

Rare earth sector can't get off the ground.

Investors wary as China could rig the market

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- Gabriel Friedman

Somewhere on the outskirts of Montreal, Kiril Mugerma, chief executive of Geomega Resources Inc., aims to build a recycling plant that can produce rare earth oxides, the obscure set of elements that recently emerged as a flash point in the U.S.- China trade war.

Turning to recycling marks an about-face from the original game plan for his company, which spent millions of dollars trying to prove it could mine rare earths from a patch of land in northern Quebec.

Geomega's story encapsulates the scaling back that has occurred throughout the Canadian rare earths' sector over the past decade, shrinking from more than a hundred explorers to just a handful of companies, mostly studying opportunities downstream from mining, in areas such as refining or recycling.

Found inside green energy items such as electric vehicles and wind turbines but also washing machines and hard drives, rare earths face growing demand. But China dominates the supply chain, and fears that it could manipulate the market have kept investors away, even as the U. S. and Canadian government discuss ways to help foster the sector in North America.

"The (mining) project is not forgotten, it's still within the company," Mugerma said in a telephone interview. "But today to bring it to value, is very hard. It's a very highrisk for a company to begin committing hundreds of millions of dollars when you don't control your destiny — if the price goes up, China can still bring it down."

Mugerma said that since he started as chief executive in 2015 of the Boucherville, Que. company it has been clear that the half- a- billiondollar mining project would need to be shelved.

Instead, he spent the past few years studying recycling methods, and stockpiling old rare earth magnets' waste. Earlier this month, Geomega released plans for a plant that would cost \$ 2.5 million to build and would have an estimated \$30 million in annual revenue. He's hopeful that if they bring the plant online in 2020, and start generating cash flow, the company can still open the mine one day.

“We want to sell to anybody but China,” he said. “You want to stay small because you basically want to stay under the radar as long as possible.”

It’s not the only company that is looking to enter downstream from mining.

In Vancouver, Don Lay, chief executive of Medallion Resources Ltd., said his company is studying ways to extract rare earths from a byproduct of heavy mineral sands mining, known as monazite.

It remains years away from production, but Lay said one likely advantage over building a mine is that construction costs are expected to be under \$25 million.

“We’re going to look more like a chemical company than a mining company,” he said.

China’s dominance of the sector is well- known. It produced 70 per cent of world supply in 2018, down from 80.5 per cent in 2017, and controls 36.6 per cent of world reserves, according to the U.S. Geological Survey.

Rare earths include 17 different elements always found together, which though fairly abundant in the Earth’s surface, rarely occur in high concentrations to justify building a mine.

Mine production constitutes only one piece of the supply chain: After the ore is mined, the rare earths needs to be processed and separated, and then undergo further processing into alloys, which again may be converted into magnets, catalysts or other intermediate product. Those also are inserted into final products such as a wind turbine or an electric vehicle.

“The actual problem is not the lack of mines,” said Ryan Castelloux of research firm Adamas Intelligence. “It’s how to take them and convert them into the materials.” With the exception of a single mine in California, known as Mountain Pass, North America almost entirely lacks a supply chain.

While Canada may have abundant resources, and several rare earth deposits have already been identified, the high price tag of building a mine — hundreds of millions of dollars at a minimum — deters many investors, said Castelloux.

The idea that China could weaponize rare earths, possibly through an export ban or another way, gained currency in May when Chinese President Xi Jinping, accompanied by a trade negotiator, visited a rare earth magnet factory for a photo op. Already, China has raised tariffs from 10 per cent to 25 per cent on imports of rare earths from Mountain Pass.

That mine has become a cautionary tale, after being built in 2010 by Molycorp Inc., which gained billions of dollars in market capitalization, only to face bankruptcy in 2015 after prices crashed. In 2017, a consortium of investors including China’s Leshan Shenghe Rare Earth Co. bought the mine for US\$20.5 million.

This summer, various Canadian executives in the sector perked up when they saw the U. S. government put out requests for proposals for downstream rare earths' processing capacity.

Lay of Medallion Resources said he's had a number of conversations with Canadian officials in recent months and expressed hope it would lead to opportunities. Last month, the Globe and Mail reported Prime Minister Justin Trudeau and U. S. President Donald Trump met in June to discuss collaboration on a reliable supply chain. Castilloux, of Adamas Intelligence, said he's seen governments take a look at the space in the past.

"I think it's encouraging to see these alliances forming, but they're not entirely unique," he said. "The argument has been going for awhile that rare earths are so opaque, and China kind of uses them as a weapon, (but) you have to see what kind of traction it gets."

China's industry is dominated by state-owned enterprises, and the potential for subsidizing any part of the supply chain, whether it be oxides or the magnets, poses a threat.

The problem in Canada is how to build an entire supply chain: A mine without downstream processing presents risks to investors, but the opposite is also true.

"It wouldn't hurt to have some visionary person like Elon Musk that's self-financed, just come out and say, 'enough is enough, we're going to close this gap,'" said Castilloux.

But it's a small market, about 170,000 tons produced per year, so the strategic value of rare earths may outweigh their economic value.

David Merriman, manager of the electric vehicles materials division for Roskill, a research firm, said the "million-dollar question" is to what extent a North American or European industry needs government subsidies to compete.

He noted rare earths have enabled various technological advances, adding an estimated 10 per cent to the range of an electric vehicle, for example. But in addition to production capacity, China also holds a lot of expertise for things like rare earth magnets, which are crucial to motors in electric vehicles or wind turbines, Merriman said.

"It has been a long play (by China)," said Nils Backeberg, manager of steel alloy research at Roskill. "Probably over 20 or 30 years."

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