

21 September 2021

SCANDIUM MARKET POTENTIAL AND MAKUUTU'S WORLD CLASS RESOURCE

- Makuutu is currently the 3rd largest reported scandium resource globally, currently containing over 9,450 tonnes within current MRE
- Scandium resource potential expected to grow with substantial exploration upside identified at Makuutu, specifically in eastern tenement EL00147, and northwestern tenements application TN03573 (pending)
- IonicRE positioning itself to become a key player in the Sc_2O_3 market, with initial plans to produce 20-25 tpa, and progressively ramp up production over 10 years to approx. 90-100 tpa
- Current pricing for Scandium Oxide (Sc_2O_3) trading at between US\$1,000/kg to US\$4,000/kg in opaque market
- Accelerated interest in Scandium assets globally, with Rio Tinto (ASX:RIO) and RUSAL (SEHK:486) recently announcing entry into the Sc_2O_3 market
- Scandium potential at Makuutu to focus on supplying large addressable markets within the aerospace, automotive and defense sectors, in addition to fuel cell and 3D printed specialty component applications

Ionic Rare Earths Limited ("IonicRE" or "the Company") (ASX: IXR) is pleased to provide an update to marketing activities underway promoting the substantial upside potential of Scandium co-product from the Makuutu Rare Earths Project ("Makuutu") in Uganda.

Since the Company announced the initiation of scandium marketing activities on 28 January 2021, the Company has further increased the long life potential of Makuutu with a substantial near 4 fold increase in the contained Scandium Oxide (Sc_2O_3) resource from prior 2,300 tonnes to 9,450 tonnes as per the Mineral Resource Estimate announced 3 March 2021 (refer Table 1).

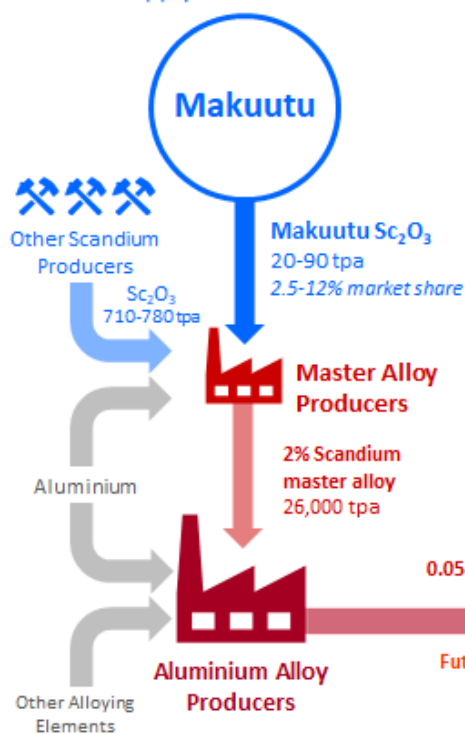
The Scoping Study announced 29 April 2021 provided an overview of the potential for Sc_2O_3 production from Makuutu, with initial production produced from 1 module of approximately 20-25 tonnes Sc_2O_3 in Year 1 ramping up to 90-100 tonnes by year 10. Negligible additional cost is incurred

in the recovery and production of Sc_2O_3 , which will report to the mixed rare earth carbonate (MREC) product at Makuutu. The low capex development at Makuutu is a clear differentiator to other potential scandium sources, and provides IonicRE with a tremendous advantage to help build and establish a key foothold in what the Company expects will be metal of high demand once initial supply can be demonstrated.

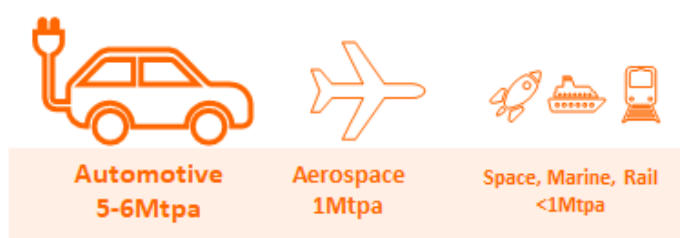
Given the potential for a substantial increase in the Sc_2O_3 market in the future, enabled through de-risking a supply chain driven by long term reliable, diverse and secure scandium sources, IonicRE could expect the potential for scandium at Makuutu to be immense. The recent moves by global aluminium giants Rio Tinto (ASX: RIO) and RUSAL (SEHK:486) to enter the scandium markets underlines the potential as a metal of the future.

While the current scandium market is 15-20 tonnes per annum as Sc_2O_3 , the global transportation industry has the potential to turn scandium into a billion-dollar market. The existing market for aluminium across automotive, aerospace, marine, rail and space applications is approximately 7 million tonnes per annum. IonicRE expects there is potential for significant market penetration by aluminium-scandium (Al-Sc) alloys into this market globally, representing scope for the Sc_2O_3 market to grow to approximately 800 tonnes per annum. This market dynamic is illustrated in Figure 1.

Scandium supply chain:



7Mtpa aluminium consumption in global transport:



700ktpa aluminium consumption with scandium with a 10% market penetration over the next 5-10 years



0.05-0.1% Scandium-containing alloys 700,000 tpa

Future Scandium-containing alloys ? tpa

Future Markets / Applications:

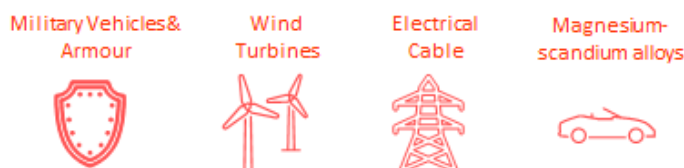


Figure 1: Scandium Oxide market potential

The adoption of Sc₂O₃ will also be heavily dependent on its price-point. As the market grows, the Sc₂O₃ price is forecast to reduce as economies of scale for production can occur. This reduction in Sc₂O₃ price is expected to facilitate Al-Sc to be used in an increasing number of applications, further growing the potential market. As a result, IonicRE has adopted long term Sc₂O₃ pricing basis reducing from approximately US\$1,500 per kg today, to initial pricing of approximately US\$1,000 per kg and long-term pricing for the peak Makuutu Sc₂O₃ production of approximately US\$700 per kg.

On 9 August 2021, the Company announced plans to evaluate the economics associated with the development a standalone rare earth separation and refinery for the processing of the critical and heavy rare earth dominant MREC from Makuutu. The refinery will also separate and refine Sc to a purity exceeding 99% and is aligned with supply directly for Al-Sc master alloy manufacturing.

The Company continues discussions with global groups interested in development of Al-Sc alloys and is exploring opportunities for collaboration in this sector. Significant recent development has been in the applications for 3D printing, where components can be rapidly produced for niche components used in automotive, aerospace and space applications.

The Company will provide an update to the market in due course.

Authorised for release by the Board.

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Attachment:

PowerPoint presentation – Makuutu Rare Earths Project; Substantial potential for future long-life, low-cost, Scandium supply

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).

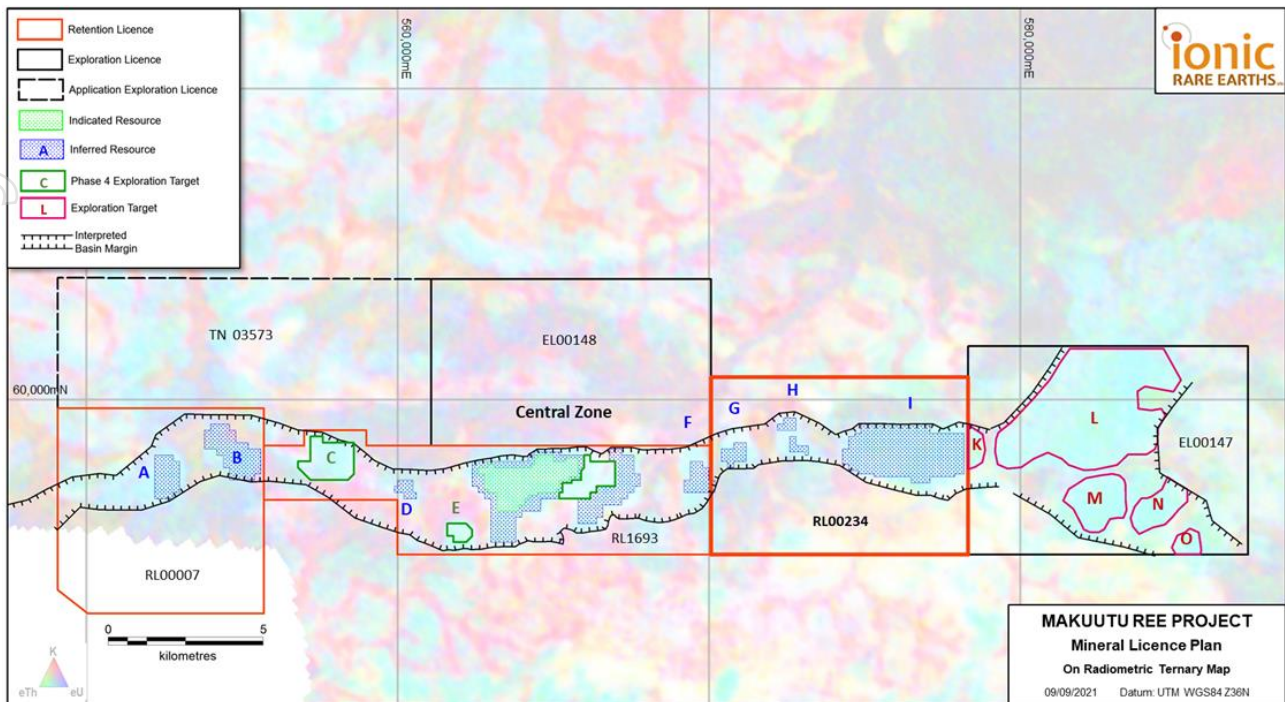


Figure 2: Makuutu Rare Earths Project approved tenements, showing the recently converted RL 00234 (bold red outline), along with current resource areas and exploration targets across the 37-kilometre-long mineralisation trend.

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.