

INDEPENDENT COVERAGE OF THE MINING MARKETS



WHO'S WHO » GREEN TECHNOLOGY

Battery Metals

From Rio Tinto's headquarters in London to Tesla's biggest buyer in California, who's who in the battery metals business?

45%

Ahead of lithium, graphite or cobalt, nickel now accounts for 45 per cent of the value of an average electric car battery, says Talon Metals

"He executed flawlessly, took every dollar he could"

Swiss metal investor Pala and trader Anthony Milewski have flipped to the nickel market



GLENCORE

»

Dean Rossell

In Aitken County, Minnesota, there are more beavers than cars or people. Hunters shoot deer beneath fur trees, watched on by the chickadee, a small, timid, bobbing bird found in America's boreal forests.

In 2000, conglomerate Rio Tinto flew planes low over Aitken County, buying-up private land, taking state leases,

Catriona Beadel

When Rio Tinto's geologists hit discoveries they have to compete for capital inside its London headquarters. Rio has carved-out a new "Ventures" unit led by banker Andrew Latham and is investing in battery metals in its Energy & Minerals division, led by Mongolian Bold Baatar. But when Baatar is test-driving

fund. Betting on electric car sales, amassing cobalt in Antwerp and Baltimore, they built the biggest stash outside state control, listing the vehicle in Toronto when prices surged. "We are building a cobalt mining company with an excel spreadsheet," Milewski told *The Northern Miner*, pumping-out equity, buying-up cobalt streams. "He executed flawlessly," one banker says, "took every dollar he could."

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swampland. Not wanting to alert competitors, Rio was guarded with locals, who started complaining to the local press: unmarked jeeps were “driving all over” and “strange people” with “different accents” were dropping in to buy coffee and biscuits at the local grocery, Sam’s. “Risk equals hazard plus outrage,” one government relations officer inside Rio noted.

Leading the push was an American geologist working out of Salt Lake City. Planning the flights, guiding the drill holes, pushing for permits, Dean Rossell works for Rio’s prospecting business, using old government surveys and new technology to allocate the group’s \$488m exploration budget, the biggest in the mining industry. Scouring the world for battery metals, working in an environment described by peers as “competitive secrecy”, Rossell discovered the Eagle nickel deposit in Michigan, sold for \$325m, and has spent years working on a project in Ontario that he cannot discuss with other geologists.

After 8 years of drilling, Rio found what it was looking for in Aitken County, hitting 138m of nickel and copper and a discovery bigger than Eagle. 31,000 acres of land and a team of Rio geologists have been stuffed into a separate company, Talon Metals. Listed in Toronto, more than half the stock is held by Rio and mining private equity giant RCF. New York-based Triple Flag has paid \$5m for a 3.5 per cent royalty,

flower show, adviser California Beadel is crunching Monte Carlo pricing models.

Travelling 180 days of the year, Beadel previously worked in private equity and is now in Rio’s fast-track: byproduct from its operations in California could soon turn the group into the biggest lithium miner in the US. A wellspring of ideas, Beadel is also the driving force behind YMP, bringing up-and-comers together for talks by industry leaders. “Sometimes you think you’re in a bit of a silo,” Beadel tells IMARC, but “mining presents global opportunities.”

Henry Steel *Playing rough in Mongolia »*

Anthony Hayward

Look out the windows of Glencore’s head office in Switzerland and you will see oil executive Tony Hayward striding round the car park, pinging messages on Instagram, talking loudly into his mobile.

Having led oil group BP, Hayward is best known for one of the worst environmental disasters in history. 5m barrels of crude gushed into the Gulf of Mexico after a BP well exploded in 2010. The company paid fines of \$18.7bn and was found guilty of “gross negligence”, a high bar in US courts. 10 years on and Hayward is one of the most powerful people in the green energy market, overseeing a third of all cobalt

cobalt27 was bought back by Pala. Still in his thirties, Milewski has a new spin-off: Nickel28.

Eric Desaulniers

Studying explosions as an infantry officer in the Canadian military, Eric Desaulniers was sucked into the world of mapping and was soon flying over north Africa looking for oil and uranium for Royal Dutch Shell and the government of France. After a trip to the North Pole with NASA he started exploring for metal in Quebec, hitting a 14km graphite anomaly. Able to withstand temperatures of 3,927 degrees, graphite goes into brakes and batteries: there is 40kg of graphite in every Nissan Leaf.

Backed by Quebec’s pension funds, powered by its hydros, plugged into its cliques, for \$211m Desaulniers’ company Nouveau Monde plans to build one of the world’s largest graphite mines, filling 10 per cent of the market using an all-electric fleet, he tells Now You Know. “We have a very large reserve... and we have all the economics.”

Luke Kissam

Selling toxic herbicide and GM crops, if any company needs a squeaky-clean lawyer, it is agri-giant Monsanto. That man was Luke Kissam, a preppy former cadet from South Carolina who

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Capital, the biggest mining specialist that nobody has heard of.

Investing in coal, platinum and a hotel business in the Caribbean, Tau's new play is battery metals: with an electric mining fleet and a rail line into Detroit, Talon is working on plans to bypass smelters, consolidating their profits, producing enough high-grade nickel powder to make more than 1m electric cars, insiders told officials at the State Department in closed-door meetings in Washington in 2019, all "Made in the United States".

TLO:TSX || Talon Metals

Nenad Grubin

In the shade of an old Orthodox Church in a valley in Serbia, where scooters bounce down tracks surrounded by goat herds and vineyards producing plum vodka, Rio Tinto has discovered kryptonite, the wonder material from Superman, which it hopes will transform its green energy business.

Geologist Nenad Grubin was working as a researcher in Belgrade when his articles on lithium were picked-up by Rio's labs in California. Wading through streams across Serbia, he was given enough money to drill two holes. Grubin hit boron then lithium in one deposit, discovering a new mineral that is chemically similar to kryptonite. It does

with a PhD in geology, Hayward spent much of his studies snorkelling off the coast of Turkey. Joining BP's exploration division, he was soon drilling wells in the North Sea, spending "long nights watching the fax machine as it printed out well logs." Hayward was sent to China in the '80s, compiling an atlas and surveying basins, from Mongolia to the Vietnamese border. "There were no cars, very few expats and millions of bicycles." Exploring, he later remembered, was about "how to get inside the head of a hydrocarbon molecule: learn how it thinks, where it started its life, and where it migrates."

Hayward learnt about regulators the hard way. He also guided BP through a capital market crisis. Balancing ongoing investigations into Glencore's books and the highest fatality count in the FTSE 100, he is treated like an errant prefect by CEO Ivan Glasenberg, Glencore's largest investor, but says the energy industry does not deserve the flack it takes. "It's bizarre," he tells *UWE Bristol*. "Without energy there is poverty."

Kenny Ives *Unlocking Canada's "vault" of battery metals »*

Anthony Milewski

At 7.45 on July 6th 2018, security cameras were disabled at a warehouse in Rotterdam and three lorries were loaded with \$5m of cobalt drums. After

after a stint in table sweeteners, Kissam joined chemical maker Albemarle in 2003. He sold off its paint business, built a large new lithium lab and paid \$6bn for an expanse of brine pools. High-purity, battery-grade lithium would soon be the group's fastest-growing division, he told analysts, upping output ever since, shifting \$1.2bn of lithium in 2018. "Let's look at where battery technology has come over the last decade," he tells *CNBC*. "This is the best growth story in speciality chemicals."

"We were very competitive," says Kissam's brother, who is now president of South Carolina Electric & Gas. "He's been my best friend and he's been my mentor."

Sarah Maryssael

When Tesla factory line workers high-five hitting their daily production targets, one manager looks worried. Five years ago, Sarah Maryssael was working as an engineer at Vale's nickel mine in New Caledonia, the world's most complex. Trading her hardhat for a life in California, she is now Tesla's head of metal, lining-up lithium, nickel and cobalt, jetting between Singapore, Sydney and the US. On a MWh basis, Tesla accounts for 22 per cent of all car battery capacity, making Maryssael the biggest buyer in the market. And if mining companies under-invest, auto groups will be

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green energy & minerals division. “To find a new mineral in such vast quantities is a truly remarkable discovery,” says Grubin, quoting Jean Paul Getty’s geologist, Sig Muessig: exploration is “not a matter of chance and neither is it pure science. Exploration is a business.”

to Anthony Milewski’s company, Cobalt27. Having studied Russian in Washington and corporate finance in Moscow, Milewski worked for private banks, joining investor Vladimir Iorich at Pala, his Swiss mining

“We might get into the mining business, I don’t know. We’ll do whatever we can to make sure we can scale as fast as possible.”

RIO:LSE || @RioTinto

06.11.19: Gold: **\$1,486** Copper: **\$5,940** London Brent: **\$63** Cobalt: **\$35,000** Iron Ore: **\$83** Base Rate: US: **1.9%** China: **4.4%** India: **5.8%**

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