build plants in the UK. It is thought Davis may be seeking to build graphite and tin processing plants for his ventures in Britain, close to car factories and other customers for the metals.

Yet such "on-shoring" faces economic hurdles. "The challenge the West has is you are competing against a Chinese processing industry that's years ahead and is already very cheap," noted Sanderson of Benchmark. With raw material costs going up, carmakers will be under pressure to choose the cheapest supplier; these are unlikely to be European processors, which would be held to a higher environmental standard, too.

RECYCLING

Higher prices may be useful in one regard, however: they usually spur miners to bring on supply that might have otherwise been uneconomic. "There are high margins to be made, so miners will be incentivised to produce more and to move into new areas which might be more expensive, or else to switch to a new type of deposit," said Peter Schmitz, head of commodity research at FTSE 100 miner Anglo American.

The other solution to the battery crunch will be to recycle. "There's no way that we can afford to simply throw away batteries," Schmitz said. "There's a good push for being more efficient."

French waste management giant Veolia is building a recycling plant at Minworth in the Midlands that it reckons could recycle 20 per cent of the UK's spent car batteries by 2024.

"We have a scarcity of resources. But we can address that if we have companies that can 'mine' our waste," said Estelle Brachlianoff, Veolia's chief operating officer and incoming boss. "It sounds simple, but it's actually quite complicated – it needs investment in the type of plants that can untangle these metals."

> **There's no way we can afford to simply throw away batteries**

The number of electric cars on British roads is expected to jump eightfold to more than two million by 2035, so recycling would have to ramp up massively to keep pace. Without a radical shift in the metals supply chain, China will remain in the driver's seat. That is a feeling familiar to people in Ethiopia, where politicians have been locked in talks with international creditors for more than a year to restructure its $30 billion debt.

Soon western nations will have to decide how to step up engagement with the countries that hold the minerals they need – and how to counter China's influence. As Haile, a shopkeeper in Addis Ababa, put it: "It would be better to do business with Europe, but these days China are the only people willing to give us money for development."

Schroders and M&G set City tongues wagging

Duo abandoned talks last year but changes at the top spark speculation

Jim Armitage and Jill Treanor

As Michael Dobson bowed out of Schroders last month, he recalled how he had first been refused an £1800-a-year job at the City stalwart as a 21-year-old. "The interview went rather badly," he told guests assembled at his retirement party in the splendid surroundings of Spencer House in St James's.

It took 20 years, and a stellar career as an investment banker, before the Schroder family invited him back to become chief executive and later chairman of the firm that has borne their name –and influence – for more than 200 years.

Last week, signs emerged that the Schroder clan's grip was diminishing. As Dobson, 69, stepped down, the FTSE 100 fund manager announced that the two-tier system that gives the Schroder family more voting powers than outsiders is to be scrapped. The family's holding will reduce from 47.9 per cent to 43.1 per cent.

With the City digesting the implications of the unexpected decision – welcomed by institutional investors – a rival business was also undergoing change. Over at M&G another long-standing executive signalled his departure. John Foley, 65, announced he would retire once his successor as chief executive, was found. He too had spent almost two decades with the firm, joining insurance giant Prudential in 2000, which spun out M&G in 2019 to appease disgruntled investors.

M&G's fortunes as a stand-alone business, employing 6,000 and managing about £360 billion of assets, have been far from easy. The shares are down 5 per cent from the demerger price and the City had always regarded it as an odd-construct. It is the rump of the Pru's UK operations, taking its name from the once-prized asset management business but still housing insurance.

The changes were unrelated but industry watchers could not resist using the events to rekindle speculation about a tie-up between the two in an industry ripe for deals. Last year, Schroders' boss Peter Harrison, 55, admitted he had considered a bid for his smaller rival – but stepped back from an approach for fear it would damage the culture of the family firm, which counts Schroder heiress Leonie as its representative on the board.

At the time, Harrison said: "[The cultural issue] is too big for us. You look at a whole range of things. You look at growth prospects, risks, and you balance those out. And the equation didn't work."

While Foley's departure had been the subject of City gossip in recent weeks, it caught out some observers who had expected him to stay longer while new chairman Edward Braham established himself. Braham, a former partner at Freshfields Bruckhaus Deringer and a respected lawyer in the field of mergers and acquisitions, arrived only in March to replace Mike Evans who stepped aside because of a stress-related illness.

But with Foley now serving 12 months' notice, rival managers thought it feasible that M&G could be in play, especially as finding a replacement for Foley is a tough task. "It's such a weirdly shaped business, you need asset management and insurance skills – that's different regulations, different people to have those skills," said one City source.

It also presents challenges for any bidder. "What to do with the insurance assets? You need them run by an insurance market expert, it takes different regulatory knowledge and stuff like that," said one rival.

A revival of a Schroders-M&G tilt was not out of the question, said one industry chief. "It could make absolute sense to merge the asset management businesses. You would get synergies. Foley is effectively now a lame duck, so it's possible a deal could now be on the way for M&G."

Most, however, say Schroders seems unlikely to be the bidder in any M&G takeover. Schroders has been on an acquisition trail since the M&G non-bid. It has halved its £1.5 billion cash pile through deals to buy the UK advisory and management business of River and Mercantile and a 75 per cent stake in renewable energy investment specialist Greencoat.

"Schroders are moving out of that traditional asset management space that is structurally challenged," said Mandeep Jagpal, analyst at Royal Bank of Canada.

Having the Schroder family as an investor means that Harrrison can run the firm for the long-term. The shares are down 20 per cent this year, to £28.49 – although no worse than French competitor Amundi and slightly less than Abrdn, the rival created by the troubled tie-up between Aberdeen and Standard Life.

But M&G's share price has doubled since the time of that non-approach. At the time it was closer to 100p than the 215p it closed at Friday, valuing the business at £5.5 billion. Schroders, which employs 5.500 people and manages £573 billion of funds, is valued at £7.7 billion.

Jagpal said investors tend to question what the catalyst will be for Schroders to outperform. But, he added: "Schroders is managed on a long-term basis which focuses on where the business is going to be in five, ten years' time."

Dobson's replacement in the chairman's seat is the veteran fund manager Dame Elizabeth Corley, 65, who is said to have little appetite to steer a new course.

Schroders finance director Richard Keers, 58, said the management was focused on integrating the acquisitions of the past six months. M&G is not an option. "The reasons we walked away from M&G are the same today as they were then," said Keers.

Schroder heir Leonie is a board member

Twitter row engulfs property-spree mayor

Sam Chambers

It is a plot worthy of a modern day Anthony Trollope novel.

A local councillor whose billion-pound commercial property spree astounded the industry has now been accused of trolling his enemies via Twitter.

Ian Harvey, Mayor of Spelthorne, shot to national prominence for trying to offset government funding cuts at the tiny Surrey council by investing £1 billion into property acquisitions, using cheap loans from the Treasury. The extraordinary spending across the southeast was seen as putting his borough's residents at great financial risk.

Now, an independent investigation has found he was behind the Twitter account @Mrs_Pike39, seemingly inspired by the 1970s sitcom *Dad's Army*. The account tweeted negative comments about fellow councillors, questioned then-Labour leader Jeremy Corbyn's manhood and claimed Surrey council was "skint" because the government was shifting grants to Labour districts.

The investigation, carried out by former solicitor Richard Lingard, was prompted by a complaint from fellow councillor Richard Barratt. Harvey was ousted as council leader along with other Conservatives in 2020. He still serves as mayor for the United Spelthorne Group party.

According to a copy of the report produced by Lingard, a resident alleged that the same spelling mistakes, such as "hypocrasy", were made on Harvey's own account and that of the "Mrs Pike" one. During his investigation, Lingard heard how Harvey used to refer to himself as "Captain Mainwaring" from *Dad's Army*.

Lingard found that, on the balance of probabilities, Harvey was behind the Mrs Pike account. "It is clear that [Harvey's] motivation… was to enable him to say things about political opponents and others that he was not prepared to say openly in his capacity as a public servant," Lingard wrote. "The very act of setting up an alias of this nature … is completely incompatible with the obligations imposed upon Cllr Harvey by … Spelthorne council's code of conduct."

The council standards committee ultimately determined there was not sufficient evidence to support the allegations against Harvey, who denied them.

Critics argue that Harvey's property dealmaking left residents unduly exposed to commercial risks. Auditors at KPMG expressed material concerns and told the council in 2020 that the debt-fuelled deals may have been unlawful. Harvey has dismissed the associated risks as "negligible".

Harvey orchestrated deals to buy BP's headquarters in Sunbury-on-Thames for £360 million and a west London office block let to WeWork for £170 million. When the pandemic hit, Harvey consented to WeWork's request to defer £4.5 million of rent on its west London office. The flexible office giant thanked the council this year by saying it was leaving the building.

The value of Spelthorne's portfolio has dropped by £73 million to £940 million over the past three years.

The council decided not to follow the report's recommendations. Petra Der Man, Spelthorne council's monitoring officer, said that after a hearing there was insufficient information to link Harvey to "anything at all" that was alleged.

Harvey said the "bizarre and unsubstantiated allegations" were politically motivated and he had reported the matter to the police.

Accused: Ian Harvey

Julian Richer Sound Advice

Profits come first, but let's also try to give back

GERARDO JACONELLI

My school housemaster, Ernest Polack, was an inspirational man. He would tell us about the beatings he had taken at the hands of Afrikaner farmers after he had been to South Africa in the school holidays to protest about apartheid – now that's what I call a role model.

On a far more modest level, I had given a talk in a small church hall in Yorkshire on responsible capitalism and fairness, which I had promised our lovely vicar I would do as a favour.

There were about 20 people there. And one woman, a nurse, asked what we could do about the constant bad news in society. My reply was enthusiastic because, as citizens with a certain degree of freedom, I think there is actually quite a lot we can do.

Working in a hospital full-time, and bringing up a family, she was under the cosh – and though I may have given her food for thought, I couldn't help feeling her despondency.

I absolutely accept that for some people, there are not enough hours in the day. But because I have received so many advantages in life, and having no children to look after, I do feel that giving back something is the least I can do.

Given the many injustices and inequalities in society, and the snail's pace of our democracy in correcting them, a good place for us to start is to ask, "Are there positive or helpful things we might do without having to go through parliament?" If there is something we feel strongly about, surely we business people have the particular skills to do just that?

In January, the Edelman Trust Barometer said that, "By a huge margin, people want more business engagement … the role and expectation for business has never been clearer … its societal role is here to stay."

This suggests that the great British public would welcome our involvement – and, after spending a lot of time in the business community observing my peers – I think, generally, we would be good at getting stuck in. We are managers, after all – good at problem solving, organising, motivating people, ensuring efficiencies and achieving objectives, otherwise presumably we wouldn't have survived in business.

We can't expect busy MPs to do everything for us, especially when we have the specialist skills required. And what a good example it would set for society if businesses were seen to be doing more to support our great nation.

As a business owner, the profits must come first, otherwise you won't have anything to give away, but you might promise yourself that as your business grows and the profits start to flow, you will apportion a proportion of your time and money to good causes. (For many years, we have put aside 15 per cent of our profits for this. Admittedly, public company bosses will have their shareholders to convince, who might not be as altruistic).

> **There are so many good causes out there – why not have a go?**

So, just a few tips:

1) There are infinite good causes out there, but your resources are finite. So try to focus on one or two areas you particularly care about.

2) If you prefer to give away money, then perhaps scan the news to find small organisations that are doing good work on the ground – ones operating with little fanfare or credit but making a difference to people's lives; often they won't attract mainstream support and you wouldn't normally hear of them because they can't afford a fundraiser.

3) If you would like to get involved, research the subject you think needs sorting. If a relevant domain name is available, this is a great start; it suggests that no one else is dealing with it.

4) Find a niche that isn't being well served. A couple of my own examples:

a) Most of us will remember the hugely distressing case of Fiona Pilkington and her daughter, Francecca. After ten years of torment by local youths, they committed suicide. When I searched for agencies to support victims of anti-social behaviour, there was precious little around. So I set up ASB Help (Anti-Social Behaviour Help) to do something about it. Fast forward nine years and we have a terrific team who are spokespeople for this challenging sector and advising thousands of people a week through our website. There's much more to be done, but it's a good start.

b) When I was managing and playing in a band, I was mortified by the way musicians were treated. Most venues paid a pittance, way below the real living wage, with us having to fund our transport and gear out of that. A memorable low point for us was being offered the slops from a beer keg in lieu of payment (hopefully, no reflection of our performance), so I set up Richer Unsigned to support musicians and we now have 3,000 artists on board.

There are so many good causes out there – why not have a go and the best of luck to you if you do.

Julian Richer is founder and managing director of Richer Sounds