How the American recent policy shift has inspired a rare earths revival

The American Federal Government's recent policy shift to require national self-sufficiency in critical metals for technology for the Defense Department has led it to a focus its interest on whether total domestic supply chains can be constructed or revived. In the case of the rare earths, the U.S. Defense Department has always required that its war fighting equipment, e.g., weapons, aircraft, ships, and battlefield vehicles be finally assembled in the United States. There has been leeway though for most of the supporting supply chains of technology metal based/enabled components.

Rare earth permanent magnet raw materials, mined, refined, and even fabricated into magnets in China, for example, have until now been regularly sourced there but used only in the United States in final component assemblies for warfighting equipment built both for the U.S. DoD, and by America's closest allies. However, it is traditional for allied nations to require "domestic content" even for war fighting equipment built in the allied nation for the US Dept of Defense. As an example, warships built in Halifax for the Royal Canadian Navy by a US shipbuilder are required to have at least 10% Canadian content. Among that content are subassemblies manufactured in Canada but utilizing Chinese made rare earth permanent magnets. Under the 2019 US National Defense Authorization Act if those ships were being built even in Canada for the US Navy the use of Chinese manufactured rare earth permanent magnets would be prohibited! The future of this practice is unclear, and it is under review by both the American and Canadian defense establishments as the US and its allies try to harmonize their concerns about Chinese sourcing of critical

materials and components.

For the civilian market the entire supply chain for rare earth permanent magnet using devices, such as automobile components, large and small finished appliances and consumer electronics, and industrial machines is today predominantly in China. Other than automobiles and trucks most civilian appliances and devices utilizing rare earth permanent magnets are today assembled completely in China and distributed and marketed in the USA by so-called domestic American companies.

The total supply chain for rare earth permanent magnets was developed in and sited in the USA until the early 21st century when the last vertically integrated operations of Magnequench were sold to a Canadian company that then sold them to a Chinese company and moved them bodily to China. This was possible, because China had become far and away the largest miner of rare earths in the world and had built up a dominant position in refining rare earths into metals, alloys, and was then aggressively entering the rare earth permanent magnets' markets. Cheap but increasingly skilled Chinese labor plus a disregard for mining and industrial health and safety gave China an unbeatable competitive advantage.

Now with the threatened weaponization of rare earth permanent magnet supplies by China the governments of the US, Canada, the EU, and Australia are scrambling to become independent of as much of the Chinese supply chain for rare earth permanent magnets as possible. Certainly, they want to eliminate the need for rare earth permanent magnets manufactured in China.

In order to accomplish the re-creation of a China free supply chain of rare earth permanent magnets it will be necessary for the downstream components of that supply chain to be rebuilt. This means that rare earth separation facilities, rare earth metal making, rare earth alloy making, and rare earth permanent magnet making facilities MUST be built and put into efficient operation with sufficient capacities not only to

meet Defense Department needs, but also after that to meet civilian (consumer product) needs. This is the bottleneck at the moment. Non-Chinese rare earths' deposits and even producing mines sufficient to supply defense needs for the raw materials for rare earth permanent magnets exist today. But there is no funded (guaranteed) demand large enough for free market capitalism to speculate on the construction of a rare earth permanent magnets for the US military only supply chain.

The key will be the consumer products' supply chains. If, for example, the demands of the UAW that GM return auto manufacturing for the US market from China to North America become a general requirement for US industry then the demand for rare earth permanent magnets in North America could well become large enough to trigger the financing of a large scale domestic total rare erath permanent magnet supply chain in North America. The consumer appliance and electronics industries are watching the auto negotiations carefully to see if an insourcing trend is coming.

I believe that Chinese costs are rapidly rising to first world levels, and that this fact as much as any other is driving the rebirth of a domestic total North American rare earth permanent magnet supply chain.

I will be interviewing those mining, processing, and manufacturing companies in the US, Canada, the EU and Australia that I think are in the forefront of the rare earth revival.

MI3 Market Alert: Palladium

up $597 over the year

Mario Drolet President of MI3 Communications Financières Inc. (MI3) released a technical note at market open today on 21C Metals Inc. (CSE: BULL | OTCQB: DCNNF) for exclusive distribution on InvestorIntel. In this note, MI3 highlighted the following points on 21C Metals Inc.

- 21C Metals is an exploration company focused on the acquisition and development of deposits of production grade metal which are critical components to current and future vehicle technology.
- 21C has 2 projects: East Bull Palladium Property in Sudbury, Ontario and Tisova Copper-Cobalt located in Czech/German border.
- East Bull contains an Inferred resource of **523 000 Ounces PdEq** or 11.1 M/Tons @ 1.46 PdEq0020 – **PALLADIUM UP $597 over the year!!!!**
- Top management with Wayne Teasdale ‘’A Company Builder’’ sold his two previous companies: Rainy River and US Cobalt
- Only 62.6 million shares outstanding
- Support: S2; $ 0.065 – S1; $ 0.095 Resistance: R1; $ 0.10 – R2; $ 0.135
- *** **North Palladium buyout by IMPALA Palladium for 1.0 Billion**

About 21C Metals:

21C Metals is an exploration company focused on the acquisition and development of deposits of production grade metal which are critical components to current and future vehicle technology. Palladium is necessary for internal combustion engines (specifically catalytic converters) and cobalt is necessary for electric vehicle batteries.

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Amanda Lacaze on the rare earths market and Lynas' Mt Weld resource

"We have three significant things that set us apart. The first is our Mt Weld resource which is recognized as a premier resource throughout the world. It is true Tier 1 Resource: high-grade, long life. It is so high grade that some of it we don't even need to put it through concentrator to process it. The second thing is that we have the benefit of being first in the market. We are the only non-Chinese miner and processor of any scale. And the third… we have been running our rare earths separation plant here in Malaysia for over six years and we have developed IP (Intellectual property) within our business with respect to how to separate those materials (rare earths)." States Amanda Lacaze, Managing Director and CEO of Lynas Corporation Ltd. (ASX: LYC), in an interview with InvestorIntel's Tracy Weslosky.

Amanda went on to comment on the ongoing trade war between China and the US. She said that having major international economies speaking about rare earths is a positive thing. She added, "The rare earths market is quite a small market. If you are for example the CEO of a car company, you are not going to care about rare earths if you are looking at your bill of materials. In a $25,000 bill of materials, rare earths may only be a couple of hundred dollars. You are going to care about rare earths when you can't get them because you cannot put your car on the road". She further added in the 2011 rare earths crisis Japan funded Lynas, as a result, the Japanese rare earths processing market and consumption has increased by about 60% since 2012. If there is a secure and reliable supply

there is a strong and growing market.

Amanda also said that the increased interest in rare earths at this time is a net positive as a lot of outside-China markets and customers are thinking very seriously about how they are going to secure their future needs. She further added that the demand for rare earths outside China remains very strong and the US and Australia have referenced that both the countries will continue to work closely and work even more closely on the supply of critical minerals and rare earths in particular.

To access the complete interview, click here

Lacaze on Lynas' proposed heavy rare earths separation plant in the US

"We see the US market as a wide-open market. The US has allowed itself to be disintermediated in the rare earths industry and that is a risk for the US manufacturers. We have seen that the Chinese have, in over 30 years, steadfastly marched down the value chain. So today they are in the business of rare earths mining, separation, metal making, magnet making, component making and ultimately the finished material. Many would say at what stage a US vehicle is a US vehicle. Is it when it is just assembled from components that have been shipped in from China? There is a large component manufacturing industry in the US and having the security of supply for the inputs to that industry is very important. So we see the US as a market where, with the right presence and the right development, there is significant opportunity for growth. With respect to our MOU with Blue Line. Texas is

actually a great place to do business. We are very much looking forward to operating there. The first stage of what we do there will be focused on heavy rare earths separation. Heavy rare earths cannot be separated anywhere except China…Heavy rare earths are essential. High-performance magnets used in electric vehicles must have atleast a small component of either dysprosium or terbium added to them and of course, they are used in many other applications including medical and particularly in some of the defense applications. A heavy rare earths separation line as a starting point we think is very important and it builds out our product portfolio. What we are doing in the US will not be limited only to heavy rare earths, over time we would expect that we will continue to grow, the market will grow… We do believe that if we establish the facility we will create additional activity in the rare earths supply chain…" States Amanda Lacaze, Managing Director and CEO of Lynas Corporation Ltd. (ASX: LYC), in an interview with InvestorIntel's Tracy Weslosky.

Amanda went on to provide an update on Lynas' plant in Malaysia. She said that Lynas had the fourth scientific review done in Malaysia which came out with a clean report card that stated that the plant is low risk and compliant with all regulations. The company also recently announced the renewal of its operating license in Malaysia. She also provided an update on Lynas' growth plan. She said that Lynas is focussed to be a pure-play rare earths company. The company believes that by being a pure play it will be able to give its shareholders the best return. She said that in 2018 Lynas implemented a project called Lynas Next which took the nameplate capacity from about 5,000 tons a year of NdPr to about 7,000 tons a year of NdPr. In May the company announced the Lynas 2025 plans where by 2025 the company will produce 10,500 tons a year of NdPr.

To access the complete interview, click here

High grade silver plus high grade cobalt is how Canada Cobalt Works

Yes, it's still about cobalt in the long term but right now Canada Cobalt Works Inc. (TSXV: CCW | OTCQB: CCWOF) is primarily a silver play. Not only do they have incredibly high grade silver in their underground mine, very soon they will be producing it via tailings sitting dormant on the property. Their permit is expected to be issued by year's end with a possibility of a US$10 million or greater revenue run rate in the first half of 2020.

With cobalt mines shutting down in the Democratic Republic of Congo (DRC) there looks to be a significant change in what has been a depressed cobalt market. Add this to Canada Cobalt Works silver assets and you are looking at a stock that is in the early stages of a major reversal.

Canada Cobalt Works Inc. (formerly Castle Silver Resources) is a growing silver and cobalt company that has past producing cobalt/silver mines under exploration. Canada Cobalt Works owns tenements over a 78 square km total claim zone NE of the town of Gowganda, Ontario, Canada. Their flagship asset is the Castle Cobalt-Silver Property which includes the historic Castle Mine. The property is close to all needed infrastructure.

In 2018 the Company used an environmentally friendly metal separation technology for efficient extraction of cobalt to produce a cobalt sulphate compound suitable for end use in battery production. This material was taken directly from the

first level adit at the historic Castle Mine site.

Frank Basa, CEO of Canada Cobalt Works Inc., stated: “We take a distressed asset, in this case the Castle Mine which was a former high-grade silver/cobalt producer, put it together, fund it, and develop the asset.”

The Castle Mine location map

The history of the Castle Mine

In the 1980s the Castle Mine was a prized silver asset that extracted 891 grams per metric tonne year-in-year-out for the entire 10 years that previous owners Agnico Eagle mined it. In 1989 the Castle Mine was shut down, not because it had run its life, but because the price of silver fell too low.

Castle Mine has high grade silver and cobalt

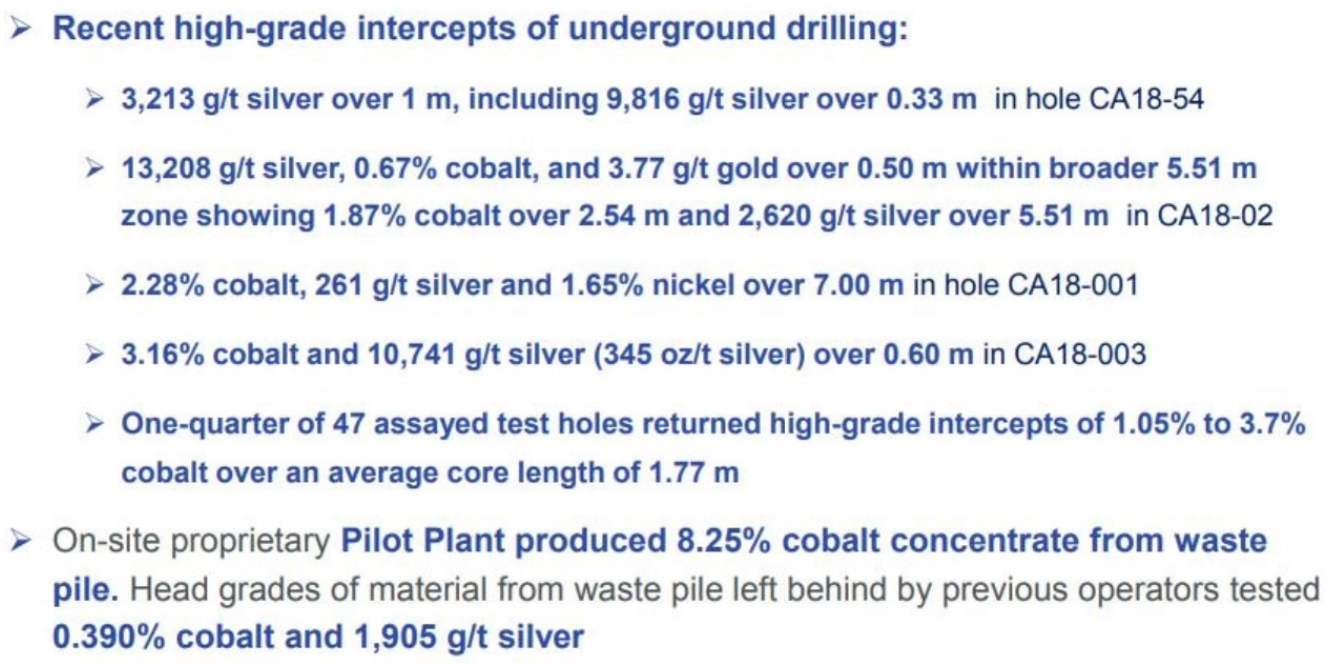
Drilling is showing that the Castle Mine still has plenty of high-grade silver. New silver/cobalt vein structures found

during the 2018 underground drilling have included 76.4 oz/ton (2,620 g/t) silver over 5.51 metres and much higher grades over shorter distances (385.2 oz/ton (13,208 g/t) silver over 0.5 metres). Further proof is likely on its way as the Company continues its underground drilling.

CEO Basa continues: "What we have are very high silver values, which a lot of our investors were surprised at. We normally get like 100, 200, 300 ounces a ton in our core while most people get, let us say, 10, 15, 20 ounces a ton."

Note: Anything above 50g/t silver is considered high grade, and for cobalt over 2% is considered high grade.

Some of the high grade silver and cobalt drill results at Castle Mine



Silver production alone would pay for the cost of mining

A way of looking at this is the silver alone would pay for the cost of mining. Earnings from cobalt and other metals will be a bonus, so even if the cobalt price was to remained depressed, the Castle Mine can still be mined. However the price of cobalt may not be that depressing, the decision to place the world's largest single source of cobalt into care

and maintenance at the end of 2019 is likely to help other producers. But it does place more uncertainty on the cobalt supply chain, with a risk that may see electric vehicle (EV) makers increase efforts to reduce cobalt in lithium-ion batteries.

With a name like Canada Cobalt Works it might be easy to ignore the fact the company has a high-grade silver project. Once in production, costs are expected to be covered by the silver, with the cobalt mined going straight to gross profit. So no matter the cobalt price Canada Cobalt Works can prosper. Canada Cobalt Works also have some gold potential after a recent apparent gold system discovery 1.5 km east of the Castle Mine. As a final bonus Canada Cobalt Work's properties are very well located near to infrastructure, and in the mining friendly region of Ontario Canada.

Stay tuned for further drill results.

Jack Lifton on rare earths version 2.0

"A lot of my friends are calling this rare earth version 2.0. This is the first real awareness of the Washington that there is a problem and that they need to find a solution. How it is impacting the space is that a lot of investors are now looking again at the rare earths projects that are closest to production. In the non-Chinese world, we have perhaps half a dozen producing rare earths companies but all of the processing of heavy rare earths, in general, is done in China today." States Jack Lifton, Co-founding Principal at Technology Metals Research LLC (and the new InvestorIntel host

for all critical materials), in an interview with InvestorIntel's Tracy Weslosky.

Jack went on to provide an update on Lynas. He said that Lynas is trying to balance its operations to satisfy both the Malaysian government and the Australian government and Lynas will build an ore processing plant in Australia. The ore processing part is a problem in Malaysia. The ore is brought from Australia to Malaysia where it is roasted, cracked, leached and separated. The roasting, cracking and perhaps leaching is going to move to Australia. Also, Lynas has indicated that it is going to set up a separation plant for its heavy rare earths with its current distributor which is Blue Line Chemicals of Texas. Jack further added that the United States is very concerned about the security of supply (of rare earths) and investors would be making a mistake if they ignore the space.

To access the complete interview, click here