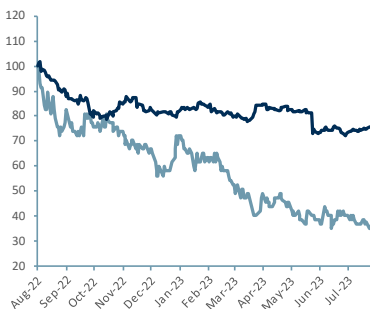




CIC

52 Wk. Lo/Hi

0.02 – 0.06



IXR (lighter line) ASX market vs price relative

**Monday, 14 August 2023**

Close Price	0.02
52 wk Range Low	0.02
52 wk Range High	0.06
MCAP (m)	\$79.00
EV (m)	\$59.46
Index: Public	XASX
Financial YE	30-Jun
Reporting Currency	AUD
Listing Currency	AUD

**Business Activity**

Mining E&amp;P

**Key Metrics**

Gross debt (m)	\$0.02
Cash (m)	\$19.56
Net Debt (Cash) (m)	-\$19.54
Net Operating Cash (m)	-\$5.72
Revenue (m)	\$0.33
Net Income (loss) (m)	-\$5.45

**Key Ratios**

(Net Cash) / Shareholder Equity %	-24.73%
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**Ionic Rare Earths Ltd.****Core Investment Case Update**

Ionic Rare Earths Ltd (ASX:IXR) is a rare earths mining explorer (Uganda) and REO magnet recycling company (Belfast, UK). Rare earth elements primary use is in the production of permanent magnets – key components of clean energy applications (wind turbines and electric vehicles). IXR's flagship Makuutu Rare Earths project is significant given its ionic adsorption clay-hosted geology - similar to that found in projects in Southern China, main global supplier of Heavy Rare Earths. IXR currently holds 60% interest in the Makuutu project. Makuutu has a mineral resource estimate of 532 Mt @ 640 ppm Total Rare Earth Oxide (TREO) and Indicated Resource of 404 Mt @ 670 ppm TREO. In Sep22 IXR received a £1.72m grant from the UK government to develop its demonstration magnet recycling plant in Belfast, UK.

- IonicTech begins REO recycled magnet production at Belfast facility;
- Makuutu DFS for Stage 1 development signed off;
- Phase 5 drilling commenced + increases mineral resource estimates;
- Cash & CE 4Q23A (30 Jun 2023) A\$ 11.1m.

AUD (m)	MCAP	EV	RoA %	RoE %	NCO	Levered FCF
2023	79.00	59.46	10.61%	16.99%	-5.72	-13.96
Multiples	EV/ Revs	P/S	Fwd PE	BV/ Share	P/B	Current
2023	N/A	N/A	N/A	0.01x	1.71x	24.45x

## Investment Case

**IXR is a rare earths explorer and recycling business for clean energy technologies, e.g. wind turbines, electric vehicles (EVs) and magnet recycling. Low-cost, high value rare earths project and strategic asset** – The Makuutu project provides an advanced stage, low-cost (low AISC) high value heavy rare earths development opportunity. A key advantage of the Makuutu project is its geology – Ionic Adsorption Clay (IAC) mineralization.

Makuutu's geology is similar to projects located in Southern China and Myanmar where the cheapest and most readily available sources of Heavy Rare Earth Oxides (HREO) are extracted. ~95% of the global supply of Heavy Rare Earths originates from clay-hosted mines there. The Makuutu project is easily accessible via highways and roads, has reliable high grade power infrastructure, rail connectivity, mobile connectivity and readily available sources of water.

**Scalable economic deposits:** Stage 1 Definitive Feasibility Study (DFS) of the Makuutu project base case indicates an initial life of mine (LOM) of 35 years, delivers EBITDA of US\$ 1.6bn, a post-tax-free cash flow of US\$ 1.02bn and an IRR of 32.7%. The base case assumes maiden ore reserve of 172.9 Mt @ 848 ppm of TREO, REO potential production of ~1,300 tpa over the first 10 years, suggesting significant upside potential.

**Makuutu basket highly sought after:** Makuutu presents one of the best-balanced Rare Earth Oxide (REO) baskets vs. other projects globally. ~71% of the basket is HREO and CREO dominant, over the initial 35-year LOM. Total CAPEX is estimated at US\$120.8m for the stage 1 production of mixed rare earth carbonate (MREC). The first MREC production is expected in 1Q25 putting IXR in a unique position to be a long-term sustainable magnet and heavy REO producer. In addition, Makuutu's basket contains critical raw materials (e.g. neodymium, dysprosium, terbium, etc.), used in energy transition technology manufacturing and emissions reduction (EV motors and wind turbine generators).

**Significant exploration upside:** Phase 5 drilling at Makuutu advanced ahead of schedule, which has potential for an upward revision of the existing mineral resource estimate of 532 Mt @ 640 ppm TREO. P5 rotary air blast (RAB) drilling advanced on EL00147, EL00247 and RL00007 – 76 holes completed for 1,663 metres. P5 RAB drilling will support potential growth targets to extend the 37km Makuutu mineralized corridor and will facilitate the next planned Mining License Application (MLA) expected before End Nov 2024.

## Catalysts

Completion of an award of stage 1 mining license application (MLA) - expected 3Q23; Increase resource estimates; Long run rising critical metals prices; Clay-hosted geology; Transition to magnet recycling and global circular economy of REEs.

## Operational Strategy

### DFS Stage 1 completed

Ionic Rare Earths is an **REE recycling and explorer company** that has completed Stage 1 of its REE mining deposits Definitive Feasibility Study (DFS) in March 2023 and received approval for works commencement at the Makuutu mine site by the Ugandan Ministry of Energy and Mineral Development (MEMD).

The Phase 5 drilling program received approval to commence in May 2023 with **production scheduled for early 2025E**. The drilling program expected to increase the existing mineral resource estimate (MRE) at Makuutu to 532 Mt @ 640 ppm TREO. Existing Ore Reserve Estimate of 172.9 Mt @ 848 ppm TREO.

### ESG focused

IXR's DFS includes an **Environmental and Social Impact Assessment (ESIA)** which was approved by Uganda's National Environmental Management Authority (NEMA), which facilitated the approval of the MLA license.

IXR joined the United Nations Global Compact in Oct 2022 and to incorporate the UNSDGs into science-based reports going forward. IXR has been awarded a "BB" ESG score for the Makuutu Rare Earth project by Digbee ESG™ (mining sector leading independent assessments platforms for ESG disclosure - London, UK).

### Rare Earth Oxides production at Belfast, UK recycling facility

**Recycling** - In Sept 2022 Ionic's 100% owned subsidiary – Ionic Technologies – received a grant from the UK Government Advanced Propulsion Centre (APC) of £1.72m (~A\$2.9m) to **develop a demonstration scale magnet recycling plant**.

The recycling plant will **secure REEs for renewable energy applications**. The plant will produce **high purity magnet REOs** from recycled magnets and swarf (waste material/debris), which will be used in high specification magnets in EVs and offshore wind turbines, with strong interest also in defence.

### Exhibit 1: [News flow summary since IXR CIC 21 March 2022](#)

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1 Aug 2023	– Viridis (VMM) to acquire 100% IAC REE project in Brazil
28 Jun 2023	– EV supply chain (i.e. magnet recycling) added to Ionic board
18 Jun 2023	– IonicTech begins REO production at Belfast facility
18 May 2023	– Makuutu P5 drill program commences
17 Apr 2023	– IonicTech magnet recycling plant commissioning commences
20 Mar 2023	– Makuutu Stage 1 Definitive Feasibility Study (DFS)
27 Oct 2022	– Makuutu receives ESIA approval
30 Sep 2022	– SerenTech changes name to Ionic Technologies
12 Sep 2022	– Makuutu mining license application begins
8 Sep 2022	– Seren Technologies receives £1.72m UK govt grant
3 May 2022	– Makuutu Resource records substantial increase
11 Apr 2022	– \$30m placement
3 Apr 2022	– Acquisition of Seren Technologies

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## Management Team

### ➤ **Managing Director, Tim Harrison.**



Tim has over 23 years' experience as a chemical engineer and metallurgist with a specialty in mineral processing and hydrometallurgy across a range of commodities. Tim also has experience project development, engineering and construction. Tim was appointed Managing Director in December 2020. Tim joined Ionic as Project Manager of Makuutu Rare Earths Project in 2020 to drive development and value creation. He has a BA in

Chemical Engineering from the University of Adelaide, Australia.

### ➤ **CFO / Company Secretary, Brett Dickson.**



Brett has over 20 years' experience working on start-ups, restructuring and financing of junior publicly listed mining and exploration companies in Australia, Nicaragua, Chile, Mexico, Finland, Ukraine, Laos, Papua New Guinea and South Africa. His experience ranges from capital/debt raisins, corporate restructuring and exchange listing. Brett is the CFO and Company Secretary of IXR. He has a BA in Economics and Finance from Curtin

University in Bentley, WA.

## Risks

**Project development risk** – This includes failure to reach 12-month targets set out for the UK recycling facility. There is risk associated with obtaining the MLA sign-off in Uganda, Africa on time as expected deadlines tend to slip in many developing economy jurisdictions.

**Commodity price risk** – IXR is highly exposed to commodity price volatility. A potential fall in commodity prices could lead to its projects becoming economically unviable. Risk mitigation steps could include measures to hedge risk including steps such as stockpiling when prices are low and price hedging when prices rise above expectations. REE mining extraction is capital intensive and relatively inefficient (small product volumes require mining of large ore volumes). Product prices are high to compensate and may suppress demand / encourage research into substitutes.

**Funding availability** – Mining is a capital-intensive business and requires a significant amount of investment as well as working capital. If the company is unable to raise capital for its exploration and development activities, it will adversely impact the timelines for its mining projects. Also, too much new equity (raising money via issuing equity) will lead to dilution while debt funding will increase interest costs thereby putting further pressures on cash flows. We estimate that in 2021 AUM \$30trn were formerly inaccessible to companies without an ESG with metrics. We believe the AUM filtered informally at this time using ESG filters is far in excess of AUM \$30trn.

**Regulatory risk** – Mining projects tend to attract high regulatory interest given their impact on the environment as well as on the country's natural resources. IXR's assets are in Africa and recycling is in the UK, both are subject to extensive country specific laws and regulations. Failure to comply with them could lead to delay or complete shutdown of the development of the assets. IXR is ESG focused but does not have an ESG policy on its website or use big data collection and analysis at this time. Big data collection and analysis can reduce several risk types and wastage.

**Personnel risk** - Small and mid-sized companies are more dependent on their C-suite/executive management teams than large and mega-cap global companies. The loss of key personnel can have a disproportionate impact on valuation and investor perception compared to similar events at larger more mature (often ex-growth) companies.

**Political risk** – China dominates the REE industry, from processing through to value added products. The ongoing geopolitical tensions are already weaponizing commodities and the continuation of the Russian/Ukraine war could affect relations with China reducing the ability to find processing centres for sales of rare earths.

*IXR scores well on ESG / sustainability within the smaller mining companies' cohort. We expect IXR's ESG credentials to enhance its fund-raising capability.*

*Investors should note that IXR has assets in the UK (recycling under development) and exploration and mining assets in Africa which have a commensurately higher risk profile.*

## Notes [Intentionally Blank]

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<b>Is the research provided by a broker and paid for after it has been produced.</b>	<b>NO</b>	<input checked="" type="checkbox"/>
<b>Is the research potentially cross subsidized by other investment banking services.</b>	<b>NO</b>	<input checked="" type="checkbox"/>
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 Managing Director  
 Head of Research  
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