

Independent and Sustainable Rare Earth Production

Establishing a world class Rare Earth processing hub at Saltend Chemicals Park Humber Freeport UK

Annual General Meeting
December 2021

PENSANA Plc

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

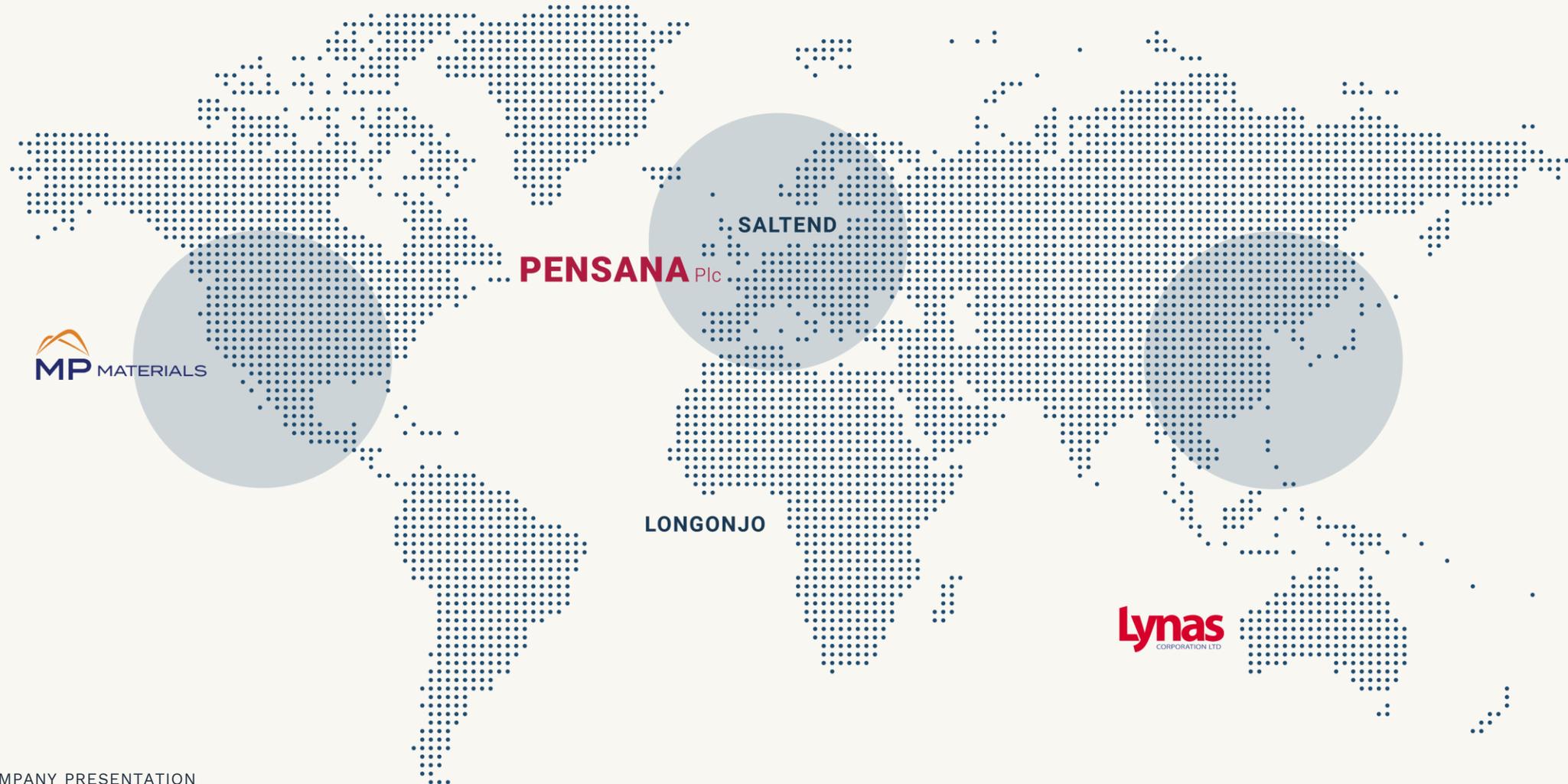
Source: <https://chinabigidea.substack.com/p/gep-innovation-in-china-2025-carbon>



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\$5.8bn



US\$7.8bn



<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

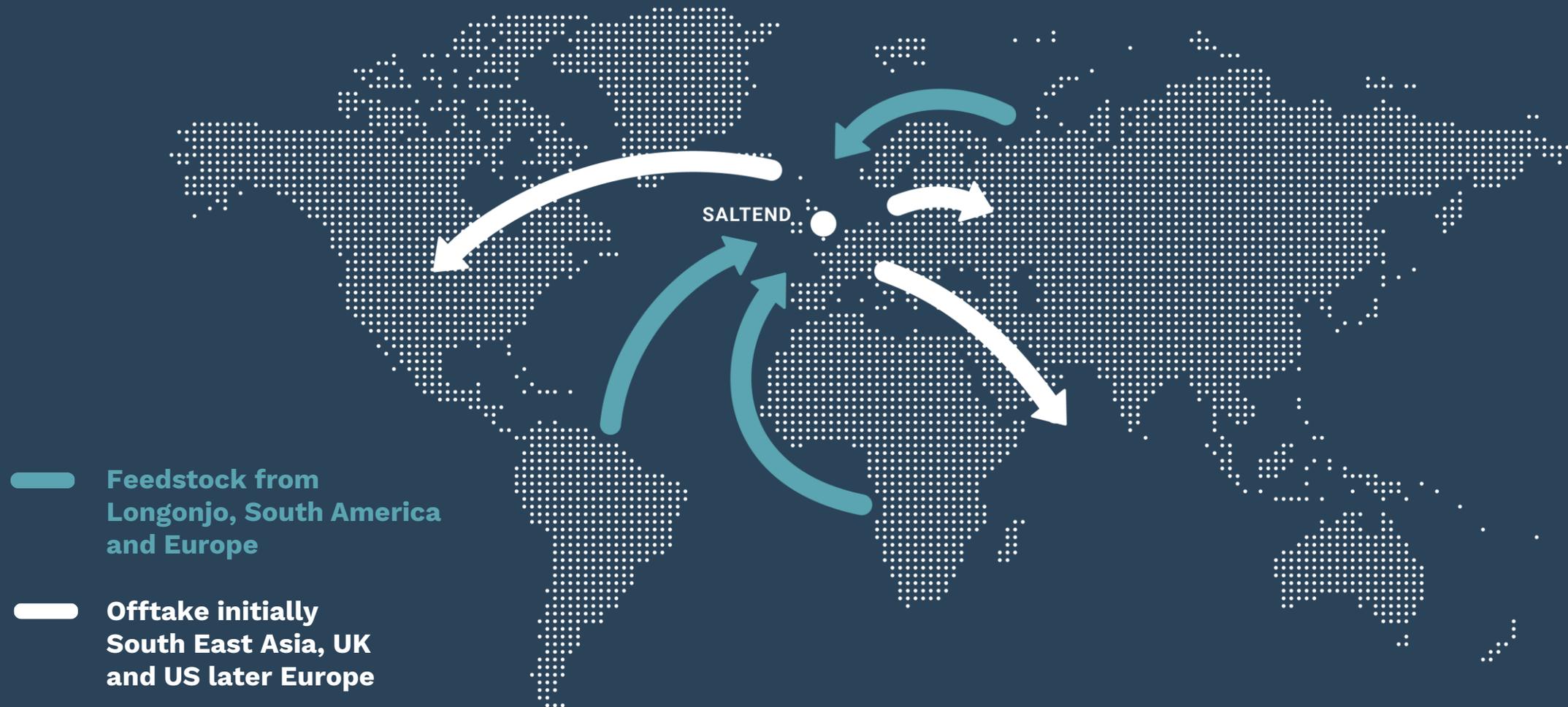
CAPEX US\$

**c. US\$1.5
billion**

**>US\$2
billion**

**~US\$500
million**

INDEPENDENT RARE EARTH PROCESSING HUB



“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.



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

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



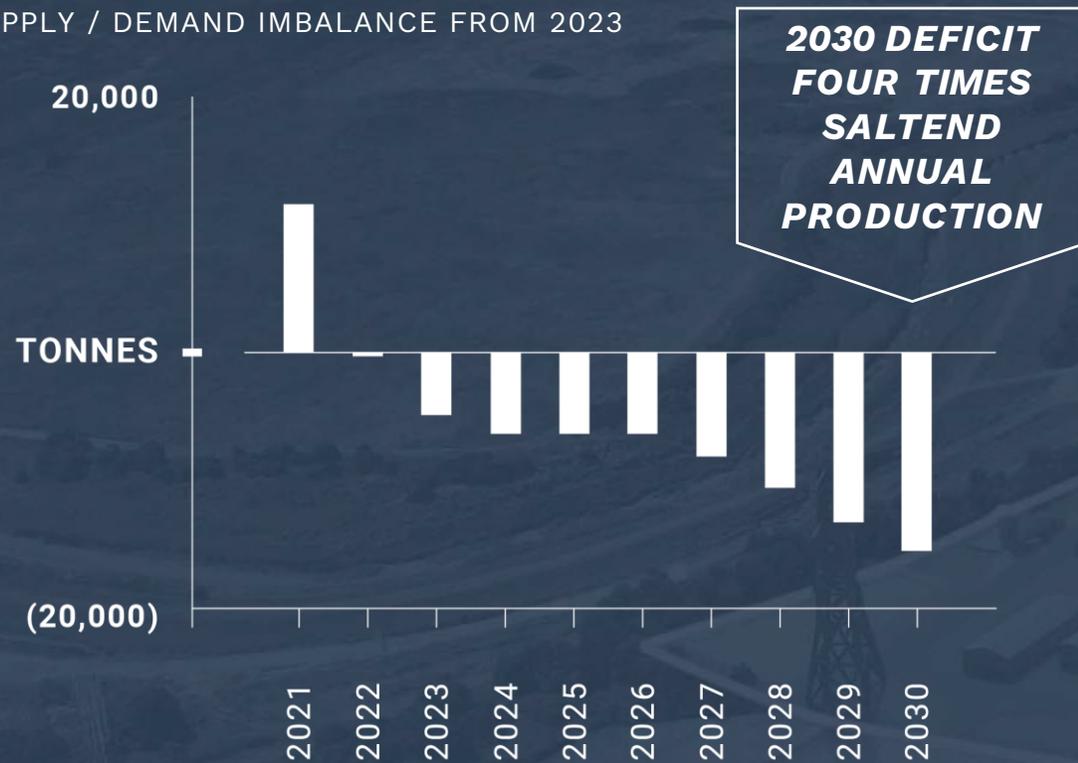
PORTO LOBITO

LONGONJO

HYDRO POWER

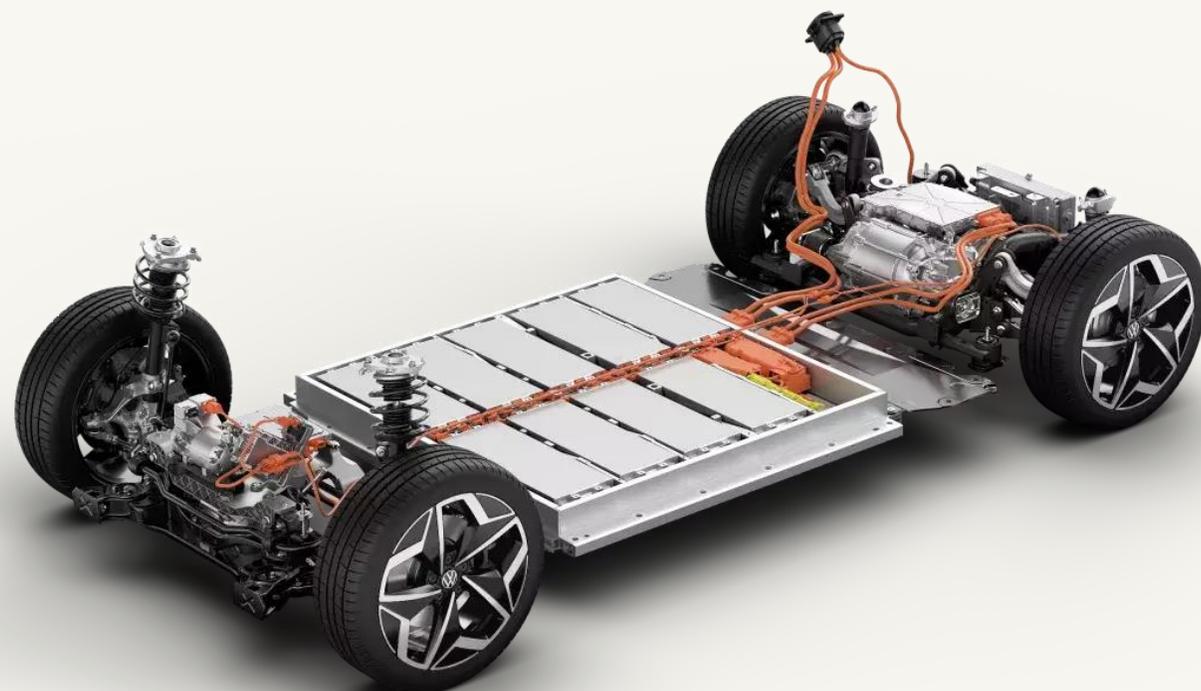
ROSKILL FORECAST NdPr OXIDE PRICE TO REACH \$160,000 PER TONNE BY 2030

SUPPLY / DEMAND IMBALANCE FROM 2023



US\$ / TONNE NDPR OXIDE





***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.

LONGONJO MILESTONES

2021 MILESTONES

LONGONJO

- Completion of initial Longonjo bulk sample concentrator comminution & flotation pilot test work programme
- Successful generation of high purity mixed rare earth sulphate
- Longonjo in-fill drilling campaign which upgraded the mineral resource to 313 million tonnes, 2.3 times higher than the previous Measured and Indicated resource estimate
- Large diameter drilling programme and recovery of 100 tonne bulk sample from the area of proposed first mining for optimisation and pilot plant programmes
- Commencement of FEED study by Wood Plc over 120 equipment and services packages contracted
- Site infrastructure and provision of bulk services design and detailed costing undertaken by PPM

LONGONJO MILESTONES cont.

2021 MILESTONES

LONGONJO

- Snowden concluding LOM mine optimisation study associated with FEED
- Hydro power supply line ESIA underway
- Relocation Action Plan independent surveys conducted for Longonjo subsistence agriculture activities
- ESIA baseline studies updated independently by HCVA and pre-construction Environmental Management Plan operational
- Agreements reached on long term fees & tariffs with RNT (National Power Transmission), EPL (Port of Lobito) and CFB (Benguela Railway)
- High grade rare earths reported in soil samples confirmed at the Coola exploration project, located 16 kilometres north of Longonjo
- Key hires for project management team, mining, geology and in-country subcontractors

SALTEND MILESTONES

2021 MILESTONES

SALTEND

- Saltend integrated Business Plan announced, first site visit October 5, 2020
- Wood study into the separation of NdPr oxide from mixed rare earth sulphate and UK site selection
- FEED study by Wood for the establishment of Saltend rare earth oxide separation facility
- Planning permission obtained for the establishment of a rare earth oxide separation facility at the Saltend Chemicals Park
- Award of FREEPORT status to the Humber, home to the world-class Saltend Chemicals Park
- Geotechnical drilling and trenching ahead of main construction
- Heavy Rare Earth separation designed for future production options
- Key hires for Marketing and Sales in UK, EU and Japan

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

PLANS FOR THE NEXT TWELVE MONTHS

LONGONJO	<ul style="list-style-type: none">• Finalisation of FEED• Award of 120 equipment work packages• Commencement of construction
SALTEND	<ul style="list-style-type: none">• Finalisation of FEED• Award of 63 equipment work packages• Commencement of construction• Contract third party feedstock supplies• Development of Rare Earth Metal Conversion Plant• Downstream magnet metal scoping studies• Detailed study of hydrogen based NdPr magnet recycling including Wind Turbine nacelles
FINANCING	<ul style="list-style-type: none">• Main financing ATF, BOND, UKEF, Private Equity, bilateral and local banks, Institutional Equity• Strategic co-operation / offtake agreements• 3rd party feedstock partnership agreements• Strategic JV partnership (Equinor)

FEED EQUIPMENT AND SERVICES PACKAGES

100% of the T1, T2 and T3 packages complete.

Overall 65% of equipment packages complete targeting 70% for +/-10% accuracy

Category	Concentrator	MRES	Refinery	Total
T1 Critical long lead items	3	6	2	11
T2 Required	9	11	12	32
T3 Vendor data	8	14	15	37
T4 Budgetary quotes	21	14	21	56
T5 In house database	17	17	13	47
Total	58	62	63	183

WORLD BANK GROUP

Angola Economic Update October 2021

Angola's economy is expected to exit a five year recession and grow in 2021

- ✓ Handled the Covid pandemic extremely well
- ✓ Fiscal Surplus (oil price rises)
- ✓ Debt to GDP ratio falling from 135% to 95% in 2021
- ✓ Moody's has upgraded credit rating to B3 with stable outlook
- ✓ Anglo American, De Beers, Rio Tinto and others now re-investing

DEVELOPMENT SCHEDULE



FINANCIAL SUMMARY

ANNUAL PRODUCTION	12,500 TREO / 4,500 NdPr oxide
CAPEX	SALTEND REFINERY US\$ 190M
	MRES REFINERY US\$ 152M
	LONGONJO MINE AND INFRASTRUCTURE US\$ 49M
	LONGONJO CONCENTRATOR US\$ 134M
OPEX	US\$ 14.7/KG TOTAL RARE EARTH OXIDE
REVENUE (Average steady state)	US\$ 648 MILLION (Average per annum based on first five years)
EBITDA (Average steady state)	US\$ 413 MILLION (Average per annum based on first five years)
NPV8% (UN-LEVERAGED, POST TAX)	US\$ 2.1 BILLION
IRR	50%
PAYBACK FROM FIRST PRODUCTION	2.3 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 November 2021 NdPr spot price of \$120/kg. Real price escalation of 3.2% p.a. to 2030, flat real thereafter.

ANNOUNCEMENT SCHEDULE

- Update on FEED
- Marketing Agreement
- Update on site activities at Saltend and Longonjo
- ATF Funding
- Bond Financing
- Other Financing
- Commence Main Construction



WORLD CLASS MANAGEMENT TEAM

Recent appointments have strengthened the Board and Management team



PAUL ATHERLEY
CHAIRMAN

TIM GEORGE
EXEC DIRECTOR/
CEO

ROCKY SMITH
COO

ROBERT KAPLAN
CFO

JEREMY BEETON
NON-EXEC DIRECTOR

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

STEVE SHARPE
NON-EXEC DIRECTOR

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.

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.

Former Managing Director of Molycorp's Mountain Pass rare earth mine in the US, now owned by NYSE listed MP Materials.

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.

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.

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.

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.

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.

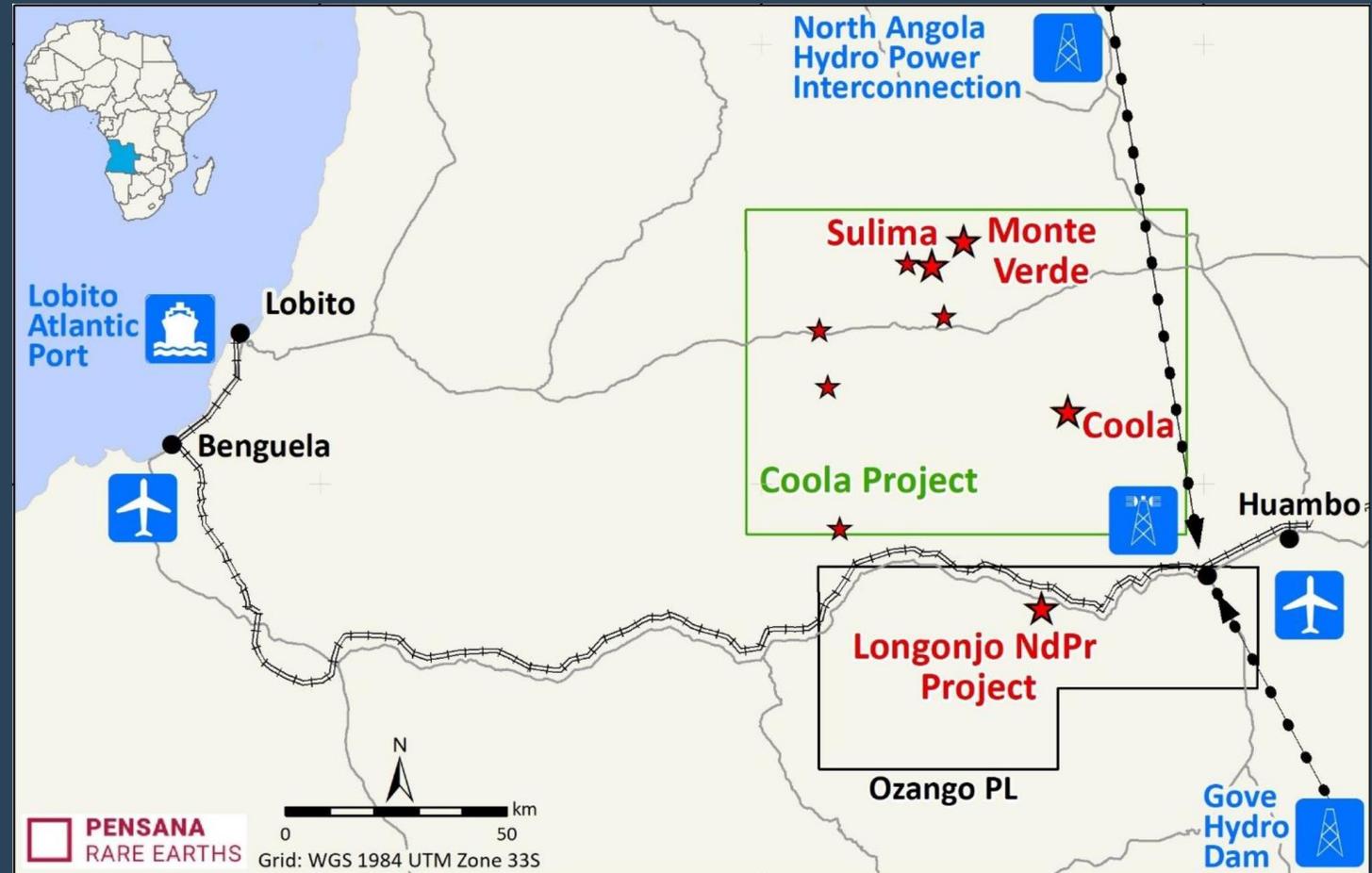
Production of metal alloy provides direct link to magnet manufacturers.

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.

COOLA Exploration to recommence in 2022

“The 7,500 Km2 Coola Project contains several high quality ‘walk-up’ targets prospective for a suite of key strategic ‘new technology’ metals.

The early reconnaissance sampling results are a great start in confirming the Coola complex as a fertile mineralised system.”



METALLURGICAL TESTING



SALTEND



LONGONJO



HYDRO-POWER AND RAIL



PORT OF LOBITO



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