Unique Market Exposure to a Heavy Rare Earths Elements Project with Superior Economics

Company Profile by TERRA STUDIO
As at 15th January 2021

OVERVIEW / FLAGSHIP PROJECT

Ionic Rare Earths Limited (ASX: IXR): is a mineral resource company currently focused on the exploration and development of the Makuutu Rare Earths Project (now 51% earning up to 60% interest) in Uganda. The Makuutu project is similar to the Southern China Ionic Adsorption Clays (IAC) mines from where ~95% of the world's Heavy Rare Earths Elements (HREE) are produced, and already has a large mineral resource of 78.6 Mt at 840ppm TREO.

KEY ELEMENTS OF STRATEGY

The key elements of IXR strategy are as follows:

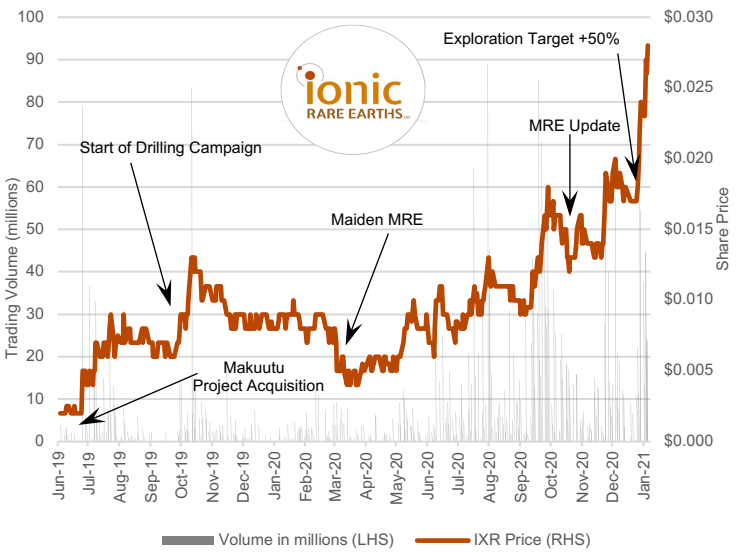
1. Extend (and increase the confidence) of mineral resources at Makuutu
2. Progress development studies aiming at demonstrating superior economics, overall scale, and path to production

KEY OUTCOMES IF SUCCESSFUL

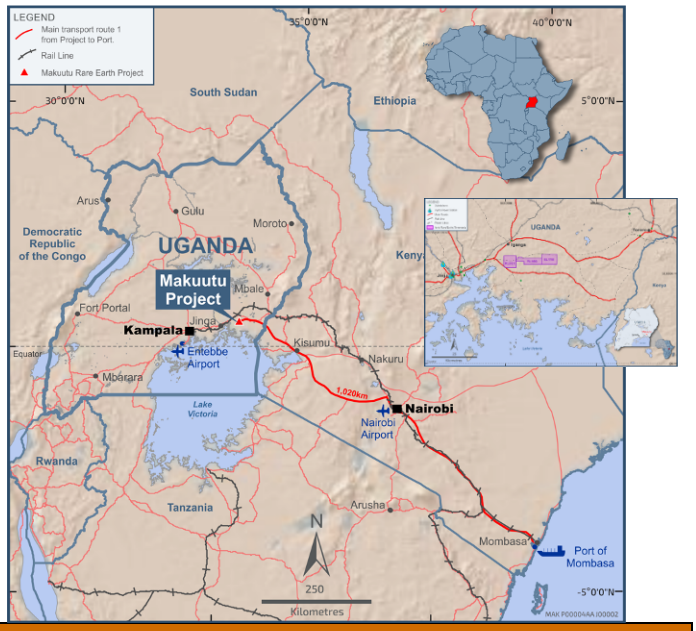
1. One of the largest ionic adsorption clay deposits outside China
2. A HREE project with a simple desorption/leaching process, low up-front capital, low capital intensity and high margins
3. As the other IAC projects are privately held, IXR offers a unique exposure to the superior economics of IAC deposits and a major source of future low cost HREE in a context of depleted or running out Chinese IAC mines and limited overall long term supply
4. Opportunity for a long-life asset to supplement declining HREO production from China and supply western markets with critical and heavy rare earths

CORPORATE OVERVIEW (ASX: IXR)

Shares	2,760 million ordinary fully paid shares
Unquoted Options and Performance Rights	Expiring various dates ex various prices: 349.4 million (IXRAA) 30 Nov 2020: 110m @ A$0.018 (IXRAE) 33.4 million performance rights (IXRAF)
Share Price	A$0.028
Market Capitalisation	A$77.3 million
Cash	A$3.03 million as at 30 September 2020 ⇨ Fully funded through to upcoming Mineral Resource Estimate (MRE) update & scoping study update

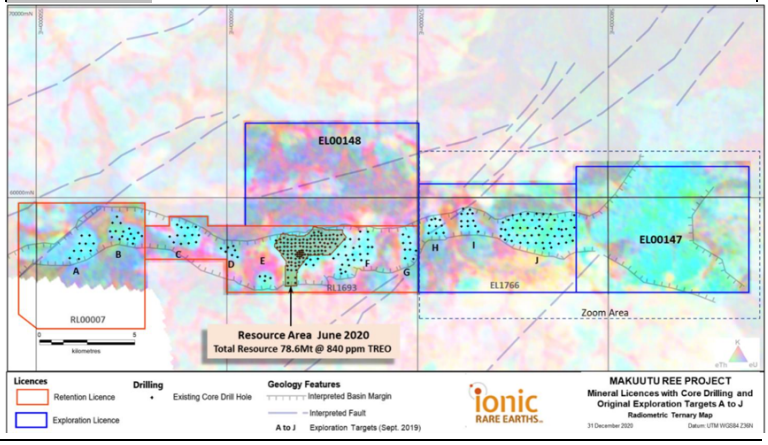


⇨ ASX: IXR share price shows a strong uptrend as the company delivers positive corporate developments and exploration and project evaluation results



MAKUUTU INVESTMENT HIGHLIGHTS

Mineral Resource and Exploration Target	• 78.6 Mt at 840ppm TREO at a cut-off of 300 pm TREO less Ce_2O_3) representing less than 20% of mineralised corridor, which is now 37km long with new EL00147 • Exploration target: 240-800 Mt at 450-900 ppm TREO ⇨ Significant mineral resource upside to be on par with other similar projects and mines
Deposit Type	• Ionic Adsorption Clays (IAC) • Low grade, but excellent geological and mineralisation continuity and elevated HREE content • IAC mines from Southern China are responsible for the majority (95%) of the high value HREO production globally ⇨ Opportunity to replicate the proven development path of the Chinese mines, applying improved environmental standards
Drilling Program	• 2020 drill program tested an area more than 3 times larger than the current MRE (16.1 km^2 vs 4.9 km^2) • Drilled metres represent more than 4 times current MRE (3,750m vs 900m) • Number of drill holes (222 completed) is more than 4 times current MRE (51 holes) • Assays received for 5 of 7 tranches – assays pending • Shallow (17m average depth) drill holes • Part of the drilling involved duplicating pre-IXR positive results from non-JORC RAB drilling ⇨ Minimal cost and highly effective drilling ⇨ High degree of confidence to increase the mineral resource substantially



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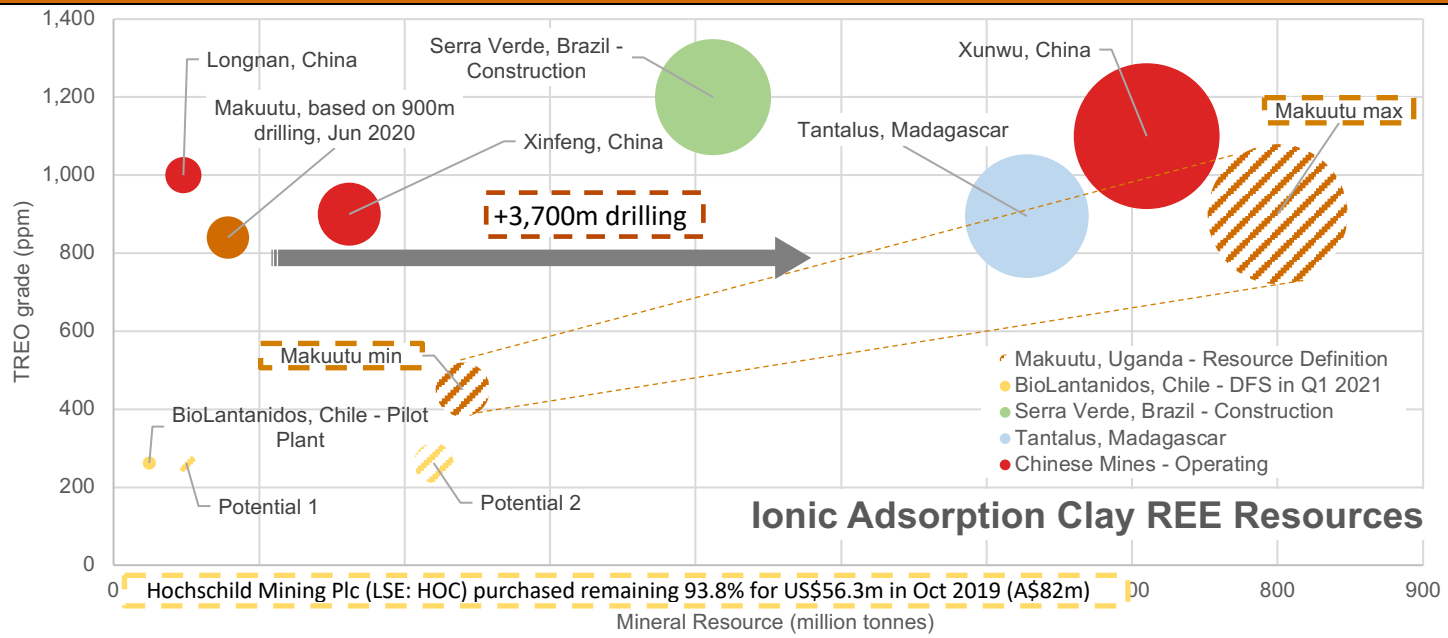
MINERAL RESOURCE BENCHMARKING OF IAC MINES AND PROJECTS



Source: Company reports, Terra Studio. All mineral resources are JORC or NI43-101 compliant except those for the Chinese mines

IAC REE vs. HARD ROCK REE PROJECTS

	IAC-hosted REE	Hard Rock-hosted REE
Host Rock	Soft clay	Hard rock
Mineralisation	Elevated HREO and CREO product content	Bastnaesite + Monazite (LREO dominant); Xenotime (HREO dominant)
Mining	Open pit (0-20m) Minimal strip ratio Negligible blasting	Strip ratio can be high Blasting required
Processing	No crushing or milling Atmospheric leaching, purification, precipitation Scalable	Crushing and milling Flotation Expensive cracking
Costs	Typically low capital expenditure and low operating costs	Typically high capital expenditure and high operating costs
Product	Oxide or carbonate precipitate (+90% TREO) Low La + Ce content	Concentrate (20-40% TREO) High La + Ce content
Payability	70%	40%
Margin	Typically high margin	Typically low margin
Environmental	Non-radioactive tailings	Often radioactive tailings requiring monitoring beyond life of mine
Refining	Simple acid solubilisation followed by conventional REE separation Complex recycling of reagents and water	High temperature "cracking" and strong reagents to solubilise refractory REE minerals and manage radionuclides

HREE = Sm + Eu + Gd + Tb + Dy + Ho + Er + Tm + Yb + Lu + Y;
LREE = La + Ce + Pr + Nd; CREE = Nd + Eu + Tb + Dy + Y.

INVESTMENT HIGHLIGHTS (continued)

Mining Scenario	• Open pit mining with negligible strip ratio, and negligible blasting (if any) • Opportunity to use mined areas for rehabilitation ⇨ Low-cost and low environmental impact mining
Metallurgy	• Preliminary test work achieved extractions up to 75% TREE-Ce using simple desorption/leaching techniques • HREE achieving higher recovery than LREE • Potential low-cost recovery of scandium ⇨ High value, quality product
Community	• Strong local community engagement • Uganda government support demonstrated by renewed (RL) and granted (EL) licences
Logistics and infrastructure	• 10km from sealed highway • 20km from rail line • Access to water and Grid power near project site • 80km from 184 MW hydroelectric power

UPCOMING NEWS FLOW

Q1 2021	• Drilling assay results • Mineral Resource Estimate (MRE) update • Scoping Study update
Q2 2021	• Drilling starts on EL00147 and DFS commences ⇨ Potential large increase in project scale

KEY RISKS AND MITIGANTS

Geological	• The risky nature of exploration/drilling activities is mitigated by the excellent geological continuity of IAC deposits
Processing	• Technical risks are significantly mitigated by the nature of the deposit, a relatively simple processing route and a strategy limited to the production of a precipitate ⇨ The weathering of the original REE-bearing rocks simplifies the processing and separation of the REE ⇨ High probability of project development