

Independent and Sustainable Rare Earth Production

Establishing the world's first Rare Earth processing hub at Saltend Chemicals Park Humber Freeport UK

EV AND OFFSHORE WIND WILL DRIVE RARE EARTH DEMAND FIVE-FOLD BY 2030

NdPr oxide is key to the manufacture of permanent magnets used in Electric Vehicles and Offshore Wind turbines.

Adamas Intelligence warns that post 2030:



“The rapid demand growth of the 2020s will soon be dwarfed by the demand growth of the 2030s.”



**NdPr OXIDE PRICE
GROWTH TO 2030**

5.6 - 9.9% CAGR

CHINA SUPPLIES 95% OF WORLD'S RARE EARTH MAGNETS

“China has no obligation to be the rare earth supplier to the world.”

Lin Boqiang, Director of the China Center for Energy Economics

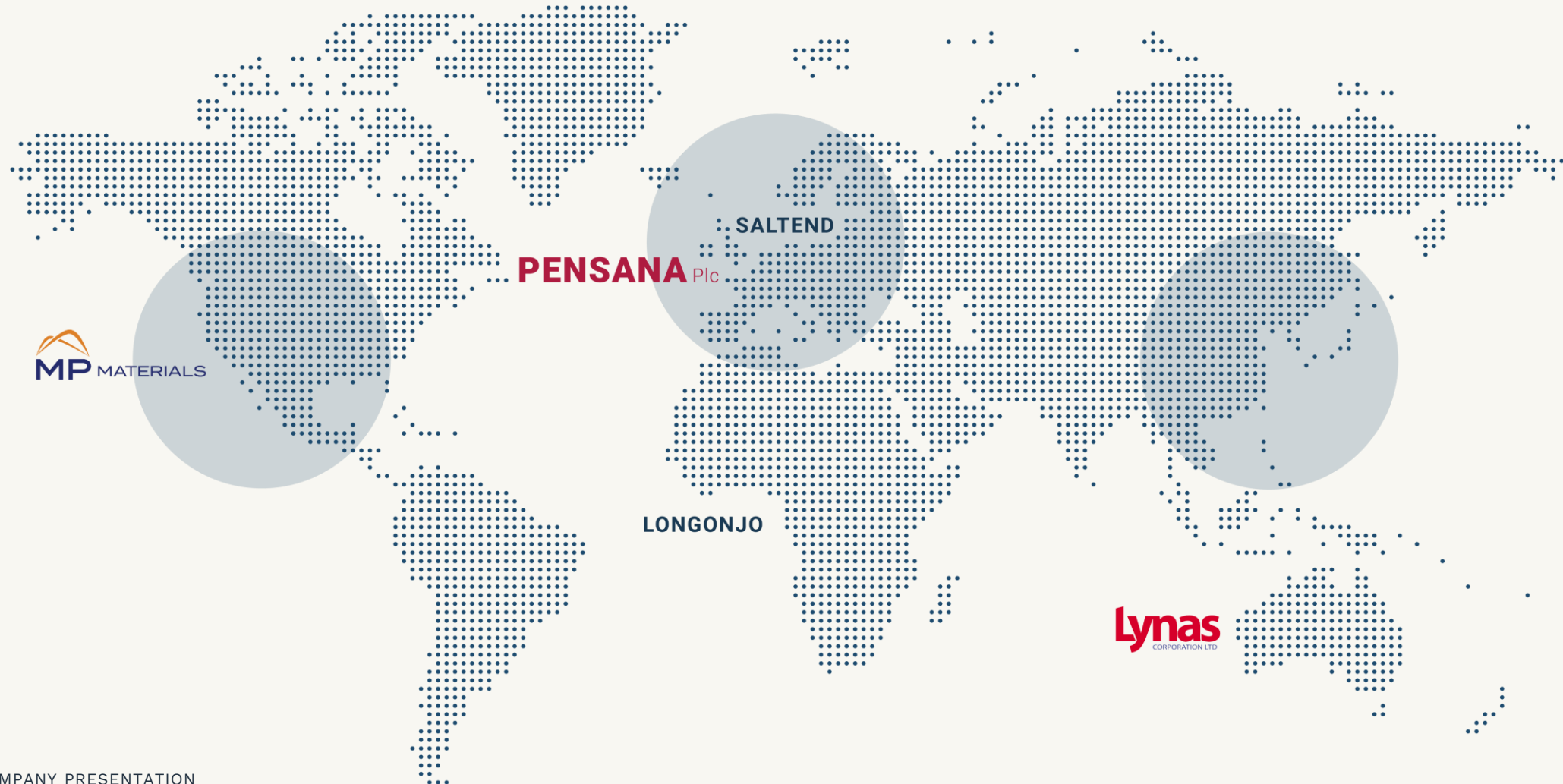
Source: <https://chinabigidea.substack.com/p/gep-innovation-in-china-2025-carbon>



CARBON NEUTRAL
2060 PLAN

LYNAS CORPORATION (LYC.ASX) CURRENTLY THE ONLY MAJOR RARE EARTH PRODUCER OUTSIDE CHINA

PENSANA Plc



Lynas
CORPORATION LTD

LYC:ASX

MP MATERIALS

MP:NYSE

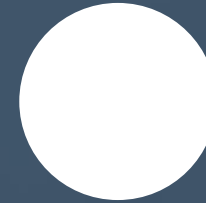
PENSANA Plc

PRE:L

**MARKET
CAP US\$**



US\$7bn

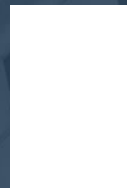


US\$9.5bn



<US\$300m

**NdPr
PRODUCTION
tonnes per year**



5,500
tonnes

**IN PRODUCTION
SINCE 2013**



6,500
tonnes
by 2024

IN DEVELOPMENT



4,500
tonnes
by 2024

IN DEVELOPMENT

CAPEX US\$

**c. US\$1.5
billion**

**>US\$2
billion**

**<US\$500
million**

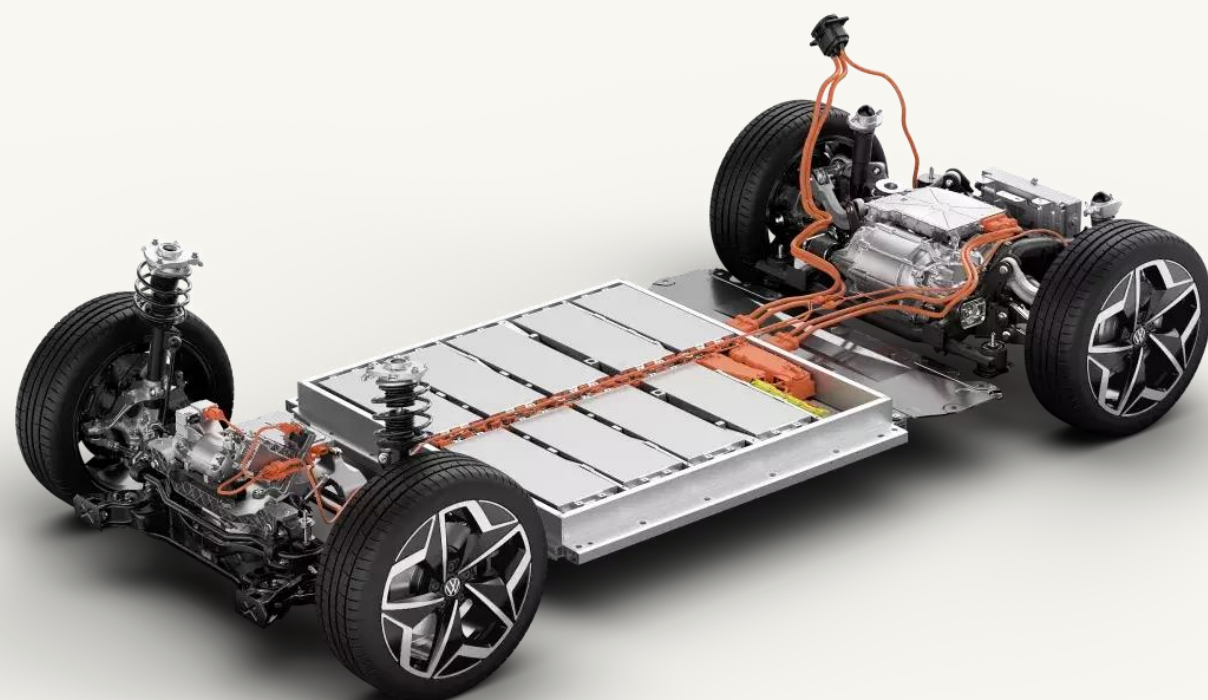
“PLUG AND PLAY” SALTEND CHEMICALS PARK

The first major rare earth separation facility to be established in over a decade.

First to be established in a Freeport - will create 450 jobs during construction and 125 high value full time jobs.

Facility will produce 12,500 tpa of TREO including 4,500 tpa of NdPr oxides ~5% of 2025 world demand.





***VW ID.3 RANGE OF EVs
WILL CONSUME THE
EQUIVALENT OF
SALTEND'S ENTIRE
PRODUCTION FOR THE
NEXT DECADE***

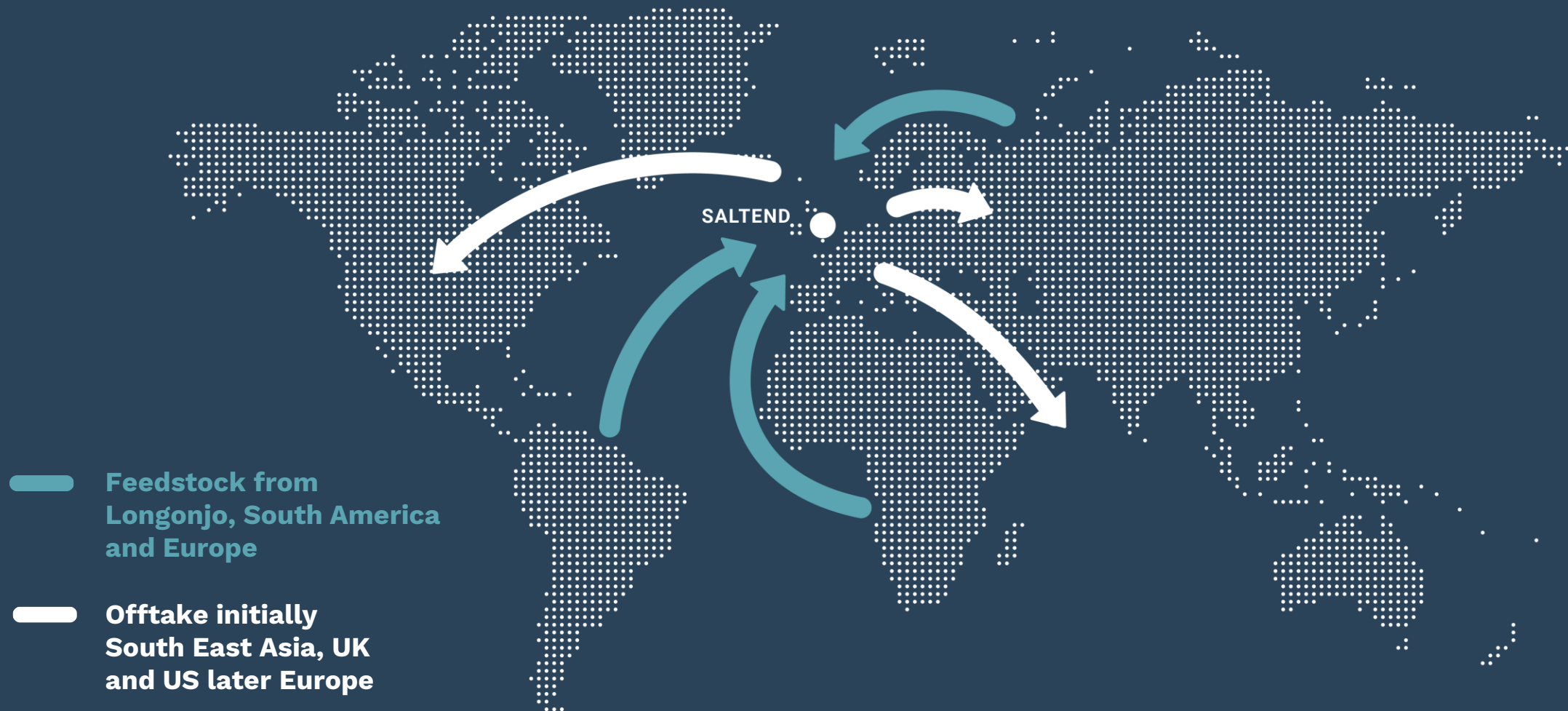
Sources: ID.3 forecast based on management expectations and VW Financial Services forecast sales of 1.5 million units per annum expected to be sold by 2025. Estimated rare earth usage per vehicle private communication Adamas Intelligence, Saltend production based on nameplate capacity.

FREEPORT STATUS TO ESTABLISH SALTEND AS INTERNATIONAL PROCESSING HUB

Pensana was part of the team behind the highly successful Treasury approved Humber Freeport bid led by Associated British Ports. The range of benefits is expected to include:

- Business rates relief for five years of operation
- National insurance relief for new employees
- Discounts on land tax and stamp duty
- 130% deduction for main pool assets
- 100% deduction for special pool assets

INDEPENDENT RARE EARTH PROCESSING HUB



LOW CAPITAL COST STATE-OF-THE-ART MINE

Longonjo is one of the world's largest rare earth deposits with an initial 20 year mine life.

Near surface mining, 1.5 mtpa flotation concentrator, mineral sands type roaster to produce 45,000 tpa of clean, high value mixed rare earths sulphate.

Wood Group plc has designed mine to ICMM guidelines featuring solar, hydroelectric power and ~70% reagent recycling.

LOW CAPEX DUE TO EXCELLENT INFRASTRUCTURE

Hydroelectric power and recently upgraded US\$2bn Benguela rail line provides direct link to Atlantic port of Lobito



PORTO LOBITO

LONGONJO

HYDRO POWER

METAL PRODUCTION, LINKS WITH MAGNET MANUFACTURERS, HYDROGEN TO RECYCLE OFFSHORE WIND TURBINE NACELLES

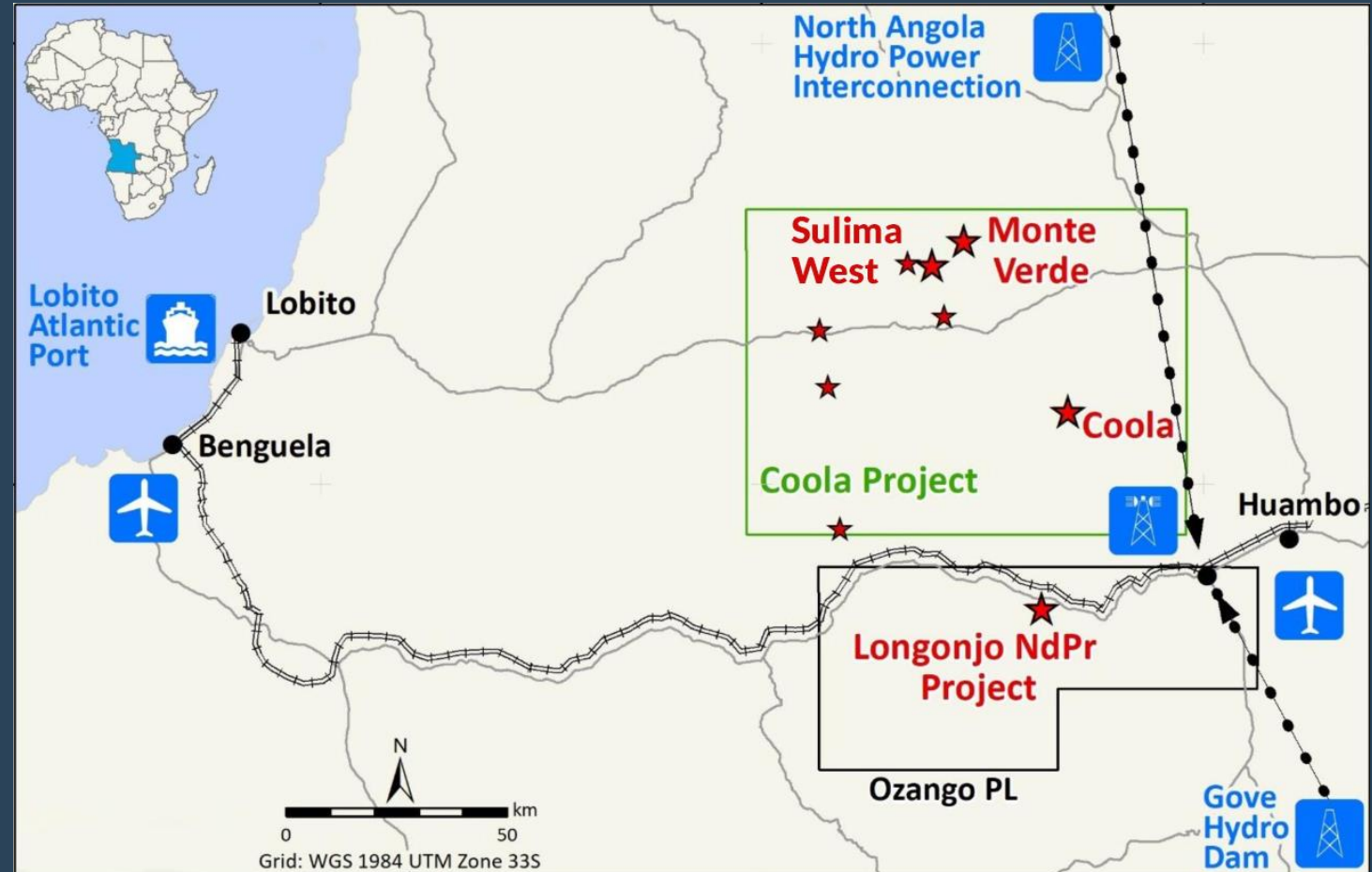
Studies are underway into private wire link to offshore wind to power conversion of NdPr oxides into metal.

Production of metal alloy provides direct link to magnet manufacturers.

Working with Equinor for the supply of Blue Hydrogen from its Hydrogen to Humber (H2H) Saltend facility to be used in the recycling of permanent magnets from end-of-life offshore wind turbines utilising hydrogen decrepitation process route.

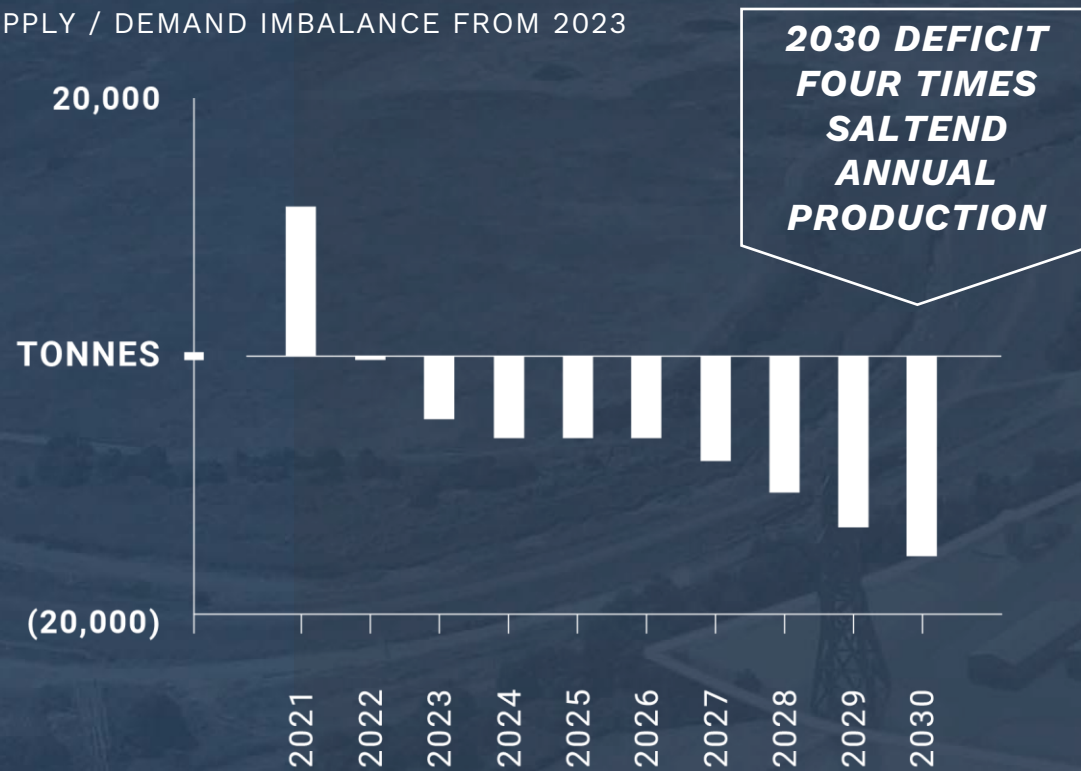
EXTREMELY ENCOURAGING INITIAL RESULTS FROM COOLA EXPLORATION PROGRAMME

- 22 samples from 4.2 km diameter ring structure at Sulima West, all mineralised reporting up to 10.6% TREO, averaging 4.2% TREO (NdPr average = 0.86%)
- Rock chip sampling of 0.9km diameter Coola carbonatite ring dyke reported up to 4.9% TREO (average 2.6%) with Soil reporting up to 13.18% TREO (average 3.21%)
- **Exploration Manager Grant Hayward:**
“We are extremely encouraged by these exciting targets. Whilst it is early stage, these are very large structures reporting grades which are in some cases higher than those for Longonjo.”



PRICES ALREADY ABOVE ROSKILL NdPr OXIDE FORECAST OF \$160,000 PER TONNE BY 2030

SUPPLY / DEMAND IMBALANCE FROM 2023



US\$ / TONNE NDPR OXIDE



Source: NdPr oxide price as quoted by Shanghai Metals and Materials as of 16 March 2022

FINANCIAL SUMMARY

ANNUAL PRODUCTION	12,500 TREO / 4,500 NdPr oxide
CAPEX	SALTEND REFINERY US\$ 195M
	MRES REFINERY US\$ 127M
	LONGONJO MINE AND INFRASTRUCTURE US\$ 49M
	LONGONJO CONCENTRATOR US\$ 123M
OPEX	US\$ 15/Kg TOTAL RARE EARTH OXIDE
REVENUE (Average steady state)	US\$ 705 MILLION (Average per annum based on first five years)
EBITDA (Average steady state)	US\$ 459 MILLION (Average per annum based on first five years)
NPV8% (UN-LEVERAGED, POST TAX)	US\$ 2.4 BILLION
IRR	61%
PAYBACK FROM FIRST PRODUCTION	2.1 YEARS

Source: Company information. Management estimates, inclusive of Longonjo and Saltend operations, are based on underlying independent studies undertaken by consultants listed in Appendix 1. NPV is calculated at an operational level pre-financing which is anticipated to be a blend of equity and long term debt financing. Revenue based on the Shanghai Metals Market NdPr March 2022 spot price of \$150/kg. Real price escalation of 3.2% p.a. to 2030, kept flat real terms thereafter.

WORLD CLASS MANAGEMENT TEAM



PAUL ATHERLEY
CHAIRMAN

Mr. Atherley has extensive experience as a senior executive. Previously Executive Director of the investment banking arm of HSBC. He has completed numerous successful acquisitions and financings of resource projects in Europe, China, Australia and Asia.

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.

ROCKY SMITH
COO

Mr Smith is a highly experienced Chemical Engineer with 35 years' rare earths experience. He is one of the few western mining executives with in-depth knowledge of the rare earth industry and running complex chemical processes. He was Managing Director of MP Materials Mountain Pass rare earth project in the US and was responsible for building the project and it's operational readiness.

ROBERT KAPLAN
FINANCE DIRECTOR

Mr Kaplan is a Chartered Accountant with over 20 years 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.

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.

**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.

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.

MARKET AND TECHNICAL ADVISERS

MARKET INTELLIGENCE

Adamas Intelligence

Market forecasts

Roskill

Market forecasts

SALTEND TECHNICAL

Wood Group

Technical engineering and design

Px Group

Saltend owner operator

Oakdene Hollins

Circular economy

On Line Design

Planning application

SLR consulting

Air quality assessments

EEG

Geotechnical design

Ivy House

Environmental design

LONGONJO TECHNICAL

Wood Group - technical engineering and design

Paradigm Project Management - Longonjo site infrastructure and bulk services technical engineering, design and cost estimates

Auralia Metallurgy - specialist metallurgical and processing laboratory

Nagrom - geochemistry testing and analysis

ALS / Eriez - pilot plant test work

HCV Africa - ESIA, EMP, RAP and hydrology

ANSTO - Australia nuclear science and technology association

Grupo Simples - Longonjo ESIA

Snowden - Mine plan schedule and pit optimization

SRK - Mineral resource estimates & geotechnical

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APPENDIX

WORLD BANK GROUP

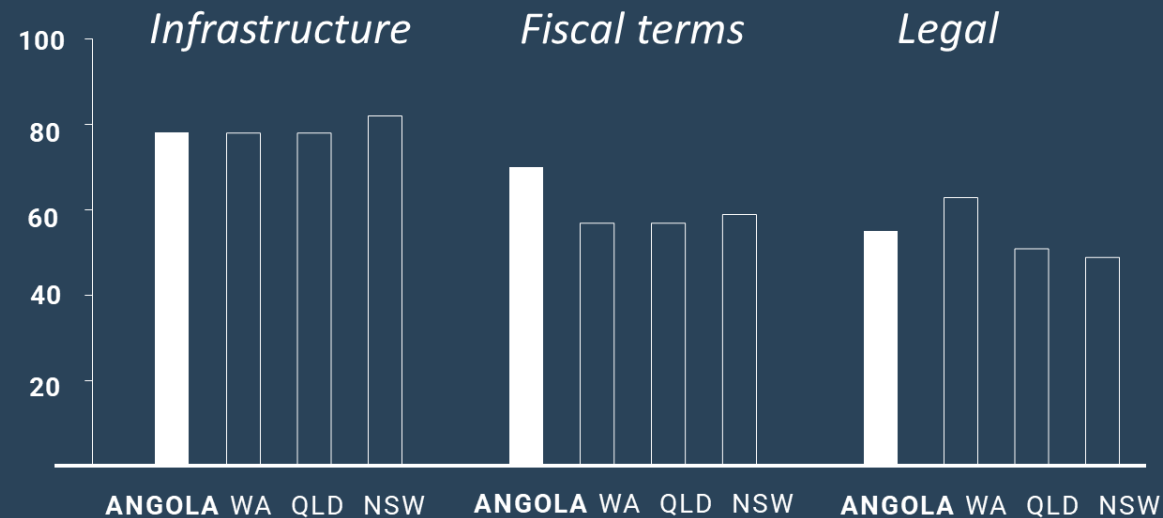
Angola Economic Update

Angola's economy is expected to exit a five year recession and grow in 2022

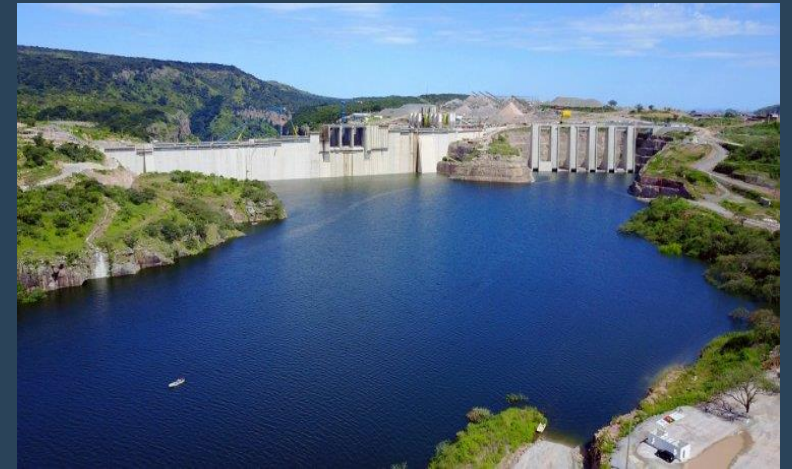
- ✓ Handled the Covid pandemic extremely well
- ✓ Strong Fiscal Surplus (oil price rises)
- ✓ Debt to GDP ratio falling from 135% to 95%
- ✓ Moody's has upgraded credit rating to B3 with stable outlook
- ✓ Anglo American, De Beers, Rio Tinto and others now re-investing

MINING JOURNAL World Risk Report 2021

Angola stands tall versus the Aussie mining states of Western Australia, Queensland and New South Wales



HYDRO-POWER AND RAIL



PORT OF LOBITO

