
RAINBOW RARE EARTHS



UNLOCKING SECONDARY SOURCES OF NdPr FOR A GROWING MARKET

NOVEMBER 2022

**"THE MIDDLE EAST HAS OIL;
CHINA HAS RARE EARTHS."**

Deng Xiaoping, credited as
the father of modern-day
China, 1992



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RAINBOW RARE EARTHS

ACCESSING NEAR-TERM, RESPONSIBLE PRODUCTION OF RARE EARTHS



- Listed on LSE: RBW
- Focused on achieving responsible production of separated magnet rare earth oxides from near-term, secondary sources

STRONG PORTFOLIO UNDERPINNED BY UNIQUE INTELLECTUAL PROPERTY

- Flagship asset at Phalaborwa, South Africa:
 - PEA recently published – base case shows US\$260m/annum revenue and US\$195m/annum EBITDA during steady state production
 - Expected to be the lowest cost global producer of separated magnet rare earth oxides – US\$33.86/kg average cost vs US\$137.92/kg average revenue
 - Low capital intensity
- Unique IP allows the recovery of separated rare earth oxides from a single hydrometallurgical processing plant
- Patenting IP rights relating to the recovery of rare earths from phosphogypsum, unlocking further global opportunities
- Portfolio includes Gakara, Burundi: large mineralised system – high-grade rare earth concentrate via simple gravity separation



THE RIGHT LEADERSHIP TEAM TO DELIVER FOR PROJECT EXECUTION AND LONG-TERM GROWTH

EXPERIENCED BOARD AND MANAGEMENT

- George Bennett and Dave Dodd established MDM Engineering; delivered >100 feasibility studies and >80 mine developments
- Key MDM technical team engaged by Rainbow with extensive knowledge of rare earth processing and project development
- Adonis Pouroulis is a mining entrepreneur; extensive experience across Africa and a long-term strategic vision for growth
- Pete Gardner is a Chartered Accountant with c. 20 years experience in the mining sector covering both development and producing assets

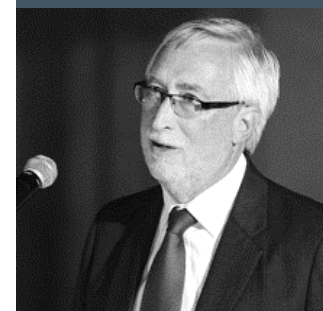
GEORGE BENNETT
CEO



**ADONIS
POUROULIS**
CHAIRMAN



DAVE DODD
TECHNICAL
DIRECTOR



PETE GARDNER
CFO



ACCELERATING GLOBAL DEMAND FOR RARE EARTHS UNDERPINNED BY MOUNTING PRESSURE TO DECARBONISE GLOBAL ECONOMY



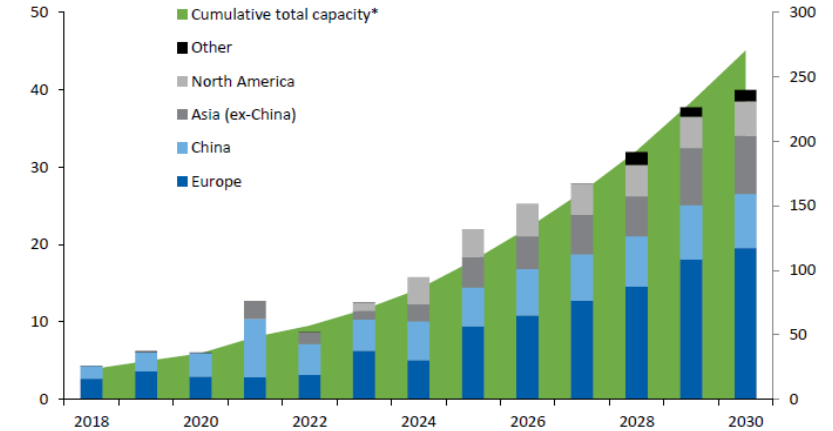
CRITICAL BUILDING BLOCKS FOR DECARBONISATION

- Rare earth permanent magnets are essential components of electric motors and wind turbines, which accounted for 95% of global rare earth consumption by value in 2021¹
- Neodymium (Nd) magnets contain c. 30% rare earth elements by mass including Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb)
- The average hybrid or EV uses 2-5kg of rare earth magnets¹ – EV costs are dominated by the battery pack, with rare earth magnet motors representing <1% of the EV cost
- A 3MW direct drive wind turbines uses ~2t of rare earth magnets¹ – for offshore turbines where maintenance cost is critical this technology is expected to be dominant

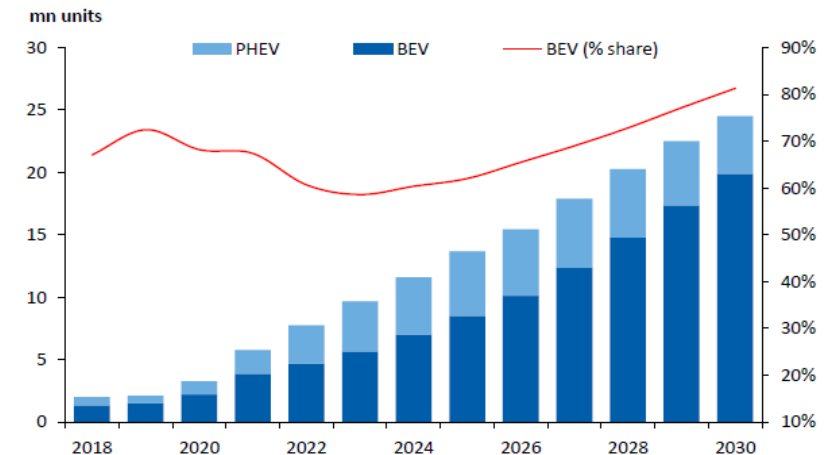
ROBUST DEMAND GROWTH DRIVEN BY LEGISLATION

- Demand is forecast to grow strongly, driven by increased adoption of EVs and offshore wind power generation, accelerated by evolving global emissions legislation and government policy

OFFSHORE WIND POWER CAPACITY ADDITIONS (GW)



RISING EV SALES FORECASTS



1. Sources: Argus Media Ltd, Global Wind Energy Council

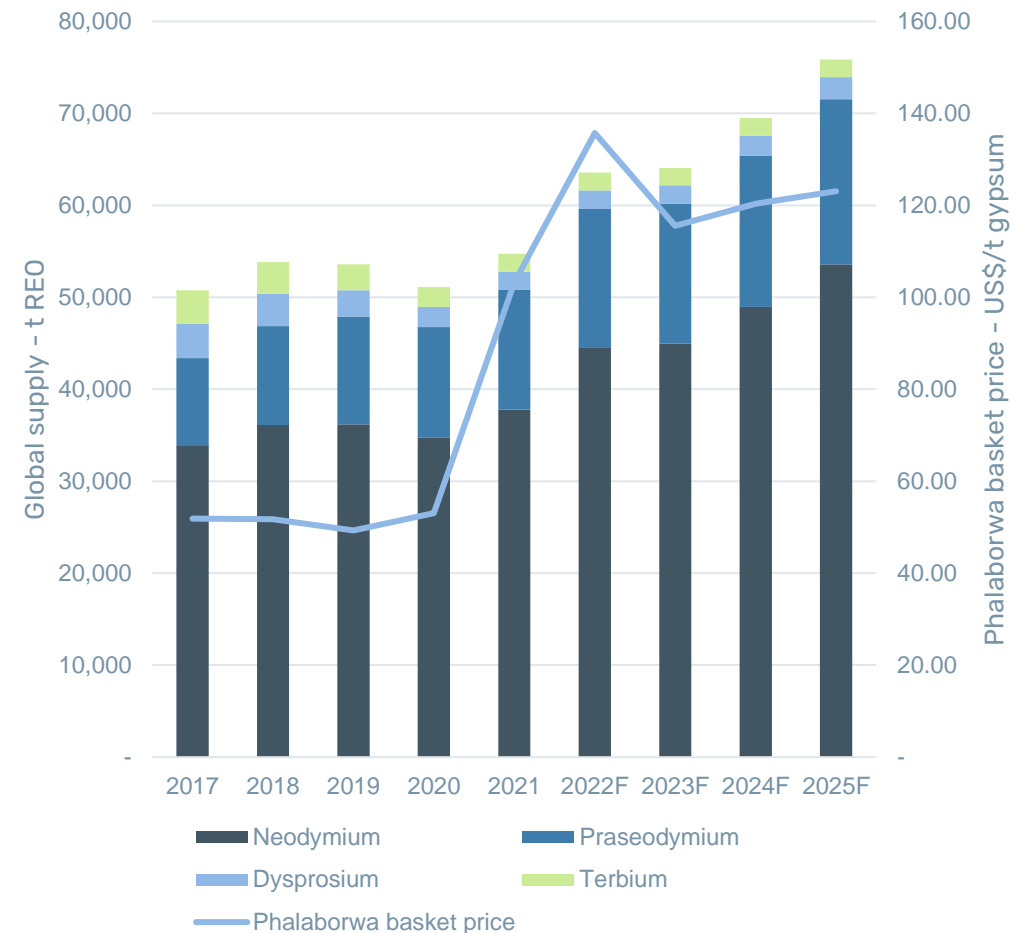
LONG TERM SUPPLY DEFICIT EXPECTED FOR RARE EARTHS DRIVING STRENGTHENING RARE EARTH PRICES



GLOBAL SUPPLY CONSTRAINED

- Global rare earth supply is unlikely to match growing demand
- Majority of rare earth production is China-based (including ore sourced from Myanmar) - Mountain Pass (US) and Lynas (Australia) are the other significant global suppliers
- China dominates rare earth processing, generating over 90% of separated rare earth oxides in 2021 and 85% of rare earth permanent magnets
- Western governments, including US, EU, Australia and UK, are increasingly looking for a responsible, independent supply chain for rare earth magnets
- According to analyst projections:
 - Supply of magnet rare earth metals will need to increase by ~9% per annum over the next decade to satisfy the growing demand
 - Magnet rare earth prices will need to rise over the coming decade to enable new supply to come on stream

RARE EARTH SUPPLY VS. PHALABORWA PRICE



PHALABORWA: EXCITING, NEAR-TERM GROWTH OPPORTUNITY

DELIVERY OF SEPARATED MAGNET RARE EARTH OXIDES ON SINGLE SITE FROM HISTORIC GYPSUM STACKS

- Rainbow is earning a 70% interest in Phalaborwa
- Project is largely permitted and positioned in an established mining town, with:
 - associated skilled labour availability
 - existing infrastructure
 - supporting industry (i.e., local production of sulphuric acid, a key reagent in the processing circuit)



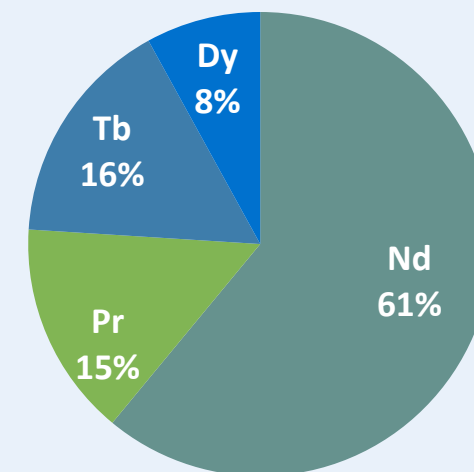
JORC COMPLIANT INFERRED MINERAL RESOURCE

	Tonnes Mt	TREO %	Contribution of TREO by oxide					Grade	
			Nd %	Pr %	Dy %	Tb %	Other %	Th ppm	U ppm
Stack A	21.9	0.42	23.3	5.7	1.0	0.4	69.6	49.0	1.8
Stack B	8.7	0.46	23.6	5.7	1.0	0.3	69.4	44.1	2.0
TOTAL	30.7	0.43	23.4	5.7	1.0	0.3	69.6	47.6	1.8

1. The Inferred Mineral Resource Estimate is reported above a cut-off grade of 0.2% TREO.
2. No constraining pit shell is required for the Inferred Mineral Resource Estimate due to the gypsum stacks being entirely above ground level.
3. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

PHALABORWA IN-SITU MAGNET RARE EARTH OXIDES VALUE

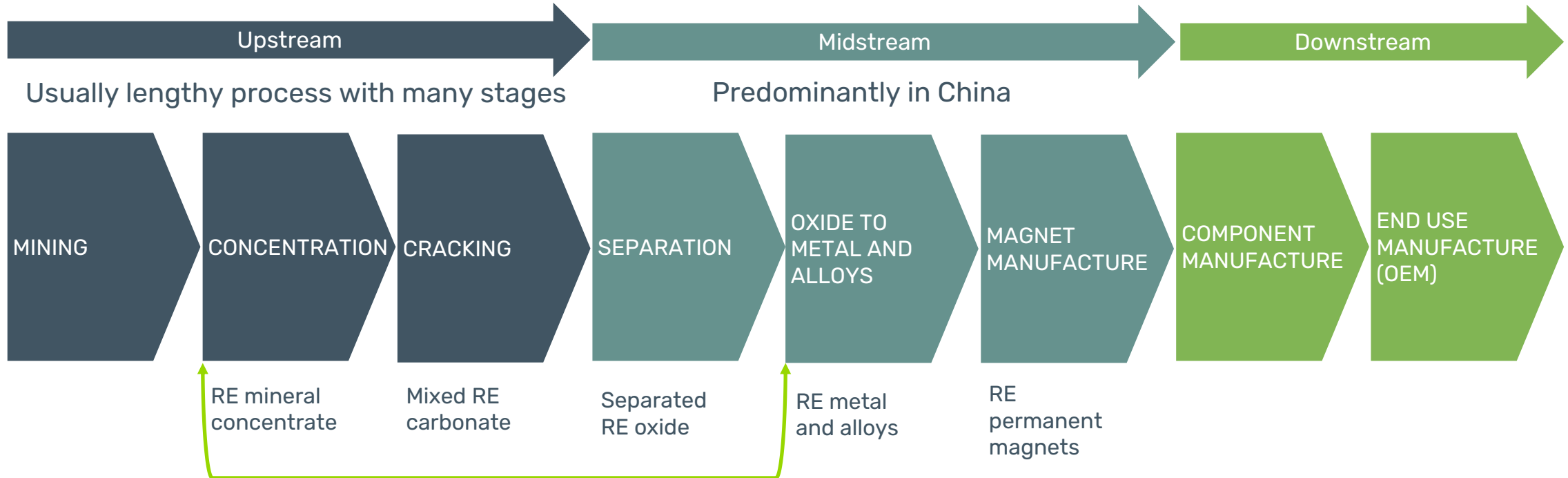
US\$181/t of gypsum⁴



4. Based on Mineral resource Estimate announced 17 Jun 2021 with base case rare earth prices from recent PEA

RARE EARTH MAGNET SUPPLY CHAIN

UNDELINES PHALABORWA'S UNIQUE ADVANTAGE



Phalaborwa will uniquely deliver separated rare earth oxides from a single hydrometallurgical process plant on site in South Africa

PHALABORWA PRELIMINARY ECONOMIC ASSESSMENT

EXPECTED TO BE THE LOWEST COST PRODUCER OF SEPARATED MAGNET RARE EARTH OXIDES

STRONG ECONOMIC RETURNS FROM PEA

- October 2022 PEA demonstrated the low-cost nature of the Phalaborwa development
- Base case model delivers robust economic returns with significant upside seen using YTD magnet rare earth prices
- US\$260m/annum revenue from sale of 1,870t/annum separated magnet rare earth during steady state production for base case price assumptions – rises to US\$330m/annum using 2022 YTD average prices
- Average operating costs of US\$33.86/kg separated magnet rare earth oxides expected to be the lowest of all Western rare earth projects
- US\$195m/annum EBITDA during steady state production for base case price assumptions – rises to US\$266m/annum using 2022 YTD average prices
- Capex of US\$295.5 million significantly below that of a traditional hard rock rare earth mining project

BASE CASE¹

NPV₁₀³
US\$627m

IRR
40%

Margin⁴
75%

Payback
2 years

YTD AVERAGE PRICES²

NPV₁₀
US\$934m

IRR
51%

Margin
81%

Payback
1.7 years

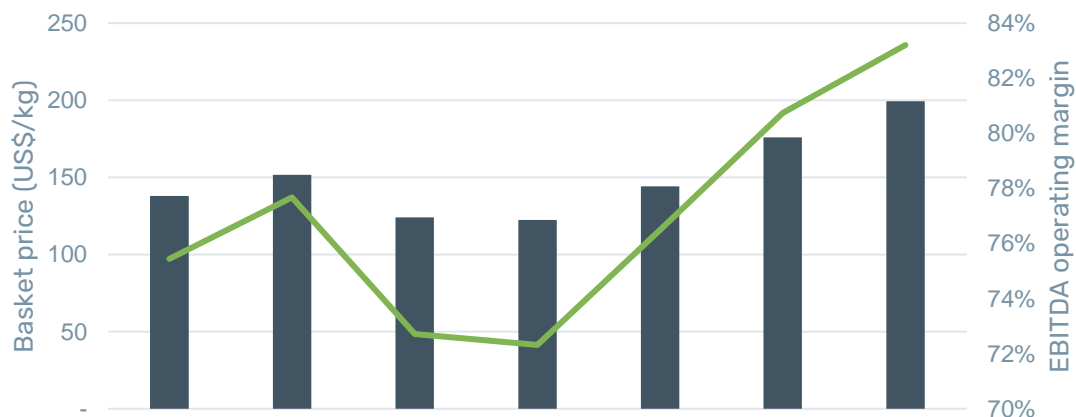
1. The base case uses US\$110/kg Nd; US\$112.50/kg Pr; US\$340/kg Dy; US\$1,875/kg Tb
2. Prices derived from weekly data collated by Rainbow from price reporting agencies up to 23 September 2022: US\$146.36/kg Nd; US\$140.25/kg Pr; US\$403.70/kg Dy; US\$2,117.56/kg Tb
3. Net present value using a 10% forward discount rate
4. EBITDA operating margin

STRONG RETURNS WITH LOW SENSITIVITY TO COSTS IN ANY FORESEEABLE PRICING ENVIRONMENT

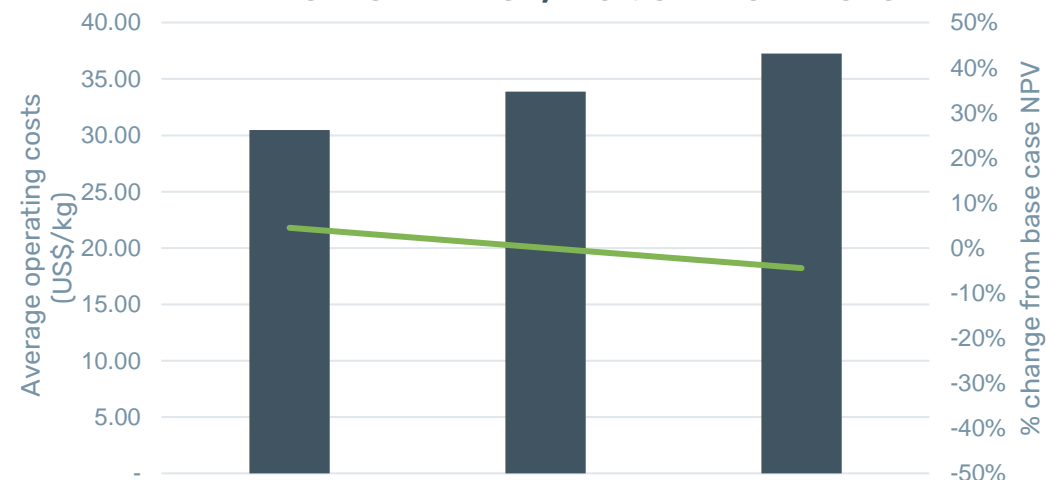
- Sensitivity analyses demonstrate robust EBITDA operating margins in all pricing sensitivity scenarios
- Strong supply / demand fundamentals support long-term increase in magnet rare earths prices
- Long-term forecast prices provide an NPV of c.US\$1 billion, with a 2.4-year payback

- NPV insensitive to changes in operating costs; beneficial in inflationary environment
- Opex, capex and forex analyses demonstrate strong NPVs in all scenarios:
 - opex +10%: -US\$28m (-4%)
 - capex +10%: -US\$17m (-3%)
 - FX US\$1:ZAR17.5: +US\$25m (+4%)

ROBUST EBITDA OPERATING MARGIN IN ALL PRICING SCENARIOS



NPV INSENSITIVE TO +/-10% OPEX CHANGES



NEXT STEPS

PHALABORWA DEVELOPMENT SCHEDULE

POSITIVE RESULTS OF THE PEA SUPPORT THE CONTINUED DEVELOPMENT OF PHALABORWA - NEXT STEPS:



Further process optimisation →

1. Subject to necessary permits



Phalaborwa gypsum stacks



K-Tech's facilities in Florida

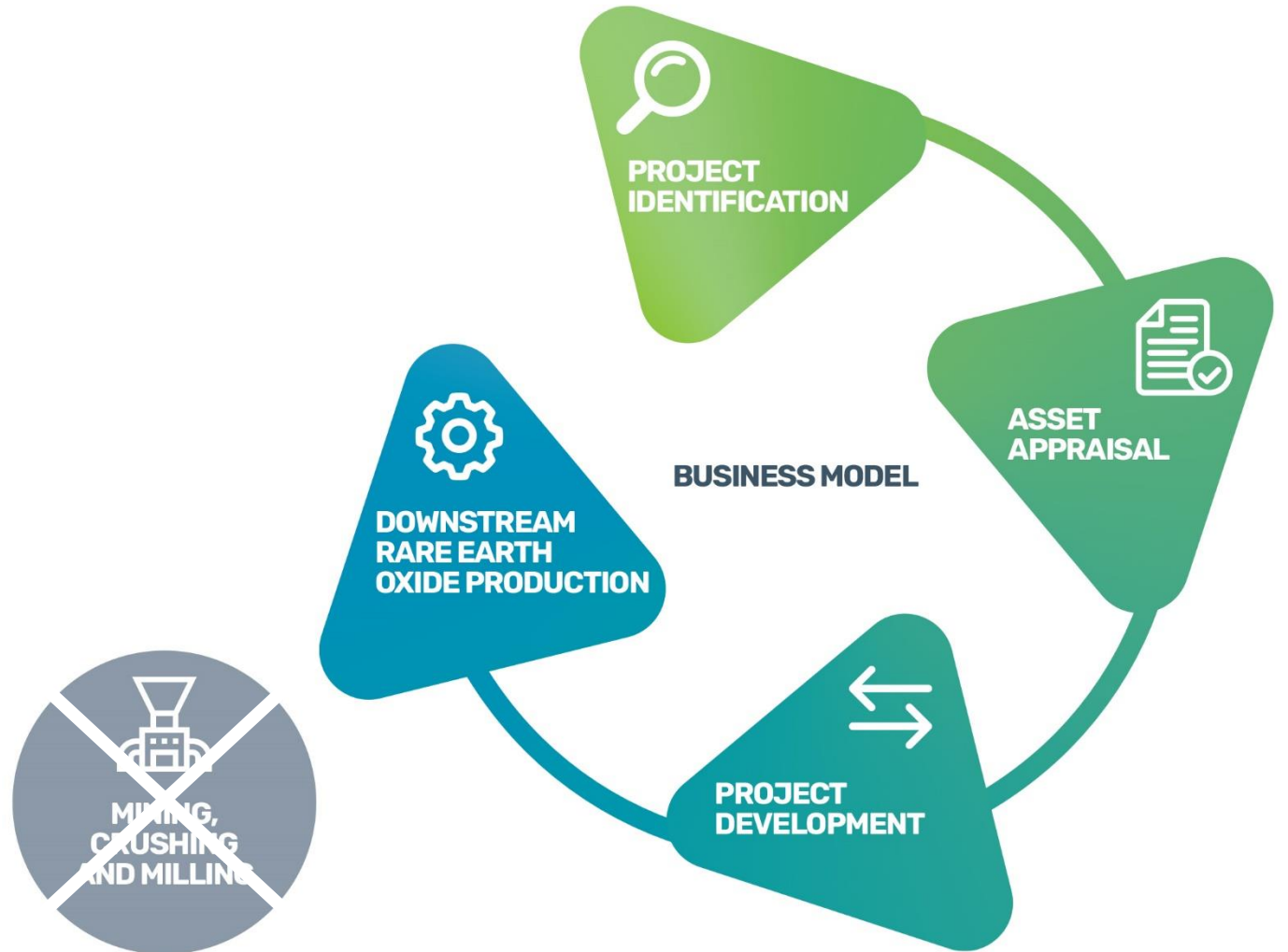


Pilot Plant System for Hydrometallurgical Application

LONG TERM GROWTH

UNIQUELY POSITIONED TO UNLOCK NEAR-TERM RARE EARTHS PRODUCTION

- Strategic focus on recovering rare earth oxides from secondary sources to support global decarbonisation
- IP and expertise in recovering rare earths from phosphogypsum unlocking additional opportunities:
 - Signed master agreement with OCP – Moroccan world-leading producer of phosphate products – and UM6P University on rare earths extraction from phosphogypsum
 - MoU with major chemicals company in SA to extract rare earths from nitro phosphate process stream
 - Investigating further global opportunities for our unique rare earth extraction technology



RAINBOW RARE EARTHS

A STRATEGIC SOURCE OF RARE EARTHS FOR A GROWING MARKET



UNIQUELY POSITIONED TO UNLOCK NEAR-TERM RARE EARTHS PRODUCTION

- ✓ **RIGHT STRATEGY:** focus on recovering rare earth oxides from secondary sources
- ✓ **EXCEPTIONAL FLAGSHIP ASSET:** Robust economics of Phalaborwa demonstrated by PEA with expected EBITDA of US\$195m/annum during steady state production
- ✓ **RIGHT TECHNOLOGY:** IP and expertise in recovering rare earths from phosphogypsum
- ✓ **PIPELINE FOR GROWTH:** applicability of IP to wider phosphogypsum opportunities including OCP and SA based chemical group already announced
- ✓ **RIGHT SKILLS:** Management team with notable experience throughout the asset lifecycle
- ✓ **STRONG INSTITUTIONAL INVESTOR SUPPORT**



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THANK YOU

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