

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

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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 [~4,000km<sup>2</sup>](#) 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.

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# InvestorIntel's Top 10 Trending List for November 2021

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In this InvestorIntel video, Tracy Weslosky lists InvestorIntel's Top 10 Trending articles and videos on InvestorIntel.com for the last 30 days. You may find this quite interesting as this Top 10 list provides an indicator of what market trends our audience is finding interesting.

Presently trending #1 on InvestorIntel.com is Frederick Kozak's take on the [top 5 rare earths companies](#) for 2021. Our Australian Editor Matthew Bohlson's coverage on the Australian Government's extension of a [\\$2 Billion loan facility for the critical materials industry](#) is trending #2 followed by an [update on Lynas Rare Earths Limited](#) (ASX: LYC) trending #3. [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQB: APAAF) is presently trending #4 with their [article](#) written by Dean Bristow titled – Biden, the Chinese raw material hunt and the 'massive' monazite results of Appia Rare Earths & Uranium. Trending #5 is Tracy Weslosky's update on [Neo Lithium Corp.](#)'s (TSXV: NLC | OTCQX: NTTHF) acquisition by China's Zijin Mining Group.

Here is the complete list of InvestorIntel's Top 10 Trending Articles and Videos on [InvestorIntel.com](#) for November 2021.

1. The Top 5 Rare Earths Companies for 2021  
<https://bit.ly/3shB8X4>
2. Australian Government extends a \$2 Billion loan facility

- for the critical materials industry <https://bit.ly/3AX4gqv>
3. Lynas Rare Earths, making record profits and growing to meet the EV demand <https://bit.ly/3m65cSW>
  4. Biden, the Chinese raw material hunt and the 'massive' monazite results of Appia Rare Earths & Uranium <https://bit.ly/3lKR82m>
  5. China pays full value for Neo Lithium, the bull market has arrived. <https://bit.ly/3Fxco3w>
  6. Byron King's Top 5 "Outstanding" Yukon Gold (and Silver) Mining Names <https://bit.ly/2WFj9yL>
  7. North American Rare Earth Juniors Consolidate Capabilities to Advance Towards a Total Domestic Supply Chain <https://bit.ly/3bai3ia>
  8. Cesium, A Critical Metal and an Opportunity for Avalon Advanced Materials <https://bit.ly/3ByGh0u>
  9. U.S. nuclear power generation at historical heights as investors buy uranium <https://bit.ly/2XlRrY0>
  10. Canada's Voyageur Pharmaceuticals Breaking a Chinese Monopoly <https://bit.ly/3us0gdb>

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

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**Rare earths directed Appia Energy embarking on a fully funded drilling program at**

# Alces Lake

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Rare earths companies are starting to gain attention as demand for the magnet [rare earths](#) in particular is forecast to boom this decade as we move further towards renewable energy and electric vehicles. The market for magnet Rare Earth Oxides (REO) is expected to increase [five-fold by 2030](#). Two key magnet metals, Neodymium (Nd) and Praseodymium (Pr) have seen their prices rise strongly in 2021 and notably again the past month after a recent dip.

**Neodymium (Nd) oxide and Praseodymium (Pr) oxide prices have spiked higher the past month**



Source: [Kitco](#)

One rare earth junior (Appia Energy) has 2nd highest average rare earth element (REE) grade in the world, at [16.65 wt% TREO](#), hosted in favorable monazite ore.

[Appia Energy Corp.](#) (CSE: API | OTCQB: APAAF) (“Appia”) is focused on rare earths at their 100% owned, 43,434 acre, Alces Lake Project in the Athabasca Basin area of northern Saskatchewan, Canada. They also have uranium prospects in the region as you can read [here](#).

**Appia Energy’s project portfolio in Northern Saskatchewan, Canada**



## [Source](#)

The Alces Lake project has 'monazite ore' containing valuable rare earths Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy), and Terbium (Tb). Exploration since 2017 has identified high-grade Total Rare Earth Oxide (TREO) with [up to 49 wt%](#) TREO (average grades of 16.65 wt% TREO and 3.85 wt% CREO) on or near surface. Less than 1% of the property has been explored with diamond drilling.

On July 15, 2021, Appia [announced](#) that they are now embarking on a [fully funded ~5-6,000m drilling campaign](#) at Alces Lake, which is as much drilling as they have ever drilled before at the Project. The first phase of ground geology and geophysics is completed and the drilling team is about to mobilize to the Alces Lake camp, where two drilling rigs and crews will be working 24/7 on this phase of the helicopter-supported diamond drilling program.

Alces Lake Project Manager, Nic Guest, [commented](#): "The quality of the data obtained in the first phase of ground exploration is excellent. Our understanding of the various occurrences across the property has grown and we have planned our drill program accordingly. Our first phase of 2021 drilling will give us new and important information."

Appia President, Frederick Kozak, [stated](#): "Approximately 5,700 metres of drilling has been planned to test the near-surface and down-plunge extents of new and existing rare-earth targets. More than 4,000 metres will be dedicated to identifying the depth potential of the WRCB zone (cumulatively the Wilson-Richard-Charles-Bell discoveries) and help complete the understanding of this significant discovery."

The Alces Lake Project has excellent local infrastructure including mills, power, labour, highway, air strips, and well

established summer and winter access routes. Appia has even recently built [a winter camp site](#) to help with all year round operations.

## **Highlights of Appia Energy's exciting Alces Lake Project**



Source: [Company presentation](#)

### **Closing remarks**

Appia is sitting on a super high grade REE monazite ore deposit at Alces Lake. A huge summer drilling campaign has just begun and will help the Company potentially build up a Resource estimate. Rare earths expert Jack Lifton has also [agreed to join the Appia team](#) as a Strategic Adviser.

Appia is currently trading on a market cap of C\$83 million after a recent stock price dip. For those who missed out on buying Appia earlier, now looks to be a good time to take a second look. We will let you know the drill results as they come in during the following months. Stay tuned.