

12 September 2022

## MINING LICENCE APPLICATION PROCESS COMMENCES FOR THE MAKUUTU CENTRAL ZONE

- **Application commenced for a Mining Licence over RL 1693, submitted to Ugandan DGSM**
- **Focus on plan to de-risk and accelerate Makuutu development through modular expansion**
- **Government approval for the Makuutu Environmental and Social Impact Assessment (ESIA) study expected shortly**

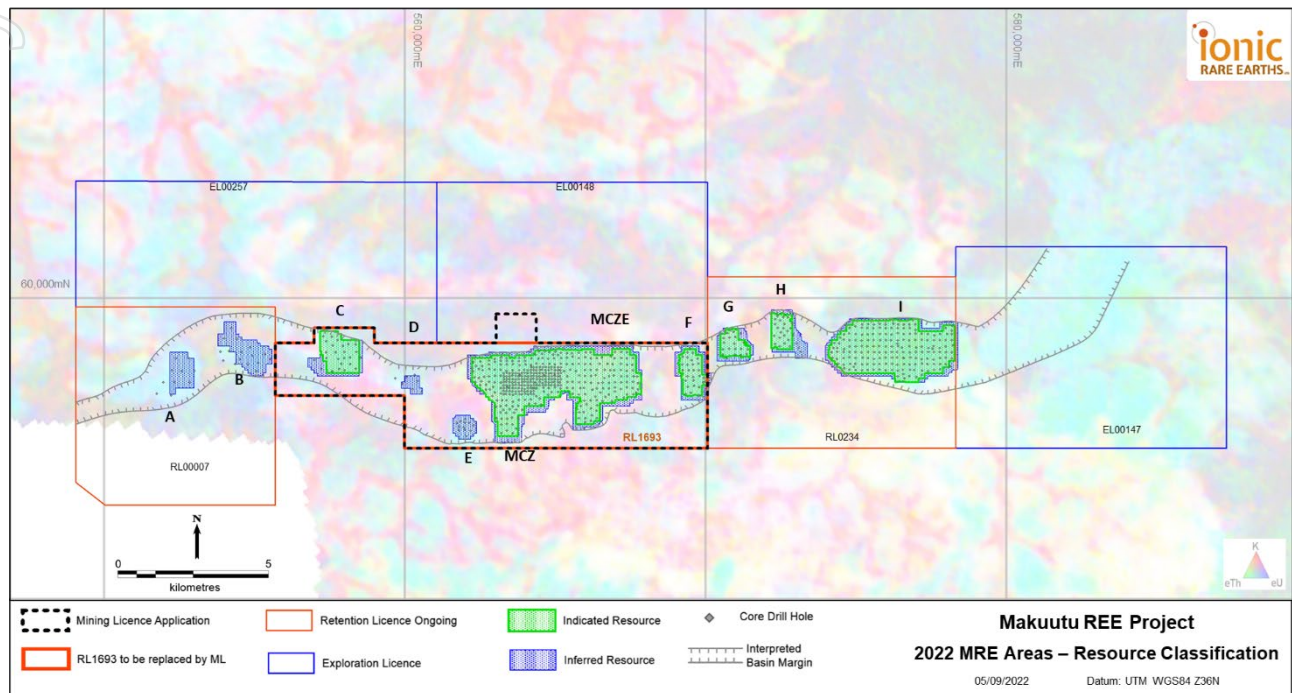
The Board of Ionic Rare Earths Limited (“IonicRE” or “The Company”) (ASX: IXR) is pleased to advise the Mining Licence Application (MLA) process for the Makuutu Rare Earths Project (“Makuutu” or “the Project”) has been initiated. Makuutu is being developed by Rwenzori Rare Metals Limited (“RRM”), a Ugandan private company which owns 100% of the Makuutu Project. IonicRE is a 51% owner of RRM and moving to 60%.

The MLA will focus on the Makuutu Central Zone (MCZ), located within Retention Licence (RL) 1693, and will provide the basis for initial mining at Makuutu. This area contains an Indicated Resource of 259 million tonnes at 740 ppm TREO-CeO<sub>2</sub> (Table 2 and ASX: 3 May 2002). Advice received indicates that with an initial focus on this 44km<sup>2</sup> licence the Company will be able to accelerate development as opposed to a MLA over the total Makuutu Project area of approximately 300km<sup>2</sup> where mining in some areas would not take place for well over 20 years in the future.

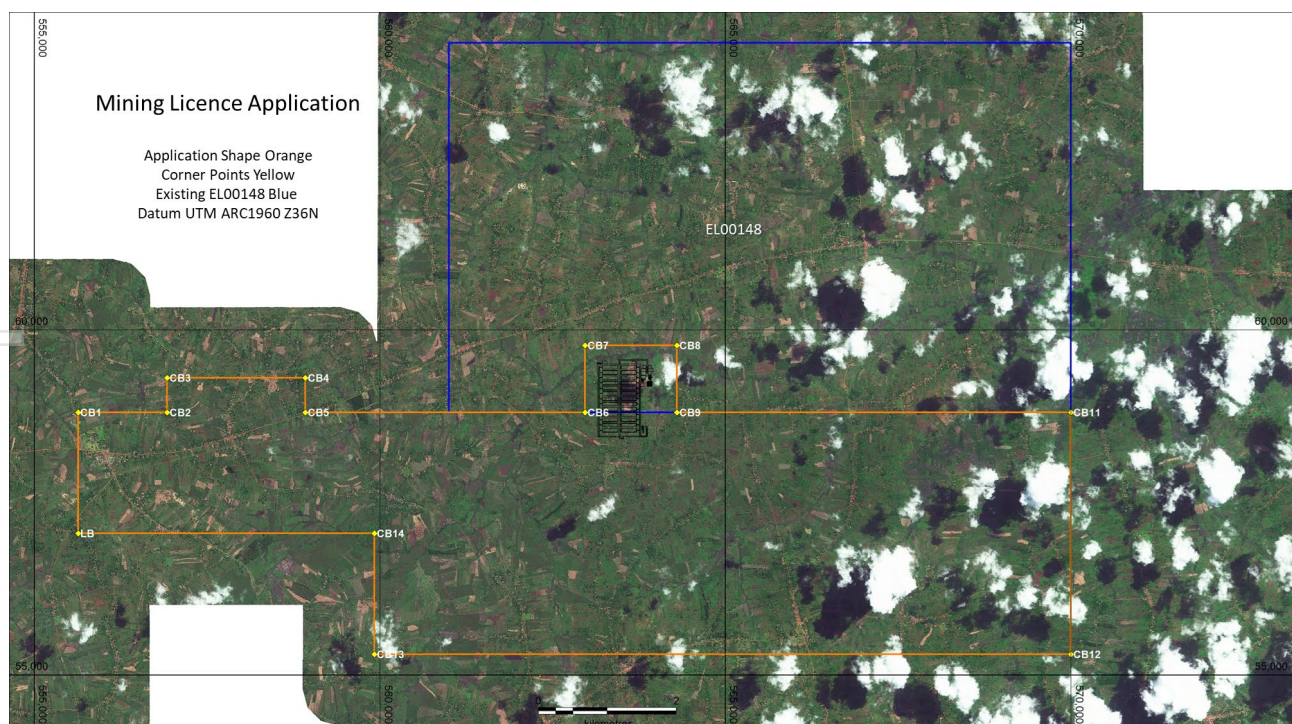
Managing Director Mr Tim Harrison stated *“the MLA application marks a significant milestone for the Company and comes only 3 years after IonicRE obtained an interest in the project. My congratulations and thanks go to the Makuutu team who have delineated one of the world’s largest rare earth ionic clay deposits and can now look forward to an accelerated and de-risked development project.”*

The MLA comes after two ESIA public hearings were completed in early August 2022 in Bugweri and Mayuge Districts, Uganda. The total registered attendees at the hearings over the two days amounted to 3,800 persons with significant turnout from the National Environmental Management Authority, Ministry of Energy and Mineral Development, government representatives, district leadership, local communities and other stakeholders. Strong support for the project was evident during those hearings.

Discussion with Ugandan government officials indicate that the ESIA submitted in December 2021, which also focused on RL 1693, is in the final stages of assessment and is expected to be approved shortly.



**Figure 1: Makuutu Project resource map showing resources located within MCZ (RL 1693 shown with bold red border) and the MLA area shown with a black dashed border.**



**Figure 2: Makuutu Central Mining Licence Application area defined by orange border around RL 1693.**

Pending the award of the MLA, the Company, via RRM, will be working with Ugandan authorities on a Mineral Development Agreement (MDA) which will establish the fiscal terms for the mine development in Uganda.

**Table 1: Makuutu Resource above 200ppm TREO-CeO<sub>2</sub> Cut-off Grade (ASX : 3 May 2022)**

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO <sub>2</sub> (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc <sub>2</sub> O <sub>3</sub> (ppm)
Indicated Resource	404	670	450	500	170	230	30
Inferred Resource	127	540	360	400	140	180	30
<b>Total Resource</b>	<b>532</b>	<b>640</b>	<b>430</b>	<b>480</b>	<b>160</b>	<b>220</b>	<b>30</b>

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

All REO are tabulated in announcement 3 May 2022 with formulas defining composition of (Light Rare Earth Oxides ("LREO"), HREO and Critical Rare Earth Oxides ("CREO")).

**Table 2: Mineral Resources by Area (ASX: 3 May 2022)**

Classification	Indicated Resource			Inferred Resource			Total Resource		
Area	Tonnes (millions)	TREO (ppm)	TREO-CeO <sub>2</sub> (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO <sub>2</sub> (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO <sub>2</sub> (ppm)
<b>A</b>				13	580	390	13	580	390
<b>B</b>				26	410	290	26	410	290
<b>C</b>	31	580	400	3	490	350	35	570	400
<b>D</b>				6	560	400	6	560	400
<b>E</b>				18	430	280	18	430	280
<b>Central Zone</b>	151	780	540	12	670	460	163	770	530
<b>Central Zone East</b>	59	750	490	12	650	430	72	730	480
<b>F</b>	18	630	420	7	590	400	25	620	410
<b>G</b>	9	750	500	5	710	450	14	730	480
<b>H</b>	6	800	550	7	680	480	13	740	510
<b>I</b>	129	540	350	19	530	350	148	540	350
<b>Total Resource</b>	<b>404</b>	<b>670</b>	<b>450</b>	<b>127</b>	<b>540</b>	<b>360</b>	<b>532</b>	<b>640</b>	<b>430</b>

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

Highlighted rows providing Indicted Resource Estimate for MLA over RL 1693.

The next tenement due for renewal is RL 00007, otherwise known as the Makuutu Western Zone (MWZ), which is due by 27 November 2022. The renewal will be initiated with the Phase 5 drill program to include additional resource drilling in these areas to convert the Inferred Resource to an Indicated Resource classification.



**Table 3: Makutu Rare Earths Project Tenement Details**

Licence ID	Licence Type	Application Date	Granted Date	Expiry / Renewal Date	Area (km <sup>2</sup> )
RL00007	Retention	27/03/2019	27/11/2019	27/11/2022	43.38
RL 1693	Retention	11/07/2017	02/11/2017	01/11/2022	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	19/10/2020	28/12/2020	27/12/2023	60.30
EL00148	Exploration	21/10/2020	28/12/2020	27/12/2023	48.15

Authorised for release by the Board.

**For enquiries, contact:** Tim Harrison  
Managing Director  
+61 3 9776 3434

### **About Ionic Rare Earths Ltd**

Ionic Rare Earths Limited (ASX:IXR or IonicRE) is focused on developing its flagship Makuutu Rare Earths Project in Uganda into a significant, long life, high margin, supplier of high-value magnet and heavy rare earths oxides (“REO”).

IonicRE plans to become a vertically integrated magnet and heavy rare earths supply chain early mover. In August 2021, IonicRE announced plans to develop its own heavy rare earth refinery, or hub, to market its unique and high value magnet and heavy rare earths dominant basket (~73%). Additionally, IonicRE in April 2022 completed an acquisition of a UK company with plans to deploy patented technology into permanent magnet recycling, completing the circular economy of rare earths.

### **About Rwenzori Rare Metals Limited**

Makuutu is operated by Rwenzori Rare Metals Limited (“RRM”), a Ugandan company which is 51% owned by IonicRE at present, with the Company moving to 60% ownership on the completion of the Feasibility Study expected to be submitted to the Ugandan government at the end of October 2022.

### **About Makuutu Rare Earths Project**

The Makuutu Rare Earths Project is an ionic adsorption clay (IAC) hosted rare earth element (REE) deposit located 120 km east of Kampala in Uganda and is well serviced by existing high quality

infrastructure including roads, rail, power infrastructure and cell communications. The installed infrastructure is illustrated in Figure 3.

The deposit stretches 37 km in length and has demonstrated potential for a long life, low-cost capital source of magnet and heavy REEs. These IAC deposits are prevalent in southern China and Myanmar, which have been the source of the world's lowest cost magnet and heavy REE production, however these deposits are gradually being exhausted and Makuutu represents one of only a handful of such deposits outside of southern China.

The Makuutu deposit is shallow, with less than 3 m of cover over a 9 m average thickness clay and saprolite zone which results in low-cost bulk mining methods with low strip ratio. A maximum thickness of 28.5 m has been identified at Makuutu. Processing is via simple acidified salt desorption heap leaching, breaking the chemical ionic bond which washes the rare earths (in a chemical form) from the ore into a pregnant leach solution (PLS). The PLS is concentrated up using membrane technology, from which the rare earths are precipitated as a mixed rare earth carbonate product; a product which attracts both a higher payability and achieves a high basket price due to the dominant high value magnet and heavy rare earths which make up over 70% of the product basket.

The Project has the potential of generating a high margin product with a potential operating life exceeding 30 years. The Project is also prospective for a low-cost Scandium co-product.



**Figure 3: Makuutu Rare Earths Project Location with major existing infrastructure**

## Existing Infrastructure

One of the Makuutu Rare Earths Project's competitive advantages is its proximity to existing infrastructure. The Makuutu site is approximately 10km from Highway 109 which is a sealed bitumen

road connecting to Kampala, to Kenya and on to the Port of Mombasa. All weather access roads connecting the site to the adjacent sealed bitumen highway are already existing. A rail line lies within 10 kilometres north of the Makuutu site near the town of Iganga. There are four hydroelectric power plants located within 65 km of the project area, with total installed generating capacity of approximately 810 MW, providing an abundant supply of cheap power to the Project.

Water will be sourced at the project by harvesting water from the Makuutu site, given the Project location in a positive rainfall environment, and a net positive process water balance will require membrane processes to be used to manage site discharge water for reagent recovery. Excess water management will be a key focus of the Project to ensure environmental standards are met and reagent consumption is minimised.

A workforce of semi-skilled and artisanal workers is available in nearby towns and population centres. The closest major population centre is Iganga, which has a population of 50,000. The town of Mayuge is approximately 10 km from the Project site and the intent is to source local operations staff from the immediate districts and train staff accordingly. The operation is to be staffed by a residential workforce. No fly in – fly out is envisaged, and the number of expatriate staff is intended to be low, and to be phased out over time.

Industrial facilities are available in the city of Jinja, approximately 40 km from the Project area. Additional industrial facilities are available on the outskirts of Kampala.

### **Competent Persons Statement**

*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](http://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.*

### **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.*