

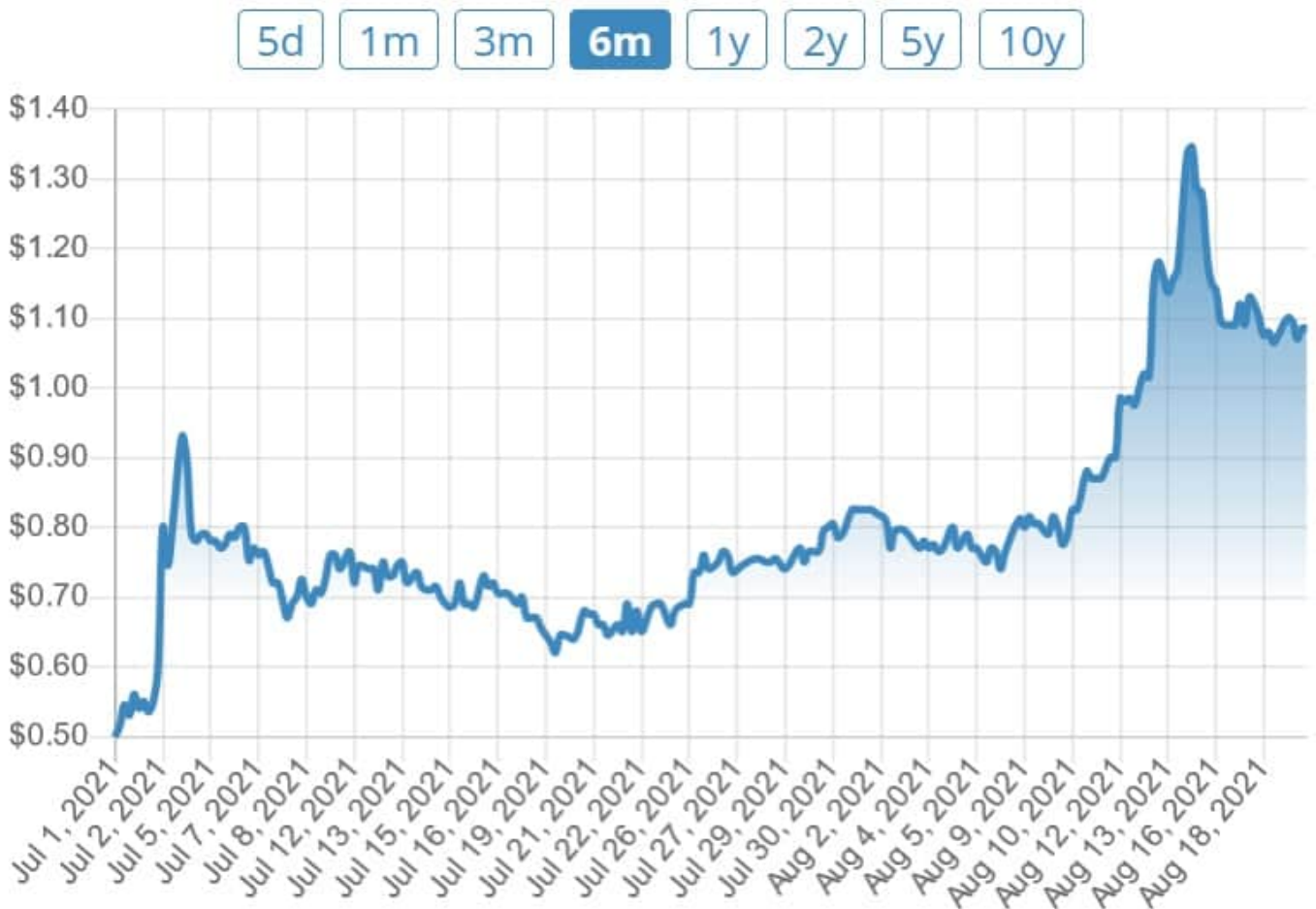
Newly listed Australian Rare Earths Limited is off to a flying start

Rare earth permanent magnets are so powerful they are the heart of modern 'efficient' motors that drive many electric vehicles, wind turbines and electrical appliances. Their advantage is that they achieve stronger output and therefore reduce power consumption and boost efficiency compared to other electric motors with no rare earth permanent magnets. These magnets contribute 30% of the market by volume and >90% by value.

Key magnet rare earth material prices such as Neodymium (Nd), Praseodymium (Pr) and Dysprosium (Dy) have been rising the past 2 years, partly due to the surge in electric vehicle (EV) sales and also due to supply concerns out of China.

Australian Rare Earths Limited (ASX: AR3) ("AREL") is a newly listed Australian company focused on the valuable magnet rare earths at their Koppamurra Project in Australia. The Company listed at A\$0.30 on July 1, 2021 raising A\$12 million. The stock tripled in the first five days after listing reaching A\$0.90, and is currently trading at A\$1.08.

Australian Rare Earths Limited stock price chart (IPO at A\$0.30 on July 1, 2021)



Source: Australian Rare Earths Limited

The Koppamurra Project








AREL is progressing the exploration of a significant deposit of valuable ‘clay-hosted’ rare earth elements, located at their Koppamurra Project spread over tenements in South Australia and Victoria. Past exploration of the Koppamurra region has shown it contains mineralization containing the rare earth elements neodymium, praseodymium, dysprosium and terbium as revealed from reviewing historic drilling data and samples available from State core repositories. The rare earths were found to accumulate in the shallow clay layer deposited onto a limestone base (Gambier Limestone).

The Koppamurra Project is a frontier ‘ionic clay’ rare earth opportunity in South Australia and Victoria, Australia, spread over a massive ~4,000km². Clay hosted rare earth mining is shallow-excavation mining involving progressive rehabilitation

and is much lower impact than many other forms of mining. The deposits of interest are non-radioactive, which is a significant advantage over other mineral sand and hard rock rare earth element deposits.

Ionic clay projects have significant advantages over mineral sand and hard rock rare earth projects

KOPPAMURRA: AUSTRALIA'S ONLY PROSPECTIVE IONIC CLAY REE DEPOSIT

	Ionic Clays	Hard Rock
 Location	<ul style="list-style-type: none"> Currently mined in China and Myanmar, but resources are depleting 	<ul style="list-style-type: none"> China still dominates but mines in production and under development in USA, Australia etc
 REE Assemblage	<ul style="list-style-type: none"> Supply virtually all heavy REEs (>80%) and a significant portion of light (La-Eu) REE globally 	<ul style="list-style-type: none"> Monazite or Bastnaesite ores which are typically higher in light REE assemblage
 Scale	<ul style="list-style-type: none"> Scalable development – lower initial capex requirements 	<ul style="list-style-type: none"> Typically require significant scale for economic viability given higher capex requirements
 Exploration	<ul style="list-style-type: none"> Quick and inexpensive to define resources given shallow drilling using aircore, auger, push-tube core 	<ul style="list-style-type: none"> Similar to other hard rock base metals requiring substantial drilling, geochemistry, geophysics etc
 Mining	<ul style="list-style-type: none"> Shallow free digging material with low strip ratio Progressive rehabilitation 	<ul style="list-style-type: none"> Drill and blast with large mining fleet Deep open pits or underground mining
 Processing	<ul style="list-style-type: none"> Simple metallurgy; screen then heap or tank leach No toxic chemicals nor radioactive waste streams 	<ul style="list-style-type: none"> High temperature +/- pressure leaching Radioactive tailings
 Risk / Economics	<p>Fast to drill and develop, low capex and high value product</p>	<p>Significant time and cost to develop, complex processing, radioactivity issues, lower product value</p>

Source: Company presentation

Current news and next steps

Prior to AREL listing on the ASX, 470 aircore, auger and push tube drill holes were completed in January 2021 and a JORC 2021 **Inferred Mineral Resource of 39.9Mt @ 725ppm TREO** was announced. A feature of the Koppamurra Mineral Resource is low radioactivity. Preliminary testwork at ANSTO has demonstrated that recovery improves at lower pH levels and this will be investigated further to improve optimization of metallurgical recoveries, currently around 50% to 70%.

More recently a further 79 hole drill campaign was completed with assay results pending and expected by mid to late August. Further field exploration will begin in October.

In July AREL announced that they had acquired new tenements and expanded the Koppamurra project by greater than 40%.

Board and management are highly regarded

The AREL board consists of renowned metallurgist Dudley Kingsnorth. He is an internationally recognized expert in the rare earths industry, providing advice to producers, end-users and government entities. He has over 50 years of experience in operations, project development and marketing.

Australian Rare Earths Limited reasons to invest summary

INVESTMENT HIGHLIGHTS

-  Australia's only prospective **ionic clay hosted REE deposit** and one of two listed opportunities globally
-  **Maiden resource identified** with ability to **rapidly expand** through low cost drilling
-  **Favourably located** in Australia with access to a skilled workforce and good infrastructure
-  **High value REE assemblage** with **low radioactivity**
-  Globally, Ionic clay hosted REE deposits represent simple, **low cost mining and processing**
-  Potential to be a **strategic, independent and sustainable source** of HREEs essential for future economies
-  Strong pipeline of **upcoming news flow**

Source: Company presentation

Closing remarks

It is still very early days for Australian Rare Earths Limited and their ionic clay rare earths Koppamurra Project in Australia, already with an Inferred Mineral Resource of 39.9Mt @ 725ppm TRE0. The IPO raised A\$12 million which will largely be used for exploring their tenements with drill assays due out shortly in August, to be followed by a further exploration program starting in October. Ionic clay projects have several

advantages including lower CapEx, faster and easier development and processing, and no radioactive waste streams.

The Board and Management are highly experienced and include renowned rare earths expert Dudley Kingsnorth. The stock price has already taken off given the excitement behind the Company's potential. Despite this, the market cap is still reasonable at A\$122 million. One to follow closely.

Search Minerals are setting themselves apart in the critical materials pack

As industrial nations continue to shift towards a greener future and explosive demand for EVs and the associated demand for magnetic materials shows no signs of abating it's time to take another look at Search Minerals Inc. (TSXV: SMY). Search holds a 100% interest in a rare earths deposit within the Port Hope Simpson – St. Lewis District of South East Labrador that is road accessible and on tidewater, which is a leg up on a lot of their North American counterparts. The company already has a favourable Preliminary Economic Assessment (PEA) for their FOXTROT deposit, a resource estimate for Deep Fox and a third discovery has been identified at Fox Meadow. There are also more than 20 additional exploration prospects identified along the 70 km long and 8 km wide region controlled by Search including Silver Fox and Awesome Fox.

The PEA highlights a 14 year mine lifespan on Foxtrot (8 years open pit, 6 years underground) that would recover approximately 7.4 million tonnes of Indicated and 2.0 million tonnes of Inferred Resources. Mineralized zones typically show

high concentrations of many of the magnetic materials in demand (Nd, Pr), and some of the most revered critical materials including but not limited to: Dysprosium (Dy) Neodymium (Nd), Praseodymium (Pr), Terbium (Tb) and Yttrium (Y). However, the newest prospect at Silver Fox hosts significantly higher grades of Zirconium (Zr) and Hafnium (Hf).

But this is only the start of the story. What makes Search different from most other critical materials' explorers is the development of its breakthrough Patented Direct Extraction Metallurgical Process. With the mining of many commodities, it's not as simple as taking the rock from the ground, crushing it up and sending it to market. Think back to Imperial Metals Mount Polly tailings pond breach in 2014. Mining rare earths are no exception and can have their own environmental nightmare lurking if not addressed properly, just ask China. Fortunately, Search has found an elegant answer for an environmentally conscientious solution for managing waste residue that also significantly reduces CAPEX and operational costs. Without getting into the details (you can read more about it here), this is a big deal.

To further the development of this proprietary process, Search signed an MOU with the Saskatchewan Research Council (SRC) on Oct 29, 2020. The MOU outlines a collaboration with SRC as they build their Rare Earths Processing Facility in Saskatchewan, Canada. It is anticipated that using the SRC conventional solvent extraction process will enable Search to validate the ability to produce the individual rare earth oxides necessary to enter the rare earths supply chain.

Another intriguing development in progressing this patented process is the Nov 10, 2020 entry into a Technical Collaboration Framework Agreement with USA Rare Earth, LLC. This will involve technical assistance through joint technical meetings, sharing of data, site visits and reviews and collaboration around the engineering and development of

Critical Material projects. Subsequent to this agreement on March 11, 2021 USA Rare Earth participated in a Search Minerals private placement with a strategic investment of C\$630,000.

Search Minerals is a company that has identified an optimally located, economic resource in a commodity that is likely to continue to see increasing demand, has exploration upside and a proprietary process to get its product cost-effectively to market in an environmentally conscious way. This has obviously attracted the interest of others in the industry. That's how you set yourself apart from the rest of the pack.

Critical Materials Corner with Jack Lifton: Rare Earths War Games.

In this episode of the **Critical Materials Corner with Jack Lifton**, Jack talks about the possibilities and consequences of China ceasing exports of rare earths and rare earth enabled products to the United States.

In this InvestorIntel video, which may also be viewed on YouTube ([click here to subscribe to the InvestorIntel Channel](#)), Jack explained that the goal of the Chinese government is to make the domestic consumer economy grow and eventually exceed the export economy.

Speaking on why China has become an importer, there are theories that the country may be running out of material, it may want to conserve what it has, and the industry pollutes the environment. "All three of these theories are correct and

drivers of the Chinese rare earth economy,” Jack said. China plans to focus on improving its domestic economy thus it needs rare earths. He continued, “China is on a world mission to make sure it has sufficient supplies to carry out its long-term plans. This would lead to a technology metals boom, more specifically for copper.” He further added, “Copper is the key technology metal...to get it from the producer to the end-user, you need copper.” Speaking on the likelihood of a metals boom, he explained China becoming a major world economic power will be a major driver.

To watch the full interview, [click here](#)

Beating the path down to become a “Vital” rare earths producer in 2021

Vital Metals Ltd. (ASX: VML) targeting to be the largest independent supplier of clean mixed rare earth feedstock outside of China. That’s a lofty goal, but absolutely necessary because China still counts for about 80% of the world’s rare earths production while only sourcing about 30% of their rare earths domestically. While the initial impact from Vital’s rare earths production may be small in the future supply-chain for rare earths, they are an important part of the global movement for the diversification of rare earths production and are an early entrant into a new supply chain. This has already been recognized with the contract that the company announced in late December 2020 for a binding term sheet signed with REEtec AS, (a Norwegian rare earths separation company) for supply of 1,000 tonnes rare earths

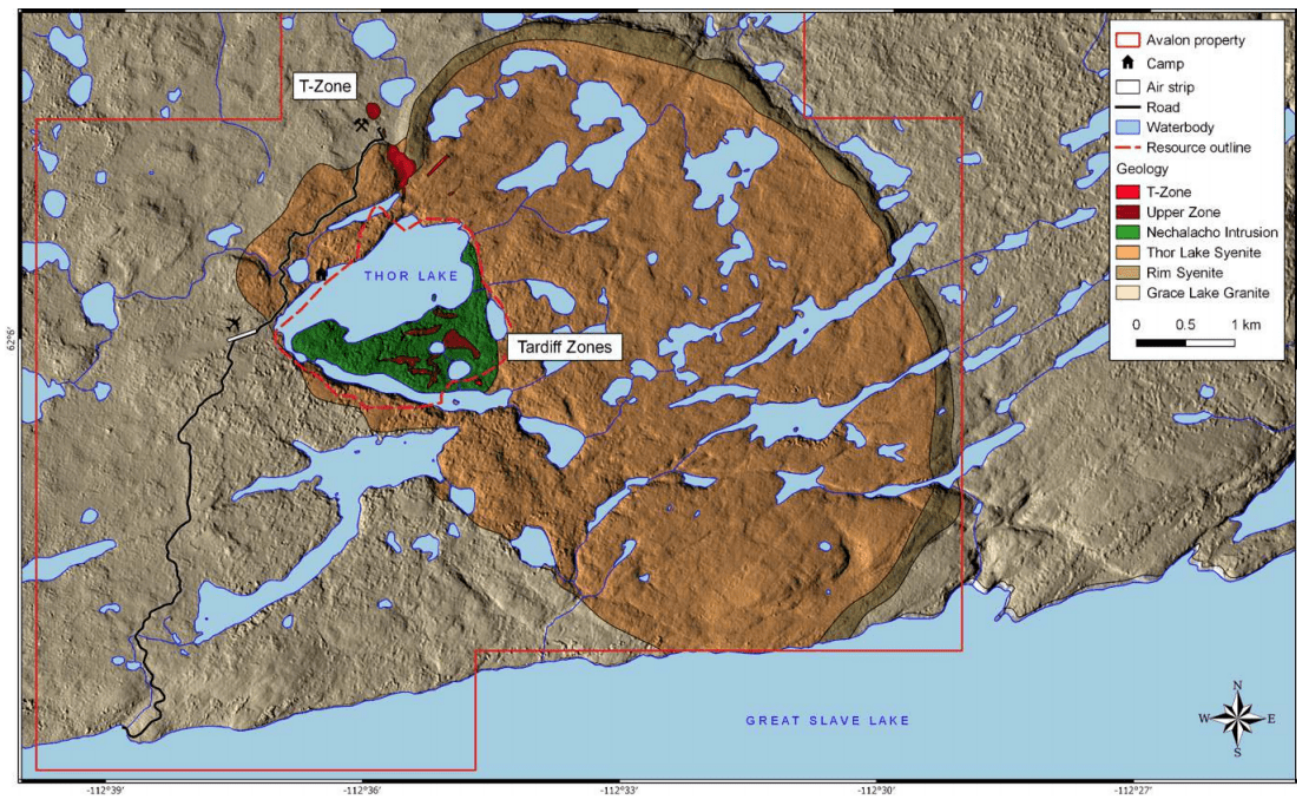
oxide (ex-Cerium) per year for a period of 5 years. The supply can be increased up to 5,000 tonnes per year for a period of 10 years.

Vital Metals is on track to produce rare earth oxide in 2021.

That is the first thing you will read when you go to the company website and it is real and it is happening. The production will come from the company's Canadian Nechalacho project in the Northwest Territories on Thor Lake, close to Yellowknife and near the edge of Great Slave Lake.

In fact, preparations are currently underway at the Nechalachco rare earths project to commence the production of rare earth oxide sometime around May 2021. Everything is on track to meet this production schedule as a result of years of previous work on the project (and previous owner's expenditures of more than \$100 million) and the design of the project parameters ensure early cash flow (and low capital costs) of a production stream that is highly desirable to end users.

The company has two shallow zones on the Nechalacho asset – the T Zone and the Tardiff Zone(s) as shown in the map below:



Vital is employing a very smart strategy – instead of developing the whole project all at once, they are going to first develop the smaller T Zone which will generate cash flow for further exploration and future development of the Tardiff Zones. Their strategy to develop the first mine in northern Canada requires less than A\$20 million total capital cost for this first project (North-T, 100% interest), some of which can also be funded by future generated cash flow.

The company has been working towards 2021 production on the T Zone. Last year and into this year, the mining area saw site clearing above the planned pit, dewatering and geotechnical work to confirm the pit design and infrastructure construction for mining and production. Construction of the ice road to bring in the drilling rig and mining equipment has also commenced. We anticipate news in the near-term to confirm the timing of the arrival of mining fleet and delivery of the ore sorter at site. As reported today, at December 31, 2020 the company had approximately \$6.1 million of cash and cash equivalents, so they should be well-funded through first production from Nechalacho.

Looking ahead, recall that on September 22, 2020, Vital announced a binding term sheet for the construction and operation of a rare earth extraction plant to produce a mixed rare earth carbonate product. The plant will be located adjacent to the Saskatchewan Research Council's (SRC) planned separation plant which will be able to convert rare earth carbonate mixes to commercial grade rare earth oxides. Vital's plant is expected to be operational in Q3-2021 and will use feedstock from Nechalachco— a second "customer" for the mining output. Most people do not know that the SRC has almost a decade of expertise in rare earths (associated with uranium mining in Saskatchewan) and recently announced the construction of a rare earth processing facility in Saskatchewan, the first of its kind in Canada. The SRC facility is expected to be operational in late 2022.

The team at Vital are world experts in the global rare earth element arena including all necessary elements of mining, processing, geology and marketing and are recognized for this expertise. The devil really is in the details and Vital's team has a cost and time effective strategy to deliver early production and cash flow. Remote locations require extensive planning and timing is everything as mining and processing equipment can only be delivered and setup during certain weather windows. Things can go wrong, but it appears that most contingencies have been accounted for. This is a key success factor

The global movement to diversification away from China as the global source of rare earth elements has been underway for a number of years. The world always knew that as technology developed, the rare earths would become more and more important, but it has become abundantly apparent that the development of electric vehicles in particular demands more rare earths and from more secure and friendly sources. Vital Minerals' aim is to become a global player in the production of rare earths. Their expertise, projects and potential have

put them squarely on this path and they will become a producer in 2021.

Critical Materials Corner with Jack Lifton – Impact of Biden Admin on Rare Earths

In the first episode of the **Critical Materials Corner** with Jack Lifton, Jack talks about if there is going to be any change in the focus on critical materials under the Joe Biden administration.

In this InvestorIntel video, which may also be viewed on YouTube (click here to subscribe to the InvestorIntel Channel), Jack went on to explain the role of bureaucracy and the US Federal government to drive policies on critical materials to make the US independent of China for critical materials.

Speaking on the electric vehicles sector, Jack said, “The big drive in the US is to get the price of the batteries down.” He continued, “If I were an investor, I would be looking at batteries, battery management, battery raw materials, and also the raw materials for solar panels and wind turbines because these are big pushes by the US government.” He further added, “You can store energy with lithium, cobalt, nickel and manganese. But you can’t make anything move without rare earth permanent magnets.” Speaking on the Department of the Interior’s list of critical materials he explained why copper should be on the list.

To watch the full interview, click here

The 600 pound gorilla in the room – welcome, Lynas Rare Earths

In the rare earths space, it is the 600 pound gorilla, but we mean that in a positive way. Investors familiar with rare earths will know this, but for those of you just coming to learn about the company, it is one of only two producers of scale of separated rare earths outside of China and is the second largest in the world.

Welcome to the “new Lynas” Corporation, officially renamed “Lynas Rare Earths Limited” (ASX: LYC) on December 1, 2020. Listed on the Australian Securities Exchange, the company has a market capitalization of approximately AU\$3.3 billion. The company’s share price hit an all-time high on December 4, 2020 as the market pays close attention to this industry leading company. Lynas ADRs can also be found on the US OTC, trading under the symbol LYSDY.

What a difference a year (or three) makes. It was just 2017 when the company consolidated its shares on a 1:10 basis, after five challenging years in the rare earths market when the company was on the verge of going bust. Recall that the global rare earths’ price bubble collapsed in 2014 on the back of a negative World Trade Organization decision against China. A global industry had all but been decimated and lowest cost production and industry dominance was now Chinese.

Except for Lynas. The company mines rare earths in Western Australia at Mt. Weld, which is one of the world’s highest grade rare earths mines. The mined ore is concentrated at the

Mt. Weld concentration plant and sent for further processing to Lynas Malaysia's Advanced Material Plant near Kuantan, Malaysia where the facility, commissioned in early 2013, produces separated rare earth oxide products for sale to customers in Japan, Europe, China and North America. Currently, the most valuable product produced at the plant is praseodymium/neodymium (NdPr), used in magnets.

With the increasing interest in all things electric and electronic, rare earths have again come to the fore. Specifically, because so many things need electric motors (more than 140 small electric motors in the average automobile – electric and hybrid electric vehicles use even more small electric motors and larger traction motors), global demand is increasing.

We have known about this for a long time and the world is only now (again) starting to pay attention. Because of previous global price increases and the subsequent price collapse in the rare earths, China arguably has the world's most complete rare earth industry chain. This means in order to make full use of the rare earths mined in various countries, miners must come to China for processing. China produces approximately 80% of the world's rare earths but can only supply about 30% of the raw ore.

This is a problem, because the digital transformation is unstoppable – there could be as many as eight rare earths metals in your smartphone and who can't wait to get the next latest and greatest device? However, companies using rare earths for our end-use products are becoming focussed on supply chain resilience and suppliers who are closer to home (also a strategic decision). This was also recognized by US President Trump, who signed an executive order at the end of September 2020 declaring a national emergency in mining in an effort to jump (re)start the domestic industry.

Ahead of the curve, management of Lynas had already recognized

this and despite being a global leader in rare earths, in 2019 put into action “Lynas 2025” – a plan to grow production and create a new rare earths processing centre in Western Australia. In addition, also in 2019, the company announced a Memorandum of Understanding to develop a rare earths processing facility in the United States. To be located in Texas, Lynas and the company’s partner announced in April 2020 that they will receive “Phase 1” funding from the U.S. Department of Defense (DoD) for planning work for the construction of the facility. Initial plans are to process ore at the facility from the company’s mine at Mt. Weld and it was announced that in July, 2020 the companies signed a contract with the US DoD for detailed design of a heavy rare earths processing facility.

As goes the rare earths industry, so goes Lynas and in August 2020, the company successfully raised AUS\$425 million in new equity to fund future and ongoing activities in Australia and Malaysia, giving the company an even stronger balance sheet to finance future growth plans and maintain an industry leading position in the rare earths space. At year-end June 30, 2020, the company had positive working capital of approximately AUS\$84 million plus a loan of AUS\$164.9 million.

The world absolutely needs more rare earths to supply a seemingly unquenchable demand for new and evolving products. The rare earths supply chain has been dominated by China, but refreshed interest in strategic and domestic supply has caused the world to re-evaluate the current rare earths supply system. Despite a number of new and promising startup rare earths companies, Lynas continues to be the global leader. Does it belong in your portfolio?

Search Minerals' Greg Andrews on the electrification of vehicles and the "push" for rare earth magnets

In a recent InvestorIntel interview, Tracy Weslosky speaks with Greg Andrews, President, CEO, and Director of Search Minerals Inc. (TSXV: SMY), about the electrification of vehicles and their collaboration agreements with the Saskatchewan Research Council (SRC) and USA Rare Earth.

In this InvestorIntel interview, which may also be viewed on YouTube (click here to subscribe to the InvestorIntel Channel), Greg started, "The recent Canadian government's, the US government's, the EU government's rule on electrification and reducing internal combustion vehicles is a push in the right space for electrification which of course uses rare earth magnets." He continued by saying that in the last year the OEMs have been investing a lot of capital in electrification of vehicles which again requires a secure supply chain of rare earths to make their business plans operable.

"The collaboration agreements with both SRC and USA Rare Earth is a critical next step for us to turn our product into oxides." Greg said. He added that Search Minerals is exploring the proven Solvent Extraction Process with SRC and Continuous Ion Exchange process with USA Rare Earth to get their projects off the ground.

To watch the full interview, [click here](#)

About Search Minerals Inc.

Led by a proven management team and board of directors, Search

is focused on finding and developing Critical Rare Earths Elements (CREE), Zirconium (Zr) and Hafnium (Hf) resources within the emerging Port Hope Simpson – St. Lewis CREE District of South East Labrador. The Company controls a belt 63 km long and 2 km wide and is road accessible, on tidewater, and located within 3 local communities. Search has completed a preliminary economic assessment report for **FOXTROT**, and a resource estimate for **DEEP FOX**. Search is also working on three exploration prospects along the belt which include: **FOX MEADOW**, **SILVER FOX** and **AWESOME FOX**.

Search has continued to optimize our patented Direct Extraction Process technology with the generous support from the Department of Tourism, Culture, Industry and Innovation, Government of Newfoundland and Labrador, and from the Atlantic Canada Opportunity Agency. We have completed two pilot plant operations and produced highly purified mixed rare earth carbonate concentrate and mixed REO concentrate for separation and refining.

To learn more about Search Minerals Inc., [click here](#)

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