

31 August 2021

ADDITIONAL RESOURCE DRILLING AT MAKUUTU TO COMMENCE

- **A further 2,100 metres of infill drilling added to Phase 4 drill program**
- **Drilling progressing at a rapid rate in Uganda, with the three drill rigs ahead of plan with 5,200 metres completed to date on the newly revised 7,800 metre program**
- **Additional drilling planned to increase resource confidence to Indicated classification on the large resource Area I which has a current Inferred resource of 96 million tonnes¹ including zones of elevated heavy rare earth content**
- **The aim of the expanded Phase 4 infill drilling program is to increase the Indicated and Measured resource base to be in excess of 250 million tonnes**
- **Tranche 3 samples are expected to arrive in Australia this week**

Ionic Rare Earths Limited ("IonicRE" or "the Company") (ASX: IXR) is pleased to advise that the Company has approved an increase to the planned infill drilling at its 51% owned Makuutu Rare Earths Project ("Makuutu") in Uganda.

Due to accelerated progress at Makuutu, a further 2,100 metres have been added to the Phase 4 drill program, increasing the overall program to 7,800 metres. The additional drilling will focus on increasing the JORC resource confidence classification of Area I, illustrated in Figure 1, from Inferred to Indicated.

Makuutu has been confirmed as one of the world's largest scale ionic adsorption clay (IAC) hosted rare earth element (REE) deposits, located 120 km east of Kampala in Uganda. The Phase 4 drill program is part of the targeted work program to increase the Mineral Resource Estimate (MRE) classification at Makuutu, planned for Q1 2022. A significant increase in the MRE classification will form a key milestone for the Company in order to move towards completion of a Feasibility Study, including supporting activities, which will enable the submission of a Mining Licence Application (MLA) in the second half of 2022.

¹ Refer ASX announcement 3 March 2021 and Table 2.

Ionic Rare Earths Managing Director Mr. Tim Harrison commented:

“The Phase 4 drill program progress at Makuutu has to date been ahead of schedule – we have mobilised three rigs to site in the most intensive drill program at Makuutu attempted to date. The team has navigated challenges, maintaining high HSEC standards and working with local authorities and community stakeholders to ensure covid protocols are maintained at all times.”

“This positive progress to date has unlocked the potential to increase the size of the overall drill program, now increased to 7,800 metres, which is expected to be completed over the next 4 weeks and get the drill core back to Australia for assay and ultimately feeding in to the MRE update in Q1 next year.”

“These additional metres that the Company has added to the drill program reflects the growing confidence that IonicRE has in the development of Makuutu as a secure and long-term supplier of critical and heavy rare earths. By adding this drilling allocation, we are providing a very strong foundation for the Feasibility Study, which aims to define in excess of 250 million tonnes of the resource to measured and indicated confidence at Makuutu in the near term, with substantially more greenfield exploration upside remaining long term.”

Makuutu Phase 4 Drill Program

The aim of the Phase 4 drill program is to convert the Inferred Resources on RL 1693 to Indicated and Measured Resource category, plus also converting RL 1693 Exploration Targets to classified resources. This additional approved drilling will now aim to convert all of the inferred resource on the previous EL 1766 (Retention Licence application TN03555 approved for granting) to Indicated category. These higher classified resources will then be used to underpin the Makuutu Feasibility Study.

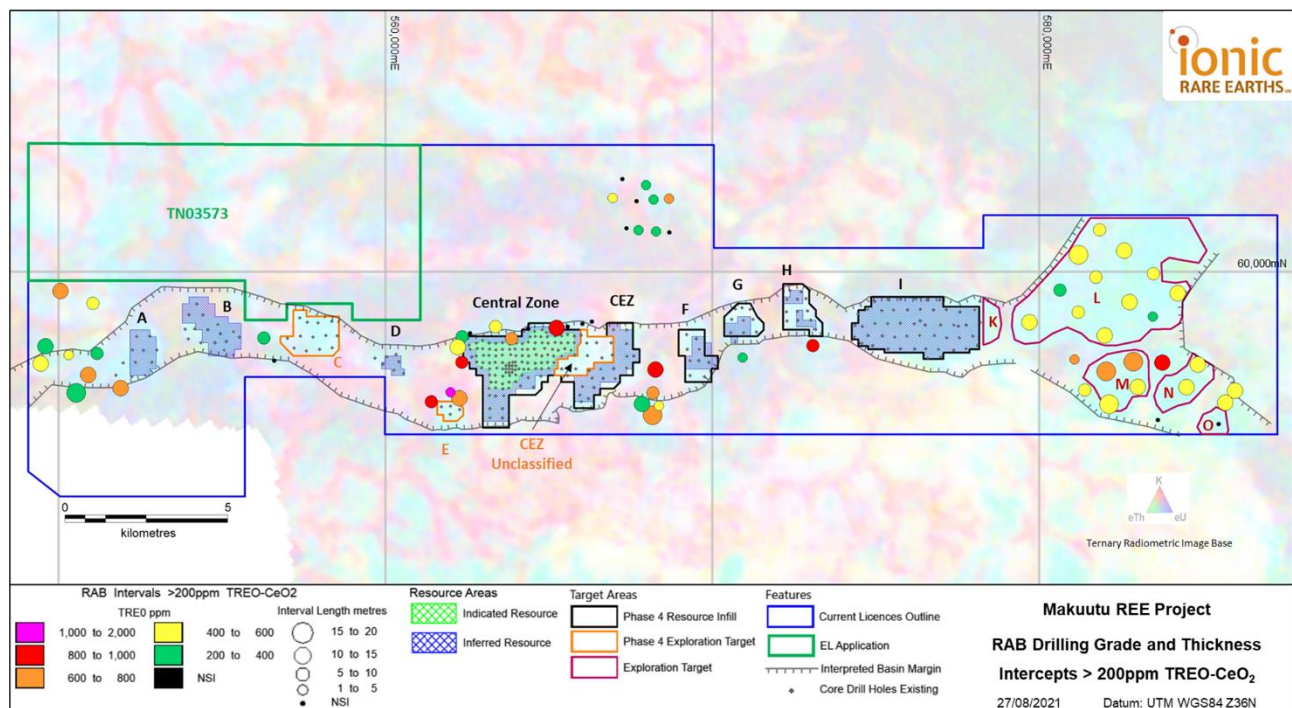


Figure 1: Makuutu Rare Earths Project tenement map showing MRE areas, target areas with Phase 3 completed drill holes, and the new EL application TN03573 to northwest of existing Project tenements.

The second tranche of assays has been received in Australia with the third tranche in transit from Uganda and is expected to arrive in Perth within the next week.

Substantial delays on the receipt of analytical data from the analytical labs is being experienced with quoted delays of 8 to 10 weeks affecting the assay lab in Perth, Australia.

The Company will provide updates to the market as progress continues with the advancement of the Phase 4 drill program.

Authorised for release by the Board.

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Makuutu Mineral Resource Estimate (refer ASX 3 March 2021)

Table 1: Makuutu Resource above 200ppm TREO-CeO₂ Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO ₂ (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc ₂ O ₃ (ppm)
Indicated Resource	66	820	570	590	230	300	30
Inferred Resource	248	610	410	450	160	210	30
Total Resource	315	650	440	480	170	230	30

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

All REO are tabulated in MRE announcement dated 3 March 2021 with formulas defining composition of Light Rare Earth Oxides (LREO), Heavy Rare Earth Oxides (HREO), Critical Rare Earth Oxides (CREO) and Total Rare Earth Oxides (TREO).

Table 2: Mineral Resources by Area

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)
Central Zone	66	820	570	51	730	500	118	780	540
A				12	570	390	12	570	390
B				25	410	280	25	410	280
C				-	-	-	-	-	-
D				6	560	400	6	560	400
E				-	-	-	-	-	-
Central Zone East				37	740	520	37	740	520
F				11	570	390	11	570	390
G				6	660	450	6	660	450
H				4	780	560	4	780	560
I				96	550	350	96	550	350
Total Resource	66	820	570	248	610	410	315	650	440

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

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 2.

The Company will move to 60% ownership of Makuutu on the completion of the Feasibility Study and has a pre-emptive right over the remaining 40% stake in the Project.

The deposit stretches 37 km in length and has demonstrated potential for a long life, low-cost capital source of critical and heavy rare earths. These IAC deposits are prevalent in southern China which have been the source of the world’s lowest cost critical 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 19.5 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 critical 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 an operation life exceeding 27 years. The Project is also prospective for a low-cost Scandium co-product.

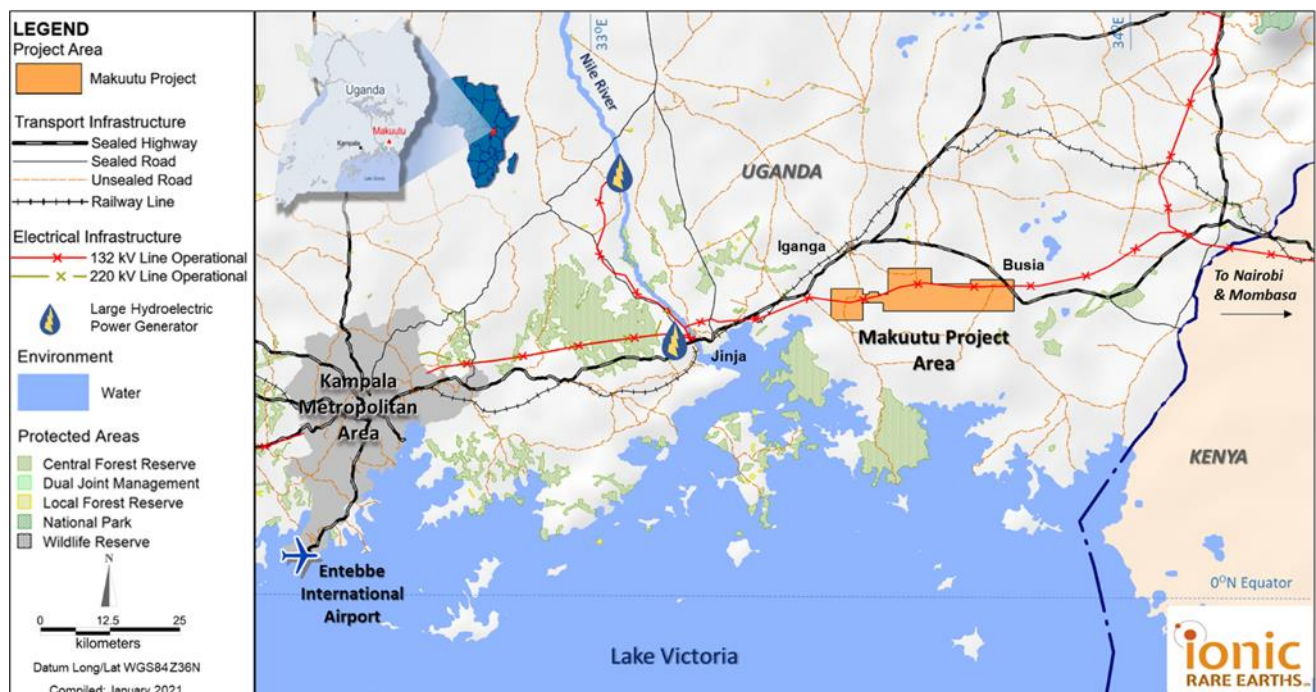


Figure 2: Makuutu Rare Earths Project Location with major existing infrastructure.

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 process 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 Person Statements

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 March 2021 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.

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.