
RAINBOW RARE EARTHS



**UNLOCKING
SECONDARY
SOURCES OF
RARE EARTHS**

**Investor
Presentation**

March 2024



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RAINBOW RARE EARTHS

UNIQUE INVESTMENT OPPORTUNITY



PHALABORWA PEA BASE CASE
OCT 2022 USING SPOT PRICING^{1,2}

NPV₁₀
US\$627m

IRR
40%

EBITDA
US\$192m

Margin³
75%

Payback
<2 years



CRITICAL MINERALS: Demand for rare earth elements (REEs) will rise significantly to meet decarbonisation; urgent need for non-China supply



STRATEGIC ASSETS: Responsible rare earth production from secondary sources: near-term production in South Africa and earlier stage project in Brazil - US\$50m project investment commitment from the US DFC via TechMet



ROBUST ECONOMICS: Phalaborwa PEA demonstrates good returns in all pricing scenarios, low capital intensity (US\$295.5m) and expected to be one of the lowest cost producers of separated rare earth oxides globally



INNOVATIVE TECHNOLOGY: Proprietary RE oxide separation process is simpler, more environmentally friendly and cheaper than traditional processes

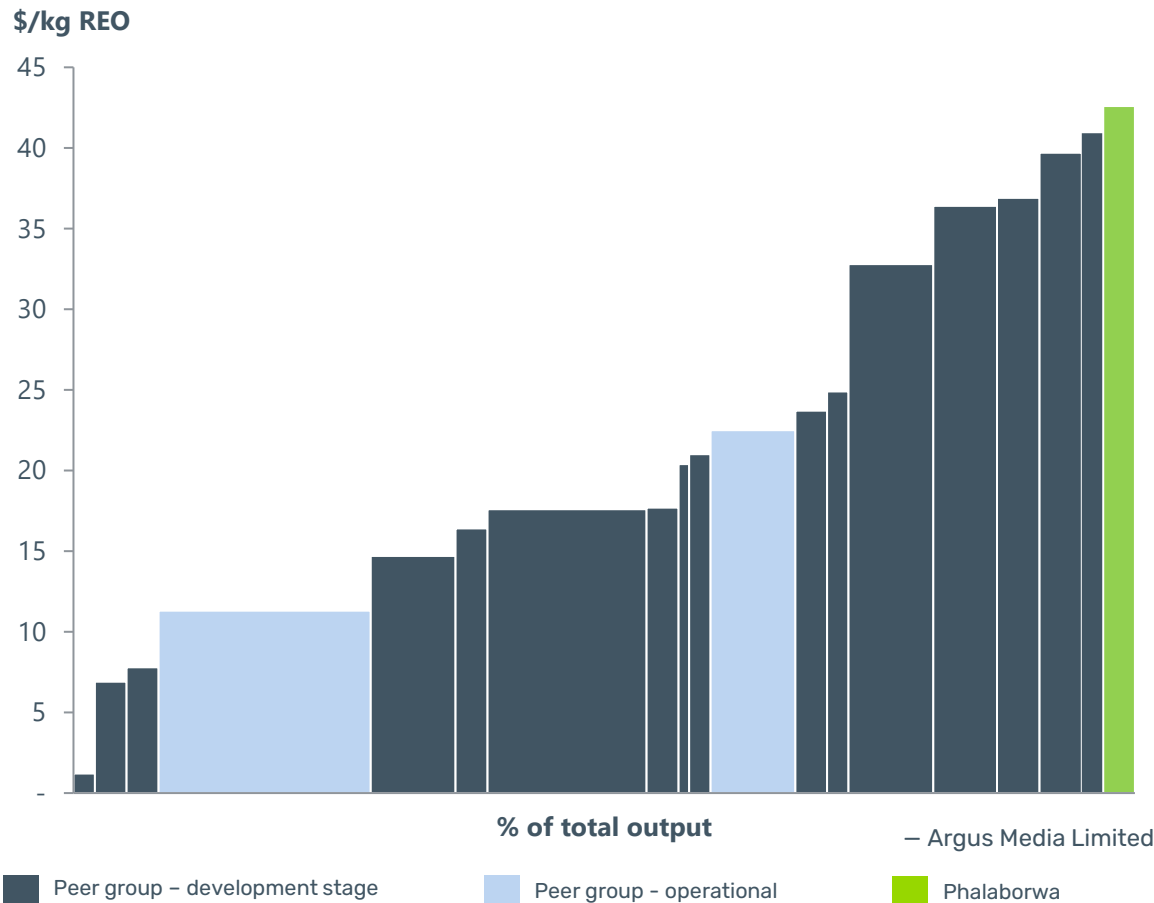


EXPERIENCED TEAM: Proven history of delivery

HIGHEST MARGIN GLOBAL RARE EARTH DEVELOPMENT PROJECT DUE TO LOWER OPERATING AND COST PROFILE THAN TRADITIONAL MINING PROJECTS



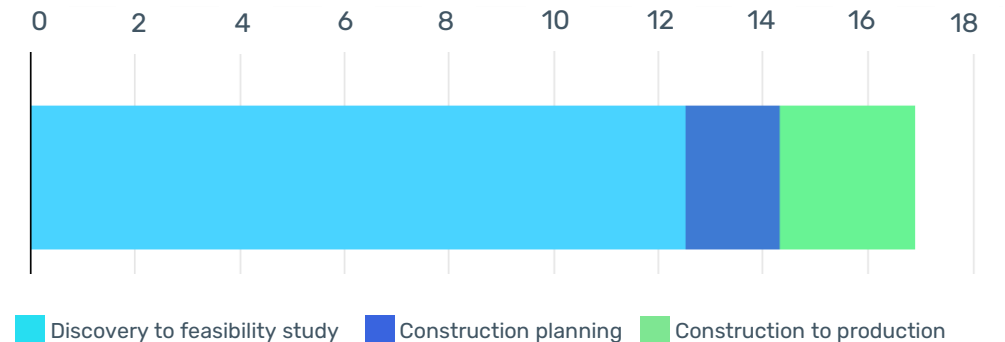
Argus Media analysis of expected operating margin per kg of REO production based on 2022 average REO prices¹



PHALABORWA HAS HIGHEST MARGIN DUE TO LOW INHERENT COST BASE

- No primary mining, crushing or grinding costs
- Many development projects have complex challenges to overcome including low grades, high levels of radioactivity and environmental complications
- High capex associated with complex processing
- Long lead time for mines to be brought into operation

GLOBAL AVERAGE LEAD TIMES FROM DISCOVERY TO PRODUCTION



Source: IEA, The Role of Critical Minerals in Clean Energy Transitions, March 2022

GOOD RETURNS EVEN IN A LOW PRICING ENVIRONMENT

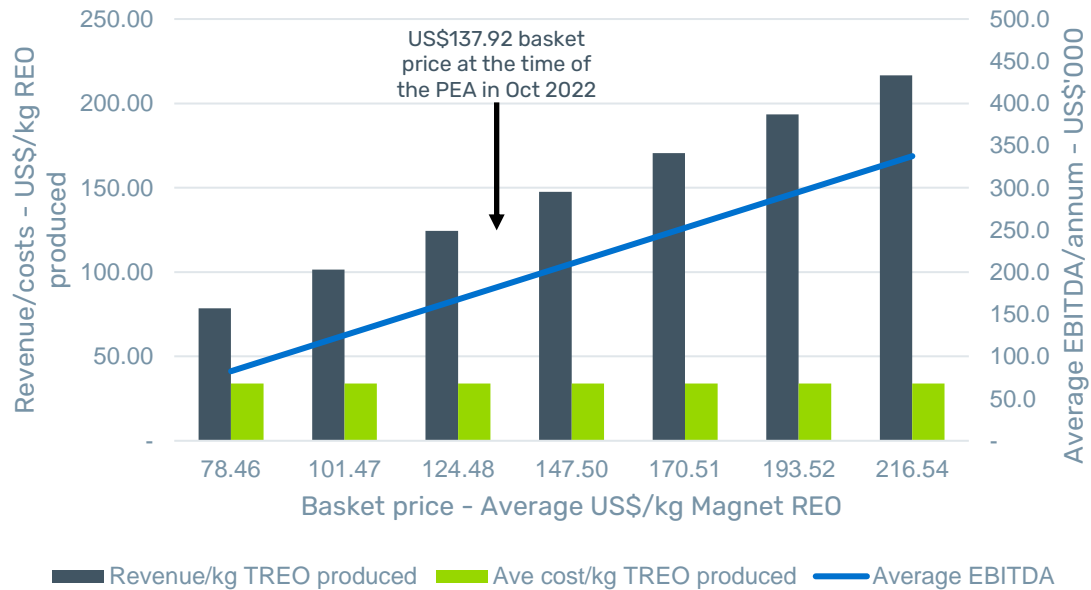
ROBUST ECONOMICS VS TRADITIONAL RARE EARTH MINING DEVELOPMENT PROJECTS



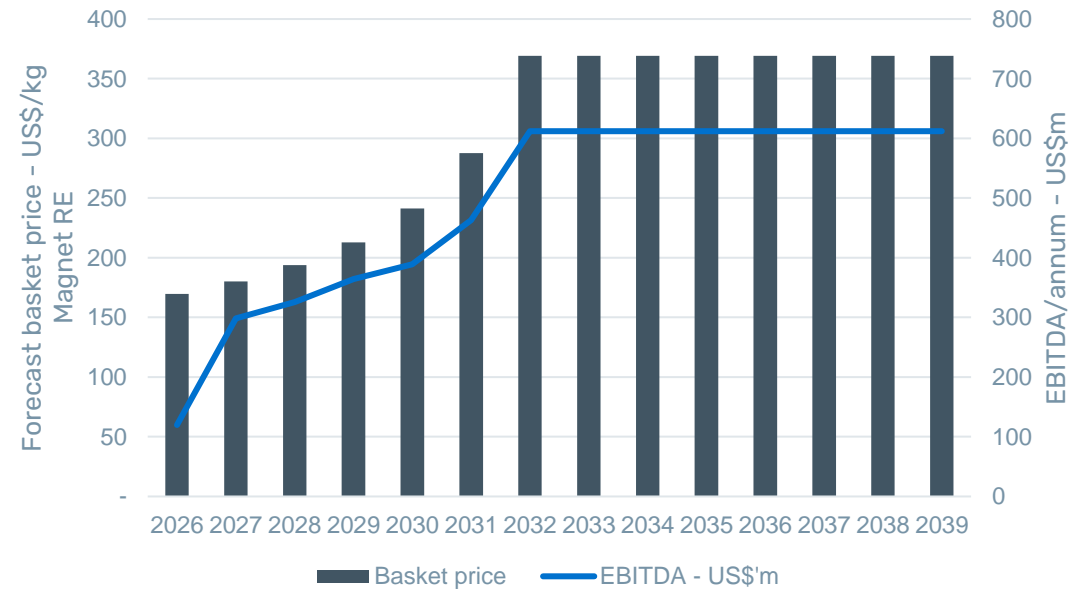
- Sensitivity analyses demonstrate robust EBITDA operating margins in all pricing sensitivity scenarios
- NPV insensitive to changes in operating costs; beneficial in inflationary environment

- Strong supply / demand fundamentals support expectations of long-term increase in magnet rare earths prices

EBITDA SENSITIVITY TO PRICING¹



SENSITIVITY TO MARKET FORECAST PRICING FROM WHEN PHALABORWA COMMENCES OPERATION²

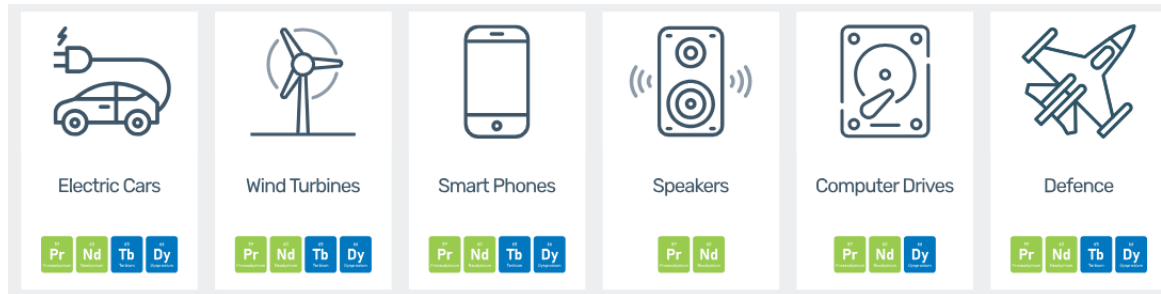


RARE EARTH ELEMENTS

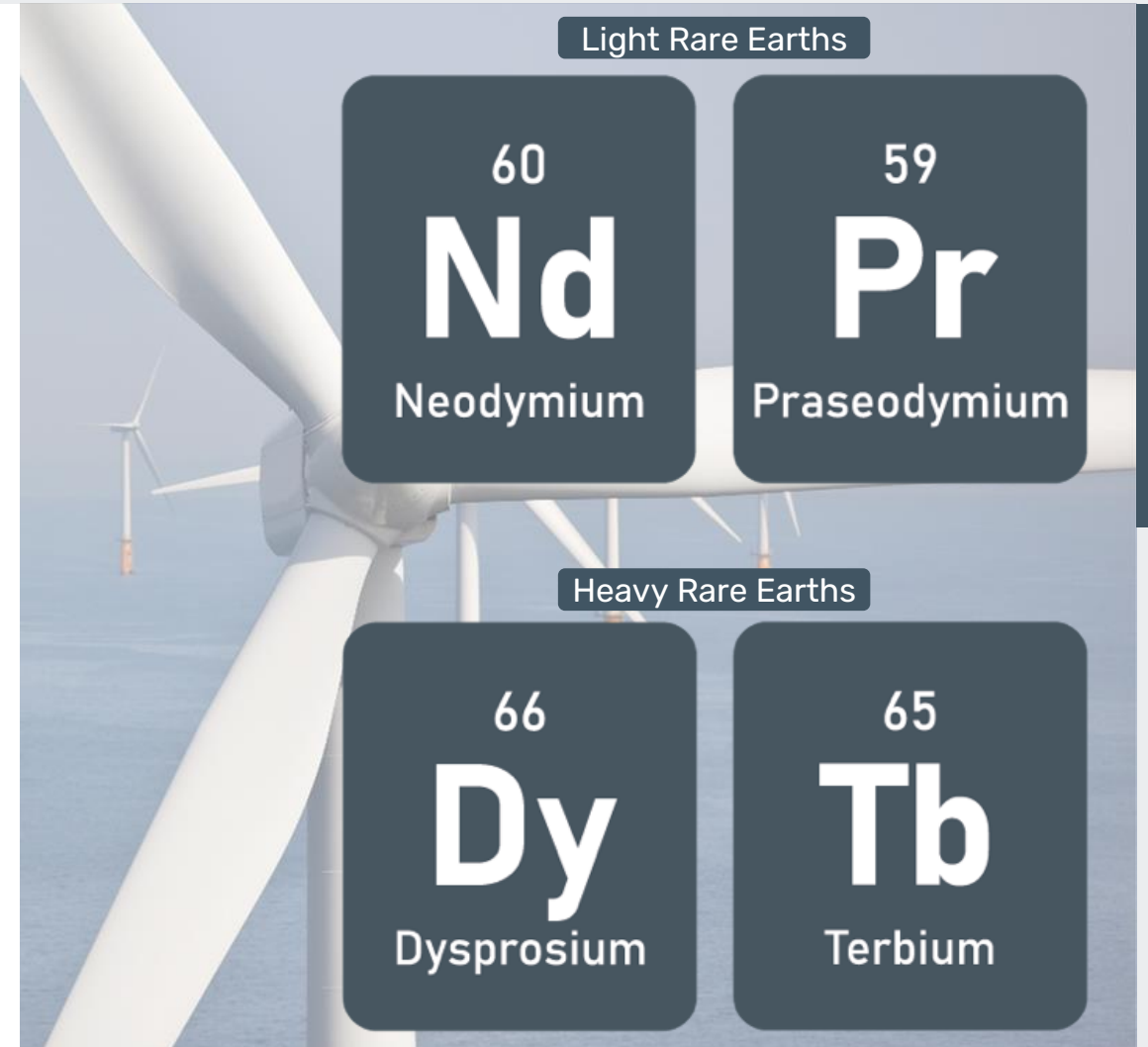
ESSENTIAL FOR GLOBAL DECARBONISATION

CRITICAL BUILDING BLOCKS TO REACH NET ZERO

- Rare earth elements (REEs) are a group of 17 elements
 - NdPr, Dy and Tb are used for permanent magnets and account for ca. 95% of global consumption by value¹
- Essential components for:



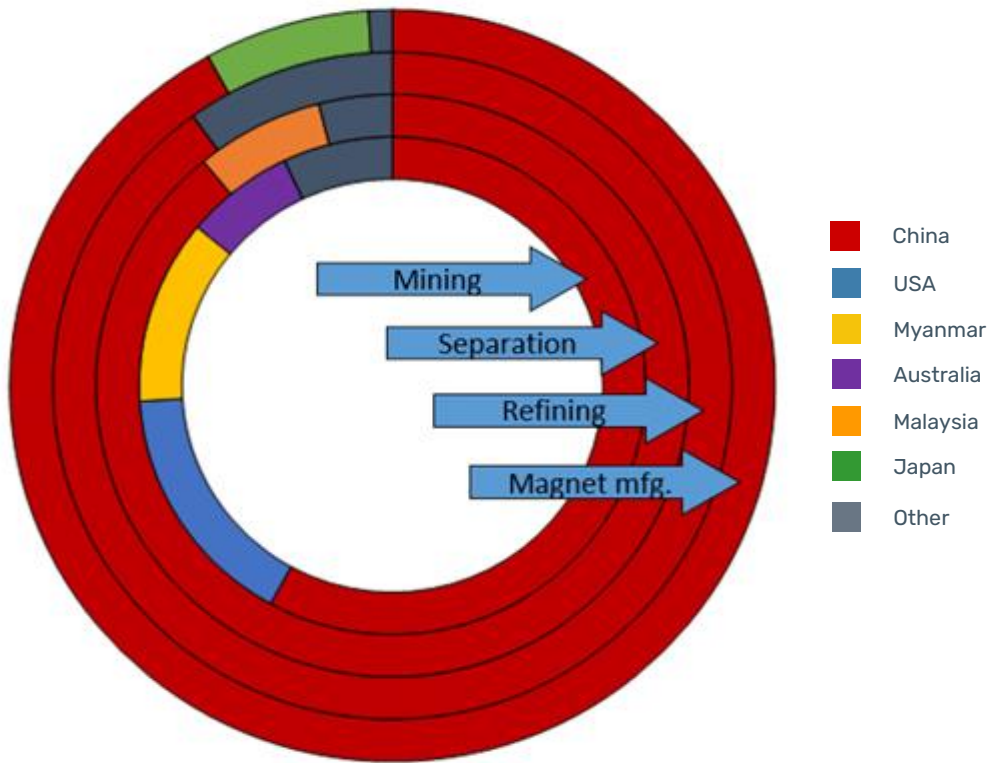
- Rare earth permanent magnets' competitive advantage is their very high strength to weight ratio and performance under high temperatures
- Global net zero GHG emissions will require unprecedented levels of critical minerals, incl. REEs (forecast CAGR of ca. 10%¹ for rare earth permanent magnets from 2022 to 2033)



MAJOR CENTRALISATION OF SUPPLY CHAIN CURRENTLY

URGENT NEED TO DEVELOP DIVERSE AND ETHICAL SOURCES OF SUPPLY

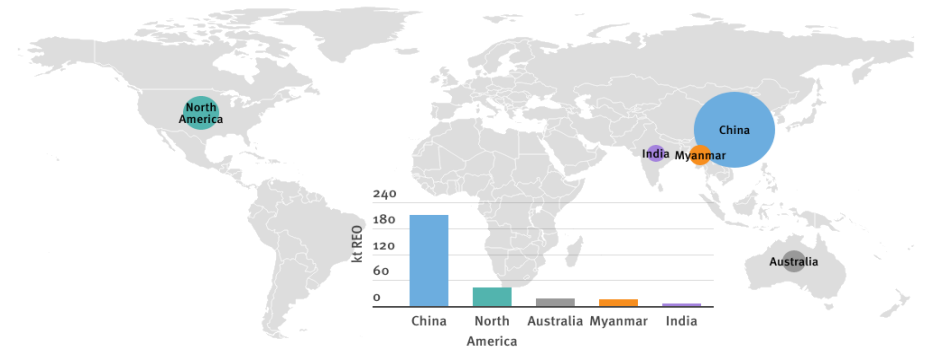
Geographical concentration of supply chain stages for sintered NdFeB magnets



Source: US Department of Energy Report: Rare Earth Permanent Magnets: Supply Chain Deep Dive Assessment, 2022

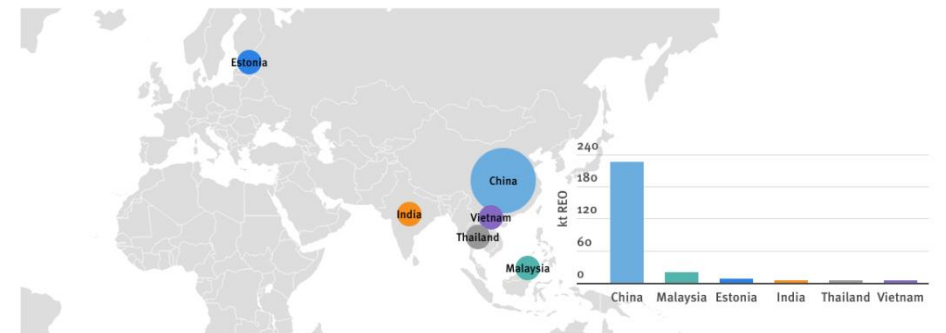
REE mine supply is currently 60-70% dominated by China
 'Heavy' REE (Dy & Tb) mine supply is +90% dominated by China

Rare earth mine production, 2022



Separated rare earth oxide supply is +90% dominated by China

Rare earth separation capacity, 2022



Source: Argus Media Ltd

STRONG LEADERSHIP TEAM

WITH TRACK RECORD THROUGH PROJECT DEVELOPMENT TO PRODUCTION



EXPERIENCED MANAGEMENT AND TECHNICAL TEAM TO DELIVER PHALABORWA AND PROJECT PIPELINE

- CEO George Bennett established MDM Engineering which delivered multiple processing plants and feasibility studies under his tenure
- Technical Director Dave Dodd worked alongside George at MDM Engineering after a long career delivering multiple mine developments
 - At MDM, George and Dave delivered two REE studies, being Lofdal in Namibia and Ngualla in Tanzania
- Technical team: Chris Le Roux and Roux Wildenboer have extensive experience in REE processing and project development
- Chairman Adonis Pouroulis, is a mining entrepreneur; extensive experience across Africa and a long-term strategic vision for growth
- CFO Pete Gardner is a Chartered Accountant with +15 years in the mining sector (development and producing assets)



RECOVERY OF MAGNET RARE EARTHS FROM PHOSPHOGYPSUM STACKS

ONE OF THE LOWEST COST RARE EARTH PROJECTS IN DEVELOPMENT TODAY

Total tonnage of ca. 35 Mt at 0.44% TREO¹

Production of ca. 1,850t of NdPr, Dy, Tb annually

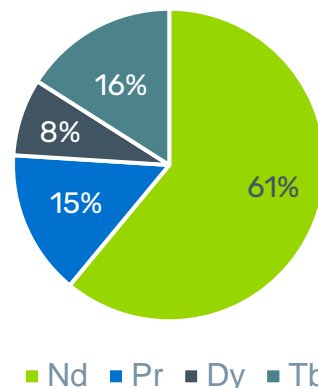
Project life of ca. 16 years



Rainbow has an 85% interest in Phalaborwa, with an option to reach 100%

The Mineral and Petroleum Resources Development Act, 2002 in South Africa does not apply to the Phalaborwa project, so a mining right is not required to extract the minerals from the gypsum stacks; accordingly, there are no black economic empowerment requirements

Phalaborwa magnet rare earth basket by value¹



Average production per annum over the project life

NdPr oxide
ca. 1750t

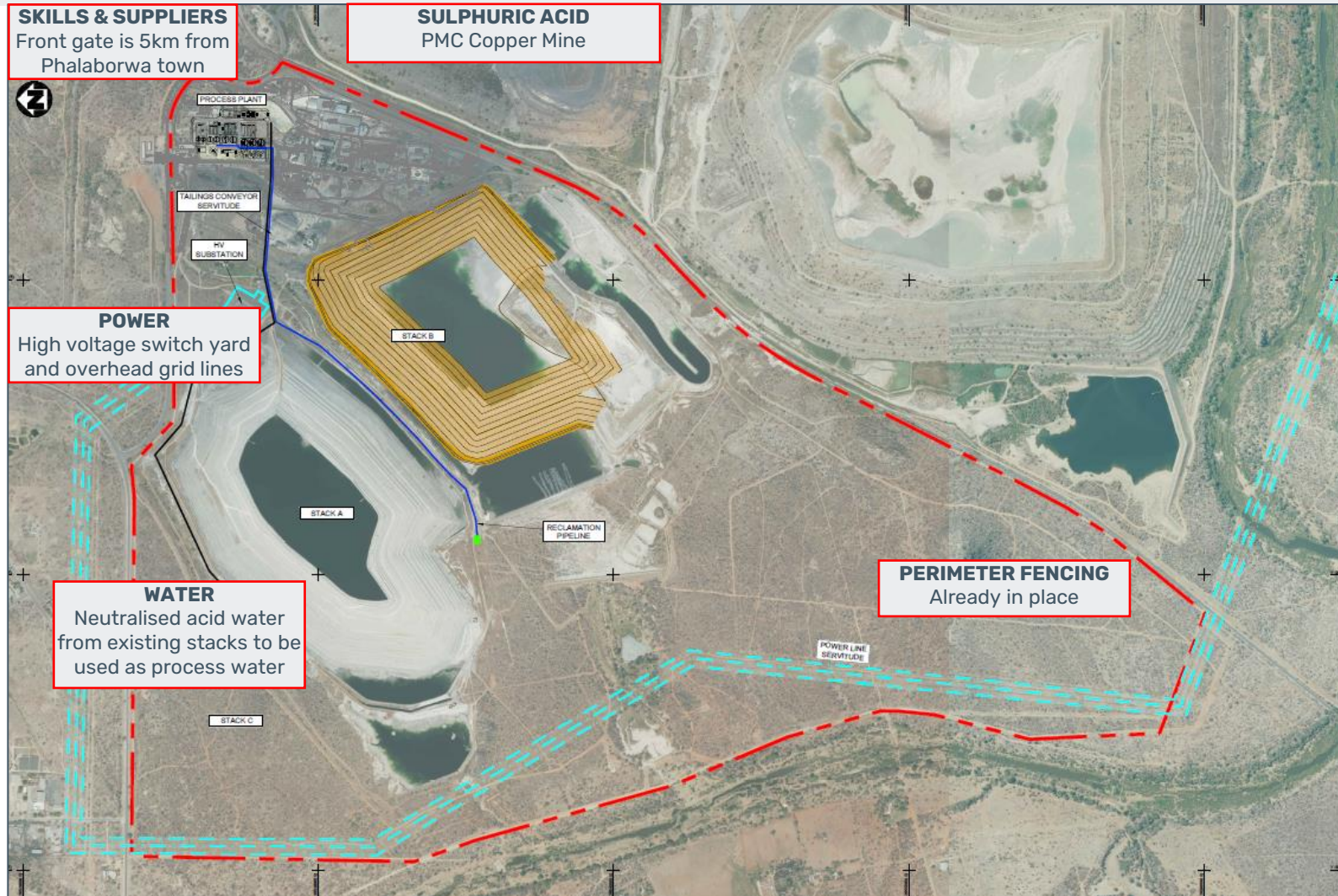
Dy oxide
ca. 60t

Tb oxide
ca. 20t

- Resource comprises two stacks of phosphogypsum, the by-product of phosphoric acid production
- Material sits at surface in a chemically cracked form
- Operation will perform environmental clean-up of acid water on site and sale of benign gypsum by-product will see full rehabilitation of site
- Preliminary Economic Assessment (PEA) in 2022 confirmed robust economics; Definitive Feasibility Study (DFS) now underway

PROJECT POSITIONED IN AN ESTABLISHED MINING DISTRICT

MAJORITY OF KEY INPUTS ACCOUNTED FOR ALREADY



FUNDAMENTALLY DIFFERENT COST PROFILE

Capex (US\$)

295.5

Opex¹ (US\$)

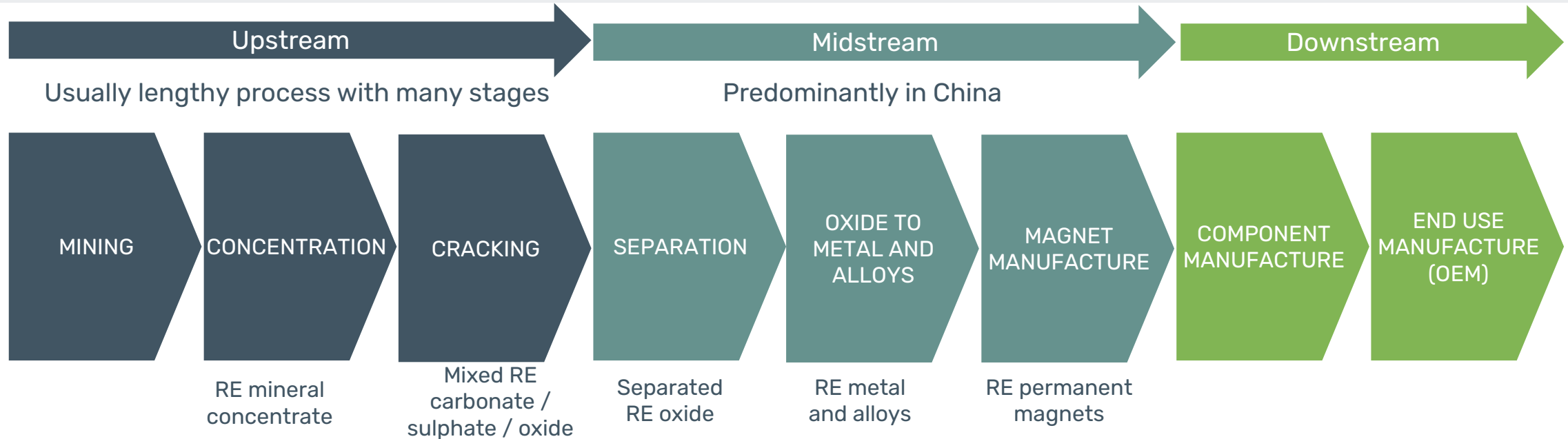
33.86

- Low capital intensity compared to traditional hard rock REE mining project
- Mining has been taking place in the Phalaborwa area since the 1960s – well established in terms of infrastructure, transport links and skills
- Exploring renewable energy options to supply bulk of project's power

1. Operating cost per kg of magnet rare earth oxide product

UNIQUE POSITION IN THE RARE EARTH MAGNET SUPPLY CHAIN

ON TRACK TO DELIVER SEPARATED RARE EARTH OXIDES OF ALL FOUR MAGNET REES



Value chain

RAINBOW RARE EARTHS

Resource already sitting at surface

CONCENTRATION (ALREADY 'CRACKED')

SEPARATION

Phalaborwa will deliver separated rare earth oxides using a proprietary separation technique

Flexibility to establish back-end plant process in the US could establish Rainbow as one of the first producers of separated RE oxides in the country

PHALBAORWA EXPECTED TO BE HIGHEST MARGIN RARE EARTH PROJECT

MUCH HIGHER GRADE THAN TYPICAL IONIC CLAY RARE EARTH PROJECTS
 WITH LOW LEVELS OF RADIOACTIVITY

Project	Style	Owner	TREO ³ %	NdPr ⁴ ppm	In-situ REO US\$/t ¹	U ⁵ ppm	Th ⁶ ppm
Phalaborwa	Gypsum stacks	Rainbow Rare Earths	0.44%	1,277	182	2	47
La Paz ²	Ionic Clay	American rare Earths	0.047%	80	14	1	7
Round Top ²	Ionic Clay	US Rare Earths/TMRC	0.063%	39	35	45	179
Makuutu ²	Ionic Clay	Ionic Rare Earths	0.08%	232	45	10	30
Mount Weld ²	Hard rock	Lynas Rare Earths	7.90%	18,833	2,348	30	750
Ngualla ²	Hard rock	Peak Resources	4.80%	10,210	1,180	18	61
Yangibana ²	Hard rock	Hastings Tech. Metals	1.17%	4,000	1,010	300	600
Bear Lodge ²	Hard rock	Rare Element Resources	3.08%	7,059	893	113	472
Nolan's Bore ²	Hard rock	Arafura Resources	2.60%	6,859	824	191	2,700
Nechalacho ²	Hard rock	Vital Metals	1.46%	3,690	794	28	139
Longonjo ²	Hard rock	Pensana plc	1.43%	3,170	415	29	967
Songwe Hill ²	Hard rock	Mkango Resources	1.41%	2,880	403	15	386
Norra Karr ²	Hard rock	Leading Edge Materials	0.50%	701	228	8	16

RESPONSIBLE PRODUCTION OF RARE EARTHS

COULD THERE BE A PREMIUM FOR 'GREEN' SOURCES OF REOS?



FOUNDED ON THE PRINCIPLES OF CIRCULARITY; RECOVERING RARE EARTHS FROM SECONDARY SOURCE

BROWNFIELD

- Phalaborwa is on an industrial site with legacy environmental issues
- New ESIA required and all workstreams underway

REHABILITATION

- Rainbow will clean up legacy issues:
 - Neutralising acidic solution
 - Redepositing benign gypsum on lined stacks in accordance with IFC standards / Equator Principles
 - Sale of benign gypsum will deplete stacks

RECYCLING

- All process water needs will be met by neutralised water in ponds
- Certain key reagents¹ recovered from upfront leach process for use downstream
- Sulphuric acid from nearby plant waste stream

CLOSED-LOOP

- No water abstraction required for processing
- Any water discharged to the environment will be done so in line with regulations

REUSE

- Existing infrastructure can be repurposed and reused
- Potential for use of reclaimed, clean phosphogypsum in building and industrial sectors

RENEWABLE

- Green energy supply currently under investigation
- Also exploring on-site solar back-up

CREATING SOCIAL VALUE

COMMUNITY

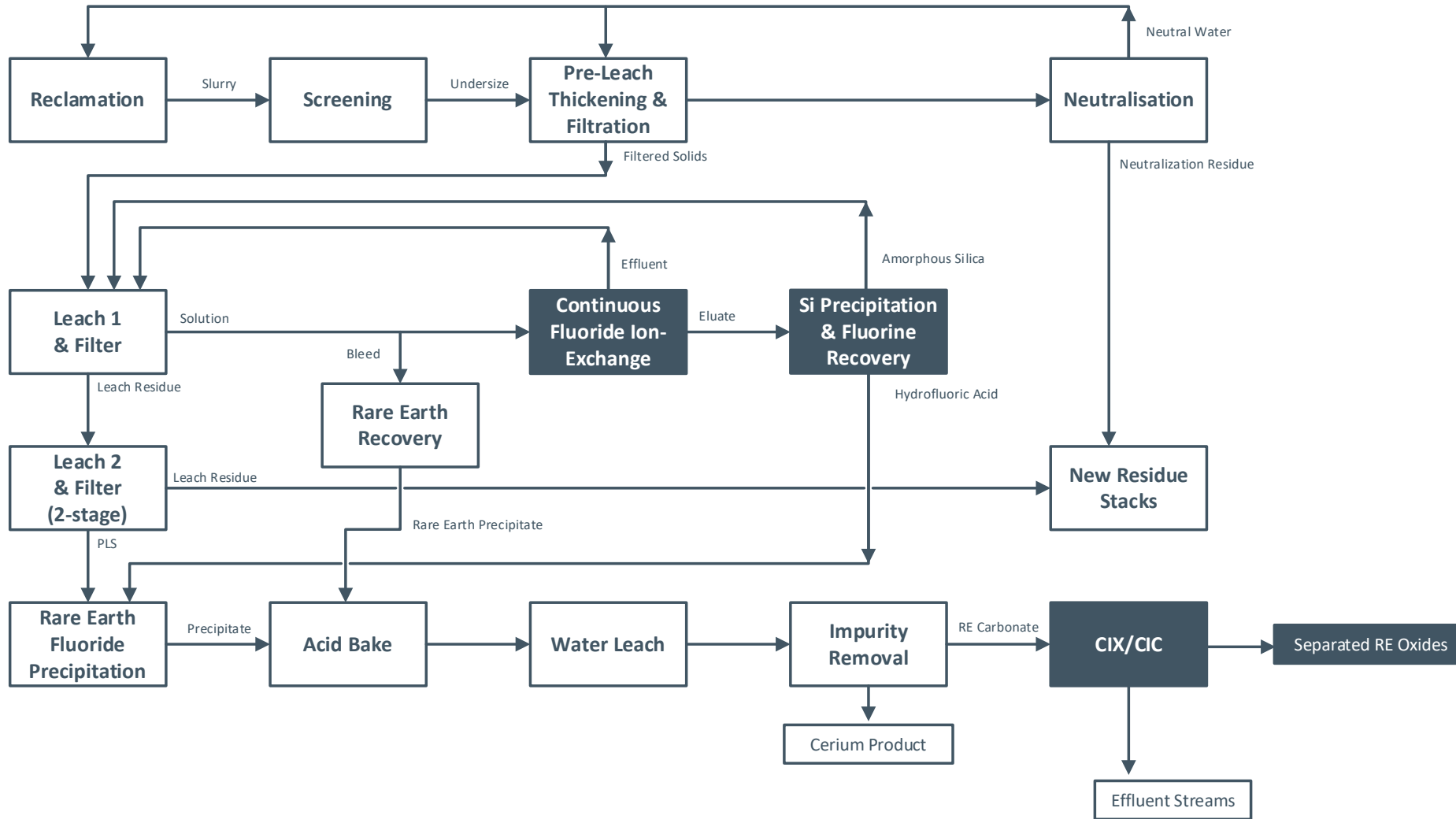
- Different social context from a greenfield project in a remote location
- Transparent payment of taxes
- Commitment to prioritise local supply chain

PEOPLE

- Focus on Zero harm
- Phalaborwa expected to provide c. 275-300 direct jobs
- Commitment to prioritise local employment

ECONOMIC PROCESS FLOWSHEET

DEVELOPED AND OPTIMISED BASED ON TEST WORK



K-Tech elements of the process

NdPr Oxide

Dy Oxide

Tb Oxide

ADVANTAGES OF CIX / CIC TECHNOLOGY OVER TRADITIONAL SX

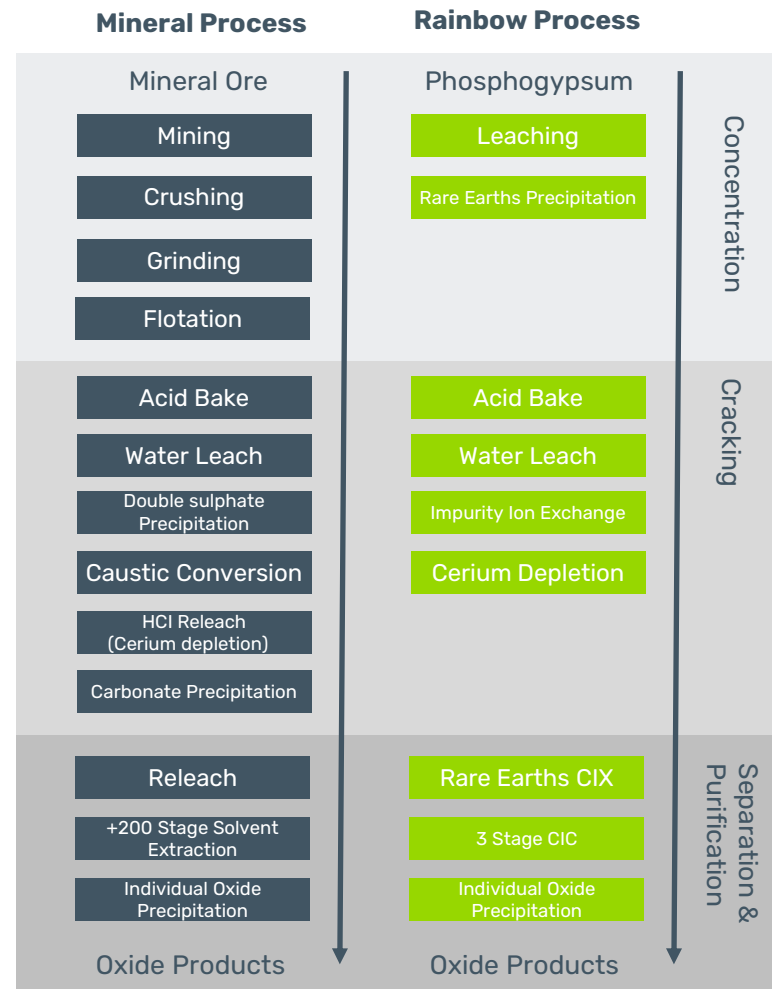
SIMPLIFIED PROCESS LEADING TO COST AND ENVIRONMENTAL BENEFITS



Rare Earth SX separation battery in La Rochelle, France; just one small fraction of overall process

Solvent Extraction (SX)

- Uses toxic and flammable solvents and diluents
- Typically requires hundreds of separate stages
- Large footprint



An example of a commercial scale CIX unit built by K-Tech

Continuous Ion Exchange (CIX) / Continuous Ion Chromatography (CIC)

- Safer and more environmentally responsible
- Reduced capital and operating costs due to simplified flowsheet / plant process and smaller footprint
- Fast, efficient, and precise extraction of trace quantities of target materials from high volume streams
- K-Technologies, Inc. (K-Tech) patented separation technology for rare earth oxides

PILOT PLANT DEVELOPMENTS

ITERATIVE PROCESS THAT ALLOWS FOR CONTINUAL OPTIMISATION



FRONT-END PILOT PLANT TO PRODUCE MIXED RE CARBONATE

MINTEK – JOHANNESBURG, SA

- Mintek is an acknowledged world-class mining centre with 20 yrs' R&D experience in rare earths extraction
- Front-end pilot plant operated for ca. 6 months based on front-end process flowsheet developed by Rainbow and K-Tech
- Integrated whole circuit 24/7 campaign completed in March 2024
- Front-end pilot plant successfully produced ca. 35 kg of mixed rare earth carbonate, with ongoing shipments to back-end pilot plant in Florida
- Optimisation opportunities identified to deliver ca. 50% saving in energy requirements and successful regeneration of 2 key reagents in the leach solution



Filter press at the front-end pilot plant



CIX / CIC units at the back-end pilot plant

BACK-END PILOT PLANT TO PRODUCE SEPARATED RE OXIDES

K-TECH – LAKELAND, FLORIDA, USA

- K-Tech are pioneers of CIX / CIC technology over 40 years
- Back-end pilot plant commenced operating in Q4 2023 based on a back-end process flowsheet patented by K-Tech
- Successful group separation in the first step of the CIC stage, delivering a NdPr group grading ca. 68% as feed for purification in the subsequent individual chromatography separation steps, and initial upgrading of the Dy and Tb group to 14.6%
- Good separation of the SEG group at ca. 63% (samarium, europium and gadolinium)
- Final stage purity expected at 99.5% separated magnet RE oxides

US GOVERNMENT TO INVEST US\$50 MILLION VIA TECHMET SIGNIFICANT DE-RISKING OF PHALABORWA FINANCING



Strong US Government interest – option to invest US\$50 million as part of the equity funding for Phalaborwa

- U.S. International Development Finance Corporation (DFC) US\$50 million funding commitment (to be invested via TechMet) announced at COP28
- Phalaborwa offers outstanding economic and ESG opportunities
- US Government interest at multiple levels confirmed by recent US Bipartisan Congressional Staff Delegation site visit

Scott Nathan, CEO of the DFC:

"The Phalaborwa Rare Earths Project being developed by Rainbow Rare Earths represents a compelling opportunity to extract and refine four critical minerals essential to both the green energy transition and economic security. DFC is pleased to be able to support this project which will remediate the effects of legacy mining activities, boost local economic growth, and diversify the critical minerals supply chain."



Site visit for US Congressional Staff Delegation in December 2023

Brian Menell, Chairman and CEO of TechMet:

"Rainbow's Phalaborwa Project has an immensely exciting future and this funding gives it the potential to become one of the world's most environmentally friendly and low-cost rare earth projects anywhere."

TIMELINE TO PRODUCTION

DE-RISKS PHALABORWA PROJECT; UNLOCKS VALUE



Q4 2022

Q1 2024



PROJECT PROGRESS

- PEA publication – Phalaborwa expected to be one of the lowest cost global producers of separated magnet rare earth oxides

NEXT STEPS SUPPORTED BY POSITIVE PEA

- Workstreams underway to deliver DFS:
 - Pilot plant operations underway to confirm and optimise flowsheet at Mintek and K-Tech
 - METC Engineering working on the DFS and managing the inputs from the various specialist consultants
 - Paragon Tailings advising on reclamation of the existing gypsum stacks – successful pilot plant testwork completed
 - Leading global gypsum experts Ardaman conducting test and design work for the new gypsum stacks
 - Resource update expected H1 2024 delivering additional project life due to higher bulk density
 - Environmental work: full ESIA workstreams underway by WSP Golder for the DFS and permitting
 - Letter of Intent signed with NEXUS for sale of gypsum by-product – demand estimated at 400 to 600 kt per annum to domestic and neighbouring markets

MULTI-ASSET RARE EARTH DEVELOPMENT COMPANY

DIVERSIFIED PORTFOLIO WITH SHORT TO LONGER TERM OPPORTUNITIES



MOU SIGNED WITH MOSAIC IN BRAZIL

MAJOR OPPORTUNITY TO REPLICATE PHALABORWA



UBERABA PHOSPHOGYPSUM STACK IN MINAS GERAIS

- Large phosphogypsum stack sitting at surface as a byproduct of phosphoric acid production
- Uberaba phosphate slurry feed is sourced from a hard rock carbonatite similar to the Foskor carbonatite mine that originally fed Sasol's phosphoric acid plant at Phalaborwa
- Ongoing phosphoric acid production is growing the stack annually
- MOU: Rainbow and Mosaic to collaborate on the development of a process flowsheet in order to extract the REEs from the stack, followed by a preliminary economic assessment
- Initial mineralogy test work complete; Rainbow and Mosaic currently undertaking further testwork
- Initial test work programme and PEA costs to be shared 50:50

INITIAL ASSAY RESULTS

TREO grade @

0.58%

NdPr % of basket

ca. 25%

Included in basket

Dy & Tb

Results from SGS Laboratories in Toronto

WHY RAINBOW?

DRIVING VALUE FROM STRATEGIC SECONDARY SOURCES OF RARE EARTHS

PHALABORWA UPSIDE FORECAST¹

NPV₁₀

US\$1.0bn

IRR

44%

EBITDA

US\$310m

Margin²

83%

KEY TAKEAWAYS

- **Phalaborwa offers unique benefits** over traditional rare earth projects:
 - Expected to be the highest margin rare earth project in development today
 - Contains all four permanent magnet rare earths, incl. ‘heavies’ Dy and Tb
 - Highly cash generative even at lower rare earth prices
 - Project backed by the US Government further to DFC US\$50 million investment commitment via TechMet
- **Unique flow sheet and separation IP** – cheaper, safer and more environmentally friendly than traditional SX and can be applied to other phosphogypsum opportunities globally
- **Strategic advantage** – Rainbow expected to become one of the only producers of all four separated magnet rare earth oxides outside of Asia
- **Geographic diversification** – partnership with Mosaic on Uberaba in Brazil further de-risks Rainbow and represents a major opportunity to replicate Phalaborwa. Potential longer-term prospects via partnership with OCP in Morocco

1. Based on the long-term price forecasts received from Argus, with the first year of production assumed to occur in 2026 and prices assumed to remain constant from 2031 to the end of the project life
 2. EBITDA operating margin

RAINBOW RARE EARTHS

APPENDIX



KEY SHAREHOLDER INFORMATION



BOARD SHAREHOLDINGS AND MAJOR SHAREHOLDERS (>3%)

Shareholder	Holding as at 10 Mar 2024
Adonis Pouroulis	14.0%
TechMet	11.9%
George Bennett	6.2%
Caden Holdings Limited	5.9%
Shawn McCormick	1.5%
Alexander Lowrie	1.1%
Atul Bali	0.7%
Darryll Castle	0.1%
J Peter Pham	0.1%
Total Board shareholding	23.7%

INFORMATION AS AT 10 MARCH 2024

Ticker	Market	Market cap	Share price	Shares in issue	Brokers
RBW.L	LSE	US\$87.2m	10.8p	630m	BERENBERG / STIFEL

SHARE PRICE (GBP) - ONE YEAR



EXPERIENCE BOARD AND EXECUTIVE MANAGEMENT

EXTENSIVE EXPERIENCE ACROSS MINING, AFRICA, CAPITAL MARKETS, INTERNATIONAL AFFAIRS



ADONIS POUROULIS
NON-EXECUTIVE CHAIRMAN

- Mining engineer: an entrepreneur whose expertise lies in the discovery, exploration and development of natural resources across Africa including diamonds, precious/base metals, coal and oil and gas.
- Founder of Rainbow and Petra Diamonds (LSE:PDL); Founder and Director of Chariot Oil & Gas (AIM:CHAR) and Founder of Pella Resources Limited



SHAWN MCCORMICK
INDEPENDENT NON-EXECUTIVE DIRECTOR

- International affairs specialist
- + 25 years of political and extractive industries sector experience having served in The White House as Director for African Affairs on the National Security Council (Washington)
- Previously Political Affairs Director of BP (London) and VP of TNK-BP (Moscow)



ALEXANDER LOWRIE
INDEPENDENT NON-EXECUTIVE DIRECTOR

- Investment banker with 13 years' experience and previous director roles at Deutsche Bank and RBS
- Co-founder of Telemark Capital LLP
- Significant market experience: IPOs and primary and secondary equity offerings



J PETER PHAM
INDEPENDENT NON-EXECUTIVE DIRECTOR

- Scholar and practitioner of International Affairs; >20 years of experience in Africa
- First-ever United States Special Envoy for the Sahel Region until 2021 with the personal rank of Ambassador; previously as US Special Envoy for Great Lakes Region
- Distinguished Fellow at the Atlantic Council
- Member of the Board of the Smithsonian National Museum of African Art in Washington, DC, as well as Non-Executive Director of Africell Global Holdings



ATUL BALI
INDEPENDENT NON-EXECUTIVE DIRECTOR

- Corporate CEO and board member with extensive experience in tech, government contracting and regulated industries; Chartered Accountant
- Currently advisor to several high-growth technology companies, Chairman of the Football Pools and non-executive director of Everi Holdings Inc (NYSE:EVRI)
- Previously held divisional CEO or President positions with IGT (NYSE), Aristocrat (ASX), and Real Networks (NASDAQ), as well as a venture capital firm



GEORGE BENNETT
CEO

- 25 years in finance and management, including as partner in stockbroking/advisory firms in SA
- Former CEO of Shanta Gold Ltd, successfully listed on LSE in 2005
- CEO and Founder of MDM Engineering, listed on LSE in 2008; responsible for delivering multiple process plants and feasibility studies. Sold after 8 years to Foster Wheeler for US\$120 million
- Seed-funded and raised initial capital for OreCorp Ltd as non-executive director, now ASX listed



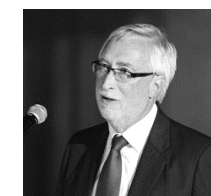
DARRYLL CASTLE
NON-EXECUTIVE DIRECTOR

- COO for TechMet¹
- Civil engineer; +30 years experience across company leadership, project/operational delivery and transformation, technical planning and implementation, fund management, business development and governance roles.
- Extensive career as an exec in mining globally, incl. running operations across Africa



PETE GARDNER
CHIEF FINANCIAL OFFICER

- Qualified Chartered Accountant; +15 years' experience in mining industry leading finance teams across Africa/developing nations
- Former CFO of Amara Mining plc (up to acquisition by Perseus Mining Ltd), Chaarat Gold, Piran Resources and Alexander Mining



DAVE DODD
TECHNICAL DIRECTOR

- 45 years of extractive metallurgy experience
- Metallurgical Project Consultant
- BSc (Hons) Chemical Engineering (1974)
- Fellow of Southern Africa Institute of Mining & Metallurgy



ALBERTO BRUTTOMESSO
PROJECT DIRECTOR - PHALABORWA

- Mechanical Engineer
- +30 years' experience in project management delivering 80 multidisciplinary mining, water treatment and infrastructure projects to date across the African continent
- Management of projects in gold, diamonds, chrome, platinum and uranium, including extensive experience in the delivery of processing plants
- Proven track record of delivering total turn key projects within budget and on time

1. TechMet is a strategic shareholder in Rainbow with the right to nominate 1 director to the Rainbow Board for so long as it holds at least 10% of the issued shares in the Company

JORC COMPLIANT MINERAL RESOURCE ESTIMATE (MRE)

UPDATE EXPECTED H1 2024



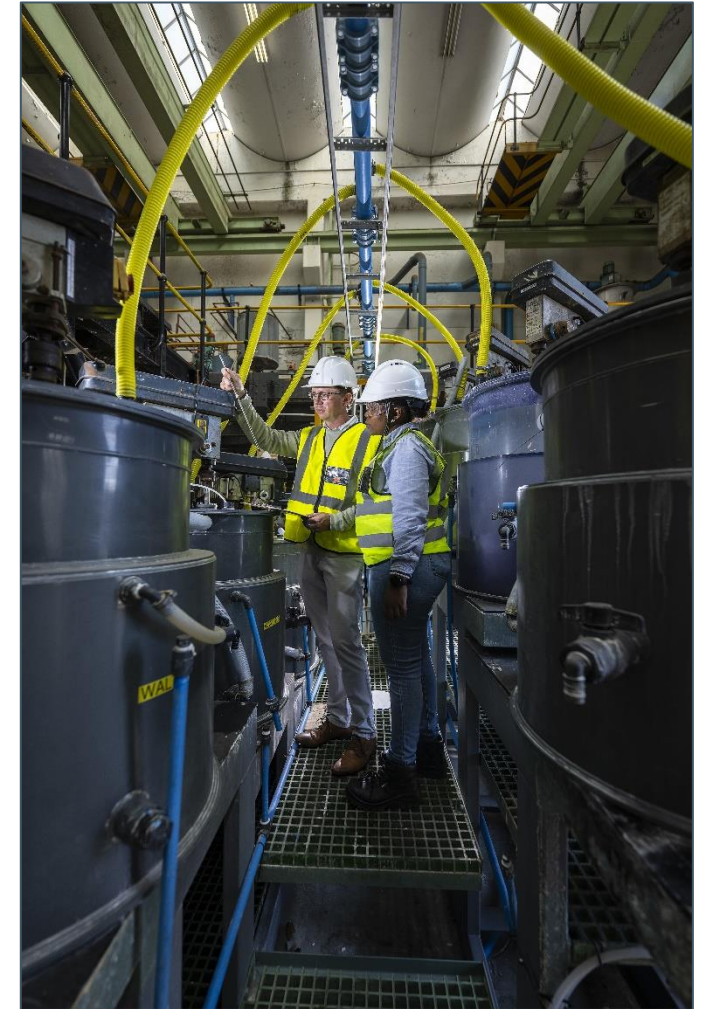
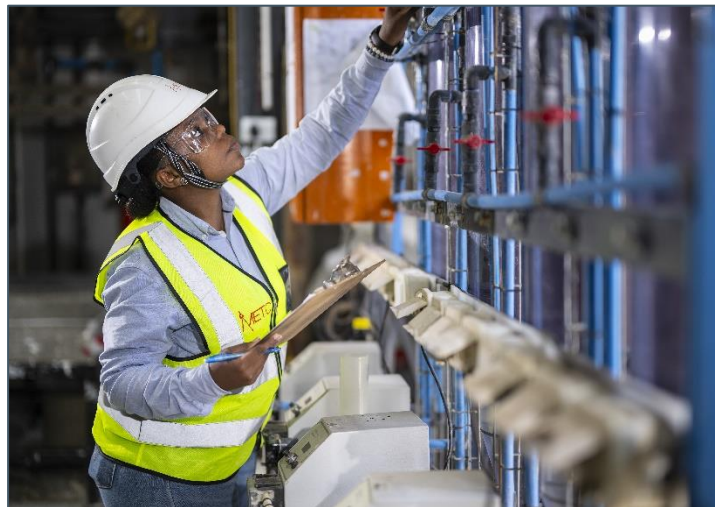
	Tonnes Mt	TREO %	Contribution of TREO by oxide					Grade ppm	
			%					Th	U
			Nd	Pr	Dy	Tb	Other		
Stack A	20.2	0.43	23.4	5.6	1.0	0.3	69.7	50	2
Stack B	10.2	0.45	23.3	5.8	1.0	0.3	69.6	43	2
Total	30.4	0.44	23.4	5.6	1.0	0.3	69.7	48	2

	Tonnes Mt	TREO %	Contribution of TREO by oxide					Grade ppm	
			%					Th	U
			Nd	Pr	Dy	Tb	Other		
Measured	7.3	0.47	23.5	5.9	1.0	0.3	69.3	47	2
Indicated	16.1	0.44	23.5	5.6	1.0	0.3	69.6	49	2
Inferred	7.0	0.42	23.1	5.5	1.0	0.3	70.1	45	2
Total	30.4	0.44	23.4	5.6	1.0	0.3	69.7	48	2
October 2022 PEA resource	30.7	0.43	23.4	5.7	1.0	0.3	69.6	48	2
Variance %	(0.3)	0.01	0.0	(0.1)	0.0	0.0	0.1	0	0

- High value magnet rare earths Nd and PR represent 29% of TREO, with economic quantities of Dy and Tb
- Further drilling to upgrade MRE completed Q4 2023
- Updated bulk density calcs have increased project tonnage by ca. 16% to ca. 35 Mt and have added 2 yrs to project life
- An updated JORC MRE is expected in H1 2024

FRONT-END PLANT PROGRESS

MANAGED BY MINTEK IN JOHANNESBURG



MIXED RARE EARTH CARBONATE SUCCESSFULLY PRODUCED AT FRONT-END PILOT PLANT

VALIDATES RAINBOW'S UNIQUE FLOW SHEET

- Iterative plant process that allows for continual optimisation in order to deliver most efficient final flowsheet for commercial scale operations
- Initial production of mixed rare earth sulphate; in consultation with K-Tech, optimal end product for back-end separation agreed as a cerium-depleted mixed rare earth carbonate
- Extra processing step does not add significant capex/opex; reduces quantity of mixed rare earths to be processed in the CIX / CIC unit by ca. 40%, with resultant cost benefits
- Mixed rare earth carbonate is of expected purity and grade and includes all four of the critical 'magnet' rare earths: NdPr, Dy and Tb



Initial production of mixed rare earth sulphate above

Optimal feed for back-end determined to be a cerium-depleted mixed rare earth carbonate – to the right

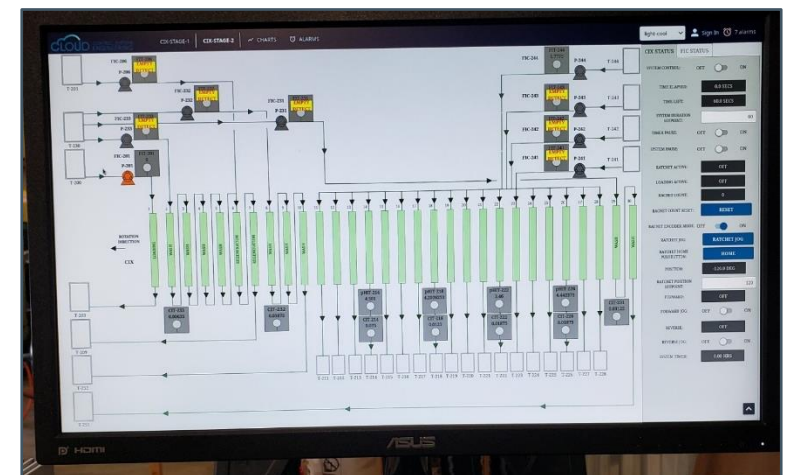
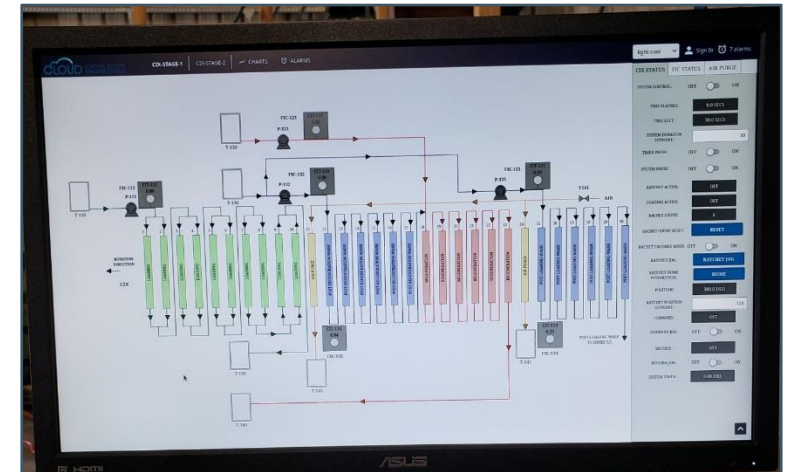


BACK-END PILOT PLANT AT K-TECH IN LAKELAND, FLORIDA

INITIAL SEPARATION RESULTS EXPECTED IN THE COMING WEEKS



Rainbow's CIX/CIC Units



Control software programming for the CIX (top) and CIC (bottom) units

RAINBOW RARE EARTHS



THANK YOU

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