

ionic rare earths

ASX: IXR | FSE: 6UH

Sustainably Sourcing Magnet and Heavy Rare Earths for the New Economy

IonicRE Investor Webinar

10 December 2024



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Competent Person 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.

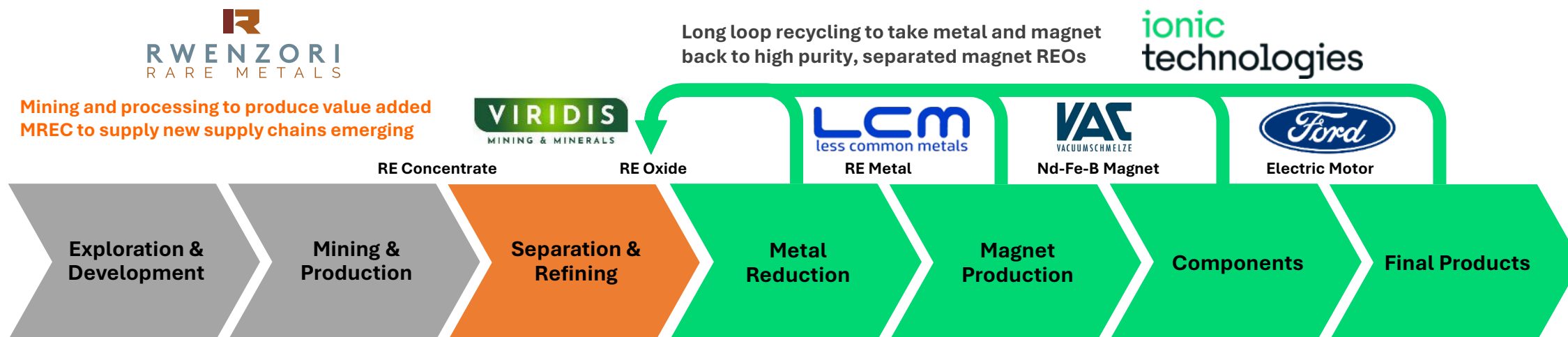
The information in this report that relates to Mineral Resources for the Makuutu Rare Earths deposit was first released to the ASX on 15 May 2024 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects 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.

REE Supply Chain and IonicRE Integration

IONICRE IS LEADING THE SECURE SUPPLY OF MAGNET RARE EARTHS, LEVERAGING OUR SUSTAINABLE TECHNOLOGY, PIONEERING MAGNET RECYCLING TO DRIVE THE NEXT GENERATION OF WIND TURBINES, ELECTRIC VEHICLES, DEFENCE, AND ADVANCED MANUFACTURING



Makuutu Rare Earths Project (60% IonicRE → 94% IonicRE in H2 2024)

- March 2023 FS¹ indicated low capital, modular development IAC enables IonicRE to bring on highly sought-after, value added MREC basket of magnet and heavy REEs
- Mining Licence LML00334 Awarded², Environmental Permits issued³
- Demonstration Plant has produced MREC – offtake negotiations underway
- Expandable asset through free cash flow and growing market demand

IonicRE/ VMM Refinery (50% IonicRE)

- 50/50 JV with Viridis Mining & Minerals Ltd (ASX: VMM) to develop refining and recycling footprint in Brazil⁴
- Leveraging Ionic Technologies IP to be an early mover and first step towards establishing greater presence in emerging Brazilian rare earth market
- Signed MOU⁵ with CIT SENAI to accelerate NdFeB magnet capacity in Brazil via magnet recycling

Magnet Recycling (100% IonicRE)

- November 2024 FS⁴ indicates low capex development to recycle spent magnets and swarf to produce separated and refined 99.9%+ REOs
- Demonstration Plant operating – Magnet REO production now (Nd, Pr, Dy and Tb)
- Addressing domestic supply chain / sovereign capability need with global opportunities, focus on EU and US
- First to revenue, supply independent of mine permitting, lower capital and technical, and supply chain risk
- Several JVs and partnerships on the table

1. ASX 20th March 2023. 2. ASX 18th January 2024. 3. 27th October 2023. 4. ASX 3rd April 2024. 5. ASX 6th November 2024. ASX 18th November 2024.

Makuutu Rare Earths Project

- 60% owned by IonicRE
- Mining Licence awarded in January 2024¹
- Updated Mineral Resource Estimate in May 2024²
- Updated Exploration Target in May 2024²
- Demonstration Plant has produced MREC to support offtake negotiations³





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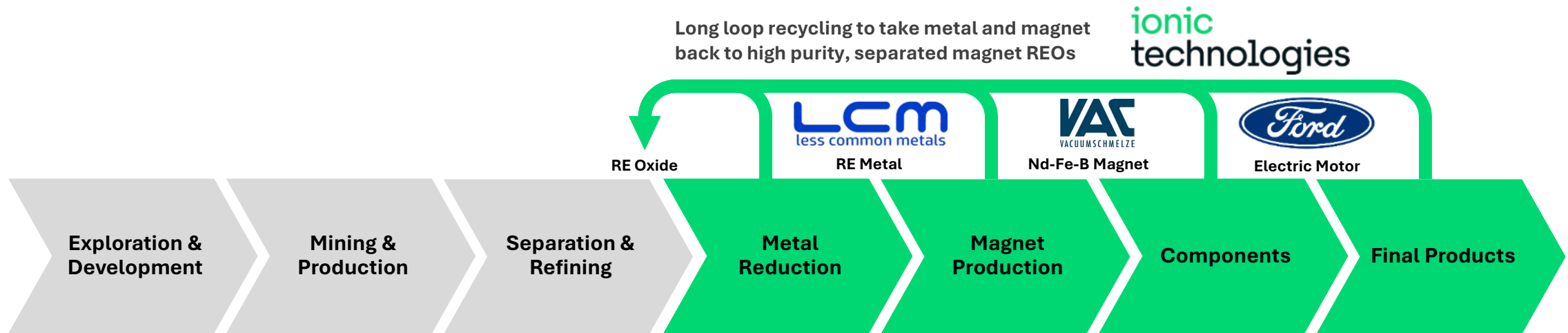
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Leading Magnet
Recycling and the
Circular Economy of
Rare Earths

Belfast now first producer
of recycled magnet REOs
in Western world

Recycling Supply Chain and IonicRE Integration an early leader

RECYCLING OFFERS A STEP CHANGE TO UNLOCK LOW CAPEX ALTERNATIVE SUPPLY CHAIN SOLUTIONS FOR IMMEDIATE MAGNET REO SOURCES TO CREATE INSULATED, SOVEREIGN CAPABILITY FOR WESTERN END USERS ACROSS DEFENCE, ENERGY TRANSITION AND ADVANCED MANUFACTURING



Ionic Technologies Belfast Magnet Recycling Feasibility Study¹ designed for 1,200 tpa end-of-life (EOL) NdFeB magnet and swarf feedstock, producing 400 tpa separated magnet REOs

- NPV_{7.5} (post-tax) = US\$502 million
- IRR (post-tax) = 43.6%
- Net Revenue = US\$2.12 billion
- EBITDA = US\$1.78 billion
- CAPEX (Belfast) = US\$108.7 million
- OPEX (Belfast) = US\$27.68 / kg REO (ex-Magnet feedstock)
- Payback = 2.4 years

1. ASX 18TH November 2024.



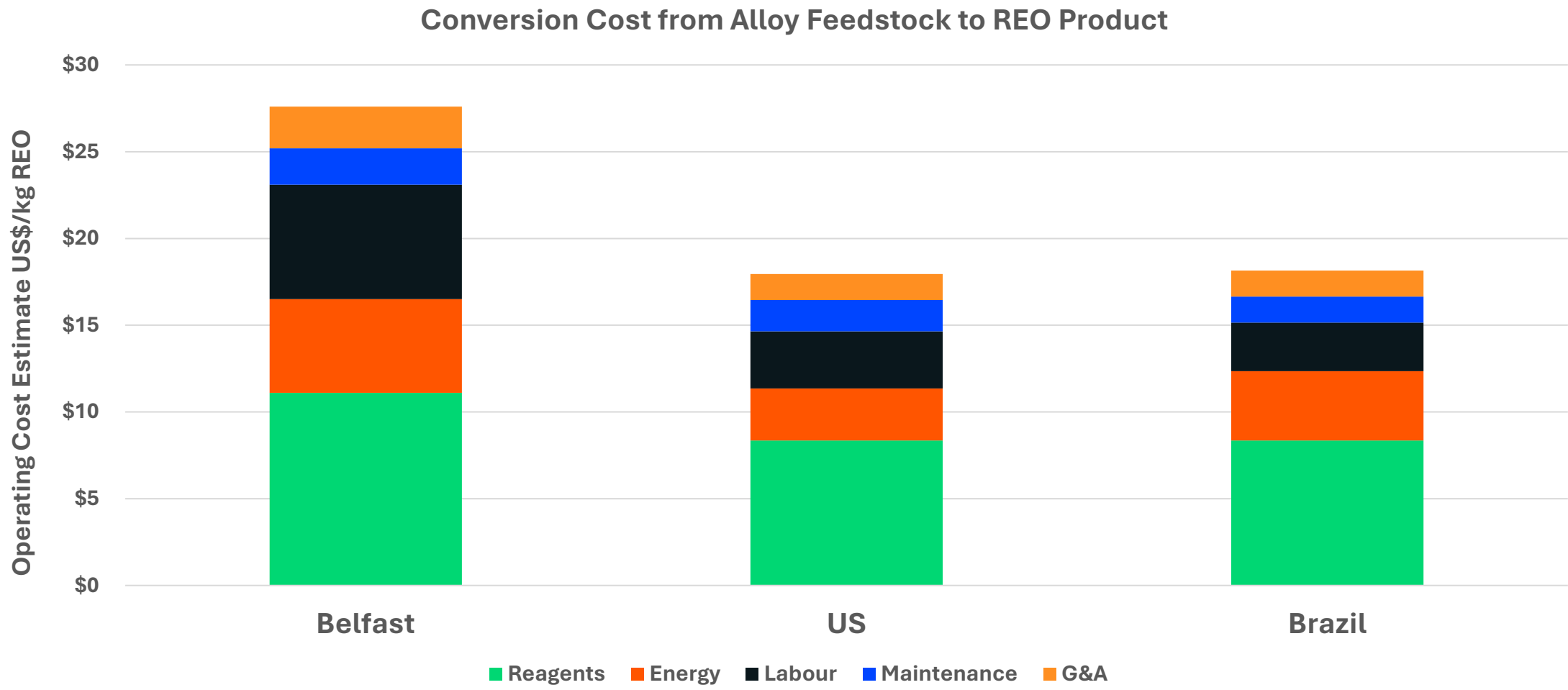
Source; <https://www.apcuk.co.uk/>

Financing Magnet Recycling in the UK

- Project development cost of £85 million for Belfast Plant and Technology facility, including £10 million site specific costs for Belfast Harbour
- Grant application submitted substantial capital cornerstone investment from UK Government via the Automotive Transformation Fund (ATF), administered by the Advanced Propulsion Centre (APC)
- The ATF is a funding program created to support the industrialisation and scale-up of a UK EV supply chain
- The ATF will deploy up to £850 million of investment, delivered in collaboration with the Department for Business and Trade (DBT) and Innovate UK, the fund provides support for large-scale, capital-focused projects in the EV technology areas
- Project debt, offtake and strategic investment also part of overall financing strategy

Global OPEX Potential

ESTIMATED OPERATING COST HAS POTENTIAL FOR FURTHER REDUCTIONS IN OTHER JURISDICTIONS



Note: All jurisdictional ranges are estimated based on preliminary data collected by the Company.

Policy Supporting Domestic Capability & Recycling

UK refreshed the Critical Minerals Strategy in 2023 highlighting the **Circular Critical Materials Supply Chains** as a key area of focus

EU's Critical Raw Material Act (CRMA) 2023, a €300 billion initiative aimed at countering the Chinese Belt and Road Initiative implemented into law earlier this year

- The Act identifies a list of strategic raw materials crucial to Europe's green and digital ambitions and for defence and space applications
- In late 2023, the co-legislators reached a political agreement on the EU CRMA and **increased the recycling component from 15% to 25%**

USA highlighted recycling as art of its America's Supply Chains Executive order in 2021 as part of Federal Plan to ensure secure and reliable supplies of critical minerals

EU CRMA 2023 Regulation sets clear benchmarks for domestic capacities along the **strategic raw material supply chain** and to diversify EU supply **by 2030**:



At least **10%** of the EU's annual consumption for extraction



At least **25%** of the EU's annual consumption from recycling



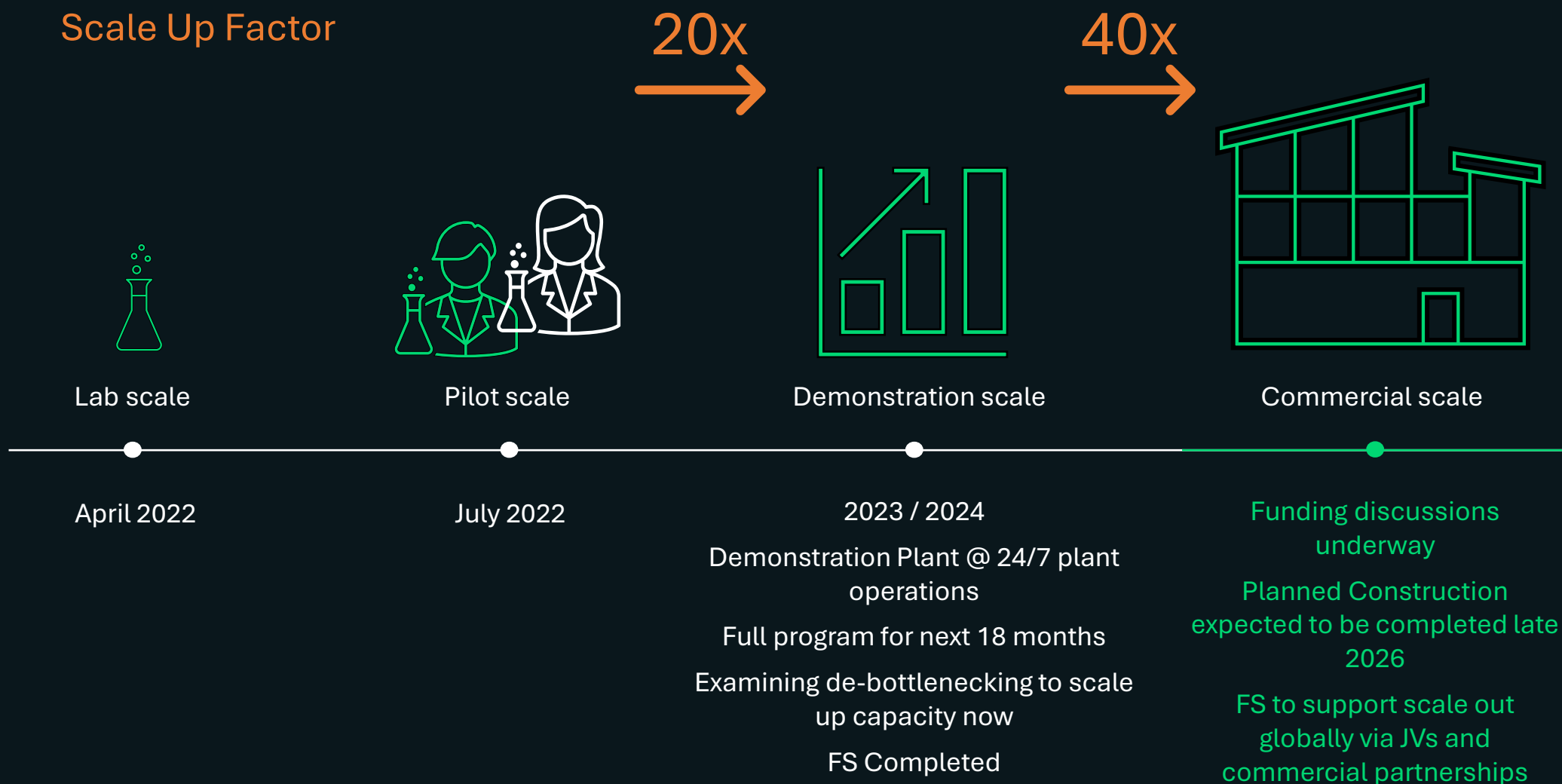
At least **40%** of the EU's annual consumption for processing



Not more than **65%** of the EU annual consumption at any stage of processing from a single third country









Our Path to Commercialisation

Rapid acceleration of our technology ready to scale globally



Peer Comparison

Peers offering medium or long loop recycling offering from metal alloy feedstock (EOL magnets or swarf) back to either a mixed REO product or individually separated magnet REOs

	Product	Location	Status	Demonstration Plant Feed Capacity (tpa)	Valuation
	Separated magnet REOs		Demonstration Plant, Feasibility Study Completed	30	A\$34m ¹ / US\$22m (ASX: IXR)
	Mixed magnet REOs		Demonstration Plant	100	Private Series B Funding raised US\$53m (09/2024) Series A Funding raised US\$27m (04/2023)
	REOs (Formates)		Pilot Plant	N/A	Private US\$25m
	Separated magnet REOs		Pilot Plant	N/A	US\$95m ¹ (NASDAQ: AREC)

Viridion – Brazilian Joint Venture – Refining and Recycling

- IonicRE and Viridis Mining and Minerals Ltd (ASX: VMM) announced 50/50 JV¹
- Viridion JV aims to construct a refinery and magnet recycling facility in Brazil utilising Ionic Technologies' separation technology
- Magnet Recycling likely the first step in developing a domestic integrated supply chain in Brazil → MOU signed² with CIT Senai, FIEMG to progress establishment of secure Brazilian Magnet supply chain

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50%

VIRIDIS
MINING & MINERALS

50%

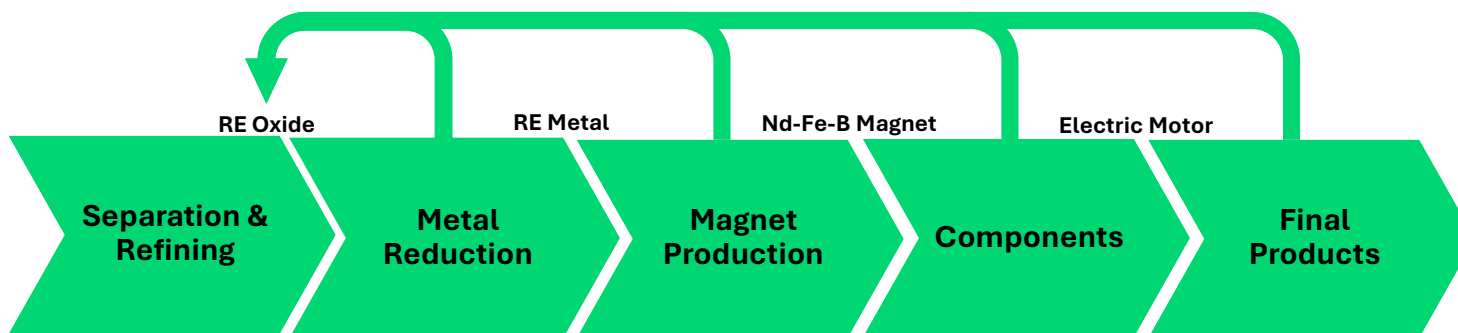
JV Company

- Magnet and Heavy Rare Earth Refinery
- Magnet Recycling Facility
- Further integration into Brazilian RE footprint

Long loop recycling to take metal
and magnet back to high purity,
separated magnet REOs

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VIRIDIS
MINING & MINERALS



1. ASX 3rd April 2024;
2. ASX 6th November 2024.

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