



ASX Announcement

18 June 2025

IXR'S VIRIDION JV TARGETS EXPANSION INTO USA WITH RARE EARTH REFINERY

Potential for US-based rare earth refinery to support stakeholders seeking secure magnets & heavy rare earths supply

- IXR's Viridion Joint Venture in Brazil to expand footprint to include a potential US-based rare earth refinery after delivering Brazilian refining and recycling capability;
- Positive endorsement through selection by BNDES and FINEP paving path for ramped up activities to support accelerated timeline;
- IXR previously completed internal scoping study for a US-based heavy REO refinery, utilising Ionic Technologies' separation and refining IP, which will now be updated through Viridion to fast-track initial estimates for both Brazilian and US refining capacity to facilitate stakeholder discussions; and
- IXR and Viridion are well placed to provide a resilient, multi-asset sovereign capability via Brazilian and US facilities to secure a sustainable ex-China rare earths supply chain.

Ionic Rare Earths Limited ("IonicRE" or the "Company") (ASX: IXR) is expanding the focus of the Viridion Joint Venture (IXR: 50%; Viridis Mining and Minerals Ltd: 50%) to potentially develop a US-based rare earth refinery, in addition to a proposed Brazilian based rare earth refinery and a magnet recycling facility. This expanded scope for Viridion will also fast track a series of discussions underway examining enhanced interest in access to sources of US-refined magnet and heavy rare earth oxides (REOs).

Viridion JV and the US market

As part of progressing a resilient downstream rare earth supply chain for the US, IXR's Brazilian Joint Venture, Viridion will now expand its scope to include a potential US rare earth refinery. This would have the capacity to obtain mixed rare earth carbonate (MREC) from JV partner Viridis' Colossus Project in Brazil, plus other similar IAC deposits to enable the flow of magnet and heavy rare earths into the US manufacturing base.



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The Viridion JV will seek to 'fast track' initial studies on rare earth refining for the purposes of US engagement to compliment the strong Brazilian support to date and mechanism for financing IonicRE's downstream ambitions.

With Viridion's recent selection by the Brazilian Government via the \$1.4 billion "transforming strategic minerals" initiative being overseen by the Brazilian National Bank for Economic and Social Development ('BNDES') and the Federal Agency for Funding Authority for Studies and Projects in Brazil ('FINEP'), Viridion is well positioned to expand into the US market on rare earth refining. This would potentially follow the development of Brazilian refining and recycling facilities, allowing value-added components to be exported from Brazil to the US as part of an overall proposal to key US stakeholders.

In May 2025, Viridion delivered the first recycled magnet REOs to the Company's Brazilian partners, with talks continuing on the location of pilot plants for a potential REO refinery and also magnet recycling facilities.

Viridion will play a strategic role in near-term substitution for disrupted critical minerals, with the Company on track to progress the development of a fully integrated rare earth supply chain, based on recycling end-of-life (EOL) magnets and swarf into high purity separated rare earth oxides (REOs) as the early facilitator of supply from Brazil.

IonicRE Managing Director, Mr Tim Harrison commented: *"Viridion has made substantial progress in very rapid time, with the recent delivery of Brazil's first locally sourced recycled magnet REOs, followed importantly by the announcement of financial support from the Brazilian Government.*

"With the United States focused on addressing its critical shortages of domestic rare earths, Viridion is now working to examine how it could play a role in building a sovereign and sustainable US rare earth supply chain, building on our plans to facilitate Brazil's rare earths drive.

"IonicRE's international expansion strategy now encompasses the UK/Europe, Asia, South and North America, as we work with our global partners to build an ex-China rare earths supply chain."

The US currently obtains 70% of its rare earth imports from China, with both the Trump administration and former Biden administration seeking to address this critical gap in domestic supply. Recent minerals shortages following China's April 2025 restrictions have had a significant impact on US, European and Japanese companies, particularly automakers, who rely on rare earths for manufacturing both internal combustion engines and electric vehicles.

Scoping Study for Rare Earth Refining Asset in the US

IonicRE completed an internal scoping study in 2023 for a dedicated US refining facility to process MREC from the Company's 60% owned Makuutu Rare Earth Project in Uganda.

This scoping study has been used in several discussions with strategic partners in the US, highlighting Makuutu's potential as the most advanced Ionic Adsorption Clay (IAC) project globally with product not committed to China. Its MREC product basket has one of the highest heavy rare earth contents identified to date, consisting of approximately 45% medium and heavy rare earths.

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A member of the global Mineral Security Partnership, Makuutu is considered a globally strategic resource for the near term, offering a low capital development option and facilitating potential long-term supply of magnet and heavy REOs.

The internal scoping study (Class 4 AACE Estimate, -20% / +30%) was prepared by a third party engineering group utilising a rare earth separation flowsheet defined, modelled and tested by Ionic Technologies, capable of producing 4,000 tonnes per annum of separated REOs with a nominal site located within Tennessee, USA, close to potential partners. The facility was designed to produce initially quantities of separated magnet REOs plus a selection of separated heavy REOs, including those listed on China's April 2025 export restrictions list.

IonicRE will now work with Viridion to revise the scope of the US refinery to align with potential feed MREC compositions available to the facility, including the potential to treat a portion of Colossus MREC, plus also higher value pre-processed MREC streams including medium and heavy REE streams post group separation.

The scoping studies are expected to be completed over the second half of 2025 and will feed directly into planning for the development of a pilot plant and technical facility in advanced discussions to validate design in Brazil.



Figure 1: Continuous heavy rare earth separation test work (left), and refinery SX test work samples used to develop Ionic Technologies flowsheet and process model for US Refinery (right).

Viridion Joint Venture

IonicRE and Viridis executed a Binding Agreement in April 2024 (refer ASX announcement 3 April 2024), for the commercialisation of intellectual property developed by IonicRE's 100% owned UK subsidiary, Ionic Technologies, to separate and refine Rare Earth Oxides (REOs) from concentrates and carbonates feed from the Colossus Project, and magnet recycling in Brazil.

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The 50/50 JV between Viridis and Ionic Rare Earths aims to commercialise and implement the Separation and Recycling Technology within a separation plant in Brazil and is positioned to become the first major producer of the full suite of refined magnet REOs in South America.

The JV has formed Viridion Pty Ltd (“**Viridion**”) in Australia and Viridion Rare Earth Technologies Ltda in Brazil, which holds exclusive global rights (excluding Asia and Uganda) to Ionic Technologies’ separation IP to produce REOs from MREC or equivalent intermediate feed streams, and own any new IP developed from the commercialisation process.

As part of this initiative, Viridion will now expand the footprint of potential refining assets with a view to establishing an additional rare earth separation facility in the US that could take pre-processed MREC from Brazil, considering a value-added magnet and heavy rare earth product, free of radionuclides, to enable US supply chain growth.

Viridion also holds exclusive rights in Brazil to monetise, implement and commercialise Ionic Technologies’ magnet recycling. This grants Viridion rights to exclusively commercialise separation technology for other REE producers, with an initial focus on partnering with existing Brazilian rare earth projects before expanding the technology globally.

For more information about IonicRE and its operations, please visit www.ionicre.com.

Authorised for release by the Board.

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About Ionic Rare Earths Ltd

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

Ionic Technologies International Limited (“Ionic Technologies”), a 100% owned UK subsidiary, 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 99.5% rare earth oxide (REO).

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The Makuutu Rare Earths Project in Uganda, 60% owned by IonicRE, 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 REO.

IonicRE has also executed a transformational 50/50 joint venture refinery and magnet recycling facility in Brazil with Viridis Mining and Minerals Limited (ASX: VMM) to separate high value magnet and heavy rare earths from the Colossus Project's full spectrum of REOs.

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

For more information about IonicRE and its operations, please visit www.ionicre.com.

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.

References to Previous ASX Releases

- IXR's Brazilian subsidiary Viridion selected for funding to accelerate rare earth recycling and refinery – 13 June 2025
- Viridion delivers first recycled magnet REO feed to Brazilian magnet manufacturer – 27 May 2025
- China export controls put spotlight on Makuutu heavy rare earths – 9 April 2025
- Viridion backed to build Brazilian magnet supply chain – 9 December 2024
- IonicRE and Viridis execute transformational joint venture for separation, refining and recycling of rare earths in Brazil – 3 April 2024
- IonicRE to evaluate standalone downstream HREO separation and refining asset – 9 August 2021

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and all material assumptions and technical parameters continue to apply and have not materially changed.