

Iluka Resources is building Australia's first fully integrated rare earths refinery

written by InvestorNews | July 5, 2023

Iluka Resources Limited (ASX: ILU) ("Iluka") is an Australian critical metals producer, specializing in mineral sand mining and processing. Iluka is the world's largest producer of zircon, a major producer of high grade titanium feedstocks rutile and synthetic rutile, and is set to become a significant global supplier of refined rare earths from 2025.

The Post-COP26 World Looks To Australia For Future Non-Chinese Rare Earths Production

written by InvestorNews | July 5, 2023

To achieve U.N. climate change management goals the world needs to shift rapidly to clean energy, and that means we need to build or secure, reliable sources of rare earths. While the USA and Canada have made some progress in this direction, Australia will also be needed to play a key role.

When looking at [a chart of rare earths reserves by country](#), China shows the largest reserves followed by Vietnam, Brazil,

Russia, India, and Australia, in that order. The USA is ranked 8th and Canada is outside of the top ten. Given Australia's stellar track record as a reliable supplier of raw materials, it should not be surprising to know that the West is looking towards Australia to step up production of rare earths, especially those needed to support the surging cleantech sectors of electric vehicles, wind energy, and solar energy.

ClearWorld.us says it well, [stating](#):

"Renewable energy development relies upon sufficient quantities of rare earth minerals, specifically neodymium, terbium, indium, dysprosium, and praseodymium. These are used in the production of solar panels and wind turbines. **If the world is to meet the greenhouse gas emissions targets sought in the Paris Climate Agreement the availability of these minerals must increase by 12 times by 2050.**"

(Emphasis by the author.)

Rare earths are key elements in the cleantech revolution



Australian listed rare earths companies:

Producers

[Lynas Rare Earths Limited](#) (ASX: LYC) ("Lynas")

Lynas is the second largest neodymium and praseodymium ("NdPr") producer in the world. Lynas owns the Mt Weld rare earth mine, which is one of the world's highest grade rare earths' mines, and the Mt Weld ORE Concentration Plant, both located in Western Australia. Lynas also owns the Lynas Advanced Materials Plant (LAMP), which is an integrated manufacturing facility, separating and processing rare earths' materials in Malaysia.

The Lynas 2025 growth strategy encompasses plans to build the Kalgoorlie Rare Earths Processing Facility (cracking and leaching) in Australia and an LRE/HRE separation and specialty materials facility in the USA. Lynas trades on a market cap of [A\\$7.3 billion](#).

Iluka Resources Ltd. (ASX: ILU) (“Iluka”)

Iluka is a relatively new (April 2020) producer of rare earths at their Eneabba Project in Western Australia. Iluka intends to ramp to selling 50,000 tpa of a 20% monazite-zircon ore concentrate for further processing offshore. Iluka has an offtake agreement for 50,000 tpa. Iluka [is working on developing a Phase 2](#) of the Eneabba Project which involves investigating techniques to beneficiate and purify the monazite to an 80% concentrate for sale further down the value chain. Iluka is mostly known for being an Australian heavy mineral sands, zirconium and titanium, producer. Iluka trades on a market cap of [A\\$3.5 billion](#).

Vital Metals Limited (ASX: VML) (“Vital”)

Vital recently began mining ore at its Nechalacho’ Mine in Canada’s Northwest Territories (NWT), with commencement of ore processing at Vital’s, under construction, Saskatoon cracking and leaching facility expected to begin in 2022. The Nechalacho Mine is a high grade, light rare earth (bastnaesite) project with a world-class resource of 94.7Mt at 1.46% REO (measured, indicated and inferred). Nechalacho’s North T Zone, which is being mined by Vital, hosts a high-grade resource of 101,000 tonnes at 9.01% LREO (2.2% NdPr). Vital has a [non-binding MOU](#) with Ucore Rare Metals Inc. for the supply to it of a mixed rare rare earth carbonate, beginning H1 2024. Vital Metals trades on a market cap of [A\\$250 million](#).

Explorer/Developers (in alphabetical order):

Arafura Resources Limited (ASX: ARU) (“Arafura”)

Arafura 100% own the Nolan’s Bore rare earth project 135kms from Alice Springs in the Northern Territory, Australia. Arafura [states](#): “The Project is underpinned by low-risk Mineral Resources that have the potential to supply a significant proportion of the world’s NdPr demand. It is a globally significant and strategic NdPr project which, once developed, will become a major supplier of these critical minerals to the high-performance NdFeB permanent magnet market.”

The deposit contains a JORC 2012-compliant Mineral Resources of 56 million tonnes at an average grade of 2.6% total rare earth oxides (TREO). 26.4% of the total rare earths contained are NdPr. The Project is [supported by](#) Export Finance Australia (EFA), and the Northern Australia Infrastructure Facility (NAIF), via non-binding letters of support for a proposed senior debt facility of up to A\$200 million and A\$100 million respectively. Arafura is looking to raise further funds to get the project started. Arafura recently [stated](#): “The momentum with offtake discussion has enabled engagement to expand to include the options for strategic investment as part of the Nolan’s project funding.” Market cap is [A\\$379 million](#).

Australian Rare Earths Limited (ASX: AR3) (“AREL”)

AREL is progressing in the exploration of a significant deposit of valuable ‘clay-hosted’ rare earth elements, located at their Koppamurra Project spread over [~4,000km²](#) of 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. The Koppamurra Project is an ‘ionic clay’ rare earth opportunity with a 2021 JORC [Inferred](#) Mineral Resource of 39.9Mt @ 725ppm TREO. AREL trades on a market cap of [A\\$98 million](#).

Australian Strategic Materials Ltd. (ASX: ASM) (“ASM”)

ASM owns the Dubbo Rare Earths Project in NSW, Australia. The Dubbo Project is a 100% owned ‘construction ready’ poly-metallic and rare earths project with potential to become a key global supplier of specialty metals and rare earths. ASM’s goal is a “[mine to metal](#)” strategy to extract, refine and manufacture high-purity metals and alloys, supplying directly to global technology manufacturers. Market cap is [A\\$1.92 billion](#).

Northern Minerals Limited (ASX: NTU)

Northern Minerals own the Browns Range heavy rare earth minerals project in Western Australia. Northern Minerals has built a pilot plant to test a number of deposits and prospects that contain high-value dysprosium and other Heavy Rare Earths (HREs) such as yttrium, hosted in xenotime mineralization.

The Company [states](#): “Northern Minerals is positioned to become the world’s first significant producer of dysprosium outside of China. Accounting for 60% of the Browns Range Project’s (the Project) revenue, dysprosium is the key value driver of the Project and is at the core of Northern Minerals’ marketing strategy. With a high value, high purity, dysprosium rich product, the Company is set to become a long term and reliable supplier of dysprosium and other critical heavy rare earths to world markets.” Market cap is [A\\$339 million](#).

Peak Resources Limited (ASX: PEK)

Peak Resources 75% owns the Ngwalla Tanzania rare earth project, which the Company [states](#) is one of the world’s, largest and highest grade, undeveloped rare earth projects. The Ngwalla Project has ore reserves of 18.5 million tonnes at 4.8% REO; 22% of the total mineral resource is NdPr, with an expected 26 year life of mine. The Project is currently at the funding stage

having completed a BFS in 2017. The BFS summary details are [here](#). About 90% of the Project's revenues will be coming from NdPr. Peak Resources [state](#): "Operating cost of US\$ 34.20/kg NdPr* Oxide, demonstrating potential to be the world's lowest-cost fully integrated rare earth development project." Market cap is [A\\$135 million](#).

Closing remarks

With rare earths demand set to grow strongly this decade as the world moves towards cleaner energy and technology, investors would be wise to take a second look at the [rare earths sector](#).

Australian critical minerals projects were recently in the news after the Government announced that they would receive an [A\\$2 billion boost](#) (via a loan facility), to support the sector. This bodes well for the Australian rare earths junior miners to join Lynas as producers. Stay tuned as this sector looks set to shine this decade.

Iluka Resources quietly becomes a western rare earths producer

written by InvestorNews | July 5, 2023

Australian company now producing rare

earths concentrates to meet increased demand

The boom in electric vehicles should increase the demand for rare earths dramatically in the decade ahead. Electric Vehicles (EVs) are [forecast](#) to grow about 11 times from the [2.2m](#) cars and trucks produced in 2019 to 22.4 million vehicles a year by 2030. [Other strong demand sources](#) for rare earths include catalysts, metal alloys, high tech products (smartphones etc), aerospace & manufacturing. Against this backdrop any company that can bring on production of rare earths (especially the valuable valuable Nd, Pr) is set to do very well based on the increased forecast demand.

Rare earths demand drivers



[Source](#)

Additional NdPr oxide needed per EV (additional to an Internal Combustion Engine vehicle)



[Source](#)

One Australian miner has recently become a rare earths producer.

Iluka Resources (ASX: ILU | OTC: ILKAY) (“Iluka”) is better known as an Australian mineral sands (zircon) and titanium producer, but in April 2020 they quietly commenced production of rare earths at their Eneabba Project in Western Australia.

Iluka has recently completed [Phase 1](#) (construction and commissioning) of the Eneabba Project and intends to sell 50,000 tpa of a 20% monazite-zircon ore concentrate for further processing offshore beginning in Q3, 2020. Iluka has an offtake agreement for 50ktpa for 2 years. Project life is estimated at 13 years with a projected 6 month payback.

Iluka [is now working on a Phase 2](#) of the Eneabba Project which involves a FS investigating techniques to purify the monazite to an 80% concentrate for sale further down the value chain. The early CapEx estimate for Phase 2 is \$20–40m, but this is subject to change as the FS advances.

Iluka is certainly advancing fast and has essentially become a largely unrecognized, western-located, rare earths concentrate producer.

Iluka Resources monazite ore Eneabba Project in Western Australia



[Source](#)

Closing remarks

New rare earths supply is very hard to come by because of large CapEx and environmental hurdles. Combine this with what is expected to be a 2 times surge in demand for rare earths this decade (boosted by demand for magnets used in electric vehicles and high tech devices) and you have a very compelling reason to be looking closely at the rare earth miners. In particular, any near term pure play rare earths producers located in safe western locations will be very highly attractive.

It appears for now that many investors are not fully aware of the potential NdPr demand surge ahead. This is understandable as

we are yet to see EV demand really surge, and NdPr prices have not yet responded. A rise in NdPr prices as the dependent industries gain more attention will follow as analysts up their forecasts. For investors willing to come in early and take a forward looking decade approach, right now is an excellent time to get familiar with and invest into the rare earths sector. The usual risks apply, and yes China will no doubt continue to be a fierce competitor.

Iluka Resources, while not a pure play, is an exciting new western entrant in the field of rare earths producers. Assuming Iluka can execute well, the coming decade should provide an excellent tailwind for Iluka to build a valuable rare earths business to compliment their existing business.