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Europe-wide search for precious lithium

William Wilkes

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Rocketing demand and prices for lithium, coupled with China's stranglehold on supply, are reviving interest in mining Europe's reserves of the coveted metal some call white petroleum.

Prices for lithium used in the batteries that power anything from mobile phones to Teslas more than doubled to \$US21,000 (\$27,000) a tonne in the past two years. Analysts expect the lithium-ion battery market to surpass \$US90 billion by 2025 as electric vehicles become commonplace and growing use of wind and sun power forces utilities to invest in large electricity storage facilities.

But while European businesses use 25 per cent of the world's lithium, a group of Chinese companies have a potential stranglehold on the Australian and South American mines that produce almost all the world's battery-grade metal. That has sent a small group of pioneers on a race to reopen European mines where the conditions that gave rise to such lowly metals as tin have left lithium-rich rocks and hot brines.

The race for European lithium echoes similar efforts in Japan to track down metals for use in batteries, amid concern about China's hegemony over other minerals used in batteries and electric vehicles.

For now, the best candidates for lithium are in Germany and the Czech Republic, where companies have successfully mined and produced battery-grade lithium and hope to sell it to the numerous car manufacturing plants dotted around central Europe. And in Britain, Portugal and Sweden and Britain's Cornwall region, companies are drilling bore holes and building 3-D maps of underground lithium deposits.

One German firm, Deutsche Lithium, was recently granted a 30-year mining license and has already scooped out 100 tonnes of lithium-yielding rock as it fine-tunes its extraction processes. The company could eventually mine 15,000 tonnes a year.

Australian mining company European Metals has extracted battery-grade lithium from its Czech Republic mine and is finalising a \$US400 million pitch to investors to scale up production.

Geologists at Cornish Lithium, a start-up scouring for lithium in Britain's historic tin-mining region of Cornwall, is using satellite images to search for rock formations and vegetation patterns typical of lithium-rich grounds — and even poring over the yellowing diaries of long-dead tin miners for clues as to where lithium-rich underground springs may be hidden. "It's a fascinating moment in the history of mining," said Richard Shaw, geologist at the British Geological Survey.

Lithium's light weight makes it perfect for use in batteries, which generate more electricity per unit of weight than any other conceivable chemistry, according to researchers. Invented by Exxon in the 1970s and made cheaper and safer since, lithium-ion batteries are now ubiquitous.

Chinese companies dominate global lithium supply. Last year, automaker Great Wall bought a \$US28m stake in Pilbara Mineral, an Australian lithium mine, and signed a contract for a delivery of 150,000 tonnes of lithium-yielding spodumene from the company's mine in Western Australia.

China's Ganfeng Lithium holds 20 per cent of an Argentine project. Chinese firm Tianqi Lithium's has attracted regulator attention in Chile due to its \$US4bn bid to buy a stake in SQM, the world's second biggest lithium producer. Combined, the companies would control 70 per cent of the world lithium market. But with Europe's car makers now set on mass-producing electric vehicles, the need to secure its own lithium

reserves is gaining urgency. “We hope to sell into the upswing in European electric car manufacturing that’ll take place in the mid-2020s,” said Keith Coughlan, director of European Metals.

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