

# PENSANA Plc

Developing one of the world's  
largest rare earth mines

Corporate Presentation  
March 2024  
LSE:PRE



# Highly Supportive Major Shareholders have invested US\$70 million to date

LSE standard list (**LSE: PRE**)

285 million shares on issue

Market Capitalization ~£90 million

**Angolan Sovereign Wealth Fund FSDEA (26%)**

*(Invested US\$32 million Mar 2020 – Apr 2023 and  
US\$15 million loan October 2023)*

**M&G Investments (12%)**

*(Invested US\$22 million Jan 2022 – Apr 2023)*

**Selection Capital (Chairman PCA) (5%)**

*(Invested US\$1.042 million Mar 2020 and on-market  
purchases.)*

## 12 Month Share Price

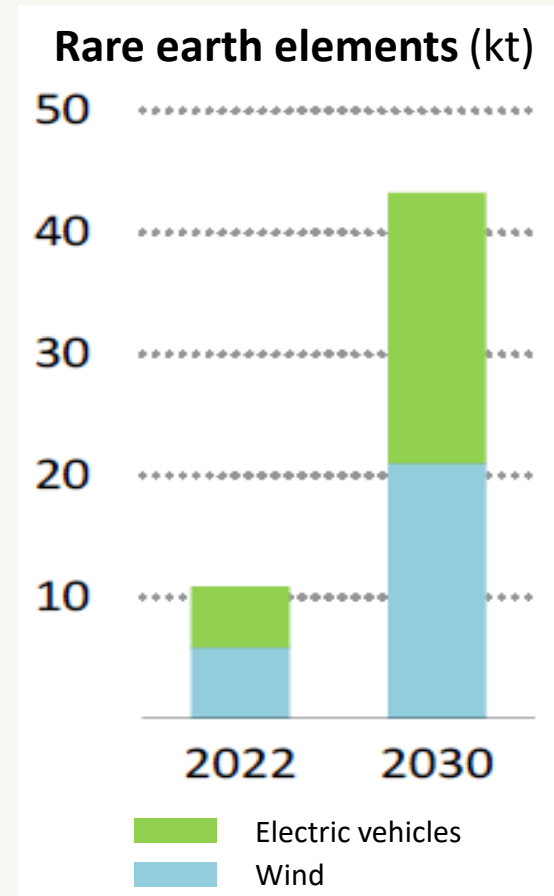


## Electric Vehicles to increase 10-fold by 2030 amid 'unstoppable' net zero shift

The transition to clean energy is happening worldwide and it's unstoppable. Electric vehicles are now expected to have a global market share of 38% of new sales by 2030.

Rapid uptake in EVs in recent years with projections now showing more than **350 million passenger cars on the road in 2030**, a 20% increase in the 2020 outlook.

Long lead times for mines and the associated infrastructure mean that scaling up supplies takes time, raising the risk of supply bottlenecks.



***Demand for rare earths expected to increase by almost 400% by 2030 under IEA APS***

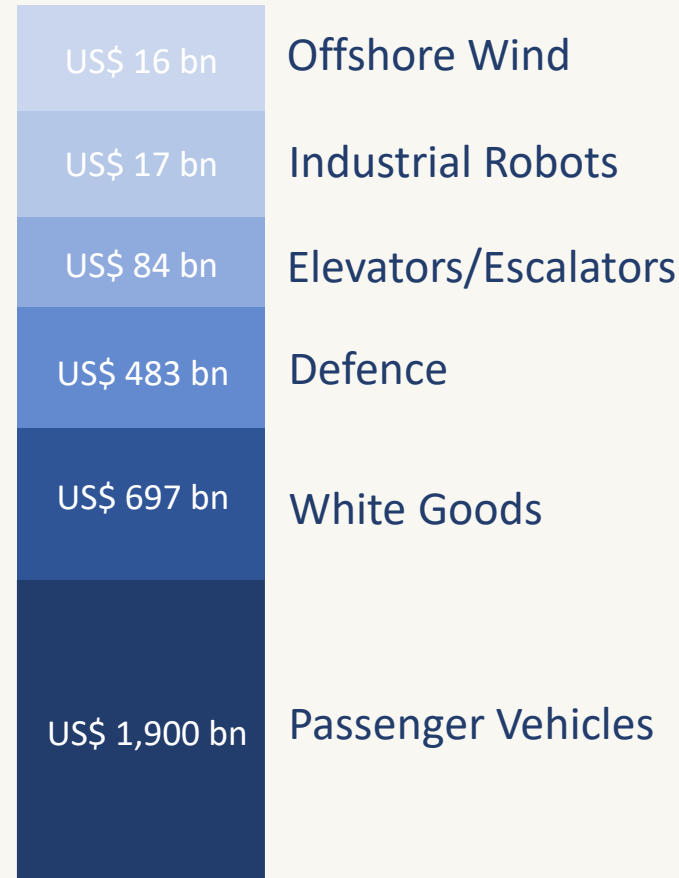
# US\$8 billion rare-earth industry enables US\$3.2 trillion of military, industrial and domestic applications

*EV and Offshore wind turbines are the biggest demand drivers with a CAGR 15-18%*

*China is 80% of the market demand and is SHORT of rare earths*





Rare Earths

US\$ 8 bn



## Investment Opportunity for UK investors

*Rare opportunity to gain direct exposure to the biggest energy transition in history*

-  The electrification of motive power through EVs and Wind Turbines will generate a demand growth for magnet metal NdPr of 7.5% CAGR over the next decade.
-  Pensana owns one of the world's largest undeveloped rare earth mines, one of only three with a JORC Reserve >100,000 tonnes of NdPr.
-  Global significant producer ~5% of world production of NdPr at full capacity.
-  Upfront capital cost of US\$217 million for the fully permitted mine and processing facilities is amongst the lowest of its peers.
-  Financed with US\$236 million debt and equity facilities by pan African bank, FSDEA, and African multilateral agencies at the subsidiary level.

# One of the Largest Undeveloped Rare Earth Deposits Globally

## *Excellent rail, hydro and port infrastructure*

JORC RESERVE 30 million tonnes containing 166,000 tonnes NdPr oxide for initial 20-year mine-life.

Shallow, deeply weathered orebody, with an average mine depth of less than 30 metres.

High average mine grade of 4.12% TREO and 0.90% NdPr over the first five years.

Access to affordable hydroelectric power and direct access to the Lobito Port via the Benguela rail line.





# Exciting new discoveries at Coola and Sulima West - 75 km north of Longonjo

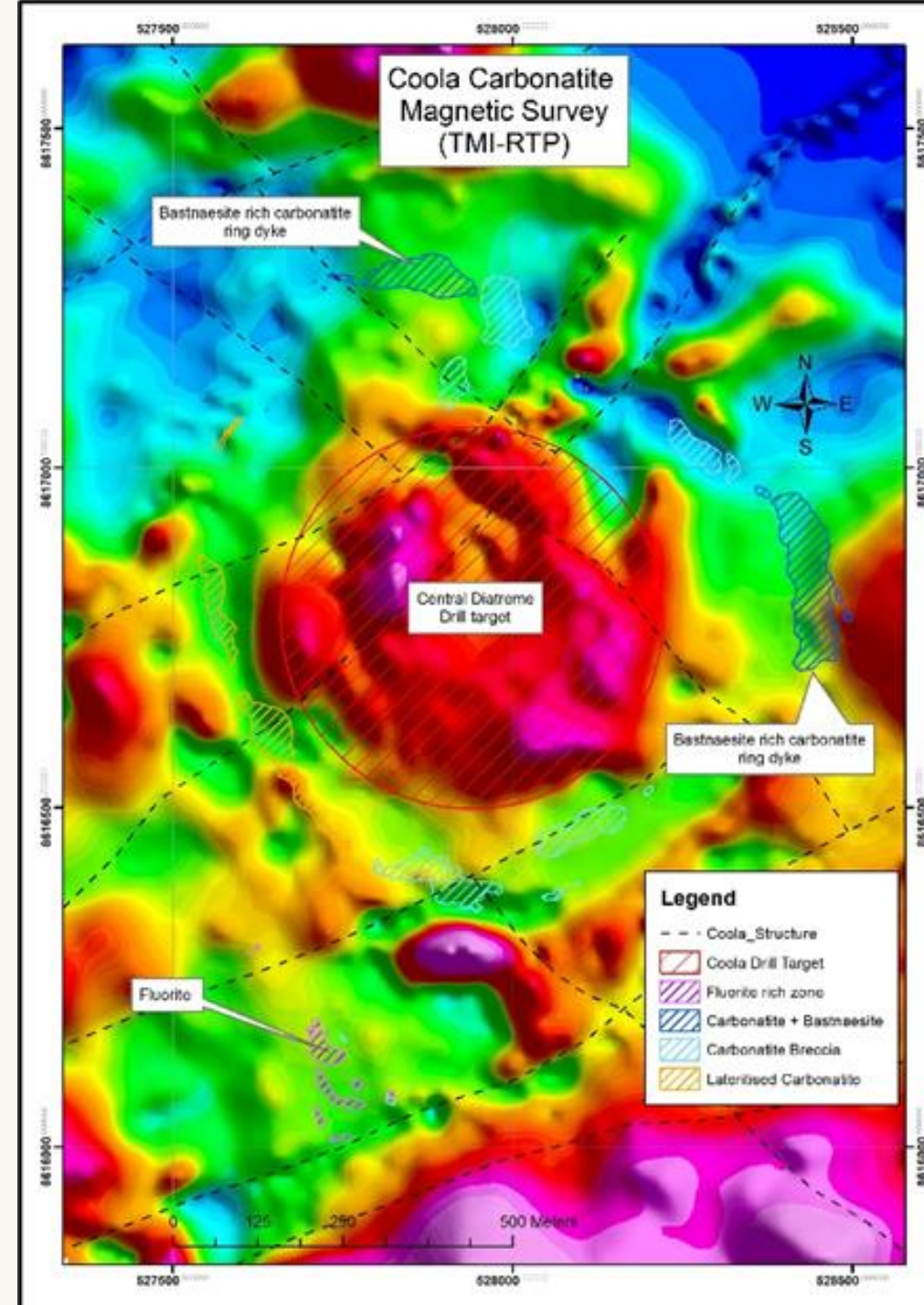
Coola confirmed as a 900-metre diameter carbonatite ring dyke with similar scale and prospectivity to Longonjo.

Sulima West has reported strong anomalies with high-grade mineralisation for drill testing.

Metallurgical testwork is underway on a Coola 4.7% TREO bastnaesite bulk sample and a Sulima West 4.8% TREO enriched laterite bulk sample.

## Exploration Manager, Grant Hayward:

*“We believe Coola to be a highly prospective volcanic pipe which appears to have a similar scale to Longonjo. Sulima West has some exciting high-grade drill targets. We are metallurgical testing bulk samples from these two deposits as potential high-grade feedstock for processing at Longonjo.”*



# Angola - Attracting Global Mining Investment

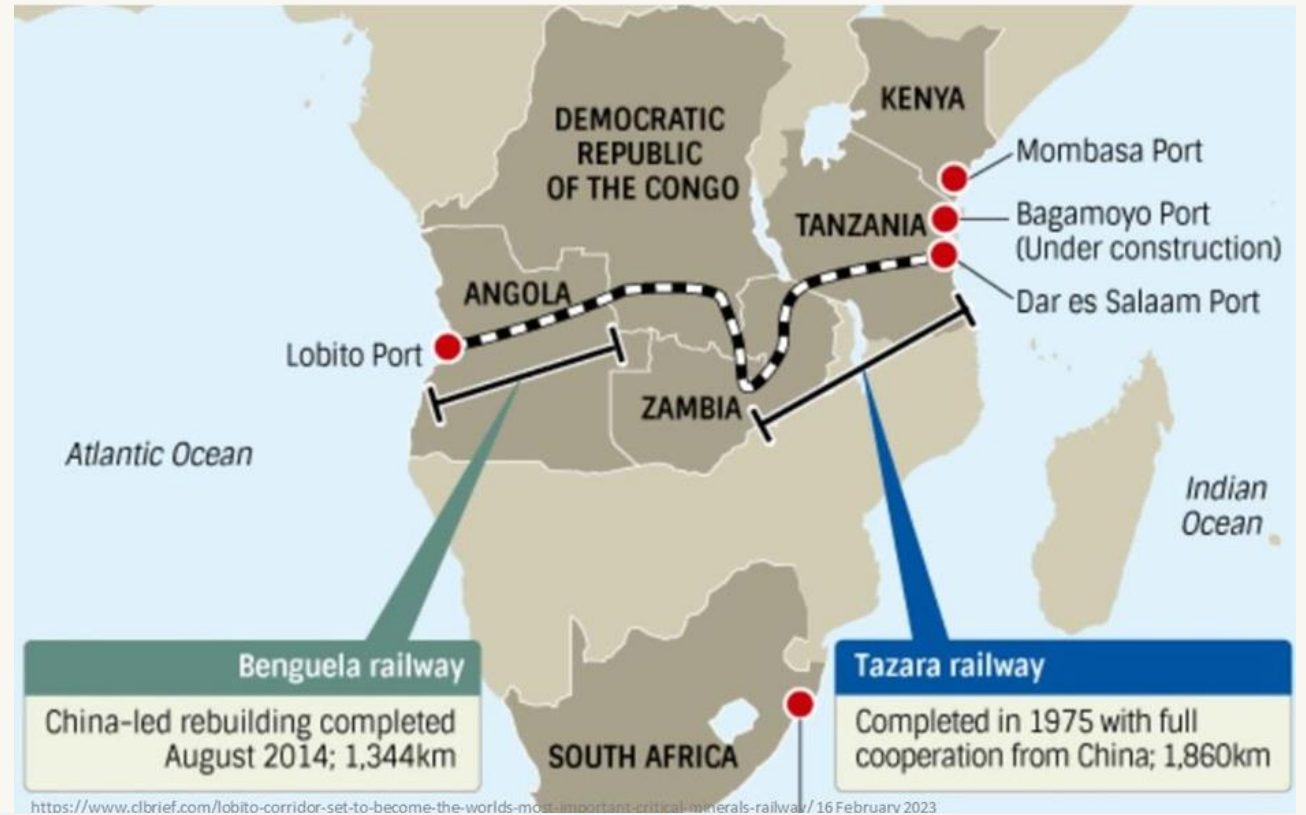
*Untapped critical minerals endowment, exceptional rail, hydro and port infrastructure and a highly supportive Government.*

**Ivanhoe Founder Robert Friedland** *"We thank the government of Angola for welcoming Ivanhoe Mines and entrusting us to explore their vast mineral endowment. Our goal is to make Angola a globally significant producer of strategic minerals."*

**Anglo American CEO Mark Cutifani** *"I was impressed with the strategic vision that the Minister has for Angola, and what he wants to do with the Mining Sector."*

**De Beers CEO Bruce Cleaver** highlighted the *"..stable and attractive investment environment."*

**Pensana CEO Tim George** *"..the Lobito Corridor will have a very positive impact on the transport logistics during construction and on the reagent and product transport during operations."*



<https://www.clbrief.com/lobito-corridor-set-to-become-the-worlds-most-important-critical-minerals-railway/> 16 February 2023

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S&P 500 4,981.80 ▲ +0.13% Nasdaq 15,580.87 ▼ -0.32% Crude Oil 77.66 ▼ -0.32% US 10 Yr 4.34 ▼ -0.18% Euro 1.08 ▲ +0.14% Dow Jones 38,000 ▲ +0.12%

## Why the US Is Betting on \$2.3 Billion African Railway

Posco to Import African Battery Graphite to Cut China Reliance

South Africa Announces Tax Breaks to Kick-Start EV Industry

US Bid to Loosen China's Grip on Key Metals for EVs Is Stalling

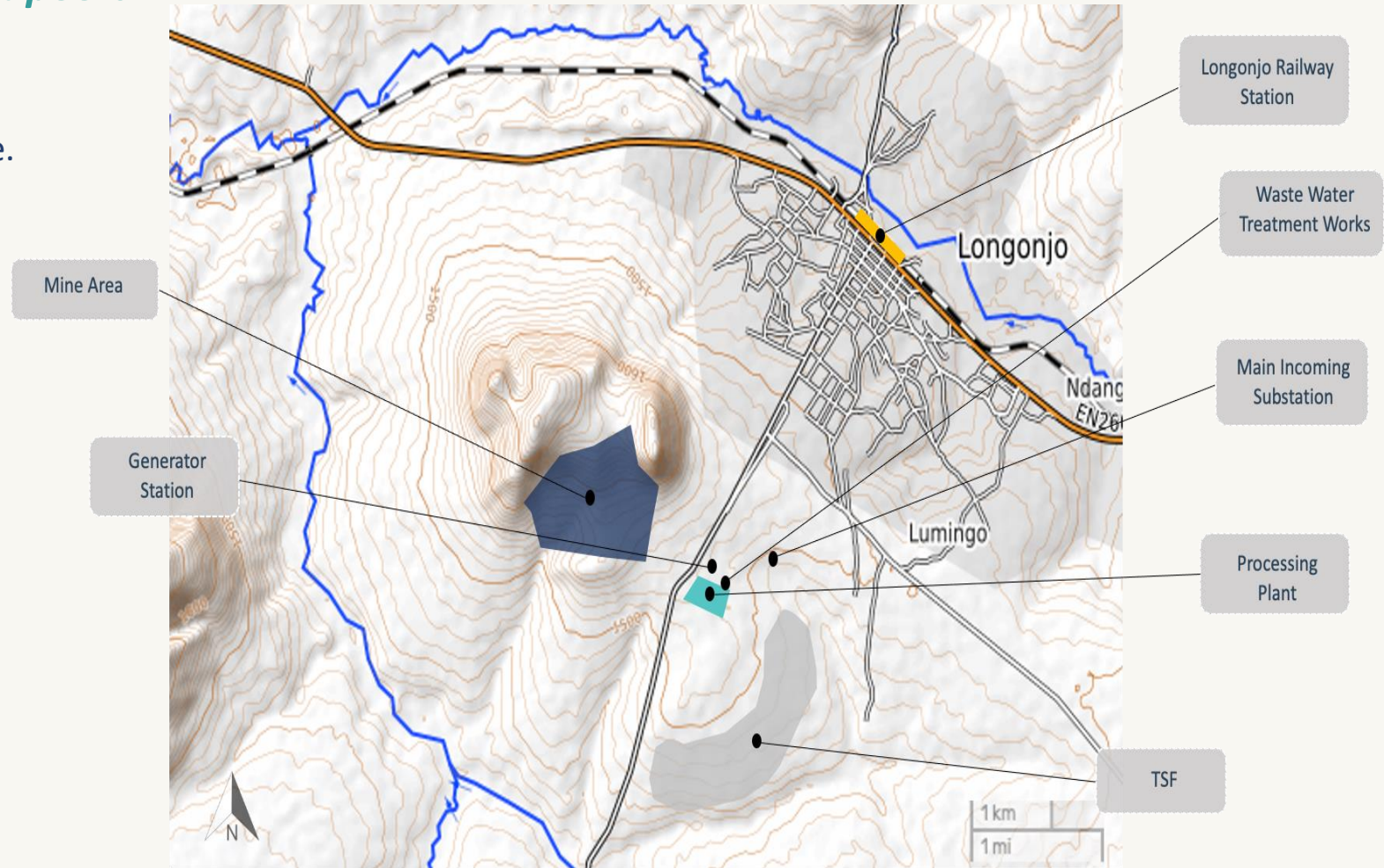


# State-of-the-art Mine and Processing Facility

## Upfront capital cost lowest amongst peers

Upfront capital cost of US\$217 million, with circa US\$105 million deferred until year three.

Low capex due to excellent rail, hydro and water infrastructure.



Source. ASX, AIM and LSE announcements and websites for the named companies

# Highly Experienced Project Delivery Team

*Proven design and delivery track record of modular process plants across Africa*



MCC is a leading project management team with a track record of delivering projects across Africa including Angola.



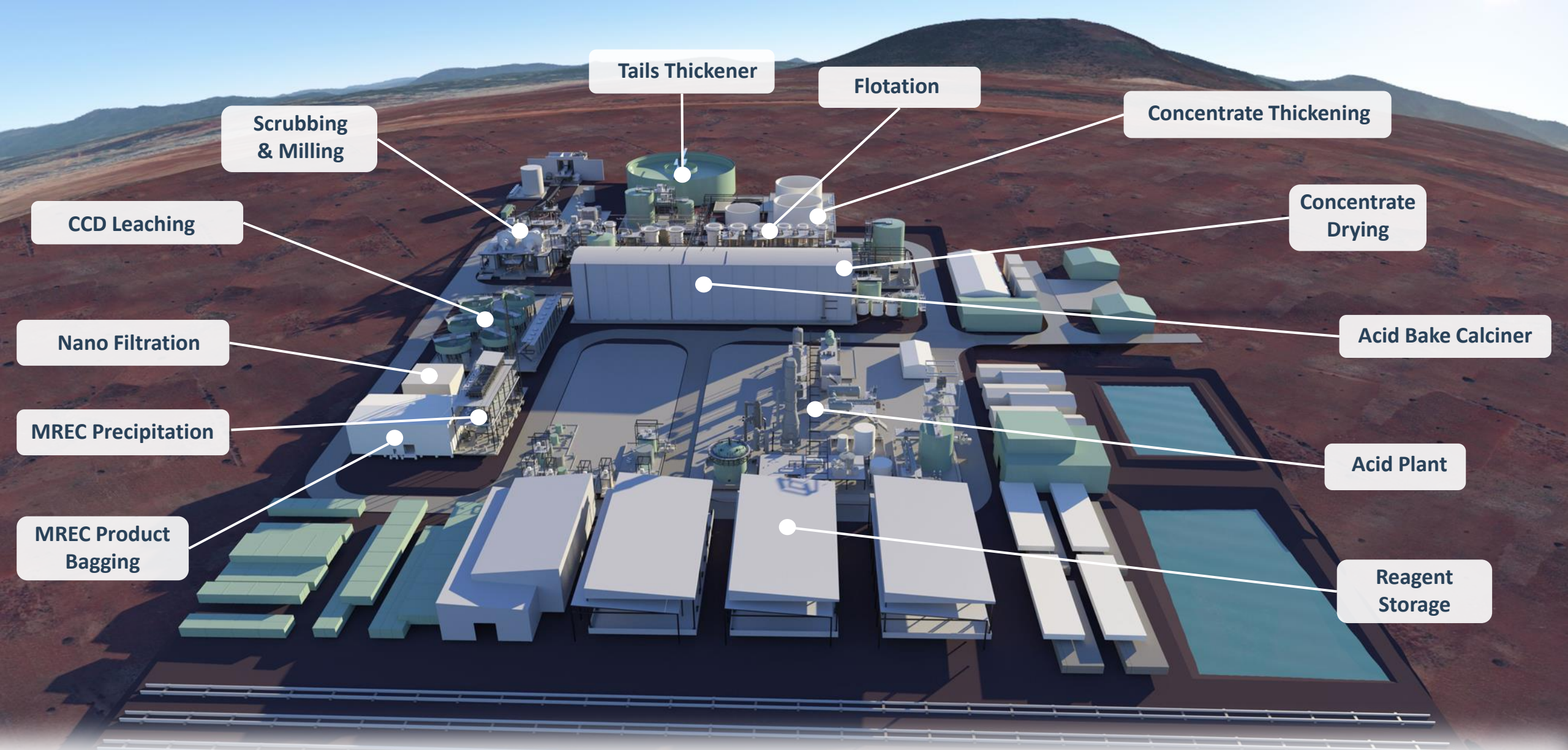
ADP African minerals specialist in detailed design, construction and commissioning of modular mineral processing plants with extensive experience in Angola.



Pro Process hydrometallurgical specialists with expertise in delivering modular process plants throughout Africa.







Scrubbing & Milling

Tails Thickener

Flotation

Concentrate Thickening

CCD Leaching

Concentrate Drying

Nano Filtration

Acid Bake Calciner

MREC Precipitation

Acid Plant

MREC Product Bagging

Reagent Storage

- ✓ Modular Manufacture
- ✓ On-site Assembly
- ✓ Extensively Pilot-Tested
- ✓ High Quality Vendors
- ✓ Hydro & Solar Powered
- ✓ Low Scope 2 Emissions
- ✓ Low Impact Footprint





Access road upgraded, 350-person camp being fabricated off-site, major earthworks well advanced and long lead items ordered ahead of main construction May 2024



# Construction and Commissioning Schedule – on track for first production in 2025

Pensana Schedule Construction Duration per Discipline

Discipline per area	Duration (Calendar months)	Year 1												Year 2												Year 3											
		Jan'24	Feb'24	Mar'24	Apr'24	May'24	Jun'24	Jul'24	Aug'24	Sep'24	Oct'24	Nov'24	Dec'24	Jan'25	Feb'25	Mar'25	Apr'25	May'25	Jun'25	Jul'25	Aug'25	Sep'25	Oct'25	Nov'25	Dec'25	Jan'26	Feb'26	Mar'26									
<b>Plant wide</b>																																					
Overall Bulk Earthworks	6	█																																			
<b>Longonjo Refinery Construction</b>	<b>13</b>	█																																			
Civil Works	8					█																															
Structural Installation	6					█		█																													
Platework Installation	6									█		█																									
Mechanical Installation	5											█		█																							
Piping Installation	3													█		█																					
Electrical Installation	7											█		█																							
Instrumentation Installation	6												█	█																							
Commissioning C2-C3	5																									█											
<b>Hot Commissioning Assistance C4</b>	<b>2</b>																									█											
<b>Hot Commissioning Assistance C5-C6</b>	<b>4</b>																									█			█								

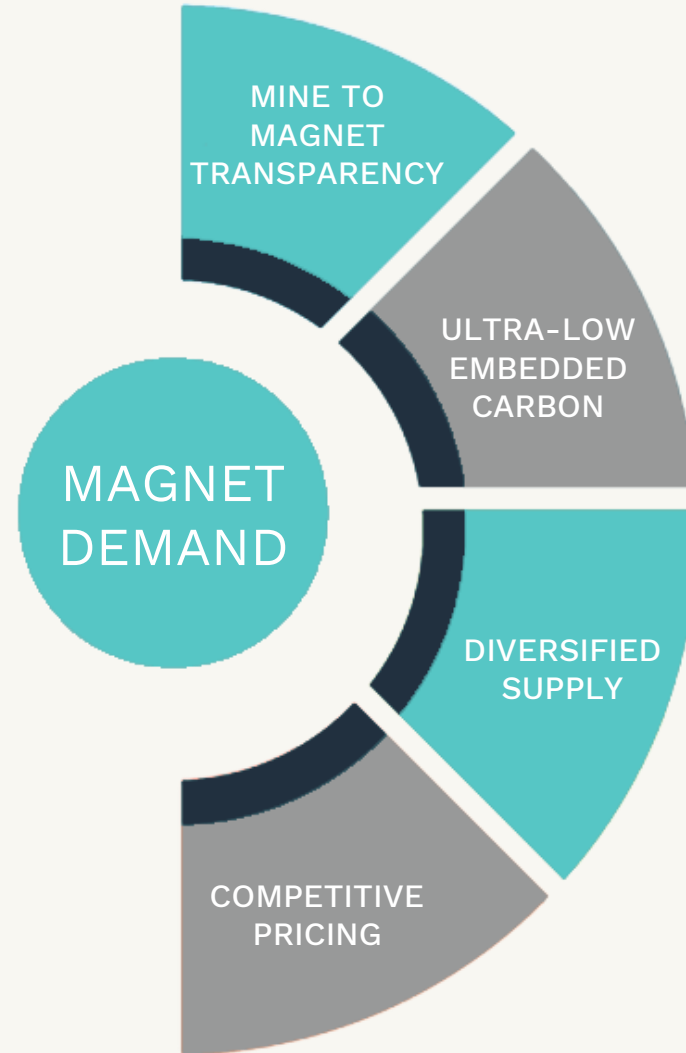


# Strong demand for Longonjo's Highly-Marketable Mixed Rare Earth Carbonate (MREC)

One of the only mine developers to offer a high value, radionuclide-free product available for export.

Executed letter of intent for the offtake for up to 100% of stage 1 production. Customer has approved MREC product specifications.

Engaged with major OEM's for partnership to support their magnet supply chains including JLR, Volvo, Mercedes, Ford, Polestar, BMW, VW, Tesla, Stellantis, PSA and GM



Mercedes-Benz

CO2 targets as a key criterion and 50% diversified supply chain.

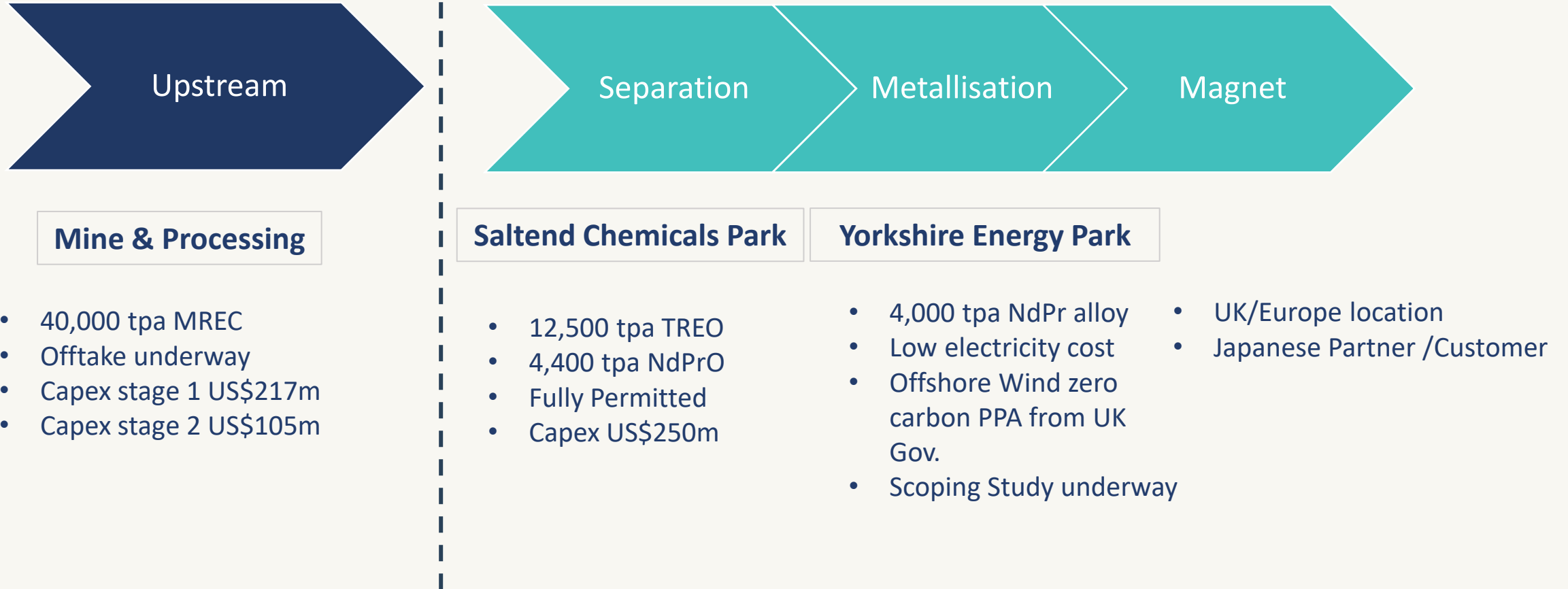
## Polestar

Net-Zero by 2030. Responsible sourcing: Ethical and transparent supply chain.



Net-Zero 2039. Full transparency for all supply chain partners.

# Looking to Establish an Independent Downstream Supply Chain



China controls **91%** of Refining, **87%** of Separation and **94%** of Magnet Production

Source: Wall Street Journal - [The U.S. Wants a Rare-Earths Supply Chain. Here's Why It Won't Come Easily.](#) - WSJ

## Longonjo Financing

*US\$156 million Debt and US\$80 million Equity Financing at the subsidiary level (PRE 65%).*

Major shareholder Angolan Sovereign Wealth Fund (FSDEA) is currently funding construction activities via a US\$15 million loan, ensuring project momentum.

The Longonjo lender consortium has provided a non-binding Term Sheet for a US\$156 million, 7 year secured facility, which is subject to equity participation, export credit guarantees and offtake agreements.

FSDEA and another party have indicated that they will provide US\$80 million in equity.

Both Debt and Equity are at the Ozango subsidiary level with Pensana expected to own ~65% on completion.



CEO Tim George recently met with FSDEA Chairman Armando Manuel in Luanda to discuss the Longonjo financing arrangements

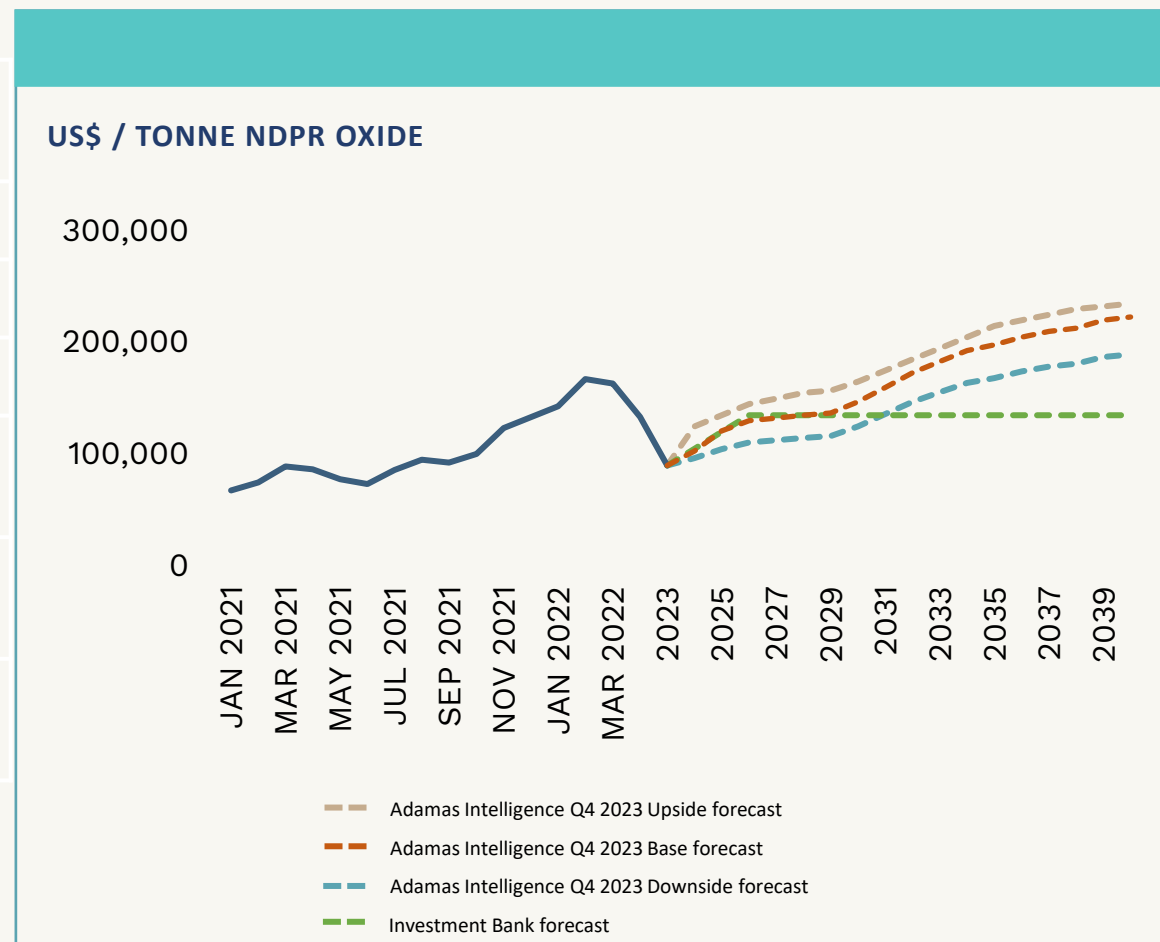
# Longonjo - Compelling Economics

*Low upfront Capex with strong cashflow  
very highly leveraged to the NdPr price*

	Adamas Intelligence Base Case <sup>1</sup>	Investment Bank Forecast
NPV @ 8%	US\$ 1,116 million	US\$ 603 million
IRR	34%	29%
Payback	4 Years	4 Years
Revenue	Stage 1: US\$ 227m Stage 2: US\$ 437m	Stage 1: US\$ 217m Stage 2: US\$ 371m
EBITDA	Stage 1: US\$ 126m Stage 2: US\$ 313m	Stage 1: US\$ 124m Stage 2: US\$ 263m
Capex	Stage 1: US\$ 217m Stage 2: US\$ 105m	Stage 1: US\$ 217m Stage 2: US\$ 105m

Management Valuation and Financial estimates based on NdPr price forecasts by Adamas Intelligence and Investment Bank

1. Adamas Intelligence Base Case Rare Earth Pricing Outlook (Q4 2023)



# Strong Independent Board and Experienced Executive Management Team



## **PAUL ATHERLEY CHAIRMAN**

Mr. Atherley is an experienced mining executive and is the founder of the Company. Previously Executive Director of the investment banking arm of HSBC. He has completed numerous successful acquisitions and financings of resource projects in Europe, China, and Australasia. He is a supporter of Women in STEM.



## **RT HON BARONESS NORTHOVER NON-EXEC DIRECTOR**

Baroness Northover was the Prime Minister's Trade Envoy to Angola (2016- 2020), Zambia (2017-2020) and Minister in the Department for International Development ("DFID") 2011-15, including serving as Parliamentary Under Secretary and Africa Minister, 2014-15.



## **ROBERT KAPLAN FINANCE DIRECTOR**

Mr Kaplan is a Chartered Accountant with over 20 years of operating experience in the African mining sector. He brings a broad skill set in both the UK and sub-Saharan corporate finance together with experience in mining operations in Angola, South Africa and Tanzania.



## **ALISON SAXBY NON-EXEC DIRECTOR**

Alison is an industry-leading expert with over 35 years of experience in industrial minerals and metals. She was previously a Managing Director at metals consultancy Roskill and was recently appointed as Research Director of Project Blue. Alison is the author of numerous publications on critical and other minerals and was originally trained as a mineral engineer.



## **STEVE SHARPE NON-EXEC DIRECTOR**

Mr Sharpe is a highly experienced natural resources financier. He is an Executive Board Member of EIT Raw Materials. Previously, he was Chair of AME Group, Managing Director at Canaccord Genuity, Managing Director at Endeavour Financial and held senior positions at Standard Bank and NM Rothschild.



## **ROCKY SMITH CHIEF OPERATIONS OFFICER**

Rocky Smith is a highly experienced Chemical Engineer with 35 years of rare earths experience. He was Managing Director of Molycorp's Mountain Pass rare earth project in California, US, which is now owned by New York Stock Exchange listed MP Materials.



## **JEREMY BEETON NON-EXEC DIRECTOR**

Former Director General of the 2012 London Olympic and Paralympic Games, Principal Vice President of Bechtel, Advisory Board of PWC, and Non-Exec of SSE Plc. Currently also a Non-executive Director of John Laing.



## **TIM GEORGE EXEC DIRECTOR/ CEO**

A Minerals Engineer, Mr. George leverages over 30 years of experience in the mining and engineering sectors, with a broad experience in mining project development throughout Sub-Saharan Africa.



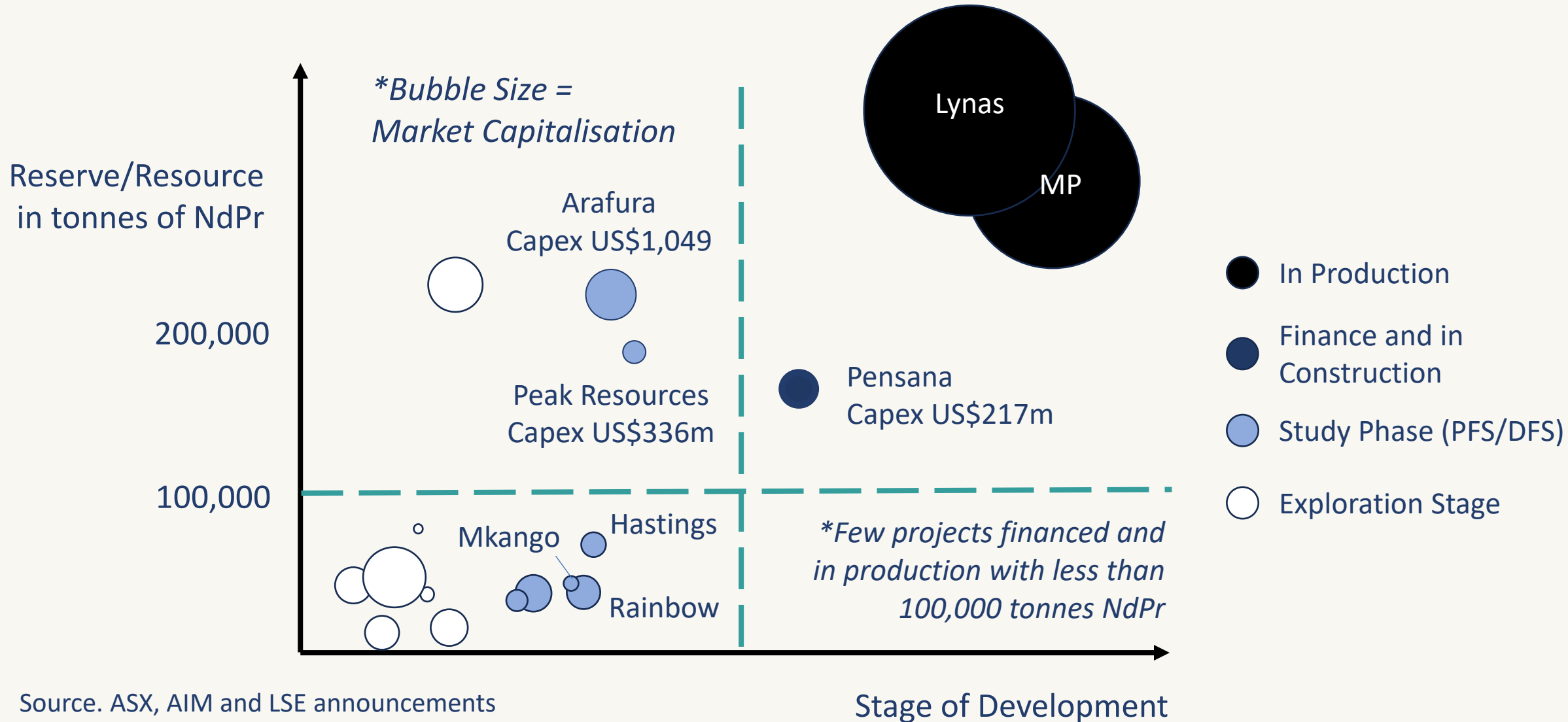
## **WILLIAM IZOD CHIEF COMMERCIAL OFFICER**

William Izod has extensive experience in managing and developing rare earth supply chains, including 10 years working with large multi-national companies, including managing a Motor and Powertrain supply chain controlling £1bn of annualised spend.



# Rare earth deposits are not rare. So why do so few get into production?

*A: New projects need >100,000 tonnes NdPr Reserve, Low upfront Capex and Finance.*



Source. ASX, AIM and LSE announcements and websites for the named companies



## **The Energy transition is driving a massive demand for rare earths.**

IEA: By 2030 there will be 350 million EVs which will drive rare earth demand 400%.

CRU, Roskills, Adamas, Investment Banks all have RE price targets ~2-3X current levels.



## **So how does a UK investor participate in this upside?**

Globally >50 RE juniors but only two major producers; LYC and MP each with mkt cap ~US\$3 bn.

PRE is one of only three companies with over 100,000 tonnes of NdPr oxide in JORC RESERVES,

...and the only one with the lowest Capex, in construction and scheduled to come into production within the next 24 months.



## **PRE is an Institutionally backed junior, with finance, in construction and with a big valuation upside.**

FSDEA, M&G and PCA have invested US\$70 million to date.

Ultra-low US\$217 million upfront Capex

- PRE (65%) of EBITDA £137-163 million per annum v current market cap of £100 million.
- PRE (65%) Base Case valuation US\$600-1,100 million = £1.09 – 2.01 per share versus current 31p.

# PENSANA Plc

## CONTACT

Pensana Plc  
Rex House,  
4<sup>th</sup> Floor,  
4 - 12 Regent Street,  
London,  
SW1Y 4PE

Sign up for regular email updates or to  
request a meeting with management  
*[info@pensana.co.uk](mailto:info@pensana.co.uk)*



+44 203 356 2700



[info@pensana.co.uk](mailto:info@pensana.co.uk)



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