

# Iluka Resources looks to join exclusive club of rare earths producers

written by | July 11, 2022

[Iluka Resources Limited](#), (ASX: ILU) an Australian mineral sands company, is poised to add rare earth elements to its portfolio of products. The company's main products are zircon, titanium, plus iron and carbon materials from its processing plants in Australia. It also has recently announced the de-merger of its Sierra Leone company, Sierra Rutile Holdings Limited, to end up with two ASX listed companies.

The plan announced by Iluka is to start concentrating monazite and xenotime in the second half of this year from its mineral sands operation in Western Australia. Cracking and leaching will begin next year followed by separation to produce rare earth oxides in 2024 at Eneabba, Western Australia, which is a 3 hour's drive north of Perth. According to public company information, the planned output is 17,500 tons per year of Total Rare Earth Oxides (TREO). They note the plant will have a full capacity of 23,000 TPY of TREO with all circuits fully utilized. It is reasonable to assume that they are looking for additional monazite to fill their plant as the capacity is more than they can produce themselves.

Based on the feed rate of 17,500 TPY TREO Iluka expects to produce 4,000 TPY of Nd/Pr plus 500 TPY of Dy/Tb. Typically, Dy:Tb ratio varies from 2:1 to 5:1. At today's pricing of \$135/kg USD for Nd/Pr oxide, Dy oxide at \$362/kg USD, and Tb407 at \$2.056/kg USD, Iluka's annual revenue could be in the range of US\$1 billion.

The projected capital costs are AU\$170-200 million for the cracking and leaching, and AU\$320-390 million for the separation and finishing. Additional costs include plant and infrastructure AU\$110-140 million plus indirect costs, contingency, commissioning and miscellaneous costs of AU\$400-470 million for a total of AU\$1-1.2 billion. [According to the company](#), there will be support from the Australian government in the form of a loan from the government's Critical Minerals Facility fund and a risk-sharing agreement that would include non-recourse debt, royalty payments to Iluka, and flexibility in repayment schedules. This is what is necessary to get these projects off the ground – government support and vision to see that risk sharing is very important.

Raising this amount of capital in the markets today is a challenge and also very dilutive as their current market cap is AU\$3.8 billion. An advantage Iluka has over many other planned entrants into the rare earth space is their existing cash flow from current operations, as it will take time to generate revenues from this operation after construction begins this year and until the first output is expected to be seen in 2025.



***Source: Iluka Company presentation, April 4, 2022***

Based on using their existing stockpile at Eneabba, Iluka could produce 12,400 TPY TREO with an operating cost of AU\$13/kg or about US\$10/kg which is competitive with Chinese costs. I am assuming they put no value on the feed material as it is in a stockpile. They have not included any transfer costs from other sources in their expanded production estimates with other sources of feed. The stockpile feed would produce 2,700 TPY of Nd/Pr or about half of the capacity of 5,500 TPY of Nd/Pr. This stockpile would be exhausted in 9 years, so they are actively looking for other sources to fill the plant.

One question that is not clear is whether they will take a Molycorp plant design approach or the Lynas approach. Molycorp originally designed a single train 20,000 TPY TREO capacity. Lynas built four 5,500 TPY TREO trains so that if supply or demand changed, or there was a problem in one train, they did not lose all their production. This came to light over the COVID era when demand dropped. This is a major consideration of any new plant design as economies of scale are limited or offset by potential operational problems.

Overall this may well be one of the players to cross the finish line in the race for more production of rare earths outside China.

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## **Auxico Resources' Pierre Gauthier on being the first NA company to commercially produce and sell monazite into the world market**

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Pierre Gauthier, Chairman and CEO of [Auxico Resources Canada Inc.](#) (CSE: AUAG) recently spoke with InvestorIntel's Byron W. King about Auxico's just licensed patent for ultrasonic disintegration process technology. This technology allows a rapid decrease in the time, temperature, and pressure necessary to crack hard rock ores and extract valuable minerals by

disintegrating the ores without the need for extensive crushing and grinding. The ultrasonic process allows a high level of extraction efficiency by greatly increasing the surface area to volume ratio of the minerals to allow rapid leaching out of the payable metals. Pierre emphasized the broad application by Auxico of this ultrasonic technology. In particular, it has allowed class-leading rapid high-level extraction of nickel and of rare earths from their ores. This saves water, energy, and most of all, time, which, of course, reduces costs.

Pierre went on to say that Auxico has also developed a new simplified [chemical process](#) for removing the radioactive elements from the very rich in magnetic rare earths mineral, monazite, after it has been treated ultrasonically. Auxico, he continued, has located monazite bearing mineral sands in Columbia and the Democratic Republic of Congo (DRC) as well as monazite rich residues from tin mining in [Brazil](#), Bolivia, and the DRC. It will treat them ultrasonically, where necessary, to improve and facilitate the removal of radioactive thorium and uranium and their safe disposal in the countries of origin in order to be able to ship the monazite for extraction and separation into individual rare earths in a plant to be constructed in Quebec or the USA.

Auxico's monazite from the DRC is low enough in thorium and uranium so that the mineral can be shipped out of the country without processing. Pierre finally pointed out that Auxico has already sold and shipped 100 tons of monazite from its DRC operation to a customer in Asia. Auxico plans to ramp up the shipments from the DRC to [1000 tons per month](#) by the end of 2022.

This makes Auxico the first Canadian company to commercially produce and sell monazite into the world market. As Byron W. King said, "This has been a fabulous interview."

To access the complete interview, [click here](#)

### **About Auxico Resources Canada Inc.**

Auxico Resources Canada Inc. is a Canadian company that was founded in 2014 and based in Montreal. Auxico is engaged in the acquisition, exploration and development of mineral properties in Colombia, Brazil, Mexico, Bolivia and the Democratic Republic of the Congo.

To learn more about Auxico Resources Canada Inc., [click here](#)

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