

# KANGANKUNDE PROJECT STAGE 1 OUTSTANDING FEASIBILITY STUDY RESULTS

- Feasibility Study of Stage 1 development confirms a technically low risk and economically robust project.
- Stage 1 post-tax Net Present Value (NPV<sub>8</sub> real) of US\$555M (A\$831M), an IRR of 80% and an average annual EBITDA of US\$84M<sup>1</sup> (A\$124.5M)<sup>1</sup>.
- Pre-production capital cost of US\$40M (A\$60M<sup>2</sup>) which includes 12.5% contingency, making it one of the lowest capital cost rare earths projects under development.
- Average annual FOB operating cost of US\$2.92/kg TREO, positioning Kangankunde in the lowest cost quartile of the global rare earths industry.
- Payback period of less than 2-years, and post-tax NPV to Capex ratio of more than 10:1, which are outstanding characteristics across the total mining industry.
- The low-cost structure means that the Stage 1 Project will be one of very few global rare earths projects which can deliver a positive annual EBITDA at current low rare earths prices.
- Maiden Ore Reserves of 23.7 million tonnes at 2.9% TREO supporting a Stage 1 life-of-mine of 45 years.
- Stage 1 to produce an average annual ~15,300 tpa premium concentrate with 55% TREO grade, with low levels of radionuclides (thorium and uranium) and limited acid consuming minerals. The premium concentrate will contain ~8,400 tpa of REO and ~1,640 tpa of NdPr.
- No pre-stripping, very low waste to ore ratio of less than 0.2:1, simple flowsheet based on gravity and magnetic separation requiring limited reagents, and availability of low-cost grid power.
- Kangankunde premium product specifications is attracting significant offtake interest, with ~40% of annual production already contracted with Gerald Metals (USA commodity trading group<sup>3</sup>).
- Key development approvals are in place, meaning construction contract award to preferred tenderers can occur within a short timeframe, once funding has been secured.
- Multiple funding discussions gaining momentum with construction groups, trading companies and strategic investors. Lindian also currently maintains a healthy cash reserve.
- Development schedule aiming to achieve funding confirmation Q3 CY2024, commencement of site construction in Q4 CY2024 and commissioning of the processing plant in Q4 CY2025.
- The very strong economics of Stage 1 and the large resource endowment of the Kangankunde Project, plus robust market demand forecasts, provide confidence for a potential Stage 2 expansion to significantly increase annual production. Lindian intends to formally commence a Stage 2 expansion study in CY2024.

**Commenting on the Feasibility Study, Chief Executive Officer, Alwyn Vorster said:** "The Feasibility Study results reaffirm the world-class status of the Kangankunde Project and its competitive positioning to meet a rising demand for rare earths. It is distinguished by its high grade, low levels of impurities and attractive cost structure that positions the Project in the lowest cost quartile of rare earths projects globally. The Stage 1 development will require low upfront capital cost, presents low commissioning risk, and generates strong financial returns. Importantly, Stage 1 could serve as logical springboard for future expansion options. Kangankunde is fully permitted to commence construction and operations once financing is confirmed. The Feasibility Study has been prepared over 10 months by a team of experienced contractors, consulting firms and Lindian team members. The quality of the study is first class, and everyone is to be congratulated on their efforts."

<sup>&</sup>lt;sup>1</sup> Based on Project Blue rare earth price forecast 2024.

<sup>2</sup> Bloomberg 26 June 2024 AUD:USD exchange rate 0.6676.

<sup>3</sup> Refer to ASX announcement dated 26 September 2023 "Monazite Concentrate Sale and Purchase Contract Signed"



**Executive Chairman, Asimwe Kabunga, added**: "We are extremely proud of the excellent Feasibility Study results. We have been discussing funding options for Stage 1 with several parties over a number of months, and the Feasibility Study is the key catalyst to progress these negotiations, as well as attract new funding interest. We are confident of securing a superior funding solution that minimises dilution for shareholders. The fully permitted Kangankunde Project is strongly supported by the Malawian Government and the local communities. It will create hundreds of jobs, improved local infrastructure and become a major source of income for the Malawian economy."

**Lindian Resources Limited (ASX:LIN) ("Lindian**" or "the **Company**") is pleased to announce the completion of a Feasibility Study ("FS") on Stage 1 of the Kangankunde Rare Earths Project ("Kangankunde Project").

The FS examines Stage 1 of the Kangankunde Project's development, which includes mining operations, a mineral processing plant, and necessary support infrastructure. Results of the FS support a technically robust Stage 1 project with highly attractive economics and provides confidence that a significantly larger expansion project in the future should be considered.

The FS results are supported by extensive drilling programs and a maiden JORC 2012 compliant Ore Reserve developed from the recent Mineral Resource Estimate update<sup>4</sup>. It also included metallurgical test work, detailed engineering designs, cost studies, contract tender processes, human resource planning, product market studies and financial modelling.

The Kangankunde Project is well-positioned for development. Malawi is a stable and favourable jurisdiction for mineral developments. Kangankunde will require more than 200 full time equivalent site roles during the construction phase, and more than 100 full time equivalent site roles during the operational phase. As previously announced, all key approvals have been received, including the Mining Licence<sup>5</sup>, Environmental Licence and Water Permit<sup>6</sup> enabling construction to commence immediately once funding is secured.

## **Project Metrics and Financial Summary**

The outstanding technical and economic results delivered by the FS are outlined in Table 1.

Production Metrics	Unit	Years 1-5 Annual Average	LOM Annual Average	LOM Total
Ore mined	kt	522	526	23,663
Ore grade mined	% TREO	3.1	2.9	2.9
Strip ratio	waste:ore	0.1	0.2	0.2
Ore milled	kt	444	451	20,202
Grade processed	% TREO	3.3	3.0	3.0
Recovery (TREO)	%	60	60	60
Concentrate production	kt	16.2	15.3	685.7
Concentrate grade	% TREO	55	55	55
TREO in concentrate	t	8,747	8,259	369,600

Table 1: Kangankunde Project Stage 1 Key Metrics Summary

<sup>&</sup>lt;sup>4</sup> Refer ASX announcement dated 2 May 2024 titled "Kangankunde Mineral Resource Estimate Updated to include 61 million Tonnes Indicated Category Grading 2.43% TREO".

<sup>&</sup>lt;sup>5</sup> Refer to ASX announcement dated 1 August 2022 "Lindian to Acquire 100% of Kangankunde Rare Earths Project"

<sup>&</sup>lt;sup>6</sup> Refer to ASX announcement dated 2 April 2024 "Water Permit for Kangankunde Received"



Production Metrics	Unit	Years 1-5 Annual Average	LOM Annual Average	LOM Total
NdPr % (TREO in concentrate)	% TREO	19.7	19.5	19.5
NdPr in concentrate	t	1,722	1,613	72,200
Mine life	Years			45
Cost Metrics	Unit	Years 1-5 US\$	LOM US\$	LOM A\$
Pre-production capital (including 12.5% contingency)	US\$M		40	60
Average annual operating cost	\$M	25.0	25.0	37.5
Average annual operating cost (FOB)	\$/kg TREO	2.7	2.9	4.3
Average annual AISC	\$/kg TREO	3.4	3.7	5.5
Revenue and Profit Metrics	Unit	US\$	US\$	A\$
Average annual revenue	\$M	82.5	113.7	170.3
Average annual EBITDA	\$M	53.6	83.1	124.5
Average operating cashflow (after tax and sustaining capital)	\$M	38.3	58.0	86.9
Financial Outputs	Unit		US\$	A\$
Pre-Tax NPV <sub>8</sub> real	\$M		794	1,189
Post-tax NPV <sub>8</sub> real	\$M		555	831
Pre-Tax IRR	%		99	
Post- tax IRR	%		80	
Payback Period pre-tax (from first production)	Years		1.25	
Payback Period post-tax (from first production)	Years		1.5	
Investment Multiple pre-tax (NPV return on capital invested)	x		19.4	
Investment Multiple post-tax (NPV return on capital invested)	x		13.5	

Note:

• Based on Ore Reserves only.

• Real discount rate 8% (all modelling is in real terms).

• Bloomberg 26 June 2024 AUD:USD exchange rate 0.6676.

• All cash flows are in real terms, assuming 2024 dollars.

• Malawi Corporate Income Tax is 30%, with government royalties at 5% of revenue net of concentrate transport costs.

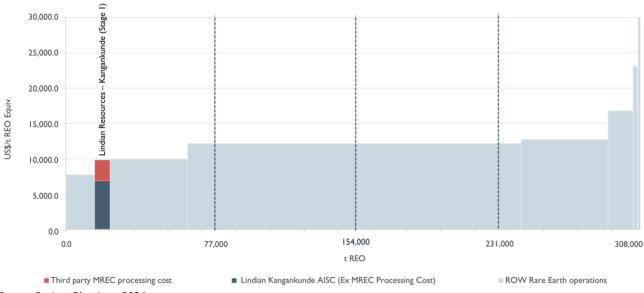


## **Low-Cost Structure**

Kangankunde Stage 1 has the following key attributes which results in a low cash cost of US\$2.92/kg of TREO, positioning it in the lowest cost quartile for rare earths projects:

- one of the largest, high grade rare earths deposits in the world,
- outcropping orebody with relatively uniform mineralisation,
- conventional mining method with a very low waste to ore ratio of 0.2,
- simple processing flowsheet comprising mainly comminution, gravity and magnetic separation, and with very little reagents used to produce a premium 55% TREO concentrate with low impurities,
- low-cost reliable grid power sourced from hydroelectricity,
- access to processing water from a borefield located at the mine site,
- excellent transport infrastructure including sealed roads and rail, and
- accommodation facilities in nearby towns.

The FS confirms the Kangankunde Project as one of the lowest cost rare earth projects in the world and positioned in the lowest cost quartile for global projects (Figure 1).



#### Figure 1: Rare Earth Industry Mixed Rare Earth Compound Projects Cost Curve (2023)

Source Project Blue June 2024

The FS financial model uses rare earths prices provided by independent market research group, Project Blue. Based on global supply and demand forecasts, rare earth prices in real terms are forecast to range from current spot prices of ~US\$50/kg NdPr to ~US\$115/kg over the next ten years, and much higher in the next two decades.

Even at current spot prices of US\$50/kg NdPr, the Kangankunde Project delivers a positive EBITDA (see Table 2). This provides Lindian with a strategic advantage compared to most of its peers in being able to commence production in a forecast rising price environment to maximise returns for shareholders.

#### Table 2: EBITDA analysis

	Unit	Current Spot Price	Years 1-5 (average)	LOM (average)
Average Price	US\$/kg NdPr	50	82	109
EBITDA	US\$M	11	57	83



## **Potential Project Expansion**

Market research analysis from Project Blue (2024) confirms that significant new supply will be required to track the increasing demand particularly NdPr units over the next three decades. This demand is being driven by several factors including climate change, advances in technology, resource scarcity and geopolitical tensions.

The long-term demand outlook for rare earths will continue to be dominated by magnet applications, of which NdPr is a critical component. This will be driven by growth in renewable energy generation and electrified transport. As such, the magnet market will be the largest growing sector and it is forecast that it will account for almost 60% of the NdPr market by 2050. Project Blue forecasts that the NdPr market will triple in the period to 2050, requiring an increase of 2-3x above 2023 supply to maintain a balanced market. Lindian will be well positioned to respond to the increasing NdPr demand when the time comes.

From a Project technical perspective, the mine design demonstrates exceptional high conversion from Indicated Resources to Ore Reserves (99% of the contained TREO). The FS and Ore Reserve utilised 46% of the Indicated Resources contained TREO, compared with the 39% of the Indicated Resources tonnes, by feeding predominantly high-grade ore over the 45 year mine life. The remaining Indicated Resource and Inferred Resource will form the basis of the Stage 2 expansion to produce updated Ore Reserves.

This additional expansion study work would include:

- Increased in-pit metallurgical testwork data to cover the total Indicated Resource.
- Updated geotechnical and mining schedule assessment to cover the total Indicated Resource.
- Increase the plant processing capacity and rate.
- Expand tailings facility capacity.
- Further resettlement agreements to provide land access for the expanded project footprint.

The Kangankunde Project Stage 1 Feasibility Study Summary is attached as Appendix 1.

### **Mineral Resources and Ore Reserves**

Lindian is pleased to release the Kangankunde Project's maiden Ore Reserve. The Ore Reserves are in accordance with JORC 2012 and estimated at 23.7 Mt of Ore Reserves at a grade of 2.9% TREO, based on a cut-off grade 1.00% TREO. All of the Ore Reserve is within the Probable category.

Category	Ore tonnes (Mt)	TREO grade (%)	NdPr % of TREO	Tonnes contained NdPr (kt)
Proved	-	-	-	
Probable	23.7	2.9	19.7	676
Total	23.7	2.9	19.7	676

#### Table 3: Kangankunde Project Ore Reserves (June 2024)

Figures have been rounded to the appropriate level of precision for the reporting of Ore Reserves.

Due to rounding, some columns or rows might not compute exactly as shown.

• Ore Reserves are stated as in-situ dry tonnes, figures are reported in metric tonnes.

• The Reserve is derived from Indicated Mineral Resources.

The Ore Reserves are defined on the basis that inventory above a defined cut-off.

• Modifying factors applied are described in Appendix 2 – JORC Code 2012 Edition – Table 1.



#### Table 4: Kangankunde Project Mineral Resource Estimate above 0.5% TREO cut-off grade <sup>7</sup>

Category	Tonnage (millions)	TREO grade (%)	NdPR % of TREO**	Tonnes contained NdPr* (kt)
Indicated	61	2.43	20.1	298
Inferred	200	2.05	20.4	834
Total	261	2.14	20.3	1,132

Rounding has been applied to 1.0Mt for tonnes and 0.1% NdPr% of TREO which may influence total calculation. \*NdPr =  $Nd_2O_3 + Pr6O_{11'}$  \*\* NdPr% / TREO% x 100

JORC Table 1 is attached as Appendix 2.

## **Next Steps and Timeline**

The Stage 1 Kangankunde Project indicative development schedule aims to have funding confirmation by Q3 CY2024, award of all key construction contracts by early Q4 CY2024, commencement of construction in Q4 CY2024, commissioning of the process plant in Q4 CY2025, and first revenue by early CY2026.

Figure 2 Kangankunde Stage 1 Project Indicative Development Timeline

Calendar Year		2024			20	25		20	26
Quarter	Q2	QЗ	Q4	Q1	Q2	QЗ	Q4	Q1	Q2
Feasibility Study complete									
Engineering design									
Funding Confirmation									
Civil works contract award									
Enabling works/bulk earthworks									
Mining contract award									
Process Plant EPC award									
Process procurement and construction period									
Commissioning and ramp up period									
First concentrate production									
First product on ship									

#### - ENDS-

#### This ASX announcement was authorised for release by the board of Lindian Resources Limited.

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<sup>&</sup>lt;sup>7</sup> Updated Mineral Resource Estimate for Kangankunde refer ASX Announcement: 2 May 2024



# **About Lindian**

#### RARE EARTHS

**Lindian Resources Limited** currently has 66% ownership of Malawian registered Rift Valley Resource Developments Limited that has 100% title to Exploration Licence EPL0514/18R and Mining Licence MML0290/22, supported by an Environmental and Social Impact Assessment Licence No.2:10:16.

#### BAUXITE

**Lindian Resources Limited** has bauxite resources (refer company website for access to resource statements and competent person statements) in Guinea with the Gaoual, Lelouma and Woula projects. Guinea is known as the premier bauxite location in the world, having high grade and low impurities premium quality bauxite.

#### **Competent Person Statement**

#### **Mineral Resource**

The Competent Persons' consents for the Mineral Resource Estimate for Kangankunde<sup>8</sup> remain in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resource Estimate of the Kangankunde Projects, and that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

The information in this announcement that relates to Exploration and Metallurgy Results of the Kangankunde Rare Earths Project is extracted from reports released to the Australian Securities Exchange (ASX) and which are available to view at <u>www.lindianresources.com.au</u> and for which Competent Persons's consents were obtained.

The Competent Persons' consents remain in place for subsequent releases by the Company of the same information in the same form and context, until the consent is withdrawn or replaced by a subsequent report and accompanying consent. Unless otherwise stated, where reference is made to previous releases of Exploration Results, Metallurgy Results and Mineral Resources in this announcement, the Company confirms that it is not aware of any new information or data that materially affects the information included in those announcements and all material assumptions and technical parameters underpinning the Exploration Results, Metallurgy Results, and Mineral Resources included in those announcements continue to apply and have not materially changed.

#### **Ore Reserve**

The information in this announcement that relates to the Ore Reserve for the Kangankunde project is based on and fairly represents information and supporting documentation compiled by Mr David Clark, a Competent Person who is a full time employee of Minero Consulting, a company engaged by Lindian Resources. Mr Clark is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Clark has sufficient experience which is relevant to the style and mineralisation of the deposit under consideration and to the activity being undertaken to quality as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Ore Reserves (2012 JORC Code). Mr Clark does not hold any securities in Lindian and consents to the inclusion in this announcement of all technical statements based on his information in the form and context in which they appear.

#### **Forward Looking Statements**

This announcement may include forward-looking statements, based on Lindian's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and

<sup>&</sup>lt;sup>8</sup> Refer to ASX announcement dated 2 May 2024 "Updated Mineral Resource Estimate for Kangankunde"



other factors, many of which are outside the control of Lindian, which could cause actual results to differ materially from such statements. Lindian makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of the announcement.

Appendix 1

ASX:LIN OTCQB:LINIF

JUNE 2024

# Kangankunde Project

STAGE 1 FEASIBILITY STUDY SUMMARY



# Kangankunde Rare Earths Project Feasibility Study Executive Summary – June 2024



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# 1. FEASIBILITY STUDY OVERVIEW

This Feasibility Study (FS) is based on a mining and processing project to produce monazite concentrate from the Kangankunde Stage 1 Rare Earths Project (Kangankunde Project). The Kangankunde Project is located on Lindian Resources Limited (Lindian or the Company) controlled tenure in the south of the Republic of Malawi. The Kangankunde Project is located close to existing transport infrastructure, which includes sealed roads and rail connections to a deep-water port.

As a strategy for de-risking the development of the Kangankunde Project, Lindian decided to implement a two-stage approach to project development, starting with a smaller-scale Stage 1 standalone project. From this, Lindian intends to produce commercial quantities of Rare Earth Oxide (REO) concentrate for sale to customers. This will provide a revenue stream while the Company considers a further expansion of the Kangankunde Project in line with market demand.

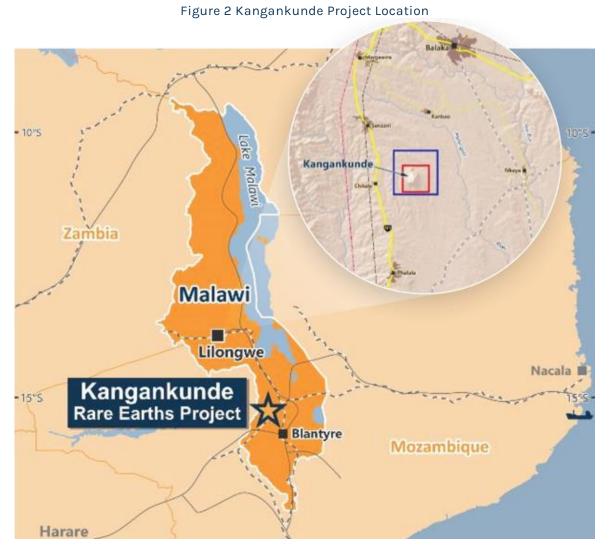
Through the early development phases of the Kangankunde Project, Lindian has established strong local community and government relationships and will provide social and economic benefits to the region. The Kangankunde Project has a number of advantages over its rare earth peers that make it globally competitive, as illustrated in Figure 1.



#### Figure 1 Kangankunde Project's Competitive Advantage



The Kangankunde Project is located 90km north of Blantyre and 13km south of Balaka and is based on a carbonatite-hosted monazite (rare earths) mineral deposit.



This FS examines Stage 1 of the Kangankunde Project's development, which includes mining operations, a mineral processing plant and necessary infrastructure. The Company has completed all key regulatory processes and documents, such as the Environmental and Social Impact Assessment (ESIA) and the Environmental Management Plan (EMP).

Many independent consultants contributed to the FS, providing expertise in geology, mining, metallurgy, plant design and engineering, and civil engineering, including road works and tailing storage facility (TSF) design and hydrology. The Company also engaged expert consultants in financial modelling and the rare earths market.

The Kangankunde Project's operations will include open pit mining within Kangankunde Hill, approximately 200 metres above the surrounding plain, with the processing facilities and associated infrastructure at the base of the hill.



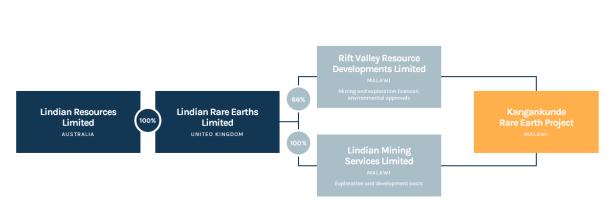
Access to the site is by a sealed road from Blantyre and Balaka via the M1 highway, followed by an unsealed 5km road to the Kangankunde Project site.

The mine lease area covers 900 hectares, with 103 hectares for mining operations and infrastructure.

Various development and operational licences and permits have been secured, including the Medium Scale Mining Licence, ESIA certification (environmental approval), water abstraction licences, explosives licence and waste management permits. The Medium Scale Mining Licence for Stage 1 allows the extraction and processing of monazite in an area of nine square kilometres.

The current holder of key permits is Rift Valley Resource Developments Limited (RVR), currently 66% owned by Lindian as shown in the corporate structure set out in Figure 3.

It is the intent that Lindian will move to 100% ownership of RVR by making the final US\$10M vendor payment at or before process plant commissioning commences.



### Figure 3 Lindian Kangankunde Project Structure

## 2. COMMUNITY AND ENVIRONMENT

## 2.1 Community

The Kangankunde Project enjoys the support of and will significantly benefit the local economy and rural community by promoting sustainable growth, creating jobs, and investing in the community while respecting traditional Malawian customs.

Located in the Traditional Authority Chantunya area and sub-TA Nyala area in the Balaka District, the Kangankunde Project primarily impacts the GVH Makolela community.

The area faces health challenges, including limited medical facilities, malaria, and HIV/AIDS. Lindian is supporting the community to undertake awareness and prevention programs to address this issue.

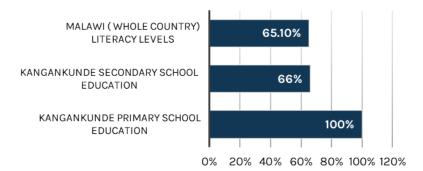
Education levels are low, and schools are overcrowded and poorly maintained. The Kangankunde Project plans to support improvements in local education.



Figure 4 Overcrowded Schools



Figure 5 Education Levels



Source: National Statistics Office, Malawi

The community mainly practices Christianity as a religion, with a Muslim minority. Lindian respects and acknowledges the community's religious practices.

A Community Engagement Plan (CEP) has been developed in collaboration with the local government, traditional leaders, communities, organisations, and women's groups in the Kangankunde Project area. The CEP establishes a committee comprised of community leaders, local community representatives, Government District Council officials, and senior leadership of Lindian.

The committee's purpose is to act as a forum for continued communication and engagement, discussions of matters that might affect either of the parties and defines the process for addressing issues. The CEP has recently been submitted to the Ministry of Mining for verification and registration.



In consultation with the Malawi Government's Ministry of Lands and Balaka Community leaders, a resettlement plan has been agreed to and implemented for Project Affected Persons (PAPs) who are relocating due to the Kangankunde Project development<sup>1</sup>. The imminent completion of the resettlement program will be a critical milestone as it provides Lindian access to the land on which the Kangankunde Project will be developed.

Infrastructure upgrades are also planned, including upgrading a 5km unsealed road from the Kangankunde Project site to the M1 Highway into an all-weather road to enhance safety and accessibility. Communication infrastructure implemented for the Kangankunde Project will also improve community access to reliable communications.

## 2.2 Environment and Social

The Kangankunde Project will have a relatively low environmental impact. An Environmental and Social Impact Assessment (ESIA) identified only minor potential impacts on flora and fauna, land erosion, groundwater extraction, and waste management. Unlike many rare earth projects, the Kangankunde Project's concentrate products and tailings will contain very low levels of radioactive materials and other impurities.

An Environmental Management Plan (EMP) has been developed to ensure mitigation measures are implemented to address all identified matters. An Environmental Monitoring Plan will be implemented from the commencement of operations to support ongoing monitoring of the Kangankunde Project's impacts.

## 2.3 ESG Management

Lindian's Environmental, Social and Governance (ESG) Policy prioritises sustainable and responsible business practices, ensuring long-term community and environmental benefits.

<sup>&</sup>lt;sup>1</sup> ASX Announcement: 12 June 2024



#### Figure 6 Lindian ESG Framework and Systems



# **3. FS CONTRIBUTORS**

The FS was executed by a group of subject matter experts under the management of Lindian's internal team. The FS commenced in mid-2023 and gained specific momentum during Q2 2024 towards its conclusion in late June 2024. Key contributors to the successful study include the parties listed below, but this is not an exhaustive record of all contributions.

RESPONSIBILITY		RESPONSIBILITY	
Civil and road work design, water supply reticulation RAP logistics, and other local approvals	of infracon	Mineral Resource estimation and pit shell optimisation	1 CUBE CONSULTING
Database management	GEOBASE	Process design and concept plant layout	AFacco
	ntertek	Process plant and infrastructure cost estimate development	ORECRAFT Pty Ltd
,		· · · · · · · · · · · · · · · · · · ·	
Metallurgical testwork		RC and core drilling	
naran v		Geology and resource development	GJ Exploration Geological Services
Power systems and supply	ESDOM	Site medical and emergency response assessment	ATA INTERNATIONAL HOLDINGS
Metallurgy testwork and independent management of laboratories	SPECIALISED METALLURGICAL	Tailings storage facility, raw water dam design and	G EOT H E T A
Rare earth markets and pricing	PROJECT BLUE	mine geotechnical	ZITLES D' HERBARDALL CONDUCTOR
Mine planning, design and scheduling	MINE PLANNING	Financial modelling	
Mine engineering project management			



# 4. GEOLOGY AND MINERAL RESOURCES

The Kangankunde Project exhibits significant geological and mineralogical potential with extensive rare earth mineralisation and associated minerals. Extensive exploration and drilling programmes have established a robust Mineral Resource Estimate, positioning it for successful development and long-term resource extraction.

# 4.1 Regional and Project Geology

The Kangankunde carbonatite complex is located in the Chilwa Alkaline Province of Southern Malawi. The carbonatite is aged between 117-129 million years and forms a distinctive low hill, rising approximately 200 metres above the surrounding plain.

The complex has a central carbonate core surrounded by zones transitioning from carbonatite-rich rock, composed primarily of dolomite, siderite and ankerite, to fenitised polymictic breccias and gneiss.

Rare earth mineralisation is dominated by monazite ((RE)PO<sub>4</sub>). Unlike many rare earth deposits, significant mineralisation is found in all rock types at Kangankunde, albeit primarily in carbonatite-rich rocks and breccias, and even extends into surrounding wall rocks in veins and stockworks.

Structural disruptions include NW/SE striking faults with sub-vertical dips, causing up to tens of metres of displacement and affecting carbonatite mineralisation contacts with surrounding brecciated wall rocks.

## 4.2 Mineral Resources

The Kangankunde Project's Mineral Resource Estimate (MRE) was conducted in April 2024 by Cube Consulting using data from drilling programs conducted between October 2022 and October 2023<sup>2</sup>.

The reported Mineral Resource Estimate, inclusive of Ore Reserves (provided in a later section), is presented in Table 1<sup>2</sup>.

Table 1 Kangankunde Rare Earths Project Mineral Resource Inclusive of Reserves Above 0.5% TREO Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (%)	NdPr% of TREO** (%)	Tonnes Contained NdPr* (millions)
Indicated Resource	61	2.43	20.1	0.3
Inferred Resource	200	2.05	20.4	0.8
Total Resource	261	2.14	20.3	1.1

Rounding has been applied to 1.0Mt for tonnes and 0.1% NdPr% of TREO, which may influence the total calculation.\* NdPr = Nd<sub>2</sub>O<sub>3</sub> + Pr<sub>6</sub>O<sub>11</sub>, \*\* NdPr% / TREO% x 100

<sup>&</sup>lt;sup>2</sup> ASX Announcement: 2 May 2024



In terms of future exploration upside, two deep drill holes confirmed mineralisation continuity to 1,000 metres below the surface. An exploration target range, in addition to the current Mineral Resource, of 400 to 800 million tonnes at 2.0 to 2.7% TREO has been identified<sup>3</sup>.

# 5. MINING AND ORE RESERVES

## 5.1 Background and Scope

The Kangankunde deposit has a history of mining studies and activities.

Between 1972-1981, Lonrho South Africa developed a sample underground drive covering 300 metres with crosscuts. From 1987-1990, various development studies were conducted by third parties, including surface core drilling, processing, and geotechnical and groundwater studies. However, this historical data is limited, only available in hard copy, and is not JORC compliant or complete.

This FS mining scope includes:

- Establishing the mine and related mobilisation.
- Drilling, blasting, loading, and hauling ore and waste to stockpiles.
- Crushing/screening ore on the run-of-mine (ROM) pad and feeding crushed ore into the process plant.

The mine design and schedules are based on the following:

- A processing rate of 450,000 tonnes per annum.
- Mining of Indicated Mineral Resources, converted to Ore Reserves, as plant feed.
- The mine design was derived from a Whittle optimisation based on operational, sustaining capital costs and target NdPr prices.

## 5.2 Contract Mining Scope

Contract mining will be employed for drill, blast, load, and haul operations. The mining contractor will also provide ore crushing, crushed ore feed to the processing plant, and intermittent ore rehandling. Mining contractor establishment includes:

- Mining-related earthworks for infrastructure and roads.
- Construction of mining workshop and office.
- Establish an explosive magazine and crusher/screening facility.

<sup>&</sup>lt;sup>3</sup> ASX Announcement: 5 October 2023. The potential quantity and grade of the Exploration Target is conceptual in nature and therefore is an approximation. There has been insufficient exploration to estimate a Mineral Resource in the area considered an exploration target and it is uncertain if further exploration will result in the estimation of a Mineral Resource. The Exploration Target has been prepared and reported in accordance with the 2012 edition of the JORC Code.



## 5.3 Mining Operating Parameters

Mining operations are structured as follows:

- Drill and blast: 5 days/week, 9 hours/shift.
- Load and haul: 5 days/week, 9 hours/shift.
- Ore crushing: Continuous operation, 7 days/week, 12 hours/shift.
- Crushed ore feed: Continuous operation, 7 days/week, 2 shifts/day, 12 hours/shift.
- Ore rehandle: 5 days/week, 9 hours/shift.

# 5.4 Geotechnical and Pit Optimisation

Geotheta's geotechnical study recommended overall slope angles between 45° and 55° and bench face angles not exceeding 82°. The study provided guidelines for mine pit geometry, slope maintenance, and safe mining practices.

Cube Consulting conducted a range of pit optimisation shells using Whittle software, focusing on Indicated materials.

Optimisation parameters included:

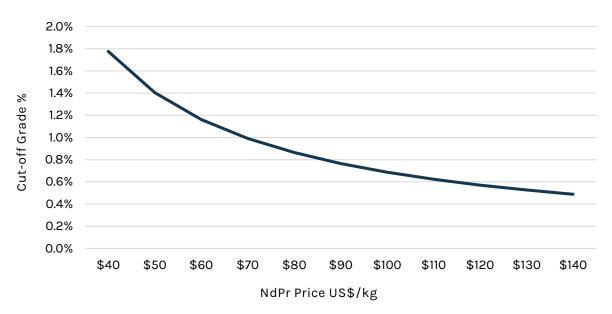
- Geological block model re-blocking.
- No ore loss factor, considering the cut-off grade and mineralisation style.
- Assumed offtake agreement tonnages for concentrate product.
- Annual processing rate of 450,000 tonnes.

Revenue and cost setups for optimisation were based on Project Blue NdPr price ranges. The optimisation included detailed cost inputs for metallurgical recoveries, processing, general and administration (G&A), corporate costs, ore crushing, sustaining capital, and mining direct costs. The optimisation highlighted that material optimised as ore is insensitive to an Ndpr price down to \$50/kg. The cutoff grade varies with the NdPr price. A 1.0% cut-off was selected for the FS.



Figure 7: Cut-off grade vs. NdPr price

#### (showing the relationship between NdPr prices and cut-off grade)



## 5.5 Mine Preparation Works

General early mining preparation will include the following activities:

- Vegetation clearing of progressive pit stages.
- Periodic earthworks, including pit stage levelling, haul road construction and hardstand/stockpile areas.

Drill and blast design parameters were established based on the geotechnical evaluation and site observations.

## 5.6 Loading and Haulage

- One 75t hydraulic excavator will load all blasted material into dump trucks.
- Three to four 50t dump trucks will haul from each mining stage to the ROM pad or other material stockpile as required. An average haulage distance of 2km is estimated over the life of mine.

## 5.7 Ancillary Equipment

Support equipment, including watercart, dozer, grader, crane, rock breaker, and support vehicles, will be deployed.

## 5.8 Grade Control

Grade control is planned to be carried out via on-site XRF analysis in a mobile laboratory using blast hole chips.



# 5.9 ROM Pad and Ore Handling

Ore from the pit stages will stockpile onto the crusher ROM pad, where excess ore will be directed to the ROM overflow stockpile. Some minor rehandling of ore will be required throughout the processing schedule.

# 5.10 Crushing and Screening

The mining contractor will provide and operate ore crushing via a 150tph primary jaw crusher to a secondary cone crusher and screening. This crushed ore will be fed into the processing plant on a continuous basis to deliver the planned ~450,000 tpa plant throughput.

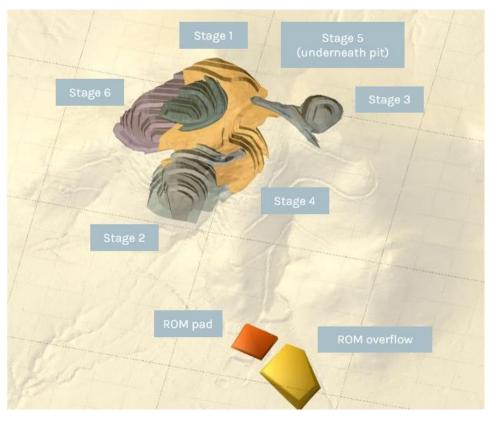
## 5.11 Mine Design

Pit Design Principles and Stages

Pit stage designs incorporated the following parameters:

- Pit wall angles, berm width, minimum mining width, and road width.
- Cut-off grades of 1.0% NdPr.

The mine was designed in six stages to ensure a steady availability of on specification grade ore.



#### Figure 8 Mine Design

Additional material-grade bins were established for low-grade, sub-grade, and waste.



#### Table 2 Mining Material Grade Bins

Mining Material	Grade Range	Comment
High Grade	>3.0% TREO	Priority plant feed
Medium Grade	2.0%-3.0% TREO	Priority plant feed
Low Grade	1.0% - 2.0% TREO	Makeup plant feed
Sub Grade	>0.5% - <1.0% TREO	Stockpiled as a separate stockpile
Waste (includes inferred material)	<0.5% TREO	Stockpiled as a separate stockpile

## 5.12 Mining Physicals

The Kangankunde Project's high-grade, near-surface mineralisation has delivered an outstanding result for mining operations, including:

- 19.5Mt of high-grade feed at 3.1% TREO as part of the 23.7Mt of Ore Reserves.
- Very low strip ratio and low mining volume rate requirement.
- Low-cost operation.
- High ore conversion of selected optimisation shell and shell insensitivity to low NdPr price.
- Low ore loss.

Mining physicals for both annual mining and totals are summarised in Table 3.

Reserve Pit Stages - Metric	Unit	Value	Years
Annual total material mined	kt	613.7	45
Annual Ore Mined			
Priority mill feed	kt	434.0	45
Low Grade	kt	91.8	45
Total	kt	525.9	45
Total Ore Mined			
Priority mill feed	Mt	19.5	45
Low Grade	Mt	4.1	45
Total	Mt	23.7	45
Strip ratio	Waste: Ore	0.2	
Grade mined			
Priority mill feed	% TREO	3.1	
Low Grade	% TREO	1.7	
Total	% TREO	2.9	

#### Table 3 Mining Physicals



## 5.13 Ore Reserve

The Ore Reserves for the Kangankunde mine, estimated according to JORC 2012, amount to 23.7 million tonnes (Mt) at a grade of 2.9% Total Rare Earth Oxides (TREO) (JORC Table 1 is attached as Appendix 2). These reserves fall entirely within the Probable category, based on a cut-off grade of 1.0% TREO.

To access these reserves, 3.9Mt of other rock material must be mined, including Sub Grade Material, Inferred Material, Waste, and Rill. This results in a stripping ratio of 0.2 to 1 (waste tonne to ore tonne).

Table 4 presents the open-pit Ore Reserves estimate for the Kangankunde Project.

Classification	Ore Tonnes (Mt)	TREO Grade (%)	NdPr % of TREO	Contained TREO (kt)
Proved	-	-	_	-
Probable	23.7	2.9	20	676
Total	23.7	2.9	20	676

#### Table 4 Ore Reserve

Key notes to the Ore Reserve:

- Figures are rounded to the appropriate precision for Ore Reserves reporting.
- Some columns or rows may not total exactly due to rounding.
- Ore Reserves are stated as in-situ dry tonnes and reported in metric tonnes.
- The Ore Reserve classification follows JORC Code (2012) guidelines, with all ore in the Probable category.
- These Reserves are derived from Indicated Mineral Resources.
- Ore Reserves are reported at an NdPr price ranging from US\$53.6/kg to US\$112.7/kg, averaging US\$107.7/kg.
- The inventory above, with a defined cut-off, is delivered to the processing plant as the study prescribes.
- Modifying factors applied are summarised in Appendix 2- JORC Code 2012 Edition Table 1.
- No known legal, political, environmental, or other risks could materially impact the potential Ore Reserves.

# 6. METALLURGY

## 6.1 Historic programs

The Kangankunde Project has undergone extensive metallurgical testing conducted by various project owners. The key historical work includes:

- 1. 1990s-2000s: Partial reports from South African testwork focused on gravity beneficiation using spirals and shaking tables, though no comprehensive reports are available.
- 2. 1980s-1990s: The French Geological Survey (BRGM) conducted pilot plant campaigns in France and at the Kangankunde site, achieving a monazite concentrate grade of 59% ± 4% REO with a 55-65% metallurgical recovery.
- 3. 1960s-1970s: Lonrho's testwork employed gravity, magnetic, and hightension separation flowsheet, achieving a concentrate grade of 60% TREO with 50-60% recovery from mineralisation grading 6.5% REO and 10.4% Sr.



4. Other Work: Beneficiation testwork at Battelle Memorial Institute and Warren Spring Laboratory demonstrated recovery and concentration capabilities using flotation and magnetic separation techniques.

## 6.2 FS Programs

Recent metallurgical programs have been comprehensive and are summarised in Table 5.

Program	Details	Findings
Initial Assessment	Conducted by Geolabs Global, Gravity Mining, and Nagrom. Activities included comminution, gravity beneficiation (shaking tables and multi-gravity separators), and magnetic separation.	Surface rock samples indicated low-grade concentrates with shaking table testwork and acceptable grades and recoveries using multi-gravity separators. Wet high-intensity magnetic separation (WHIMS) effectively separated monazite from impurities.
Pre-scoping	Conducted by ALS Metallurgy, Specialised Metallurgical Services, Steinert, and Nagrom. Activities covered comminution testing, gravity beneficiation (shaking tables, multi- gravity separators), ore sorting, and magnetic separation.	Further testing on surface samples provided insights into process flowsheet development. It indicated low to moderate bond rod and ball mill work indices and beneficiation potential using shaking tables and MGS, with intermediate concentrates grading around 30-40% TREO. Ore sorting showed the potential to upgrade mineralisation before milling.

#### Table 5 FS Metallurgical Work Programs



Program	Details	Findings
Scale-up Testing and	Conducted by Geolabs	Testing on 1-tonne samples
Further Exploratory	Global, Multotec,	demonstrated that
Work	LightDeepEarth, Coremet,	vibrating screens were
	Bureau Veritas Minerals,	preferred over
	Nagrom, ANSTO Minerals,	hydrocyclones for
	Roytec, and Tomra.	classification in milling
		circuits.
	Activities included	Beneficiation of
	sample preparation,	mineralisation fractions
	initial classification and	for one sample by MGS and
	spiralling, screening,	WHIMS achieved a 48%
	magnetic separation,	TREO concentrate upgrade
	radiological assessment,	to 64% TREO. Further work
	flocculation and	is ongoing to settle an
	thickening, and ore	optimum removal of Fe-Mn
	sorting.	minerals, resulting in even
		higher-grade concentrates.
Drill Core Testing	Conducted by ALS	Drill core samples
	Metallurgy, Specialised	underwent various tests,
	Metallurgical Services,	including comminution,
	and Bureau Veritas	mineralogy, and multi-
	Minerals.	gravity separation,
		revealing rare earths
	Activities included	primarily as monazite with
	comminution, sample	associated gangue
	compositing and	
	analysis, mineralogy	ankerite.
	(XRD and QEMSCAN),	
	concentrate analysis	
	(HLS), sulphide flotation,	
	multi-gravity separation,	
	and magnetic	
	separation.	
Radiation	ANSTO analysed two	TREO concentrate samples
	high-grade TREO	were not classified as
Que Queti é	concentrate samples.	radioactive for transport.
Ore Sorting	Testwork at Tomra.	Showed the ability to
		upgrade mixed breccia
		mineralisation from
		approximately 2.2% TREO to
		3.9% TREO, providing
		flexibility for the mining
		schedule.



Additional testwork programs, including bulk sample and variability testing, were recommended by experts and will be implemented during the next few months.

## 6.3 Potential Typical Product Specifications

The indicative product specification for the Kangankunde Project's concentrate, based on available samples to date, are shown in Figure 9.

Typical Typical					i										
REO	La <sub>2</sub> O <sub>3</sub>	CeO <sub>2</sub>	Pr <sub>6</sub> O <sub>11</sub>	Nd <sub>2</sub> O <sub>3</sub>	Sm <sub>2</sub> O <sub>3</sub>	Eu <sub>2</sub> O <sub>3</sub>	Gd <sub>2</sub> O <sub>3</sub>	Tb₄O <sub>7</sub>	Dy <sub>2</sub> O <sub>3</sub>	Ho₂O <sub>3</sub>	Er <sub>2</sub> O <sub>3</sub>	Tm <sub>2</sub> O <sub>3</sub>	Yb <sub>2</sub> O <sub>3</sub>	Lu <sub>2</sub> O3	Y <sub>2</sub> O <sub>3</sub>
%	28.8	50.30	4.85	14.5	0.90	0.15	0.25	0.02	0.05	0.01	0.01	0.001	0.005	0.001	0.15
Other ele maximu		expected	1	Me	asureme	ent		μ	Amount						
Sr+Ba, co	mbined				%					10.0	.00				
Fe+Mn, c	ombined	1			%					10.0	00				
Sulphide	)				%	%			0.01			01			
Radionu	clides														
U <sub>3</sub> O <sub>8</sub>	D <sub>8</sub>				ppm						6				
ThO <sub>2</sub>	hO <sub>2</sub>				ppm					5	0				
ThO <sub>3</sub>	'hO <sub>3</sub>			%			0.0044		4						
UO3					%			0.0685		5					
U-238	U-238			Bq/g			0,36 - 0,55			5					
Th-232					Bq/g			2,5 - 2,8			в				
Freight c	ategoris	ation		Class			Ge	General freight (not Class 7)							

#### Figure 9 Product Specification

Notes:

- Based on intermediate and final concentrates produced in to-date in laboratory and typical REO distribution in resource.
- These estimates are indicative of concentrate product achievable at Kangankunde based on current testwork.
- Main contaminants are Ba-Fe-Mn minerals. This appears resolvable and will remain the subject of ongoing testwork.

# 7. PROCESSING

The unique mineralogy of the Kangankunde Project's ore makes it favourable to relatively high levels of REO recovery, mainly through a physical process of gravity and magnetic separation. As a result, the Kangankunde Project's flowsheet only requires a small flotation circuit at the back end of the plant to reduce impurities (such as sulphides). This is considered a simple flowsheet compared to other rare earth projects that rely on a significant flotation circuit and, therefore, a high use of reagents to remove impurities.

It is also important to note that the Kangankunde Project's ore has very low levels of radionuclides, and as such, the handling of concentrate and waste disposal is simple and inexpensive. It will also significantly improve the product's marketability, as it can be shipped to most potential buyer countries without restrictions.

The clean process of gravity and magnetic separation also means that water is recirculated to the plant without requiring any expensive water treatment.



# 7.1 Process Description

The process plant is designed to process mined material through various stages, from initial crushing to final concentrate production. The plant layout and operations are illustrated in the simplified flowsheet and Process Flow Diagrams (PFDs), with key steps detailed below:

Area 100: ROM Pad, including mobile crushing and screening

- Mined material is transported to the ROM pad and stored in finger stockpiles for blending.
- A two-stage mobile crushing (jaw and cone crusher) and screening plant will operate during the dayshift, producing -20mm crushed material for the mill.

Area 200: ROM feed bin and conveyor

- The -20mm ore is loaded into a 90-tonne capacity ROM feed bin, providing 1.5 hours of residence time at a feed rate of 60 tonnes per hour.
- Ore is transferred via vibrating plate feeders onto a conveyor, feeding the ball mill.

Area 300: Milling and classification

- The ore is milled to liberate monazite. Milled material passes through a trommel and into a sump, with oversized scats periodically removed.
- The slurry is pumped to a scalping screen for preliminary classification, with undersized material processed further through stack sizer screens.

Area 400: Gravity separation

- The -106µm slurry is pumped to a deslime cyclone cluster to remove ultrafine particles.
- Initial rougher gravity separation is conducted using Multi-Gravity Separators (MGS), achieving a concentrate grade of approximately 30% TREO.
- Cleaner gravity recovery further upgrades the concentrate to 35-45% TREO.

Area 500: Magnetic separation

- The cleaner gravity concentrate undergoes magnetic separation through Low-Intensity Magnetic Separators (LIMS) and Wet High-Intensity Magnetic Separators (WHIMS).
- Magnetic fractions are collected and further processed, while non-magnetic fractions are discarded.

Area 550: Sulphide flotation

- The magnetic fraction is conditioned and subjected to rougher/scavenger and cleaner flotation to remove impurities.
- The final monazite concentrate is collected, and sulphide tailings are discarded.



Area 600: Concentrate dewatering and storage

- Monazite concentrate is dewatered using a filter press to achieve a moisture content below 12%.
- The concentrate is dried in bunkers and bagged for storage and dispatch.

Area 700: Tailings thickener and plant water

- Combined tailings are pumped to a thickener for solid-liquid separation, recovering process water.
- Tailings are pumped to the Tailings Storage Facility (TSF).

Area 750: Tailings storage facility (TSF) and return water dam (RWD)

• Tailings are discharged into the TSF, with water harvested and pumped to the RWD following which the recycled water is returned to the process plant.

Area 800: Reagents and Services

• Facilities include preparation and dosing of reagents, product storage, compressed air, diesel delivery, water supply, and fire water systems.

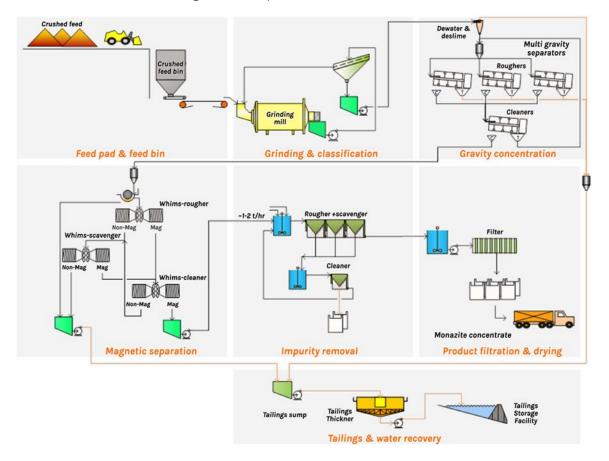


Figure 10 Simplified Process Flowsheet



## 7.2 Design Basis

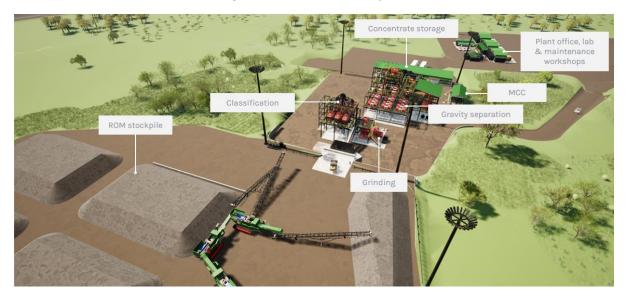
The process plant is designed with a 45-year mine life, operating at an availability of 86%, with key parameters summarised in Table 6.

Criteria	Unit	Value
Mine Life	years	45
Overall Process Plant Availability	%	86
Plant Availability per year	hr/a	7,500
Process Plant feed rate	t/hr	60
	t/day	1,233
	t/a	450,000
TREO Feed Grade - Range	%	2.0 - 4.3
TREO Feed grade – Nominal Design	%	3.11
TREO Recovery	%	60
TREO Concentrate Grade – Variability Range	%	45 - 60
TREO Concentrate Grade – Average Estimated	%	55

#### Table 6 Design Basis

The following diagrams present the current layout of the process plant and its supporting infrastructure.

#### Figure 11 Process Plant Layout







## 7.3 Support Infrastructure

The Stage 1 development plan for the Kangankunde Project covers an area of 364 hectares. The site is divided into specific zones to support mining and processing activities.

#### Table 7 Site Areas

Area	Details
Mining Stages	The Kangankunde Project includes six mining stages covering 210 hectares. A 500-metre blasting exclusion zone has been established from these stages. The mining stages connect to a processing area ore stockpile area for primary crushing and screening before final processing to concentrate.
Processing Area	The ore processing area is the central hub of the mine site, designed to process 60 tonnes of ore per hour. It includes dedicated storage for concentrate, areas for drying, packing, and loading, and a small laboratory. An additional area to the south is reserved for future expansion of the processing plant.
Tailings Storage Facility (TSF)	Post-processing waste will be contained in a Tailings Storage Facility (TSF) covering 36 hectares. A downstream Raw Water Dam (RWD) will collect and treat water from the TSF for reprocessing. The initial TSF is designed to operate for 10 years, with a design for a 30-year expansion toward the east boundary of the Mining Lease.
Explosives Magazines	An Explosives Storage Facility, compliant with the Malawi Explosives Act, is located away from other facilities to the north of the deposit. The Malawi Explosives Inspectorate has permitted the Company to construct the magazine, and construction will commence with other preliminary civil works.



Area	Details
Power Supply	Processing operations require 3.0 Mega Watts (MW) of power, sourced from the national grid and 100% hydro-generated and supplemented by a diesel backup generator. A 24-km power line corridor from the existing substation has been planned, and supply and construction tenders by recommended local contractors have been submitted and are under evaluation. The necessary power supply agreement with the national supplier is under review. Refer additional explanation below.
Water Supply	Hydrogeotech assessed process water supply options through geophysical surveys, drilling, and water quality analysis. Pump testing indicated viable water flow rates, with boreholes KGKWB002 and KGKWB004 showing safe yields of 2.5 to 3.5 litres/second. This is sufficient water supply for Stage 1 operations. Water will be sourced from dedicated boreholes, yielding an estimated 5 litres per second, stored in two reservoirs. The first, with a 500 cubic metre capacity, serves the processing plant and mining requirement, augmented by recycled water from the RWD. The second, a 100 cubic metre reservoir, supplies treated water for domestic use.
Administration Area Building	An administration building will be constructed, initially serving as contractors' offices during construction and transitioning to an operations office. The administration area buildings will include ablutions and crib facilities for workers. It will also house an on-site clinic and ambulance bay.
Medical & Emergency Response	There is an acceptable medical facility within 40 minutes (Balaka District Hospital) and specialist facilities approximately two hours away (Queen Elizabeth Central Hospital). The Company will provide an on-site first-aid treatment facility equipped with qualified practitioners, medicines, and equipment to handle minor health issues and stabilise more serious injuries for transport. The Company will implement health, safety, and environment (HSE) policies, procedures, and systems to mitigate these risks. Emergency response procedures will clearly define roles, responsibilities, and actions, with mandatory personal protective equipment (PPE) and training for high-risk activities. The Emergency Response Team will be trained in rescue and recovery systems.



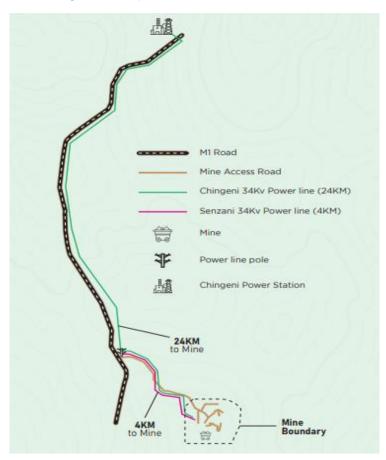
Area	Details
Accommodation	Accommodation is available off-site within the local community, with company personnel commuting to the site. Contractors can provide off-site accommodation and commute or set up on-site facilities for accommodation and meals.
Roads	A 5km unsealed road connects the mine site to the M1 main road, which will be upgraded to an 8m wide all-weather gravel road. Additionally, 1.5km of similar roads will be built within the mine site for plant and delivery vehicles. Safety will be prioritised during the construction and use of these roads.

## 7.4 Power Supply

The Company, in collaboration with the Malawi Electricity Supply Commission (ESCOM), has identified grid power infrastructure options, including:

- A tie-in point to an existing power line approximately 4 km from the site.
- A dedicated feeder from an existing substation about 24km from the site.

Based on an engineering scope provided by ESCOM, tenders for the construction of the above transmission lines have been conducted with energy available prior to commissioning of the Stage 1 processing plant.



### Figure 12 Proposed Power Infrastructure



A backup site diesel generator is included in the D&C process plant tender. The grid reliability is sufficiently high for the Company to plan on utilising electricity from the grid for its site energy requirements with the generator as a standby unit. Grid energy costs are estimated at US\$0.103 per kWh.

# 8. PROJECT IMPLEMENTATION

## 8.1 Environmental and Regulatory Compliance

The Kangankunde Project secured an ESIA certificate (environmental approval) from the Malawi Environmental Protection Authority in October 2021. Following this a Medium-Scale Mining Licence, valid until April 2032, was granted in April 2022.

Additional licences and permits received include:

- Water extraction permits for borehole water.
- Explosive magazine licence for storage during mining.
- Exploration licence valid until October 2025.

There are a number of secondary approvals that will be progressed as information becomes available to facilitate their submission.

## 8.2 Contracting Strategy

The Kangankunde Project's contracting strategy involves various models to reduce risk, costs, and schedule:

- Construction-only contracts.
- Design and Construction (D&C) contracts are on a lump sum or a rate schedule basis.

The Company has categorised the works and compiled tender packages for pricing by contractors. Management centres and contract types are detailed in Table 8.

Management Centre	Contract Pricing	Contract Type
Mining	Schedule of Rates and	Services
	Lump Sum	
Roadworks and Civil works	Schedule of Rates	Construction
Process Plant and Non-	Lump Sum	Design and Construction
Processing		
Infrastructure		
Owners Team	Schedule of rates	Employment and
		Consultancy agreements
Contingency	% of contract value	N/A

#### Table 8 Capital Costs Allocation



# 8.3 Engineering and Design

Engineering packages for roads, civils, and bulk earthworks were awarded as part of early works and issued for tender. The process plant design is based on progressive metallurgical testing, developing Process Design Criteria (PDC), Process Flow Diagrams (PFDs), and a concept 3D model. These formed the basis for the design and construct (D&C) tender for the process plant and related infrastructure.

Detailed design works for the development of the Stage 1 process plant have commenced. Lindian has engaged two experienced D&C contractors on a Limited Notice to Proceed basis. This will advance detailed design for procurement and construction of the Stage 1 process plant and associated infrastructure, including related non-processing infrastructure, storage facilities, structure pre-fabrication and concrete footings.

Following confirmation of funding solutions and a final investment decision (FID) by the Lindian board, one of the two D&C contractors will be awarded the final D&C contract<sup>4</sup>.

# 8.4 Project Organisation

An owner's team based in Perth and onsite will oversee project implementation. The team includes expertise in project management, technical, and construction management and will ensure compliance with health, safety, quality, controls and productivity standards. Key roles include the Project Director, Mining Lead, Geology Lead, Civil Lead, Process Plant Lead, Metallurgical Lead, Commissioning Lead, Project Support (Controls), Stage 2 Study Lead, and Site/Construction Manager.

The peak number of contractor personnel involved during the construction phase is estimated to be 200. The peak full-time equivalent owner team representatives (including multiple roles for H&S, Environment, Security and Admin) during the construction phase are estimated to be 30.

## 8.5 Early Works

Early works leading up to FID include setting up the Kangankunde Project team's construction support facilities, ensuring project affected people (PAP) resettlement has been completed, and meeting government requirements for civil works contractor mobilisation. Early works include the water supply borefields, access roads, contractor areas, communications systems, bulk earthworks, local accommodation upgrades and site utilities.

The Multi Gravity Separator's (MGS) design and procurement drive the critical path, and there is consideration for early engagement with the vendor of this equipment.

<sup>&</sup>lt;sup>4</sup> ASX Announcement: 12 June 2024



The Company will maintain the implementation schedule by liaising with suppliers of long-lead equipment, making early agreements with power infrastructure contractors, and monitoring the resettlement of PAP.

### 8.6 Project Schedule

Following the final investment decision or a funding confirmation decision by the Company's board, an 18-month timeline is anticipated for design, construction, commissioning, and ramp-up to "first product on ship". Key milestones are summarised in Figure 13.

Calendar Year	2024		2025			2026			
Quarter	Q2	Q3	Q4	Q1	Q2	QЗ	Q4	Q1	Q2
Feasibility Study complete									
Engineering design									
Funding Confirmation									
Civil works contract award									
Enabling works/bulk earthworks									
Mining contract award									
Process Plant EPC award									
Process procurement and construction period									
Commissioning and ramp up period									
First concentrate production									
First product on ship									

#### Figure 13 Stage 1 Indicative Implementation Schedule

# 9. OPERATIONS AND LOGISTICS

The Kangankunde Project's operations philosophy will use a structured and efficient approach to ensure optimal performance and logistics management.

## 9.1 Operations Overview

Stage 1 involves developing infrastructure and a processing plant designed to handle a throughput rate of 60 tonnes per hour for an annual throughput of ~450,000 tonnes, producing a nominal 15,000 tonnes of rare earth monazite concentrate per annum with a 60% recovery rate and an average TREO grade of 55%.

Mining operations will run with a selected fleet operating on nine hours a day, five days per week. A sufficient stock of ore will be maintained on the ROM pad to ensure a continuous feed for the process plant.

Based on this roster, additional mining capacity will be available if needed for increased production. Crushing will be performed using a mobile electric crusher, with continuous 24/7 operations for crushing and processing. The concentrate will be filtered and dried, ideally to approximately 2% moisture content, for bagging and transport to Nacala Port.

The mining activities will include contract-based drilling, blasting, loading, hauling, crushing, and screening. The processing plant will operate continuously and be supported by a laboratory, backup power, fuel storage, maintenance workshops, administration and other necessary facilities.



Internal roads, pipelines, power lines, and communication systems will interconnect the processing plant and associated infrastructure. Bagged rare earth monazite concentrate will be transported about 780km to Nacala Port for export.



Figure 14 Site Layout Plan

# 9.2 Operating Philosophy

The operations will encompass several key functions:

- Mining Operations: Drill and blast, load and haul, ROM pad and crushing operations
- Process Plant Operations: Control and maintain coarse ore feed, grinding, multi-gravity concentrators, magnetic separators, filtering, product dewatering, packing, tailings management and return process water.
- Logistics Operations: Transport consumables, parts, and concentrate products to and from the site, including port, intermodal, rail, road transport, and site loading/unloading by contract service providers.
- Laboratory Services: Provision of equipment, consumables, systems, and personnel.
- Site Services: Utilities maintenance and operations, including water, power, roads and communications.
- Maintenance: For plant mobile equipment and fixed plant.
- Business Services: Safety, health, training, community relations, environmental monitoring, and general administration.

## 9.3 Product Logistics

Four options were considered for transporting concentrate product from the Kangankunde Project in Balaka, Malawi, to customers.

The most economical option is road and rail transport from the Kangankunde Project to Nacala Port, Mozambique, due to the second shortest distance and lowest cost.



#### Table 9 Transport Options

Transport Options	Mode	Distance (Km)
Option 1: To Nacala, Mozambique	Rail	780
Option 2: To Beira, Mozambique	Road	722
Option 3: To Durban, RSA	Road	1,782
Option 4: To Dar Es Salaam, Tanzania	Road	1,516

The monazite concentrate product will be bagged into 1-tonne bulk bags and stored on-site undercover, awaiting despatch to Nacala Port. The bagged products will be loaded onto 30-tonne trucks for transport to the rail siding at Limbe, Malawi, where the bags will be packed into a 40-foot container, transported by rail to the Nacala Port, and stored undercover in interim storage.

A logistics service provider will be contracted to oversee the process, ensuring coordination, customs documentation, tracking, and efficient movement of concentrate product from the mine to Nacala Port until it is loaded onto ships for transportation to the end customer.

A cost estimate for container sea freight from Nacala Port to the Chinese Port of Qingdao was obtained to calculate a product CIF cost for the financial model.

### 9.4 Operational Human Resources

The operation's organisational structure reflects typical mining operations, focusing on mining, plant management, community, environment, business services, and health and safety.

Operational personnel will be allocated across various departments, resulting in approximately 108 employees, excluding off-site logistics services.

Department	Employee Numbers
Mine Management	8
Mining Operations – indirects	10
Plant	51
Exploration	1
Business Support Services	18
Commercial and Marketing	10
Environment and Community	6
Health and Safety	4
Total	108

#### Table 10 Lindian Labour Totals Per Area (Direct Labour Only)



Kangankunde will utilise a dual approach of corporate and local support. Lindian's headquarters in Perth, Australia, will provide strategic direction and specialised technical support, while operational and business support services will be managed locally in Balaka, Malawi.

The HR strategy complies with relevant Malawian legislation, including:

- Employment Act,
- Pension Act,
- Workers Compensation Act,
- Labour Relations Act,
- Taxation Act, and
- Mines and Minerals Bill.

### 9.5 Human Resource (HR) Functions

The HR functions will cover recruitment, onboarding, payroll, performance management, and employee engagement. It will also include wellness programs and a focus on developing local talent to fill technical and managerial roles eventually. This will be planned by Perth and implemented by Malawi-based employees.

### 9.6 In-Country Management Structure

A General Manager Operations will be appointed during the early construction phase to oversee all in-country operations and community and government liaison activities.

This role will also be the key decision maker for site roles recruitment and onboarding and ensuring operational readiness. The recruitment strategy will emphasise skilled professionals and cohesive management teams.

The staffing approach is phased, beginning in 2H 2024, focusing initially on senior management and essential roles, with peak employment reached by late 2025 and steady-state staffing by Q1 2026. The total number of employees at steady state will be approximately 108, excluding contractors (see Operations section).

### 9.7 Local and Expatriate Workforce

There will be a strong emphasis on developing Malawian nationals in many roles through structured training programs. Local recruitment will, therefore, be a key strategic driver. However, given the nascent stage of the mining industry in Malawi, the mine may initially need to rely on expatriates for critical senior and technical roles.

Lindian will implement comprehensive skills programs, health screening, and primary health education to ensure a fit and healthy workforce. The Company aims to attract and retain top talent by offering competitive salaries at the 50% industry benchmark and benefits that support and foster a positive company culture.



### 9.8 Accommodation and Transportation

Balaka is the primary location for employee accommodation. Lindian plans to secure (through lease or purchase) approximately 30-40 accommodation units in town, primarily for the construction phase owner's team and its consultants. These units will then be converted to accommodate the longer-term operational workforce.

The transportation plan from Balaka to the Kangankunde Project includes a company-provided bus service for most employees and individual vehicles for management-level expatriates.

# 10. CAPITAL COST

### 10.1 Methodology

The capital cost estimate is based on detailed works and documentation supporting the costs for various project components, including:

- Road and civil-related earthworks.
- Tailings Storage Facility (TSF) and Return Water Dam (RWD).
- Design and construction of a process plant and related infrastructure
- Infrastructure development for power to the site.
- Site support and ancillaries.
- Mining infrastructure.
- Project and site management.
- Detailed engineering.

The estimate aligns with the requirements of an AACE Class 2 estimate, with sufficient project definition and controlled tender processes to achieve high-cost accuracy.

Different methods were used for accurate cost compilation, tailored to each discipline and risk reduction strategy. The Company's strategy involved progressing with sufficient engineering work to develop and issue tenders for capital works. The estimate's primary and secondary characteristics are detailed in the discussions below.

Key estimation activities included:

- Invitations to bid
- Scope of work
- Pricing schedules
- Technical documents
- General terms and conditions
- Relevant codes and standards



## 10.2 Project Management Costs

The Kangankunde Project's capital costs are based on the planned organisational structure and are estimated considering the involvement of contractors during execution.

Table 11 Project and	Site Management Costs	Estimation Methods
idble if floject and	one management oosts	Lotination Methods

Area	Details
Civil Works	Engineering design drawings and documents compiled for tender, including road and bulk earthworks, water supply, sewage disposal, TSF, and RWD construction. Tenders are on a schedule of rates basis, with BoQs developed by Infracon and Geotheta.
Process Plant	Preparation of PFDs, PDC, equipment list, and 3D model for tender. Tenders are on a lump sum pricing basis with variation rates for changes. Equipment reliability and performance are contractor responsibilities.
Power	A backup generator is included in the D&C process plant tender. Tenders for infrastructure works prepared in collaboration with ESCOM for grid power supply.
Site Support and Ancillaries	Costs identified for supporting site activities and critical insurance spares. Commissioning spares are included in the D&C plant tender.
Mining	Owner's costs are based on the organisational structure for mine management and technical services. Mining contractor management is based on a fixed monthly fee.
Project and Site Management	Costs are assessed based on the involvement of third-party consultants/contractors, with site supervision by local superintendents and engineers.

### 10.3 Tenders

Tenderers were selected based on local availability, construction performance experience, and design and construction execution expertise. Site inspections and pre- and post-tender meetings were conducted. Capital cost generally represents the average of the three lowest bidders for the FS purpose.

#### Table 12 Capital Cost Estimate

Item	Description	Cost US\$k
1.0	Direct costs	
1.1	Civil Works	4,750
1.2	Tailings Storage Facility	3,890
1.3	Process Plant	18,290
1.4	Power Infrastructure	1,050
1.5	Site Support and Ancillaries	1,260
1.6	Mining Infrastructure	700
	Subtotal	29,940
2.0	Indirect Costs	
2.1	Project and Site Management	3,610
2.2	Detailed Engineering	1,920
	Subtotal	5,530
3.0	Contingency	
3.1	Growth and contingency	4,510
	Subtotal	4,510
	Total	39,980

Note: Based on contractor and Lindian information.

## 10.4 Basis of Estimate

The capital cost estimate was developed with the following objectives:

- Improve site access/egress for safety.
- Environmental management.
- Develop a process plant with a throughput nameplate design rate of 60t/hr.
- Construct a TSF to suit the Ore Feed of 20Mt.
- Secure power from the national supplier with a backup generator.
- Align mining works with the plant feed rate.
- Support site management with necessary resources.

Detailed Quantity and Cost Development:

- Roadworks and civil works: Bill of Quantities (BoQ) specifying quantities, supplemented with drawings and technical specifications. Revised submissions were requested following updated designs.
- D&C process plant and related infrastructure: Comprehensive scope of work supported by technical documents. Tenders received from experienced contractors for lump sum execution with variation rates.
- Power supply: Developed in collaboration with ESCOM, tenders were issued for two connection point options.
- Mining works: Tenders included scope, technical information, and pricing schedules. Additional estimations are needed for earthworks/mining road-related costs.
- Project and site management: Costs based on market testing by Future-C, covering required roles during implementation.



# 10.5 Contingency

A contingency of approximately 12.5% of total pre-production capital cost has been applied, covering growth and escalation as per AACE Class 2 guidelines.

# 10.6 Estimate Exclusions

Exclusions from the capital cost estimate include:

- sunk costs,
- further studies,
- forward escalation,
- government levies,
- working capital,
- insurance costs, and
- any changes to project design documents after May 2024.

These exclusions will be covered under the operating cost estimates and the financial model.

# 11. OPERATING COST

### 11.1 Methodology

The operating cost estimate for the Kangankunde Project encompasses all expenses related to mining, processing, infrastructure, and general site administration. Based on calendar year quarter two 2024 rates, costs are presented in US dollars, with no adjustments for future escalation or inflation. The annual ore throughput is 0.45 Mt, operating continuously (24/7). The estimate is accurate to  $\pm 15\%$ .

Operating costs were derived from:

- Budget quotations from vendors.
- First principal estimates based on typical operating data.
- Industry standards from similar operations.
- Wages and salaries from Future-C/Lindian.
- Logistics costs from potential logistics contractors.

## 11.2 Cost Breakdown

### Table 13 Detailed Operating Costs Breakdown

Operating Cost	Details		
General and	Includes safety equipment, training, general insurance, office		
Administration	supplies, licence fees for general office, ERP software, light		
	vehicle maintenance and leasing costs.		
Ore Handling	Includes all crusher feed costs.		
	The feed battery limit is the primary crusher ROM bin.		
	Stockpile rehandling/reclaim and mill feed costs are included		
	in mining costs.		
Product	Marketing and selling costs other than logistics are excluded.		
Marketing and	Costs are stated on a free-on-board (FOB) basis.		
Logistics	Product assay and shipping costs are included in the financial model.		
Tailings	Includes discharge from the tails pipeline to the TSF.		
Storage	Environmental compliance testing costs are included in		
	General and Administration.		
Labour	Excludes union fees and includes ongoing recruitment costs.		
	Estimated workforce: 108 during steady operations (excluding		
	contractors), aiming for a high percentage of local		
	employment.		
Consumables	Reagents and consumables are priced based on quotes or		
	database costs, including transport.		
Utilities	Diesel costed at quarter two 2024 calendar year rates.		
otinties	Power from the Malawi electricity grid; diesel priced at US\$1.58/L.		
	Water abstraction licence costs are excluded.		
Laboratory	Laboratory services include grade control, metallurgical costs,		
j	and product assay.		
	Environmental testing costs are included in General and		
	Administration.		
	Exploration analytical costs are excluded.		
Maintenance	Estimated as a percentage of installed capital cost for process		
	plant and mobile equipment.		
Product	Managed by a logistics contractor for transport to Nacala port,		
Logistics	Mozambique.		
	Costs include site loading, road freight, container packing, rail		
	transport, and storage.		



#### Table 14 Exchange Rates

US\$	MKW	ZAR (South
	(Malawi	African
	Kwacha)	Rand)
1.00	1,754	13

# 11.3 Summary of Operating Costs

#### Table 15 Stage 1 Average Annual Operating Cost by Expenditure

Category	Annual Cost (US\$ 000/y)	Total %	Plant Throughput Unit Cost (US\$/t)	TREO in Concentrate Unit Cost (US\$/kg)
Mining Costs	5,547	18	12	0.67
Power	1,325	4	3	0.16
Crushing and Rehandle	4,642	15	10	0.56
Labour	5,751	19	13	0.70
Consumables	322	1	1	0.04
Reagents	199	1	0	0.02
Laboratory	442	1	1	0.05
Mobile Equipment	1,479	5	3	0.18
Administration Costs	1,707	6	4	0.21
Maintenance	1,198	4	3	0.15
Product Transport	2,429	8	5	0.29
Royalties	5.562	18	12	0.67
Total	30,602	100	68	3.71

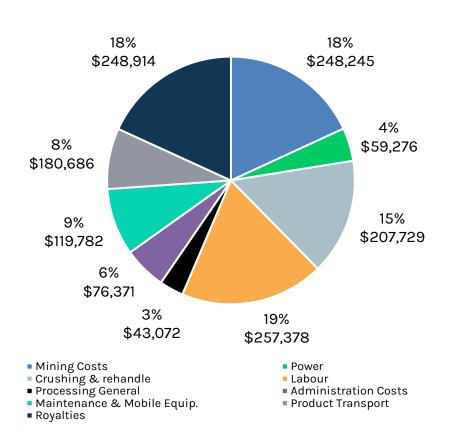
#### Table 16 Stage 1 Average Annual Operating Cost by Key Area

Area	Annual Cost (US\$ 000/y)	% Total	Plant Throughput Unit Cost (US\$/t) <sup>1</sup>	TREO in Concentrate Unit Cost (US\$/kg)²
Mining	6,531	21%	14	0.79
Processing	8,972	29%	20	1.09
Maintenance	2,160	7%	5	0.26
General & Administration	4,948	16%	11	0.60
Product Transport	2,429	8%	5	0.29
Royalties	5,562	18%	12	0.67
Total	30,602	100%	68	3.71

Note: The differences in the costs allocated to different areas in the above two tables are due to labour allocation.



Figure 15 Percentage of Annual Operating Costs by Expenditure



### 11.4 Exclusions and Qualifications

- Variations in exchange rate forecasts, escalation, inflation, financing costs, and interest charges are excluded.
- Costs beyond the study limits, VAT, import duties, and other statutory levies are excluded.
- Head office, corporate and exploration costs, political risk insurance, and contingency allowances are not considered.

# 12. MARKET AND OFFTAKE

Rare earth elements (REEs) are found in many minerals and rock types, with bastnaesite and monazite being the most dominant and xenotime and ionadsorption clays being other important sources. China is the largest producer, refiner, and user of rare earths, and it imports more to increase refining capacity.

Recently, western governments have focused more on rare earths because they are crucial for strategic applications and supporting the clean energy transition. However, China remains the most dominant, with other countries' plans and investments lagging well behind China's REE industry development.



### 12.1 Rare Earth Demand

REEs are used in high-tech industries to improve equipment efficiency, reduce size, and enhance performance. According to Project Blue (2024)<sup>5</sup>, demand for REEs in industrial uses like ceramics, glass, and metallurgical powders will grow in line with regional Gross Domestic Product (GDP). However, demand for REEs in energy applications, such as magnets used in electric vehicles (EVs) and wind turbines, will grow faster than GDP. The rare earth industry was estimated to be worth US\$7.4 billion in 2023<sup>5</sup>.

As global energy concerns grow, Neodymium Iron Boron (NdFeB) magnet motors will become critical for reducing energy use, saving costs, and easing pressure on energy grids. Currently, no substitutes for NdFeB magnets provide the same benefits.

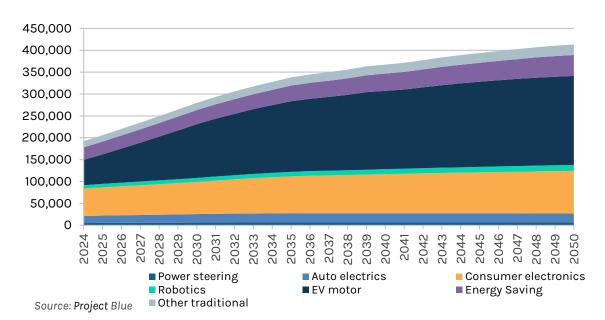
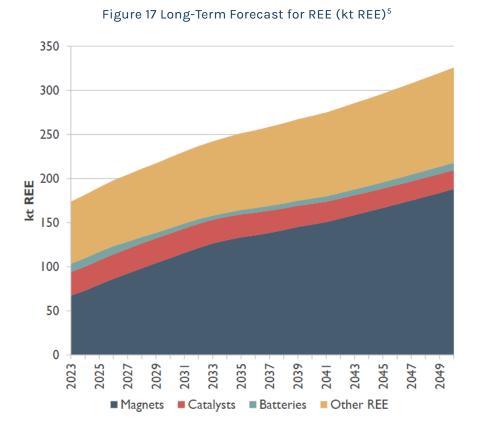


Figure 16 Rare Earth Demand by Application (kt REE)

The clean energy transition is creating a specific demand for neodymium (Nd), praseodymium (Pr), dysprosium (Dy), and terbium (Tb), which are all used in rare earth permanent magnets (REPMs).

<sup>&</sup>lt;sup>5</sup> Project Blue Rare Earths Analysis Report, 2024



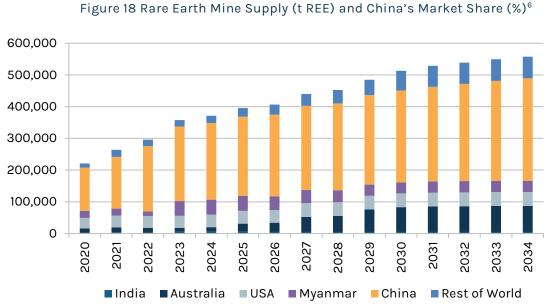
### 12.2 Rare Earth Supply

Monazite and bastnaesite are the main sources of REEs, primarily light REEs (LREEs). Major sites like Bayan Obo in China produce these REEs, while Australian and Brazilian mines mainly produce monazite. In the USA, Mountain Pass primarily yields bastnaesite. Heavy REEs (HREEs) come mostly from ionic clays and xenotime, though these are less common.

Project Blue<sup>5</sup> notes that global REE production dropped from 190.8 kt in 2014 to 175.8 kt in 2017. This decline was due to the shutdown of illegal mines in China, falling prices for rare earth oxides (REO), stricter environmental regulations, and industry consolidation in China.

China dominates rare earth production, supplying about 75% of global output at the mine level and 90% of separated REEs. China increased its REE production quotas by 20% in 2021, 25% in 2022, and 14% in 2023 to meet growing electric vehicle (EV) and offshore wind demand.

RESOURCES LTD



Source: Project Blue

Outside of China, the primary sources of REE mine supply from 2014 to 2023 have been limited to a few countries and operators, including Australia and the US.

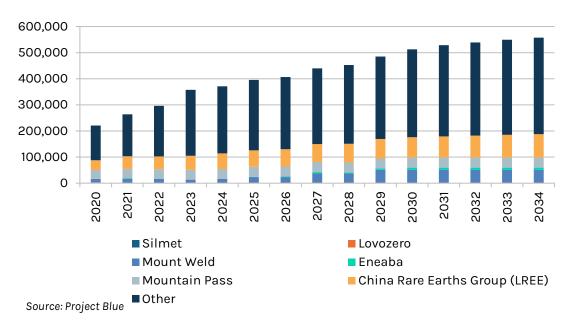


Figure 19 Rare Earth Mine Supply by Producer, 2023 (t REE)<sup>6</sup>

Analysis from Project Blue (2024) confirms that significant new supply will be required to track the increasing demand for particularly NdPr units over the next three decades. The vast majority of projects nearing the construction phase are inhibited by high capital costs, operating costs higher than the 2<sup>nd</sup> cost quartile, and limited market opportunities due to lower rare earth oxide (REO) content plus higher radioactivity.

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<sup>&</sup>lt;sup>6</sup> Project Blue Rare Earths Analysis Report, 2024

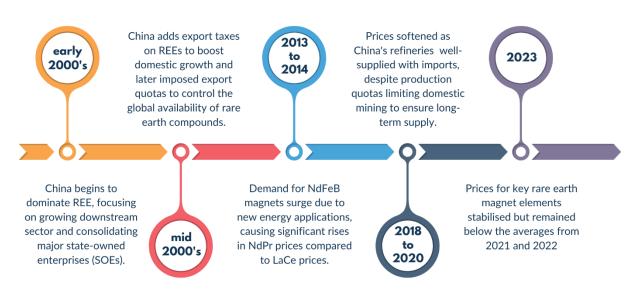


It is unlikely that many of these projects can be economic at NdPr market prices below US\$100/kg, and they will face serious development challenges despite government incentives. The Kangankunde Project, however, has low capital cost, lowest quartile operating cost, high REO content in concentrate, and very low radioactivity.

# 12.3 Rare Earths Pricing

Chinese industry positioning is the primary factor in REO pricing. In the early 2000s, China began to dominate the industry, aiming to grow its downstream sector and consolidate major state-owned enterprises (SOEs). China added export taxes on REEs in the mid-2000s to boost domestic growth and later imposed export quotas to control the availability of REE compounds worldwide. The Western-based industry did not keep pace with Chinese developments, resulting in one nation's current disproportionate pricing influence. Figure 20 illustrates the high-level pricing development during the last two decades.





The importance of NdPr in the magnet market and electric motors caused prices to rise to US\$130/kg before dropping to the current price of US\$50/kg due to global economic challenges.

## 12.4 Marketing Strategy

Lindian's marketing strategy aims to create and sustain value by globally positioning its high-purity, low-radioactive REE mineral concentrate product. The Company's target customers are those involved in key growth areas such as hybrid and electric vehicles, clean energy technologies, factory automation, robotics, and electronics.

### Product Strategy

The Kangankunde Project's product will be positioned to attract a premium to the standard specification in the concentrate market due to its higher than 50% TREO content, low impurities and low radioactive content.



It is also important to note that the Kangankunde ore has very low levels of radionuclides. This will significantly improve the product's marketability, as it can be shipped to most potential buyer countries without restrictions.

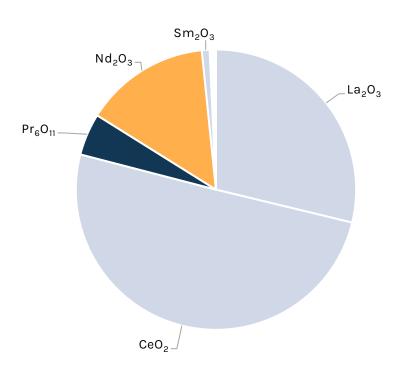


Figure 21 Anticipated REO Concentrate Product Specifications (June 2024)

#### **Pricing Strategy**

The FS base case pricing relies on price forecasts by independent experts<sup>5</sup> and is cross-referenced with pricing from leading brokerage firms that publish research on the REEs industry. As of May 2024, the average forecast for NdPr prices from various groups is shown in Figure 22. The forecasted long-range price is between US\$100/kg and US\$140/kg, with an average price of US\$120/kg for NdPr.

In terms of potential product payability, Lindian is using the standard approach followed by peer group companies, with the high REO grade and low radioactivity of the Kangankunde Project's concentrate, likely making it a potential premium product. This is further commented on in the financial evaluation section of this report.

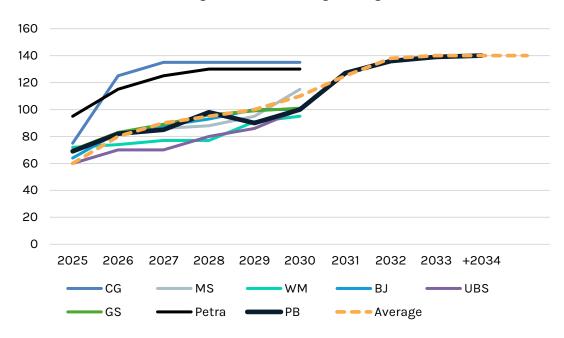
The Kangankunde Project's product will attract a premium to the standard specification in the concentrate market due to its higher than 50% TREO content, low impurities and low radioactive content. Its payability factor is, therefore, projected to be higher than most of the hard rock monazite products from peergroup projects and should be in the range of mid-50% at very low prices to high 60% at higher prices.

Given that the Kangankunde Project's operational cost is forecast to be at the lower end of the lowest cost quartile, it will be well placed to sustain periods of severe REE price downturns, as is currently the case in the market.

Note: Remainder of pie chart consists of various other elements, see product specification sheet Figure 9.



Figure 22 NdPr Pricing US\$/kg<sup>7</sup>



#### Placement Strategy - Sales Plan

Lindian plans to target the profitable Neodymium Iron Boron (NdFeB) magnet market by selling mineral concentrate rich in NdPr and very low radioactivity. Future production will meet up to 3% of global NdPr demand by 2030. This segment offers the best growth prospects in the REE market, and the importance of magnets in the automotive sector positions Lindian as a critical Western supplier.

The sales plan targets regional markets in the USA, Japan, Europe, and China. Lindian has promoted the Kangankunde Project in these regions and begun discussions with key customers about product offtake and investment in the Kangankunde Project. A well-diversified result for the sales book could be product placement, as shown in Table 17.

Location	Average Annual Concentrate Tonnes
USA	~3,000
Western Europe	~3,000
Eastern Europe & Asia	~9,000
Total	~15,000

#### Table 17 Regional Sales Targets

<sup>&</sup>lt;sup>7</sup> CG: Cannacord Genuity; report dated 13 March 2024 | MS: Morgan Stanley: report dated 13 March 2024 | WM: Wood Mackenzie: pricing within Morgan Stanley report (above). BJ: Barrenjoey: report dated 29 February 2024 | UBS: Report dated 18 March 2024 | Petra: Report dated 4 April 2024 | GS: Goldman Sachs: report dated 12 February 2024.



### 12.5 Offtake Agreements

The Company is considering the sales model, particularly how many external parties are involved as agents or traders in the sales chain.

A well-diversified model could include two well-credentialled trading houses to act as agents for 80% of five-year offtake, with the remaining 20% of the annual product being placed based on shorter-term opportunities.

Lindian has an offtake agreement with Gerald Metals SARL for 45,000 metric tonnes of monazite mineral concentrate over five years, starting from the beginning of commercial production<sup>8</sup>.

Gerald Group, founded in the USA in 1962, is the world's oldest and largest independent, employee-owned metals trading house. Gerald Group provides a customised service model across the entire commodity value chain, benefiting its global customer and supplier base.

### 12.6 Market Growth Opportunities

Under the current development plan, the Kangankunde Project will be producing around 9,000 tpa of TREO. The Kangankunde Project's orebody and vast resources are expected to enable significant growth opportunities in the future. Additional expansions to approximately 50,000 tpa of monazite concentrate can be made by installing new and more extensive processing facilities as market demand grows. This will enable Lindian to become a globally significant supplier of monazite mineral concentrate and a key supplier of NdPr.

# **13. FINANCIAL EVALUATION**

### 13.1 Key Outcomes

The financial modelling for the Kangankunde Project indicates robust financial viability. The Kangankunde Project generates a Pre-Tax Net Present Value (NPV) of US \$794M at an 8% discount rate and a post-tax NPV of US\$555M. The Internal Rate of Return (IRR) is 99% pre-tax and 80% post-tax.

The average annual EBITDA is US\$83M over the projected 45-year life of the Stage 1 Kangankunde Project. The total construction capital expenditure is US\$40M, and the Kangankunde Project will achieve a post-tax payback period of 1.5 years from delivering the first ore to the processing plant.

<sup>&</sup>lt;sup>8</sup> ASX Announcement: 26 September 2023



Table 18 Summary of Project Returns

Metric	Pre-Tax Value	Post-Tax Value
NPV @ FID (8.0%) (US\$ M)	794	555
IRR (at FID) (%)	99	80
Payback Period (Years)	1.25	1.50
Investment Multiple (x)	19.4	13.5

## 13.2 Key Life of Mine (LOM) Metrics

The Kangankunde Stage 1 Project is projected to operate for 45 years, with key metrics summarised in Table 19.

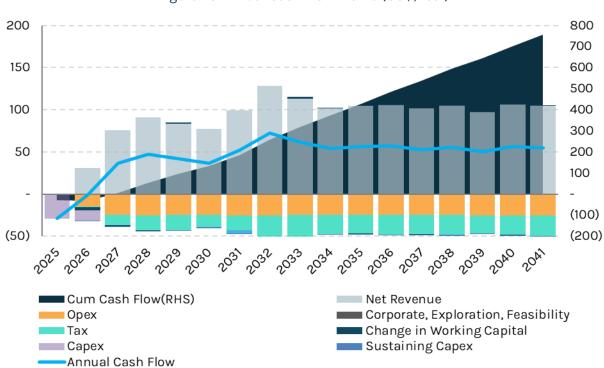
Description	Units	Life of Mine	Annual Average
Mining			
Ore mined	kt	23,663	526
Waste mined (waste in this context includes inferred material)	kt	3,952	88
Strip ratio	Х	0.2	
Grade mined	% TREO	2.9%	
Mine life	Years	45	
Production	Units	Life of Mine	Annual Average
Ore processed	kt	20,202	451
Grade processed	% TREO	3.0	3.0
Concentrate produced	wmt	685,716	15,323
Concentrate grade	% TREO	55.0	55.0
TREO recovery	%	60.0	60.0
NdPr % in TREO	%	19.5	19.5
Contained TREO in feed	tonnes	616,001	13,765
Contained TREO in concentrate	tonnes	369,601	8,259
Contained NdPr oxide in concentrate	tonnes	72,203	1,613
Profitability	Units	Life of Mine	Annual Average
Gross revenue	US\$M	5,087	114
EBITDA	US\$M	3,718	83
Operating Costs	Units	Life of Mine	Annual Average
Mining	US\$M	292	6.5
Processing	US\$M	402	9.0
Maintenance	US\$M	97	2.2
General & Administration	US\$M	221	4.9
Product Transport	US\$M	109	2.4
Royalties	US\$M	249	5.6

#### Table 19 Summary of Key Project Metrics



RESOURCES LTD.

Unit costs	Units	Life of Mine	Annual Average
AISC (FOB)	US\$/kg TREO	3.7	3.3
AISC (CIF)	US\$/kg TREO	3.7	3.4
AISC (CIF)	US\$/kg NdPr oxide	20.0	17.2
Payback Period	Unit	From first production	
Pre-tax	Years	1.25	
Post-tax	Years	1.5	



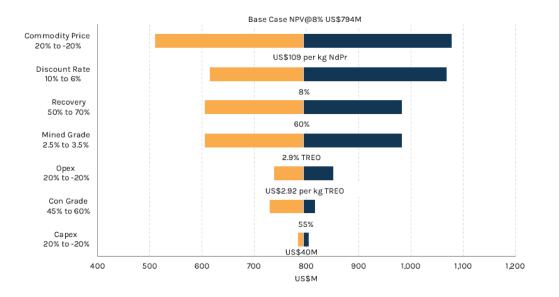
#### Figure 23 Annual Cash Flow Profile (US\$, real)

## 13.3 Sensitivity Analysis

The Kangankunde Project's financial performance is most sensitive to commodity price and discount rate variations, as illustrated in Figure 24.

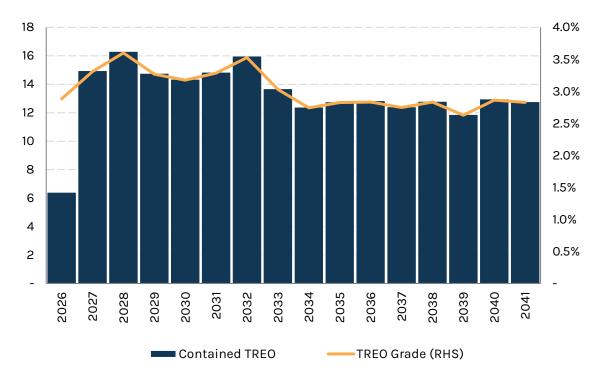
Figure 24 Pre-Tax NPV (base case Pre-Tax NPV @ 8% US \$794M) Sensitivity to Key Variables

RESOURCES LTD

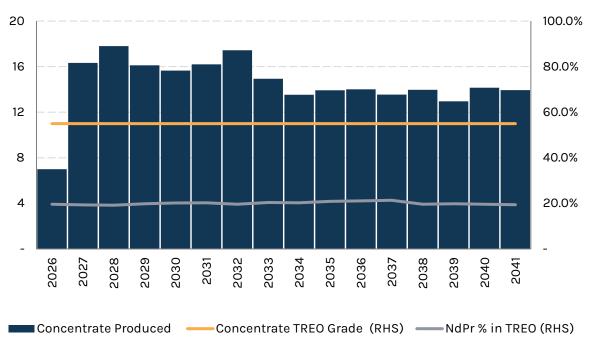


### 13.4 Production Assumptions

The production profile is based on a processing plant design throughput rate of 450 kt per annum with an average TREO recovery rate of 60%. Concentrate grades of an average of 55% TREO are assumed in the modelling.



#### Figure 25 Mill Feed Profile

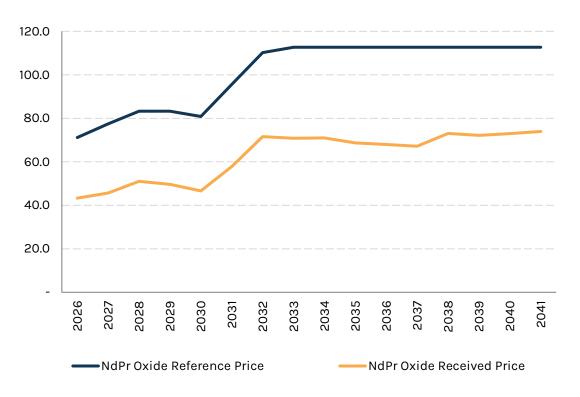


#### Figure 26 Concentrate Production Profile (kt) and Grades (%)

# 13.5 Product Price Assumptions

Concentrate pricing is based on the NdPr content contained, with adjustments made for various factors. Payability averages 64.8% over the LOM based on Project Blue's long-term forecast pricing and confidential industry offtake pricing models.







## 13.6 Capital Expenditure Assumptions

Construction capital expenditure totals US\$40M, including contingency.

Capital Cost	Units	Cost
Direct Costs	US\$M	29.9
Indirect Costs	US\$M	5.5
Contingency	US\$M	4.5
Total Construction Capital	US\$M	40.0

Table 20 Capital Costs

This capital cost makes the Kangankunde Project one of the lowest capital cost rare earths projects under development.

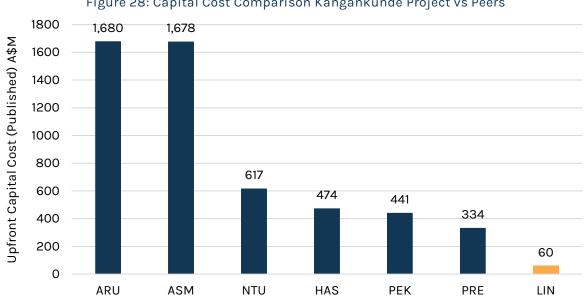
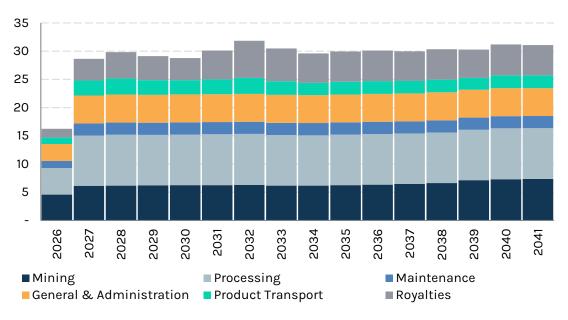


Figure 28: Capital Cost Comparison Kangankunde Project vs Peers

# 13.7 Operating Expenditure Assumptions

Operating expenditure assumptions are based on 2024-dollar estimates.

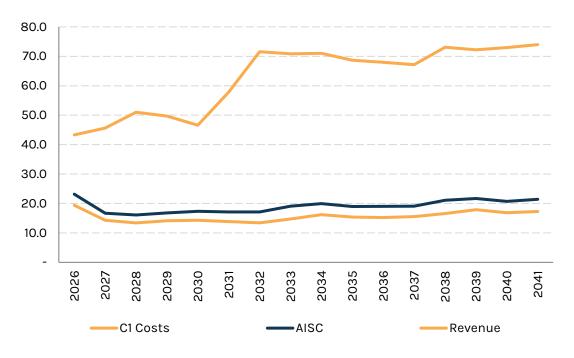


#### Figure 29 Annual Operating Expenditure (CIF) (Real US\$M)

### 13.8 Unit Cost Metrics

Unit cost metrics (C1 and AISC) and unit revenue are shown in Figure 30.

Figure 30 Unit Cost and Revenue Metrics (US\$/kg NdPr Oxide, Real, CIF)



## 13.9 Pre-Production and Sustaining Capital Expenditure

Before the first production, mining and labour operating costs totalled US\$1.1M and were capitalised and depreciated. Sustaining capital over the LOM totals US\$33.8M.



## 13.10 Inflation, Taxation, and Royalties

All cash flows are in real terms, assuming 2024 dollars with no inflation. Malawi Corporate Income Tax is 30%, with government royalties at 5% of revenue net of concentrate transport costs. Based on available information provided to Lindian, it has been assumed that the Medium Scale Mining License will not attract a requirement for direct project equity participation by the Malawian Government.

### 13.11 Corporate Overheads and Working Capital

The analysis excludes Australian corporate overheads and the final US \$10M vendor payment. Working capital adjustments are based on 30-day payment terms for revenue and operating costs, excluding labour and royalties.

## 13.12 Depreciation and Rehabilitation Costs

Depreciation is calculated on a declining balance basis over 20 years for property, plant and equipment, with rehabilitation costs assumed at US\$50,000 p.a. and closure costs at 5% of initial capital costs.

# 14. RISKS AND OPPORTUNITIES

### 14.1 Risks

A range of business and operational risks have been identified for the Kangankunde Project. These risks span various areas, as detailed below:

- Licence, title, and regulatory: Delays in obtaining necessary approvals and potential loss of leases due to reporting non-compliance or unforeseen governmental regulatory changes.
- Mining: Challenges in achieving planned mining rates and managing costs.
- Metallurgy: Greater than expected variability in metallurgical recovery rates and grades lower than expected in deeper material types.
- Plant design: Risks associated with the plant not achieving nameplate capacity.
- Plant equipment: Reliability and efficiency of plant equipment lower than expected.
- Operational safety: Risks to personnel and equipment from potential site hazards and during transit.
- Environmental: Environmental impacts and compliance with regulations.
- Community: Company behaviour results in negative relations with local communities.
- Staffing and operations: Challenges in recruiting and retaining highperforming skilled personnel.
- Project implementation: Delays to completion of project milestones.
- Operating costs: Risks of higher-than-expected operating costs.
- Capital costs: Potential for capital cost overruns.
- Marketing and pricing: Fluctuations in market prices.
- Funding: Inability or delays to secure funding for Stage 1.



Each risk was assigned a rating based on the assessed outcome and likelihood, both in uncontrolled and controlled scenarios, with additional control actions designed to reduce the risks to as Low as Possible (ALAP). The risk assessment was updated in June 2024.

# 14.2 Opportunities

The Kangankunde Project presents several significant opportunities, summarised as follows:

- 1. Conversion of remaining Indicated Resources to Ore Reserves:
  - The current Mineral Resource includes 61Mt of indicated Resources, with 23.7Mt converted to Ore Reserves.
    - An "Expansion" pit design suggests an additional 37Mt of this Indicated category could potentially be converted to Reserves with minimal expenditure and within a reasonable timeline.
- 2. Stage 2 project expansion:
  - The Company plans to commence a study for an expansion project to approximately 50,000tpa concentrate, which will need to be supported by product demand, learnings from the Stage 1 FS, the significant Mineral Resource and additional funding
- 3. Inferred Ore Conversion to Indicated Resources and Ore Reserves:
  - According to the geological competent persons, there is potential that additional drilling could convert approximately 200Mt of Inferred Resources to Indicated Resources, increasing the potential size and life of the Kangankunde Project by multi-decades.

## APPENDIX 2: JORC 2012 TABLE 1

#### Table 1 KANGANKUNDE RARE EARTH PROJECT – JORC 2012 RESERVE<sup>®</sup>

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves		<ul> <li>The Ore Reserve estimate is based on the 2024 Mineral Resource (MRE) completed by Cube Consulting and reviewed by Mr Geoff Chapman, of GJ Exploration Pty Ltd, a consultant geologist engaged by Lindian Resources Limited. The MRE was released on the ASX on 2nd May 2024.</li> <li>The Mineral Resource is reported inclusive of the Ore Reserve without mining modifying factors.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>The Competent Person for the mining and the Ore Reserve visited the site in March 2024 as part of the Kangankunde 2024 Feasibility Study.</li> <li>The Competent Person for Mineral Resources Mr Geoff Chapman has visited site on multiple occasions between 2022 and 2024.</li> </ul>
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	<ul> <li>The Ore Reserve is based on the 2024 Kangankunde Rare Earth Feasibility Study.</li> <li>Mining factors and costs used to generate this Ore Reserve are from inputs generated for 2024 Feasibility Study which has been completed to a minimum pre-feasibility study level.</li> <li>The mine plan is based on six open pit stages, designed for standard mining equipment and mine design parameters suited to the site conditions, equipment and schedule requirements.</li> </ul>
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	<ul> <li>A theoretical cut-off grade was determined from net Rare Earth sell price, operating costs, mining modifying factors, downstream operating costs and processing recovery.</li> <li>For calculation of the cut-off grade, process recoveries were based on metallurgical testwork results by geological domain. Based on this work, the cutoff grade calculation used a 60% plant recovery other than domain 4000 for which a 45% recovery factor</li> </ul>

<sup>&</sup>lt;sup>9</sup> As provided by David Murray Clark FAusIMM (24/06/2024)



Criteria	JORC Code explanation	Commentary
		<ul> <li>was used.</li> <li>The cut-off grade calculation assumed a Rare Earth 70% payability sell price factor.</li> <li>Based on the range of TREO prices assigned to the processing schedule and the above factors, a cutoff range of 0.6 to 1.0% was calculated. The mine designs applied a 1.00% cutoff for all mining stages.</li> </ul>
Mining factors or assumptions	<ul> <li>The method and assumptions used as reported in the Pre- Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> <li>The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>Any minimum mining widths used.</li> <li>The maner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	<ul> <li>The mining pit stages will be developed using conventional open pit load/haul and drill blast methods. Benches are designed at 5.0m height, mined in two 2.5m flitches.</li> <li>The Mineral Resource block model was optimized using Whittle 4D software. Mine design used Surpac software.</li> <li>Pit wall angles and pit berms were based on outcomes of the 2024 Kanangunde geotechnical study. The study included testwork, modelling, evaluations and resultant recommendations for mine design. Key parameters as related to mine design are: <ul> <li>Overall slope angle 55 degrees</li> <li>Nominal 5m berm at 15m intervals</li> <li>Bench slope angle 76 deg</li> <li>Haulage ramps at 15m width, suited to 50 tonne trucks</li> </ul> </li> <li>Open pit optimisation work was completed using costs as prepared for the Feasibility Study, including both contractor and owner cost buildups.</li> <li>Ore dilution was modelled by re-blocking the geological block model to regular suitable minable block sizes suited to the selected hydraulic excavator assigned to mining of both Ore and waste.</li> <li>Open pit mining recoveries were based on a loss of 600mm of all materials from surface, assumed to be irretrievable as rill into inaccessible areas of the mineralised hill. Otherwise, all other benches were allocated a 100% mining recovery given that all mining stages are developed within mineralised material where the majority of material is above the cut-off grade. The applied</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>mining recovery factor relates to an overall ore loss of approximately 1%.</li> <li>Appropriate minimum mining widths were applied to allow access at depth. A 25m width was applied as a minimum mining width constraint.</li> <li>Only Indicated Mineral Resource classified material was used in the optimisation as well as cashflow modelling.</li> <li>Ore material was classified into the following grade bins <ul> <li>High Grade &gt;3.0% TREO</li> <li>Medium Grade 2.0% to 3.0%</li> <li>Low Grade 1.0% to 2.0%</li> </ul> </li> <li>Total ore processed was linked to the total tailings storage capacity as designed for the feasibility study. To optimise project value, ore processing focused on High Grade and Medium Grade Feed, with the majority of Low Grade remaining in stockpile. The optimum business case for processing stockpiled Low Grade material in the future will be determined from follow-on study work.</li> <li>Infrastructure requirements are: <ul> <li>Magazine facility.</li> <li>Administration and technical services office.</li> <li>Process plant and engineering services.</li> <li>Core farm and geology services.</li> <li>Tailings dam facility.</li> <li>Mining stockpiles</li> <li>Grid energy transmission line connection</li> <li>Additional minor infrastructure as required.</li> </ul> </li> </ul>
Metallurgical factors or assumptions	<ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> </ul>	<ul> <li>Mined ore will be processed onsite to produce a Monazite concentrate which will then be transported offsite for sales.</li> <li>The process plant is designed at a 60 tph ore rate, equating to an annualised rate of 450kt for all years over the Feasibility schedule</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<ul> <li>period, other than a ramp up phase for the early months of the schedule.</li> <li>Ore processing will use standard processing methods as arranged in a novel configuration and equipment applicable to mineral processing. Processing areas are: <ul> <li>Feed to Ore, crushing and screening.</li> <li>Milling and classification.</li> <li>Gravity concentration.</li> <li>Magnetic separation.</li> <li>Impurity removal</li> <li>Tailings thickener and plant water</li> <li>Tailings Storage Facility and return water dam</li> <li>Product filtration and drying.</li> </ul> </li> <li>The process plant flow sheet was developed from a metallurgical testwork programme using qualified personnel using industry standard techniques and standards.</li> <li>Metallurgical testing covered bench scale testing on both surface and drill core derived testing composites. The testing gravity beneficiation concentrates produced were used for testing of downstream process stages (magnetic separation). The bulk samples were obtained from surface sampling around the proposed mining area. The mineralogical constituency of these samples is comparable to samples derived from core drilling.</li> <li>No pilot plant testing has been undertaken.</li> <li>Metallurgical testing of mineral concentrate samples has demonstrated that the concentrate product is not categorized as class 7 for transport purposes.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul><li>by beneficiation, as evidenced by bench scale test work.</li><li>A further metallurgical testing program has been recommended.</li></ul>
Environmental	<ul> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</li> </ul>	<ul> <li>An Environment and Social Impact Assessment (ESIA) for the Project was approved by Malawi Government and certificate of approval number 2.10.16 issued on 27 September 2021.</li> <li>A hydrogeology study and baseline testing and analysis of existing community water bores was completed.</li> <li>Groundwater abstraction permits for use of 2 x bores have been issued by the Malawian Government.</li> <li>Waste rock for all open pit stages as part of the Ore Reserve will present as carbonatite breccias or gneissic rock, both which are non-acid forming with no deleterious leachable minerals. Waste rock (very low at only 32.5kt) will be used within the mineralised area as road base, bunds and similar.</li> <li>A study to assess Naturally Occurring Radioactive Material (NORM) in waste material was completed. Based on the specifications of RSA National Nuclear Regulator RG-0018 "Interim Guidance On The Management Of NORM Tailings And Waste Rock" supplied by the Malawian Government as a guideline, the radioactivity for both waste rock and tailings is below trigger limits and <u>not</u> classified as NORM.</li> <li>Construction of mining material stockpiles by type will be in accordance with that detailed in the feasibility stockpile design for which the construction requirements will be detailed in Project Management Plan which will be approved by authorities prior to commencement of mining.</li> <li>Tailings disposal will be in accordance with that detailed in the Kangankunde Tailings Storage Facility Design report and as detailed in the engineering design by the nominated specialized tailings consultant.</li> <li>Tailings consultant.</li> <li>Tailings consultant.</li> </ul>



Criteria	JORC Code explanation	Commentary
		<ul> <li>Protection Agency (EPA), International Finance Corporation (IFC) and Malawi guidelines.</li> <li>The operation will work to an approved Environmental Management Plan (EMP).</li> <li>Environmental studies have been carried out with the conclusion that there are no major potential environmental impacts. These studies will be covered in the EMP and PMP for approval.</li> </ul>
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<ul> <li>Historical work at Kangankunde project consisted of bulk sampling from the deposit for metallurgical testing and Mineral Resource definition. The remaining infrastructure on site is minimal and will be replaced with new.</li> <li>The site is accessed from the nearby M1 highway. The site allows ultimate access to high voltage power lines as well as rail lines to port.</li> <li>The feasibility study has defined a detailed site layout for infrastructure and facilities to support mining, processing, infrastructure and product transport from site. Accommodation during operations will be provided from the nearby Balaka town in the first instance. During the construction phase there is potential for contractor personnel to be accommodated on-site.</li> <li>Existing access roads to the site will be upgraded with two identified bypasses to increase safety outcomes in the vicinity of areas used more frequently by the community.</li> <li>Power corridor and works are being developed with the governments national power supplier (ESCOM).</li> <li>Communications will be available by constructing a telecommunications tower at the site and entering into a communications agreement with a local provider.</li> <li>Site water will be available from two bore holes and will be stored and sanitised for drinking</li> <li>Fuel will be stored at the site for operational purposes in an approved storage facility supplied by the fuel provider.</li> </ul>
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study.	• A financial model was developed for the project which scheduled all capital and operating costs required for the project using a



Criteria	JORC Code explanation	Commentary
	<ul> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	<ul> <li>combination of contractor, vendor and owner costs as developed for the feasibility study.</li> <li>Operating costs were linked to key equipment productivity rates and maintenance assumptions. For open pit mining direct costs, this was based on contractor built up rates, expanded to suit the reserve ultimate pit footprint. Other costs were based on use of a combination of Lindian and contract personnel.</li> <li>There are no known deleterious materials.</li> <li>All costs were estimated in United States of America dollars (USD).</li> <li>Process plant and fixed facility related capital costs were estimated by using a tender process and obtaining lump sum pricing or schedule of rates submissions applied to calculated Bill of Quantities (BoQ).</li> <li>Transport costs are based on vendor supplied rates as supplied during the feasibility.</li> <li>Processing costs were estimated by an engineering group, specific to the proposed process plant as designed for the feasibility.</li> <li>All selling costs, royalties and other related operational expenses have been accounted for as part of the cost equations.</li> <li>A Malawi governmental royalty of 5% was applied</li> <li>No other third party royalties apply to other deposits as part of the Ore Reserve.</li> </ul>
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul> <li>Rare earth prices were based on market research group Project Blue's global rare earth supply and demand forecast report. Annual forecasts are provided for 10 years through to 2034 and long term forecasts thereafter. Price forecasts in real terms from this analysis have been used for revenue calculations in the feasibility study financial model.</li> <li>The revenue calculations in the feasibility study utilised a customer pricing formula taking into account the processing charge, metal recovery, concentrate grade and other factors to derive the payable price per kilogram of TREO and NdPr to calculate the payability amount per tonne and kilogram of</li> </ul>



Criteria	JORC Code explanation	Commentary
		product.
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul> <li>Rare Earths are essential for numerous new technologies in high growth industries, including electric vehicles and wind turbines.</li> <li>China currently produces approximately 85% of the global rare earths market supplies.</li> <li>Lindian has established offtake agreement with Gerald Group for sale of TREO in concentrate for 40% of its annual production for a 5 year period - refer to ASX announcement dated 26 September 2023.</li> <li>Offtake agreement includes market based pricing with a total contracted offtake of 45,000 tonnes of concentrate grading TREC of 55% and minimum 18% NdPr. Further offtake agreements are expected to be on similar terms.</li> <li>The highest demand value product is NdPr oxide. The demand is forecast to increase with the growth of new technologies, including wind turbines and electric vehicles.</li> </ul>
<ul> <li>Economic</li> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>		<ul> <li>A financial model was developed for the 2024 Kangankunde Rare Earth feasibility study to include all capital and operating costs for the proposed open pit mining, ore crushing, mill feed processing and administrative costs. Costs were based on both contractor, vendor supplied and first principals owner built up costs/cost drivers as developed for the feasibility study.</li> <li>The financial model incorporated the following:</li> </ul>
		Life of project 45 yrs
		Discount factor 8%
		Tax rate 30%
		Governmental Royalty 5%
		Average rare earth price used US\$108.7 per kg NdPr (NdPr)



Criteria	JORC Code explanation	Commentary
		<ul> <li>Financial modelling and NPV analysis demonstrated that the project is sound.</li> <li>Sensitivity analysis was completed on a number of key parameters to test the robustness of the project and the Ore Reserve. Standard linear deviations were observed with the project displaying physical robustness to variations in Modifying Factors.</li> </ul>
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	<ul> <li>Lindian Resources Ltd and partners maintain good relationships with key stakeholders and with the local community.</li> <li>The Exploration and Mining Licences have an Environmental and Social Impact Assessment Licence No.2:10:16 issued under the Malawi Environmental Management Act No. 19 of 2017. Both licences are in good standing with no known impediments.</li> <li>The projects Community Engagement Plan developed and approved by the Company in collaboration with local community stakeholders has been submitted to the Malawi Ministry of Mines for verification and registration.</li> <li>The project has an approved Environmental and Social Impact Assessment Licence.</li> <li>Affected People on the mining lease will be compensated to relocate following consultation and evaluation process with local authorities including financial education.</li> </ul>
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the</li> </ul>	<ul> <li>The Kangankunde Project comprising granted Exploration Licence EPL0514/18R2 and Mining Licence MML0290/22 is 100% owned by Rift Valley Resource Developments (RVRD) a Malawian registered company. Lindian Resources currently holds 66% of RVRD with a binding share purchase agreement in place to acquire 100 % of RVRD. The mineral licences remain in good standing.</li> <li>All activities for this study are wholly contained on Medium Scale Mining Licence ML0290/22 granted in 2022 to Rift Vally Resources.</li> <li>Lindian Resources will maintain management control of the site,</li> </ul>



Criteria	JORC Code explanation	Commentary
	materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.	<ul> <li>and mineral and mining tenements.</li> <li>The Company engaged with potential strategic partners. All project activities shall be conducted in accordance with any formed joint venture agreements.</li> <li>Lindian expects that all outstanding necessary Government approvals will be received with the timeframes anticipated in the 2024 Feasibility study. These are: <ul> <li>Project Management Plan</li> <li>Final building approvals</li> <li>Approval of the final mine design</li> </ul> </li> </ul>

# **APPENDIX 3: ABBREVIATIONS**

Abbreviation	Meaning	
AACE		
AISC	All-in Sustaining Costs	
ALAP	All-in Sustaining Costs As Low as Possible	
BFD		
	Block Flow Diagram	
BoQ	Bill of Quantities	
C1 Costs	Direct Costs	
CEP	Community Engagement Plan	
CIF	Cost, Insurance and Freight	
D&C	Design and Construction	
EMP	Environmental Management Plan	
ERP	Enterprise Resource Planning	
ESG	Environmental, Social and Governance	
ESIA	Environmental and Social Impact Assessment	
EVs	Electric Vehicles	
FID	Final Investment Decision	
FOB	Free-on-Board	
FS	Feasibility Study	
G&A	General and Administration	
GDP	Gross Domestic Product	
HSE	Health, Safety, and Environment	
LIMS	Low-Intensity Magnetic Separators	
LOM	Life of Mine	
LREEs	Light Rare Earth Elements	
MGS	Multi-Gravity Separators	
MRE	Mineral Resource Estimate	
MW	Mega Watts	
PAPs	Project-Affected Persons	
PDC	Process Design Criteria	
PFD	Process Flow Diagrams	
PPE	Personal Protective Equipment	
QEMSCAN	Quantitative Evaluation of Minerals by Scanning Electron Microscopy	
REEs	Rare Earth Elements	
REO	Rare Earth Oxide	
ROM	Run of Mine	
RWD	Return Water Dam	
TREO	Total Rare Earth Oxide	
TSF	Tailing Storage Facility	
VAT	Value-added Tax	
WHIMS	Wet high-intensity magnetic separation	
XRD	X-ray Diffraction	
XRF	X-ray Fluorescence	