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ASX: IXR

ASX Announcement

31 March 2024

QUARTERLY ACTIVITIES REPORT DECEMBER 2023

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HIGHLIGHTS

MAKUUTU HEAVY RARE EARTHS PROJECT, UGANDA (60% IONICRE)

- **Large Scale Mining Licence (LML) 00334 awarded by the Ugandan Minister of Energy and Mineral Development for Makuutu Heavy Rare Earths Project;**
  - **First large-scale mining licence awarded in Uganda;**
  - **Award of LML brings on further supply chain and off-taker engagement;**
  - **Assists to target Final Investment Decision for late 2024;**
- **Strategic increase in ownership of the Makuutu Rare Earths Project, with IonicRE agreeing terms to move to 94% interest;**
- **Successful completion of Phase 5 drilling at Makuutu, with significant clay-hosted rare earth intersections across multiple drill holes;**
- **Commencement of construction at the Makuutu Demonstration Plant with steady progress towards operational readiness for Q1 2024; and**
- **Over 95% of land access agreements secured for the Makuutu Stage 1 Mining Licence Application, with government verification processes completed.**

IONIC TECHNOLOGIES, BELFAST (100% IONICRE)

- **Advancements in Ionic Technologies' operations with the Magnet Recycling Demonstration Plant in Belfast on track for 24/7 operation from January 2024;**
- **Recognition of magnet rare earths as Strategic Raw Materials by the European Union, with developments positively impacting Ionic Technologies; and**
- **Appointment of WSP Global to manage the feasibility study for the commercial magnet recycling facility in Belfast, UK.**

CORPORATE

- **Executive Chairman appointed: Mr Brett Lynch to oversee strategic direction;**
- **Mr Lynch to make substantial initial investment in IonicRE; and**
- **Share Placement and SPP raised $7.2 million during Quarter.**

Ionic Rare Earths Limited
Level 5 South
459 Collins Street
Melbourne Vic 3000
Australia

Phone: +61 3 9776 3434
Email: investors@ionicre.com
Web: www.ionicre.com

ACN: 083 646 477

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The Board of **Ionic Rare Earths Limited** ("IonicRE" or "the Company") (ASX: IXR) is pleased to provide its Quarterly Activities Report for the period ending **31 December 2023**.

This report includes development activities at the 60% owned Makuutu Heavy Rare Earths Project ("Makuutu" or "the Project") in Uganda, and at the Company's 100% owned magnet recycling subsidiary in the UK, Ionic Technologies International Limited ("Ionic Technologies").

In the December quarter, IonicRE has made substantial advancement in its project development and operational capabilities. As an emergent key player in the global rare earths market, IonicRE has not only solidified its position but also set the stage for significant growth. Significantly, subsequent to the end of the quarter, the Company was awarded a Large-Scale Mining Licence (LML 00334) for the Makuutu Project, and the Company has secured a new Chairman to help bolster and lead the Ionic Board of Directors as the Company moves into the next important growth stage.

The following report outlines the critical operations, developments, and outlook as the Company moves closer to its goal of becoming an alternative supplier of magnet and heavy rare earths critical for energy transition, advanced manufacturing, and defence.

MAKUUTU HEAVY RARE EARTHS PROJECT (60% IONICRE, MOVING TO 94%)

Makuutu currently ranks amongst the world's largest and most advanced ionic adsorption clay (IAC) deposits, and as such, a globally strategic resource for near term, low capital development, and long-term security of magnet and heavy rare earth oxide (REO) supply.

Makuutu comprises six licences (see Figure 1) covering approximately 300 square kilometres, located 120 kilometres east of Kampala in Uganda.

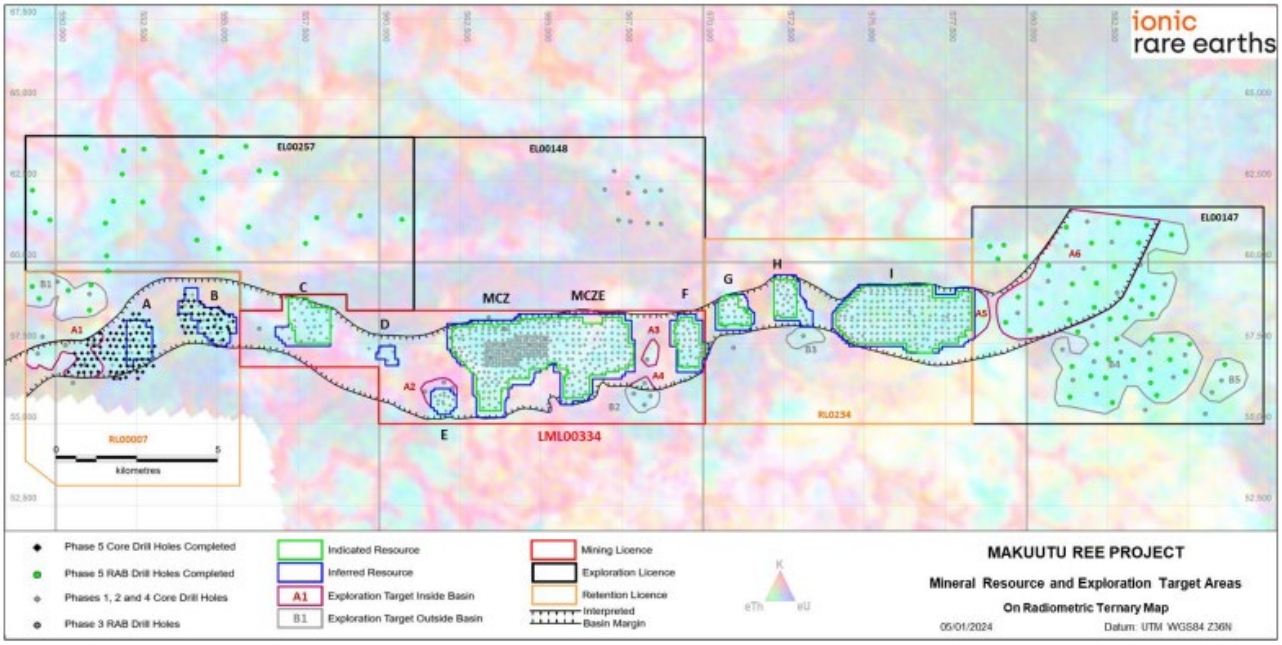

Figure 1: Makuutu Project Stage 1 Mining Licence LML00334 (red border), which has been formally awarded, as part of the larger Makuutu Heavy Rare Earths Project.

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The deposit, stretching 37 km end to end, is situated near existing infrastructure and has the potential to provide western customers with a strategic alternative supply of heavy rare earths to support the development of resilient supply chains and the growth of advanced manufacturing and industries critical to achieve net-zero carbon initiatives for 50 years and beyond.

Makuutu is being developed by Rwenzori Rare Metals Limited ("Rwenzori"), a Ugandan private company which owns 100% of the Makuutu Project. IonicRE is a 60% owner of Rwenzori, and during the quarter (ASX: 11 December 2023), announced it had signed a conditional share purchase agreement to acquire an additional 34% interest in the strategic Makuutu Rare Earths Project, taking its ownership to 94% on completion.

The increase in ownership represents a watershed moment for the Company with ownership at a 94% interest, opening a multitude of potential funding and offtake scenarios in financing the development of the Project. The Company continues discussions with partners on a transaction to acquire the remaining 6%.

Award of Large-Scale Mining Licence 00334

Subsequent to the end of the Quarter (ASX: 18 January 2024), the IonicRE Board was extremely pleased to announce that Rwenzori formally received the granted large-scale Mining Licence (LML00334) over the central Makuutu tenement (previously Retention Licence 1693). LML00334 was officially signed on Wednesday 17th of January 2024, at a ceremony in Kampala, by the Ugandan Minister of Energy and Mineral Development (MEMD), the Honourable Dr Ruth Nankabirwa Ssentamu.

Figure 2: Ugandan Minister of Energy and Mineral Development (MEMD), the Honourable Dr Ruth Nankabirwa Ssentamu, right, signing LML00334, with Mr Patience Singo, Country Manager, Rwenzori, left, and Mr Warren Tregurtha, CEO, Rwenzori, centre.

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Figure 3: Rwenzori team with LML00334, Mr Patience Singo, Country Manager, Mr Warren Tregurtha, CEO, and Ms Deborah Namirimu, Stakeholder Engagement & Communications Lead.

The award represents the first large scale mining licence to be issued in Uganda under the Mining Act of 2022. This further supports the flagship project status awarded to Makuutu in 2022 and reflects the strong support received from Uganda in the development of the Project towards operations.

The Stage 1 Mining Licence LML00334, as shown in Figure 1, which covers approximately 44 square kilometres of the Project's near 300 square kilometres of tenements at Makuutu. Currently, the Company's greater Makuutu Mineral Resource Estimate (MRE) (refer to Table 2 and Table 3 and ASX: 3 May 2022) is estimated at 532 million tonnes at 640 ppm Total Rare Earth Oxide (TREO) with a cutoff grade of 200 parts per million (ppm) TREO minus Cerium Oxide (CeO_2).

The official award of LML00334 follows the publishing of Notice of Grant of a Large-Scale Mining Licence in the Ugandan Gazette on the 9th of January 2024, post the provisional award previously announced (ASX: 2 January 2024), and the submission of documentation which has been reviewed and approved by Ugandan DGSM. As part of the process, the Company secured land access agreements over 95% of the LML00334 area (ASX: 29 November 2023) and completed a verification process on site led by the DGSM with strong support demonstrated from local project stakeholders and landowners. Prior to any mining activity commencing, the Company must compensate landowners and will continue to work with local stakeholders and government to resolve the remaining 5% of unsecured land access agreements.

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Demonstration Plant Upgrade

Construction at the Makuutu Demonstration Plant continues to progress well with first Mixed Rare Earth Carbonate (MREC) on track to be produced early in Q1 2024.

Figure 4: Makuutu Stage 1 Demonstration Plant.

The Demonstration Plant at Makuutu is a key milestone for the supply chain engagement with product to be produced here likely to be sent to potential off-take partners in early 2024. Makuutu is a globally strategic resource for near-term development and long-term security of magnet and heavy REO supply.

The Makuutu Demonstration Plant technical facility will aim to further optimise metallurgical test work and provide further technical validation basis for grade control, mine design, material handling, metallurgical reconciliation, and construction activity whilst also supporting Project financing and strategic partner activity.

By the end of the quarter at the technical facility, desorption columns had undergone water commissioning in order to pre-test the ore before commencement of test work. Irrigation tests were undertaken to ensure the desorption processes operate as designed. The inspection of in-country manufactured equipment was completed at vendor premises to ensure safety and functionality prior to taking receipt of the equipment to site and installation which has been completed. The crib shells, which are to be used to accommodate the stacked ore for desorption tests have been assembled, with additional works completed on site to prepare for initial loading of agglomerated material to commence this quarter.

In addition to the technical facility works at the Demonstration plant, an auger drill has been mobilised to the first test mine pit site (see Figure 7), where bulk sample collection drilling has commenced in order to provide test material for Makuutu test facility.

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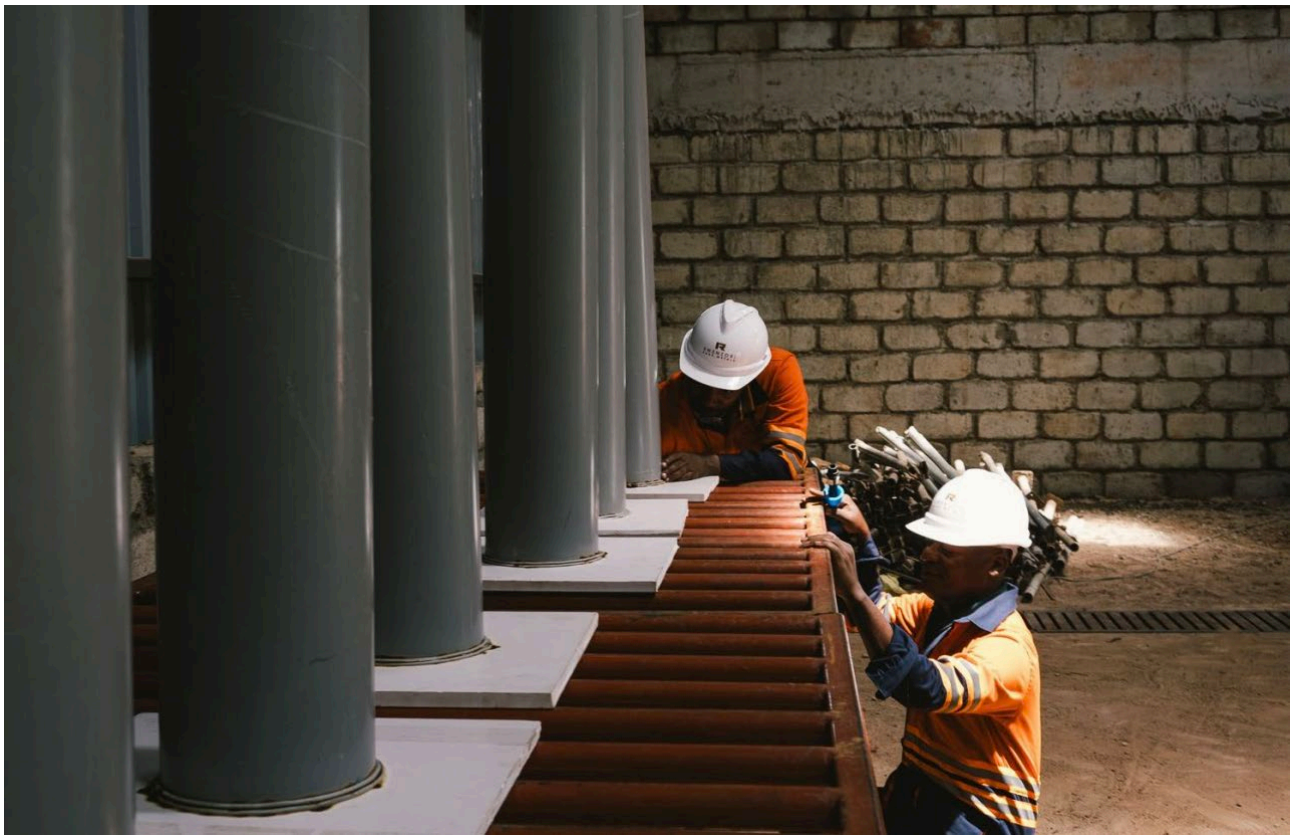

Figure 5: Inspection of constructed desorption columns.

Figure 6: Water commissioning of desorption columns.

Ionic Rare Earths Limited
Level 5 South
459 Collins Street
Melbourne Vic 3000
Australia

Phone: +61 3 9776 3434
Email: investors@ionicre.com
Web: www.ionicre.com

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Figure 7: Auger drill mobilised to test site to collect bulk sample test material.

Figure 8: Bulk sample being collected for desorption column and crib metallurgical test work program.

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Phase 5 Drilling Program

During the quarter, IonicRE completed the Phase 5 drill program at Makuutu (ASX: 17 October 2023), an important activity in advancing the next stages of development for a much larger Project.

Exploration reconnaissance rotary air blast (RAB) drilling results were reported on the highly prospective Exploration Licence (EL) 00257 and Retention Licence 00007 (ASX: 2 October 2023). EL00257 (26 holes) and RL00007 (5 holes), located at the western end of the extensive licence holding at Makuutu (see Figure 9). Assays confirmed 26 holes of the 31 holes reported recording intervals of regolith hosted rare earth mineralisation above the 2022 Mineral Resource Estimate (MRE) cut-off grade of 200 ppm TREO-CeO_2.

The RAB drilling on EL00257 was the first drilling to test this tenement. The aim of the drilling was to test the endowment of rare earth element (REE) in the regolith and determine the extent and thickness of mineralisation. This drilling successfully confirmed zones of thick REE mineralisation on the northwestern half of the licence. Results from the drilling (Figure 10) show the northwestern half of the area contains greater thickness of regolith under hardcap with significant intersections including;

- 8 metres at 975 ppm TREO from 7 metres in RRMRB117;
- 20 metres at 865 ppm TREO from 6 metres in RRMRB115;
- 20 metres at 789 ppm TREO from 4 metres in RRMRB116;
- 24 metres at 781 ppm TREO from 4 metres in RRMRB129; and
- 20 metres at 756 ppm TREO from 4 metres in RRMRB120.

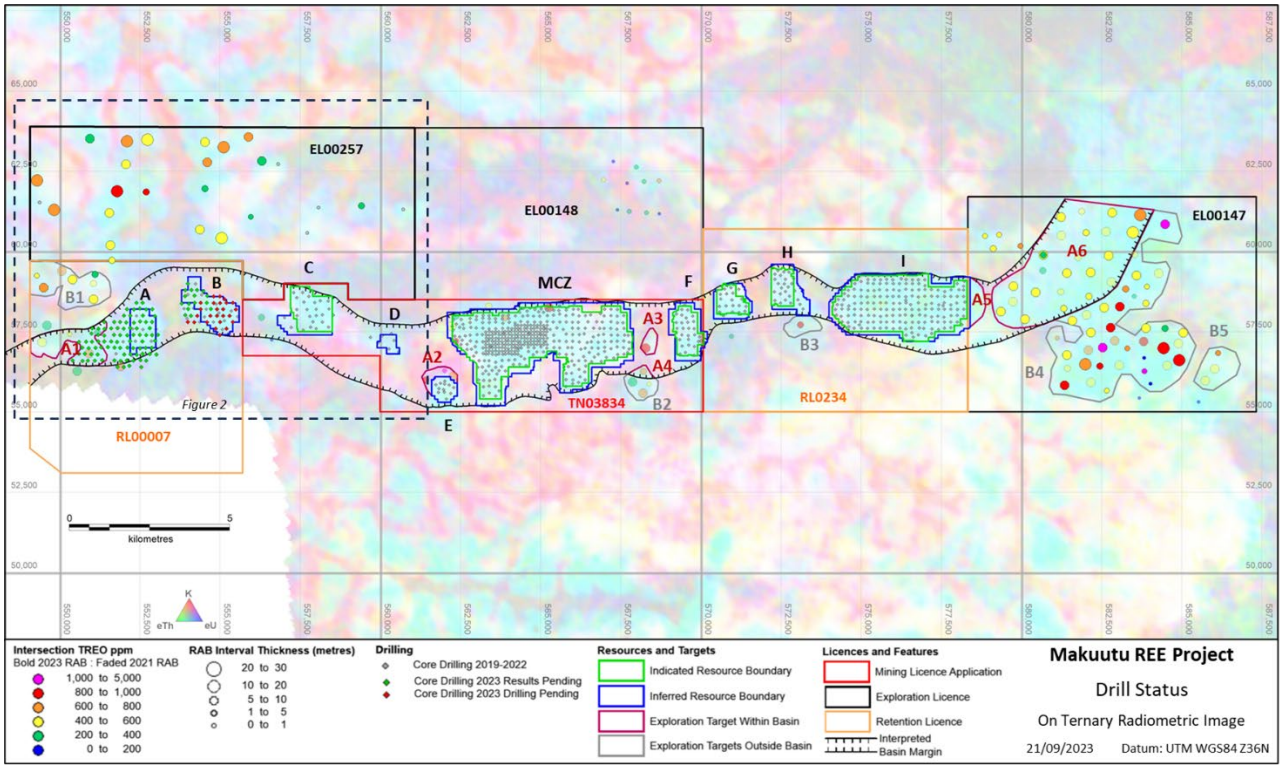

Figure 9: Makuutu Phase 5 drill program RAB results shown across EL00147, 00257 and RL00007.

EL00257 was interpreted to be underlain by the Iganga Suite granite basement rocks, an older and different protolith from the Makuutu deposit hosted in a Karoo age sedimentary basin.

Reconnaissance drilling on RL00007 included five (5) RAB holes (RRMRB139 to 143), with results of showing the mineralisation to be variable in thickness and grade with a best intersection in RRMRB142 of 18 metres at 612 ppm TREO from 6 metres.

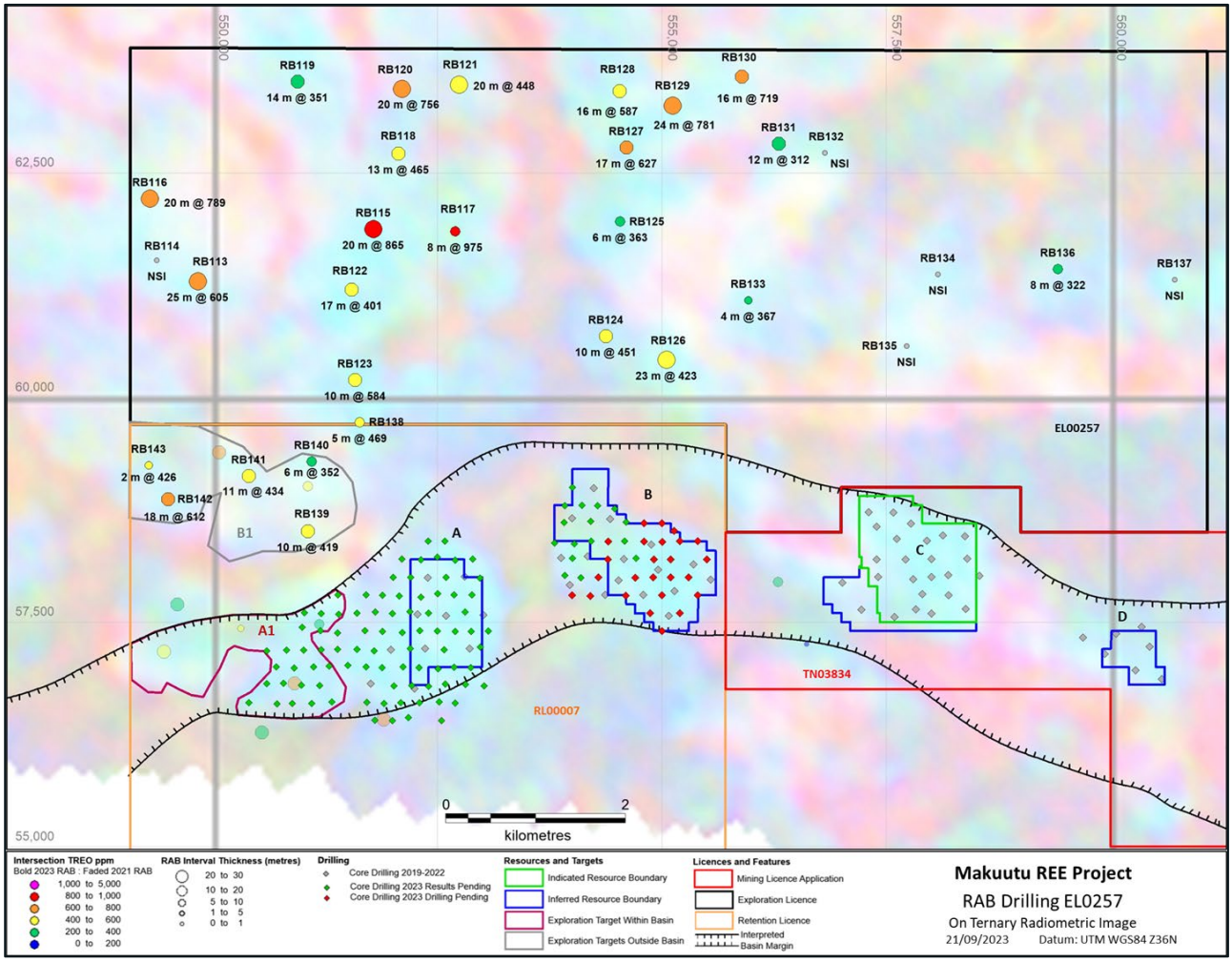

Figure 10: RAB drilling results EL00257 and RL00007 (bold intersection grades 2023 drilling, faded 2021 drilling) and Areas A and B resource infill drilling (green points results pending, red points awaiting drilling).

The results will be folded into the Exploration Target update, which is expected in Q1 2024, pending completion of metallurgical test work underway.

Infill core drilling was also included as part of the Phase 5 drill program, targeted at increasing the Mineral Resource Estimate (MRE) classification for the RL00007 resource areas A and B from inferred to indicated classification, and to test extensions of those areas to expand the mineral resource area. This will be required for the next mining licence application at the Project, expected to be RL00007 in Q4 2024.

Phase 5 resource infill and extension drilling program tranche 1 results were reported including assays for 56 holes of the 128-hole diamond holes drilled on RL00007 were reported during the

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quarter (ASX: 23 November 2023). The program was intended to increase resource estimation confidence from inferred to indicated status on resource areas A and B, and to test extensions of those areas to expand the mineral resource area.

Tranche 1 results reported Clay hosted rare earth intersections achieved in 53 of 56 infill core drill holes received, including;

- 9.9 metres at 1,163 ppm TREO from 4.2 metres in RRMDD767;
- 6.7 metres at 1,008 ppm TREO from 9.5 metres in RRMDD713;
- 2.7 metres at 977 ppm TREO from 4.4 metres in RRMDD734;
- 9.9 metres at 952 ppm TREO from 3.9 metres in RRMDD712;
- 7.3 metres at 828 ppm TREO from 4.8 metres in RRMDD724;
- 6.8 metres at 792 ppm TREO from 5.3 metres in RRMDD758; and
- 21.8 metres at 783 ppm TREO from 4.7 metres in RRMDD762.

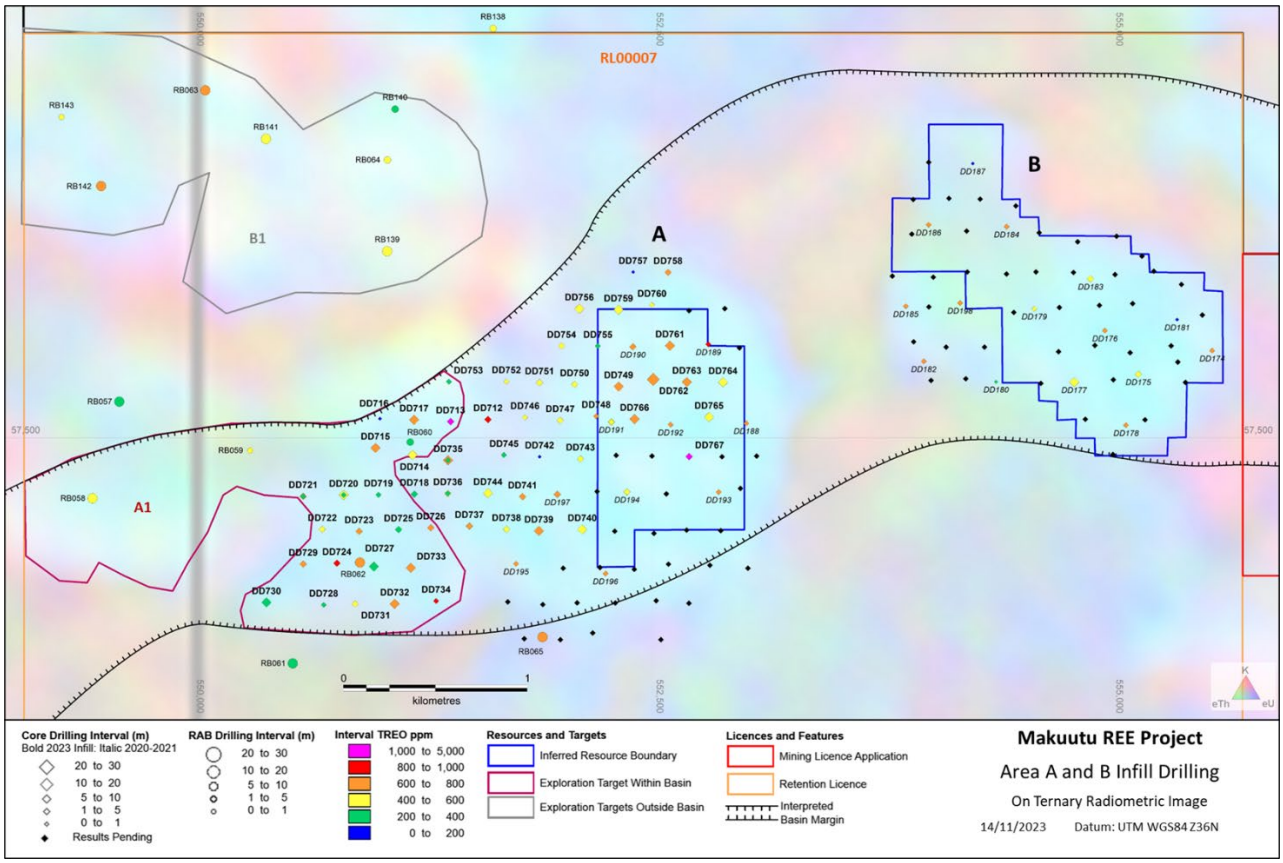

Figure 11: Phase 5 infill drilling results reported, and holes completed on RL00007 within existing MRE areas A and B, plus extension.

Several of both extension and infill drill holes show high grade heavy rare earth (HREO) and critical rare earth (CREO) intersections including extension holes;

- RRMDD712, with 9.9 metres at 952ppm TREO including 430ppm HREO and 530ppm CREO;
- RRMDD713, with 6.7 metres at 1,008ppm TREO with 428ppm TREO and 483ppm CREO; and
- RRMDD767, with 9.9 metres at 1,163ppm TREO with 672ppm HREO and 641ppm CREO.

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The elevated proportions of HREO and CREO coincide with weathered limonitic veining and alteration in the clay and underlying saprock. Furter investigations of these results is required to determine the extents of these high-grade zones.

The results from the remaining 72 drill holes are currently at the laboratory in Perth being analysed and results are expected shortly. Following the receipt of results, an updated Mineral Resource Estimate is targeted for late Q1 2024.

IONIC TECHNOLOGIES (100% IONICRE)

Ionic Technologies is a global first mover in the recycling of Neodymium-Iron-Boron (NdFeB) permanent magnets to high purity separated magnet rare earth oxides (REOs), enabling the creation of sustainable, traceable, and sovereign rare earth supply chains.

Following our announcement on 12 September 2023, Ionic Technologies successfully secured funding for two CLIMATES grants from the UK Government's Innovate UK totalling £2 million (A$3.90 million). These successful grant funding submissions centred on two CLIMATES projects:

1. in partnership with Less Common Metals (LCM) and Ford Technologies, Ionic Technologies will develop a traceable, circular supply chain of rare earths for application in EV motors within the UK; and
2. in partnership with the British Geological Survey, Ionic Technologies has commenced a feasibility study for a commercial magnet recycling plant in Belfast, UK (refer ASX announcement 7 December 2023).

Magnet Recycling Demonstration Plant

During 2023, Ionic Technologies constructed a magnet recycling Demonstration Plant and produced initial quantities of high purity (> 99.5%) neodymium (Nd) and dysprosium (Dy) rare earth oxides (REOs) (ASX: 19 June 2023). After initial process commissioning and production runs through Q3 2023, Ionic Technologies installed additional processing equipment and is in the final stages of upgrading the installed control system which is now undergoing final commissioning. Ionic Technologies is on track to go to 24/7 operations from early January 2024, with commercial production runs to support the LCM and Ford collaboration commencing immediately thereafter.

During the quarter, additional supply chain engagement discussions have progressed based upon reverse enquiry post-production of high purity REOs in June 2023, and the Company is evaluating several additional opportunities.

Pre-production was announced (ASX: 21 December 2023), commencing ahead of 24/7 operation that has commenced early this year (ASX: 22 January 2024), with over 2.7 tonnes of magnets processed to date, prepared for downstream digestion and separation circuits in the Demonstration Plant.

The expansion in operational capacity is in direct response to the heightened demand for sustainable and traceable rare earth supply chains, a market need that Ionic Technologies is well-positioned to fulfil.

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Figure 12: Left, crushed magnets prepared, and right, mixed rare earth filter cake prepared for downstream process commissioning activity.

Magnet Recycling Feasibility Study

Following the successful award of grants from the UK Government's CLIMATES program, the Company announced Ionic Technologies had selected WSP as the engineer and project manager for delivery of the feasibility study for the magnet recycling facility in Belfast (ASX: 7 December 2023).

The feasibility study forms the most significant single output of the CLIMATES project that Ionic Technologies will complete in partnership with the British Geological Survey (BGS), which will provide a comprehensive assessment of the feasibility and supply side dynamics of a magnet recycling facility, within the UK.

The feasibility study commenced in December and is expected to be completed in mid-2024.

As part of the Feasibility Study, Ionic Technologies and BGS have created a collaborative working group to develop strategies for the establishment of a secure supply of REEs for the UK, as well as

satisfying Ionic Technologies' technical requirements to enable the next phase of rapid growth to commercial scale by defining supply side dynamics in the UK.

The project will expand on the existing BGS material stocks and flows model for REEs by incorporating new, pertinent data on wind turbines, electric vehicles (EVs) and other automotive sources, all containing significant REE content, which could be recycled within the UK. With this data, Ionic Technologies will be able to specify a commercial facility, capable of receiving both end-of-life and waste (swarf) magnet material of varying quality, processing this material through a plant designed using our patented technology, to produce REOs with purity of 99.5%+ quality. REOs of this quality can be used in the production of high specification magnets, utilised in EVs, wind turbines, defence, and other applications.

In addition to a significant expansion of publicly owned data on the REE eco-system in the UK, the project will also equip Ionic Technologies with essential technical data to create a source of REOs that has the potential to provide the UK with a secure, sovereign supply of magnet rare earths, independent of geo-political influence and supply chain insecurity.

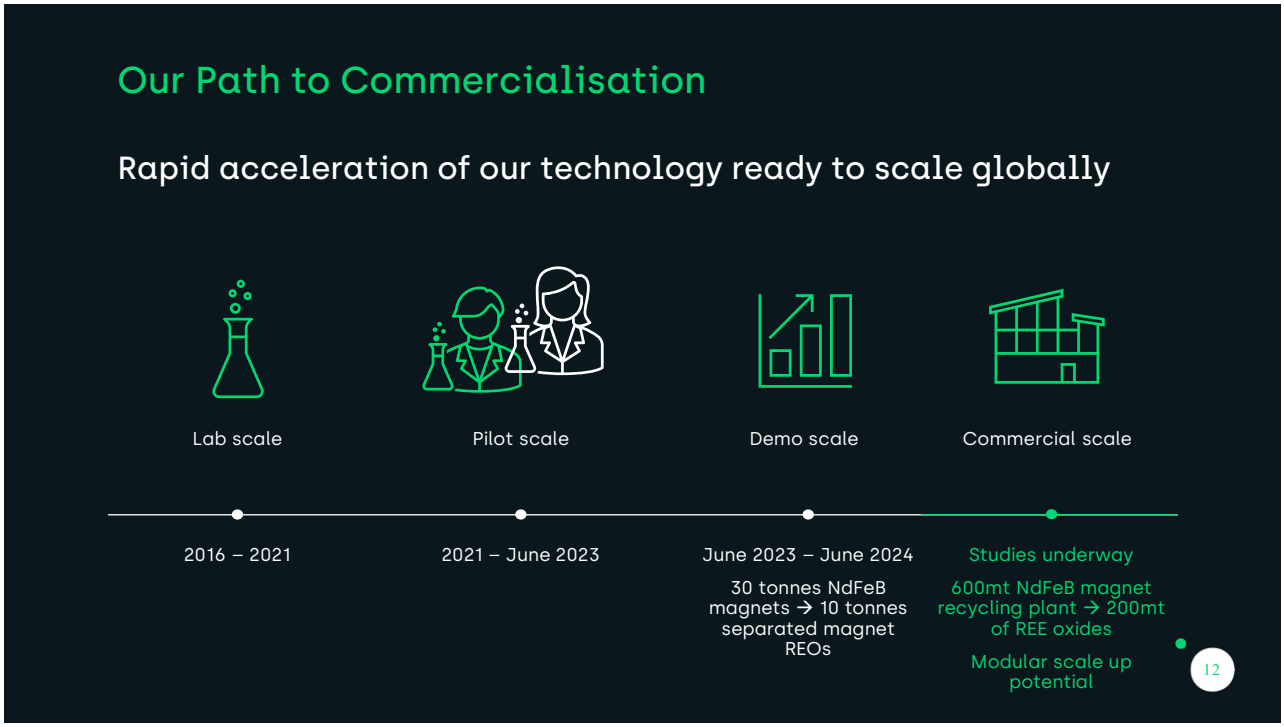

Figure 13: Ionic Technologies path to production.

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CORPORATE

Post the end of the quarter, the Company announced the appointment of Mr Brett Lynch to the role of Executive Chairman (ASX: 24 January 2024). Mr Lynch is an experienced executive with a strong background in mining and mining-related businesses across Australia, Asia, USA, and emerging markets.

He has over 30 years' experience in international business development and management, with an outstanding track record of delivering shareholder value. He has a Bachelor of Mining Engineering at University of Melbourne.

From 2019 until August 2023, My Lynch was Managing Director of Sayona Mining Limited (ASX: SYA), where he was instrumental in defining a North American, low-carbon-footprint lithium supply chain into the North American market. During his time with Sayona, Mr Lynch oversaw its growth from a junior explorer to an ASX 200 company.

Capital Raising

During the quarter, IonicRE completed a share placement to raise $5.9 million by way of at $0.021 ("Placement") (ASX: 20 November 2023). The Placement was strongly supported by both key existing shareholders and new institutional investors through the issue of 280,952,381 fully paid ordinary shares ("Shares") at an issue price of $0.021 per Share, representing a 18.9% discount to the volume weighted average price ("VWAP") over the past 10 trading days prior to the raise. The Placement consisted of the following:

1. a placement of 261,904,762 fully paid ordinary shares at a price of $0.021 to raise $5,500,000;
2. a commitment from Mr. Sufian Ahmad, a director of the Company, to subscribe for 19,047,617 fully paid ordinary shares at $0.021 to raise a further $400,000, subject to receiving approval at a General Meeting of Shareholders to be held early in 2024.

Canaccord Genuity (Australia) Limited and MST Financial Services Pty Limited acted as Joint Lead Managers to the Placement. The Placement was not underwritten.

In addition to the Placement, a Securities Purchase Plan (SPP) was conducted to provided eligible shareholders with the opportunity to subscribe for up to $30,000 worth of new fully paid ordinary shares at an offer price of $0.021 per share, being the same price as the Placements. The Company received valid applications for 62,499,906 new fully paid ordinary shares under the SPP raising approximately $1,312,500. Mr Tim Harrison, the Company's Managing Director, took up his full entitlement of shares under the SPP.

It is the intention of the Company to use the funds raised under both the Placement and the SPP to provide working capital, advance the demonstration plant activities at both the magnet recycling facility in Belfast, Northern Ireland, and the Makuutu Rare Earths Project in Uganda, as well as to meet the costs of the issue.

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Forward Outlook

Looking ahead, IonicRE is set to capitalize on the robust infrastructure and supportive policy environment for its Ionic Technologies Magnet Recycling Belfast facility. The commencement of the plant's round-the-clock operations and the anticipated production of high-purity magnet REOs in Q1 2024 are expected to serve as significant drivers for new partnerships and supply chain opportunities.

The Makuutu Project is on track to transition from development to production, with the initiation of mixed rare earth carbonate (MREC) production expected in early 2024.

This year is set to be transformative for IonicRE as it continues to navigate towards the forefront of the rare earths market offering a path to resilient supply chain solutions. With the continued integration of sustainable practices and the expansion of operational capabilities, IonicRE is well-positioned to meet the increasing global demand for magnet and heavy rare earths.

The Company's strategic initiatives and ongoing project developments suggest a dynamic and promising trajectory into the next phase of its growth.

Corporate

During the quarter, the Company expended approximately $3,953,000 on the exploration and study activities reported above.

Payments to related parties of the entity and their associates totalled $130,000 and consisted of $25,000 Director fees and $105,000 Executive Service fees.

Mineral Concessions Held

IonicRE is pleased to advise the following information, pursuant to ASX Listing Rule 5.3.3, for the quarter ended 30 June 2022 and to the date of this announcement.

1. No mineral exploration tenements were acquired or disposed of during the period;
2. Mineral exploration tenements held are set out below in Table 1; and
3. No farm-in or farm-out agreements were entered into during the period.

Table 1: Makutu Rare Earth Project Tenement status and details.

Licence ID	Licence Type	Application Date	Granted Date	Expiry / Renewal Date	Area (km^2)
RL00007	Retention	12/12/2022	20/12/2022	26/11/2024	43.38
LML00334	Mining	01/09/2022	28/12/2023	27/12/2044	43.78
RL00234	Retention	26/06/2021	06/07/2021	05/07/2024	47.03
EL00257	Exploration	15/07/2021	21/10/2021	20/10/2024	55.51
EL00147	Exploration	01/09/2023	Approved - Pending	Pending	60.30
EL00148	Exploration	01/09/2023	Approved - Pending	Pending	48.15

Table 2: Makuutu Rare Earth Project Resource Tabulation of REO Reporting Groups at 200ppm TREO-CeO_2 Cut-off Grade (ASX: 3 May 2022).

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc_2O_3 (ppm)
Indicated	404	670	450	500	170	230	30
Inferred	127	540	360	400	140	180	30
Total	532	640	430	480	160	220	30

Notes: Tonnes are dry tonnes rounded to the nearest 1.0Mt.
All ppm rounded from original estimate to the nearest 10 ppm which may lead to differences in averages. TREO = Total Rare Earth Oxide

Table 3: Mineral Resources by Area (ASX: 3 May 2022).

Classification	Indicated Resource			Inferred Resource			Total Resource		
Area	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)
A				13	580	390	13	580	390
B				26	410	290	26	410	290
C	31	580	400	3	490	350	35	570	400
D				6	560	400	6	560	400
E				18	430	280	18	430	280
Central Zone	151	780	540	12	670	460	163	770	530
Central Zone East	59	750	490	12	650	430	72	730	480
F	18	630	420	7	590	400	25	620	410
G	9	750	500	5	710	450	14	730	480
H	6	800	550	7	680	480	13	740	510
I	129	540	350	19	530	350	148	540	350
Total Resource	**404**	**670**	**450**	**127**	**540**	**360**	**532**	**640**	**430**

Rounding has been applied to 1Mt and 10ppm which may influence averaging calculations.

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Table 4: Makuutu Exploration Target (ASX: 1 June 2022).

		Tonnes Range (millions)		TREO ppm Range	
Zone	**Target ID**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Inside Basin	**A1**	14	28	400	600
	A2	2	5	600	800
	A3	2	5	600	800
	A4	2	4	500	700
	A5	4	8	400	600
	A6	90	180	400	600
Outside Basin	**B1**	15	45	500	700
	B2	4	12	400	600
	B3	2	6,	600	800
	B4	73	220	400	600
	B5	8	28	400	600
Total		**216**	**535**	**400**	**600**

Authorised for release by the Board.

For enquiries, contact:

For Company
Tim Harrison
Ionic Rare Earths Limited
investors@ionicre.com
+61 (3) 9776 3434

For Investor Relations
Peter Taylor
NWR Communications
peter@nwrcommunications.com.au
+61 (0) 412 036 231

About Ionic Rare Earths Ltd

Ionic Rare Earths Limited (ASX: IXR or IonicRE) is set to become a miner, refiner and recycler of sustainable and traceable magnet and heavy rare earths needed to develop net-zero carbon technologies.

The Makuutu Rare Earths Project in Uganda, 60% owned by IonicRE, moving to 94% ownership in H1 2024, is well-supported by existing tier-one infrastructure and is on track to become a long-life, low Capex, scalable and sustainable supplier of high-value magnet and heavy rare earths oxides (REO). In March 2023, IonicRE announced a positive stage 1 Definitive Feasibility Study (DFS) for the first of six (6) tenements to progress to mining licence which was awarded in January 2024. The Makuutu Stage 1 DFS defined a 35-year life initial project producing a 71% rich magnet and heavy rare earth carbonate (MREC) product basket and the potential for significant potential and scale up through additional tenements.

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Ionic Technologies International Limited ("Ionic Technologies"), a 100% owned UK subsidiary acquired in 2022, has developed processes for the separation and recovery of rare earth elements (REE) from mining ore concentrates and recycled permanent magnets. Ionic Technologies is focusing on the commercialisation of the technology to achieve near complete extraction from end of life / spent magnets and waste (swarf) to high value, separated and traceable magnet rare earth products with grades exceeding 99.9% rare earth oxide (REO). In June 2023, Ionic Technologies announced initial production of high purity magnet REOs from its newly commissioned Demonstration Plant. This technology and operating Demonstration Plant provides first mover advantage in the industrial elemental extraction of REEs from recycling, enabling near term magnet REO production capability to support demand for early-stage alternative supply chains.

As part of an integrated strategy to create downstream supply chain value, IonicRE is also evaluating the development of its own magnet and heavy rare earth refinery, or hub, to separate the unique and high value magnet and heavy rare earths dominant Makuutu basket into the full spectrum of REOs plus scandium.

This three-pillar strategy completes the circular economy of sustainable and traceable magnet and heavy rare earth products needed to supply applications critical to electric vehicles, offshore wind turbines, communication, and key defence initiatives.

IonicRE is a Participant of the UN Global Compact and adheres to its principles-based approach to responsible business.

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Competent Persons Statement

Information in this report that relates to previously reported Exploration Targets and Exploration Results has been cross-referenced in this report to the date that it was originally reported to ASX. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcements.

The information in this report that relates to Mineral Resources for the Makuutu Rare Earths deposit was first released to the ASX on 3 May 2022 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcement, and that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

The information in this report that relates to Ore Reserves for the Makuutu Rare Earths deposit was first released to the ASX on 20 March 2023 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcement, and that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

The information in this report that relates to Production Targets or forecast financial information derived from production the production target for the Makuutu Rare Earths deposit was first released to the ASX on 20 March 2023 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that all material assumptions and technical parameters underpinning the Production Targets or forecast financial estimates in the announcement continue to apply and have not materially changed.

Forward Looking Statements

This announcement has been prepared by Ionic Rare Earths Limited and may include forward-looking statements. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Ionic Rare Earths Limited. Actual values, results or events may be materially different to those expressed or implied in this document. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward-looking statements in this document speak only at the date of issue of this document. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Ionic Rare Earths Limited does not undertake any obligation to update or revise any information or any of the forward-looking statements in this document or any changes in events, conditions, or circumstances on which any such forward looking statement is based.

ASX Announcements

- 2 October 2023 Drilling Program Supports Additional Growth Potential at Makuutu
- 17 October 2023 Phase 5 Drilling Program Completed at Makuutu
- 18 October 2023 Makuutu Demonstration Plant Update
- 20 October 2023 Mining Licence Approved for Granting at Makuutu by Ugandan DGSM
- 10 November 2023 First Rare Earth Production from Makuutu Demonstration Plant on Track
- 13 November 2023 Significant Milestone achieved in Securing over 90% Land Access Agreements for Makuutu Stage 1 MLA
- 15 November 2023 Ionic Technologies Ramping up to 24/7 Operation in Early 2024 as Third Party Interest Continues to Increase
- 23 November 2023 Makuutu Phase 5 Infill Tranche 1 Drilling Assays Provide Thicker And Higher-Grade Results, Shows Extension Potential To The East
- 24 November 2023 IonicRE Welcomes Critical Raw Materials Act Progress From European Union
- 29 November 2023 Makuutu Land Access Agreement Verification Completed By DGSM For Stage 1 Mining Licence Application
- 7 December 2023 WSP Global Appointed To Manage Feasibility Study On Commercial Magnet Recycling Facility In Belfast, UK
- 11 December 2023 IonicRE Moves To 94% Ownership Of The Makuutu Rare Earth Project
- 15 December 2023 Makuutu Demonstration Plant Equipment Install And Bulk Sample Collection Commenced
- 21 December 2023 Ionic Technologies On Track For 24/7 Operation In January 2024

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Appendix 5B

Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

IONIC RARE EARTHS LIMITED

ABN	Quarter ended ("current quarter")
84 083 646 477	**31 December 2023**

Consolidated statement of cash flows		**Current quarter $A'000**	**Year to date (6 months) $A'000**
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	(3,953)	(6,673)
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(693)	(1,383)
	(e) administration and corporate costs	(902)	(1,729)
1.3	Dividends received (see note 3)		
1.4	Interest received	22	63
1.5	Interest and other costs of finance paid		
1.6	Income taxes paid		
1.7	Government grants and tax incentives	244	615
1.8	Other – IonicTech Operating	(1,661)	(2,400)
1.9	**Net cash from / (used in) operating activities**	**(6,943)**	**(11,507)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	(491)	(815)
	(d) exploration & evaluation capitalised	-	-
	(e) investments	-	(600)
	(f) other non-current assets	(22)	(71)

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Consolidated statement of cash flows		Current quarter $A'000	Year to date (6 months) $A'000
2.2	Proceeds from the disposal of:		
	(a) entities	-	-
	(b) tenements	-	-
	(c) property, plant and equipment	-	-
	(d) investments	-	-
	(e) other non-current assets	-	-
2.3	Cash flows from loans to other entities	-	-
2.4	Dividends received (see note 3)	-	-
2.5	Other (provide details if material)	-	-
2.6	**Net cash from / (used in) investing activities**	**(513)**	**(1,486)**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	6,812	6,812
3.2	Proceeds from issue of convertible debt securities	-	-
3.3	Proceeds from exercise of options	-	215
3.4	Transaction costs related to issues of equity securities or convertible debt securities	(425)	(425)
3.5	Proceeds from borrowings	-	-
3.6	Repayment of borrowings	-	-
3.7	Transaction costs related to loans and borrowings	-	-
3.8	Dividends paid	-	-
3.9	Other – reclassify loan to Associate	-	-
3.10	**Net cash from / (used in) financing activities**	**6,387**	**6,602**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**		
4.1	Cash and cash equivalents at beginning of period	5,693	11,117
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(6,943)	(11,507)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(513)	(1,486)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	6,387	6,602
4.5	Effect of movement in exchange rates on cash held	(86)	(188)
4.6	**Cash and cash equivalents at end of period**	**4,538**	**4,538**

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5.	**Reconciliation of cash and cash equivalents** at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	**Current quarter $A'000**	**Previous quarter $A'000**
5.1	Bank balances	4,352	5,513
5.2	Call deposits	186	180
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**4,538**	**5,693**

6.	**Payments to related parties of the entity and their associates**	**Current quarter $A'000**
6.1	Aggregate amount of payments to related parties and their associates included in item 1.	130
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.

7.	**Financing facilities** *Note: the term "facility' includes all forms of financing arrangements available to the entity.* *Add notes as necessary for an understanding of the sources of finance available to the entity.*	**Total facility amount at quarter end $A'000**	**Amount drawn at quarter end $A'000**
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	**Total financing facilities**	-	-
7.5	**Unused financing facilities available at quarter end**		-
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8.	Estimated cash available for future operating activities	$A'000
8.1	Net cash from / (used in) operating activities (item 1.9)	(6,943)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(6,943)
8.4	Cash and cash equivalents at quarter end (item 4.6)	4,538
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	4,538
8.7	**Estimated quarters of funding available (item 8.6 divided by item 8.3)**	**0.65**

Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.

8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:

8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?

Answer: **No. Significant expenditure on demonstration plants at both the Makuutu Rare Earths project in Uganda and the Magnet Recycling Facility in Northern Ireland was largely finalised by quarter end and not expected to be repeated in future quarters.**

8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?

Answer: **Yes, as announced after quarter end on 29 January 2024, the Company has received firm commitments to raise A$2 million. In addition, the Company has liquid investments in ASX listed company with a current value >$3.0 million.**

8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?

Answer: **Yes, for reasons stated in 8.8.2 above**

Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.

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Compliance statement

1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.

2 This statement gives a true and fair view of the matters disclosed.

Date: 31 January 2024

Authorised by: Brett Dickson – Company Secretary
(Name of body or officer authorising release – see note 4)

Notes

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.

2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [*name of board committee – eg Audit and Risk Committee*]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".

5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

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