Electric Vehicle Prospate Braded Base Material States





James Durrant November 2023 ASX: REE rarex.com.au

Disclaimer & Competent Persons' Statements



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Competent Person's Statement - Geology: The information in this presentation relating to the Mineral Resource Estimate for the Cummins Range Rare Earths Project is extracted from the Company's ASX announcement dated 01 May 2023 which was reported in accordance with Listing Rule 5.8. REE confirms that it is not aware of any new information or data that materially affects the information included in the original announcement and that all material assumptions and technical parameters underpinning the Mineral Resource Estimate continue to apply. The Company confirms there have been no material changes to exploration results since first reported in accordance with Listing Rule 5.8.

Competent Person's Statement – Metallurgy: The information in this presentation relating to metallurgy was first reported in accordance with Listing Rule 5.7 on 11 July 2023. REE confirms that it is not aware of any new information or data that materially affects the information included in the original announcement.

Competent Person's Statement – Production Target and Forecast Financial Information: The information in this presentation relating to production targets and forecast financial information (FFI) was first reported on 22 August 2023. REE confirms that the material assumptions underpinning the production target and FFI continue to apply and have not materially changed. The production target is based on a portion of inferred resource. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realized.

Global Resource (JORC 2012)

2.5% P ₂ O ₅ Grade Cut	Tonnes Mt	TREO ppm	P ₂ O ₅ %	NdPr ppm	Nb ₂ O ₅ ppm	HREO ppm
Indicated	66.6	5,010	6.8	1,100	830	290
Inferred	452.7	2,900	4.2	630	550	170
Total	519.3	3,170	4.6	700	580	190

Why Does RareX Exist?

Fundamental Belief In The Electrification Of Things And The Green Energy Revolution

Global net-zero ambitions

- ✓ EU Net zero by 2050 \$3.8T by 2050¹
- ✓ US net zero by 2050 \$30T by 2050²
- ✓ Australian critical minerals key to the decarbonization of supply chain³

Massive EV and wind turbine investments

The generation, storage and use of clean energy are key technologies driving the critical metals boom for **RE magnets** and **phosphate battery** storage

Electric Vehicles

Wind turbines

- \$1T surpassed in EV investment by automotive manufacturers
- ✓ \$1.7T invested in clean energy generation in 2023
 ✓ \$4T required annually – IEA⁵

LFP battery investment for EVs and grid firming

Renewable energy generation and electric vehicles have in common the need for rare earth magnets and battery storage. Lithium Iron Phosphate

 Global LFP battery market projected to grow from \$10 billion in 2021 to \$50 billion by 2028⁴



Sources:

1: https://www.weforum.org/agenda/2022/04/bnefeuropean-energy-transition-2022/

2: https://about.bnef.com/blog/report-shows-thatinflation-reduction-act-alone-wont-set-united-stateson-track-for-net-

zero/#:~:text=To%20get%20on%20track%20for,rapidl y%20cut%20down%20on%20emissions. 3: https://www.globalaustralia.gov.au/industries/net-

zero/critical-minerals

4: https://www.fortunebusinessinsights.com/lithiumion-li-ion-phosphate-batteries-market-102152 5: https://www.canarymedia.com/articles/cleanenergy/chart-clean-energy-investment-to-hit-1-7twidening-lead-on-fossil-fuels

"RareX focused on rare earths for magnet motors and also found phosphate for LFP batteries – a poetic discovery"



Corporate Snapshot Well Suited For Value Growth



Nov 2023

Capital Structure

ASX Code Share Price (13.11.2023) Shares on Issue Market Capitalisation

Cash (Sept Qtr) Investments (June Qtr) REE A\$0.030 683M A\$20.502M

A\$2.3M A\$5.3M

Key people

Chairman CEO

Major Assets

Cummins Range Project RareXploration tenements Kincora Copper Cosmos Exploration Limited Canada Rare Earths Corp Various rare earth exploration projects Jeremy Robinson James Durrant

100%
100%
5M shares ¹
10M shares
25M shares
100%

Note:

1: KCC shareholder approved: RareX will transition its free carry in 5 tenements into 40M new shares. Until then RareX maintains a 35% free carry Trundle, Fairholme, Jemalong, Cundumbul and Condobolin exploration licences in NSW, in addition to 5M shares.

Shareholders

Nov 2022

Top 50 Shareholders Number of Shareholders Major Shareholders ~38% ~5,400 Simon Lee AO (5.2%) Jeremy Robinson (4.3%)

ASX: REE 0.08 0.07 0.06 0.05 0.04 0.04 0.03 0.02 Nov 2022 May 2023 0.02

May 2023

RareX Value Proposition

R A R E 🔀

Phosphate Enabled Rare Earths

Cummins Range EV raw material project

Low-risk, high value, fast tracking

Stage-1 Stage-2

- **\$45M** to monetise the pre-strip **\$304M** at Y3 for 15 years of Bene production:
- ✓ rare-earth for magnets
- phosphate for batteries

IRR – 39% pre-tax, 27% post-tax NPV– \$549M pre-tax, \$333M post-tax

Supply-chain bulk ready - under contract Offtake - MOU for initial products

Underpinned by Australia's largest undeveloped rare earths project

- \checkmark **24Mt** Contained P₂O₅
- ✓ **1.6Mt** Contained rare earths

RARE

Exploration upside on and beyond Cummins Range

Cummins Range "near-mine" anomalies

Kimberley projects

- Mt Mansbridge
 - Maude Creek
 - +Others

East YilgarnWeld NorthRed Dragon

Investments in strategic listed companies

- Kincora 5M shares
- Cosmos 10M shares
- CREC 25M shares

Team able to discover, engineer, approve, fund and deliver

Action orientated board

B

Cameron Henry – Process plant construction Danny Goeman – Marketing, sales & shipping Jeremy Robinson – Corporate finance John Young – Mine developer Shaun Hardcastle – Corporate Lawyer

Core team with Tier 1 exploration, development and ops experience James Durrant – Mining ops & projects Kay Hofmann – Mining ops & approvals Guy Moulang – Exploration & Discovery Greg Wynne – Mine geology Lu Zhang – Metallurgy & Process Damien Krebs, Gavin Beer – Metallurgy

BHP, Rio Tinto, FMG, MinRes, Pilbara Lithium, Primero, Mets Engineering

Cummins Range Project

Critical Minerals For The Electric Revolution









Flagship Snapshot Cummins Range

Technical

A magnet-Rare Earths and batteryphosphate Critical Minerals Project, beginning with monetised overburden as **Direct Shipping Ore** (DSO)

Stage 1: Monetised DSO pre-strip Stage 2: P-RE mineral con - Bene Stage 3: Fresh rock processing (from 2039)

Scoping Study released for an 18-year mine life at 500ktpa

Supply chain agreements:

- ✓ Offtake partially complete (MOU)
- ✓ Mineral loading complete
- ✓ Stockpiling land option complete
- Trucking contract and JV pending

Jaru heritage agreement closing

Regulatory submissions planned in early-mid 2024.

Sources:

ASX Announcement 22 August 2023. The information in this presentation relating to production targets and forecast financial information (FFI) was first reported on 22 August 2023. REE confirms that the material assumptions underpinning the production target and FFI continue to apply and have not materially changed. The production target is based on a portion of inferred resource. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target iself will be realised.

Rare Earths

Financial

 NPV₈ post-tax:
 AU\$ 333M

 IRR post-tax:
 27%

 Initial Capex:
 AU\$ 45M

 Stage 2 Capex:
 AU\$ 304M

 EBITDA:
 AU\$ 1.5B

RARE

Phosphate

Enabled

Conservative cost inputs

- 20% capital contingency
- 5% pa deployed capital sus-cap
- Government taxes and royalties
- Native title contributions and royalties
- Mine closure \$41M

Conservative pricing considering US \$110/kg NdPr oxide US \$250/t 32% P₂O₅

Discounted for incentivisation and value chain position:

REO: 80% basket discount P_2O_5 : 10% discount

2023 JORC Resource 519.3Mt @ 4.6% P205, 0.32% TREO

In total: Australia's largest undeveloped rare earths project

✓ 1.6M tonnes contained TREO

✓ 24M tonnes of contained phosphate

Normalised to 1% TREO:

✓ Australia's 3rd largest undeveloped rare earths project





Sources: See slide: List Of Sources For Grade And Resource Graphs ASX Announcement 01 May 2023



Developing Cummins Range Into A Critical Minerals Project

Focussing On Overburden Approval To Establish A Near Term Operating Platform

YEAR*	2H 2023	1⊦	1 2024	2	2H 2024		1H 2025		2H 2025		2026+
Resource definition	MRE update	Ge	eotech	Reser	rve		Gra	de definitior	n en	Grad	e control
Pre-strip approvals	Heritage & enviro p	ore-requis	sites Ref	erral	Assessment	2 ⁿ	^d and 3 rd leve	el approvals		✓ Lice	ense
Pre-strip readiness	Supply chain contr	acts	Mine design	Oper	rational contra	cts	Funding	Road desi	gn & build	Insta	allation & ops
Pre-strip offtake	MOL	Js		Term sh	neets			Tak	e or pay		
Bene approvals		Enviro	pre-requisit	es		R	eferral		Assessment		✓ Licence
Bene readiness		Studies 8	& engineering	5		Comr	nercial cont	racts	Fundi	ng	Construction
Bene offtake			MOUs		Term sh	eet		Stra	tegic offtal	ke partner	LT-PERSON PARTY PARTY BARDING DOLLD
*The timetable is indicat	ive and subject to cha	nge						C. Star	CHARGE C		\$4,450M
 Resource definition Focus on first 2 Multi purpose of Geotech, metal Aiming for 1-2 y 	on -5 years on minir Irilling: definition, lurgy years of Measure	ng , d	 Pre-Strip Monet Direct >250k 	(Stage ised ove shippin tpa FOI	erburden g ore rock p B Wyndham	ohos	phate	 Beneficia Miner Magne phosp c. 500 	ation (Sta al concer et rare ea hate ktpa FOB	age-2) htrate pro htths. Bat 3 Wyndha	oduct tery am

Batteries

agnets



Sources

1: https://gwec.net/global-wind-report-2022/ 2: https://www.iea.org/energy-system/electricity/grid-scale-storage 3: https://www.iea.org/energy-system/transport/electricvehiclesUnited Nations 4: https://www.iea.org/energy-system/repowebles/wind

4: https://www.iea.org/energy-system/rene wable s/wind 5: https://www.nature.com/articles/s43246-022-00236-4 6: https://www.crugroup.com/lfp-growth-may-require-the-globalpurified-phosphoric-acid-ind ustry-to-dou ble-in-size/

Single EV Raw Material Product

Mineral Concentrate

- Combined mineral concentrate
- ✓ Single bulk product offering from Wyndham port, north WA

High NdPr grading monazite

✓ Low UTh, not affected by leach process

Clean apatite phosphate mineral

- Low contamination, simple phosphoric acid leach and purification to LFP grade
- ✓ Nitron offtake 250ktpa MOU

Pre-strip

- ✓ Organic Rock Phosphate
- \checkmark 23% P₂O₅, 5x bioavailability
- ✓ c. 1Mt from surface
- ✓ Organic
- ✓ Nitron offtake 250ktpa MOU

Nitron offtake MOU 2nd largest global fert trader

- 250ktpa Pre-strip DSO
- 250ktpa Phosphate mineral con.

Enabled Rare Earths

Magnet Rare Earths Wind farms

- 200kg NdPr per MW of turbine
- 837,000 MW of installed wind power in 2022¹
- Net-zero requires the 75 GW installed in 2022 to reach 350 GW in 2030⁴

Electric Vehicles

- 1kg NdPr per vehicle
- 2.3M EVs sold in 1Q2023 c. 35% YoY increase³

Battery phosphates Huge Growth

- 25.5 kg phosphate in each LFP vehicle⁵
- ✓ 35x installed grid-scale battery storage capacity required between 2022 and 2030 for net zero²

Supply diversification needed

- 30% of all EV batteries (2022) are LFP, In 2020 only 6% were LFP!
- >90% made in China⁶.

Favourable Project Metrics

Total LOM Production Forecasts





Rare Earths

Cummins Range comparable with peers

Scoping study modelled 31.7Mt @ 0.7% TREO from Cummins Range¹

TREO grades from monazite comparable to peers

Additional benefit of low contaminate phosphate in apatite

18-year mine life and potentially more to come

Note:

1: ASX 22 August 2023: The Scoping Study referred to in this release is based on low-level technical and economic assessments and is insufficient to support an estimation of Ore Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised. Further evaluation work and appropriate studies are required before RareX will be in a position to estimate any Ore Reserves or to provide any assurance of an economic development case

Sources:

See slide: List Of Sources For Production Forecasts and Grade, Economics And Radionuclides

Low capital intensity

Efficiency of capex deployment - AU\$ 350M capex for:

- 12 ktpa of TREO²
- Plus 169 ktpa of P₂O₅
- Preceded by monetised pre-strip
- One of the highest proposed TREO output projects
- One of the lowest development capital requirements
- ✓ High efficiency, lower risk

Note:

2: Cummins Range is projected to deliver a mineral concentrate. Peer group have various value chain positions.

"A lower risk, lower cost project, for a higher critical mineral output"



RARE PLORATION





Justification Multiple anomalies on RareX tenements proximate to the Cummins Range deposit

- Detailed gravity and magnetic surveys indicate 2 large ultramafic bodies to the north including a pipe like body
- ✓ Irregular Geophysical responses are similar to Cummins Range carbonatite pipe
- Positive 3rd party review by Nigel Brand highlighted significant target potential

Exploration Plan

Utilise existing access and facilities to efficiently create exploration targets

- **3D Modelling** of select geophysics anomalies to aid drill targeting
- Review and integrate geophysics with historical drilling and surface geochemistry
- Use the Geophysics to target surface geochemical programs
- Exploration drilling in Q2/Q3 2024

"Geophysics surveys show potential to expand the regional resource base"

Cummins Range 'Near-Mine"

The Potential To Expand The Resource At Cummins Range

Resource Expansion

For A Larger Or Longer Life Flagship Project

RAREXPLORATION

Growing Kimberley Portfolio For Future Project Synergies

Curating And Prioritising Tenements For Target Generation And A Future Hub And Spoke Model Regional Hub

Mt Mansbridge

Heavy rare earths, proximal to Browns Range

- Recently pegged all of the Killy Killy formation at Mt Mansbridge HRE project
- ✓ Numerous HRE geochemical anomalies on unconformities and vein systems
- ✓ Brown Range look alike (which is 60km to the NE)
- ✓ RareX completed soils program over magnetic feature under unconformity.
 - Encouraging results have been received.
 - Exploration team needs to ground check before announcing.

"Projects with regional, technical and operational synergies"

Note: 1: Pending formal grant

RAREXPLORATION

Maude Creek¹

HRE Project with Carbonatite Potential

- ✓ Xenotime in Kimberlite occurrence, no HRE assays
- ✓ Proximal to deep crustal structures
- ✓ Speewah carbonatite 20km north along the same structural trend
- ✓ Untested mag feature on a lineament - Crosscutting host stratigraphy







Eastern Yilgarn Projects

Under Explored Terrain With Large Areas Of Regolith Hosted Rare Earths

Weld North

Regolith hosted rare earths

- ✓ 23 air core drill holes over 10-line kilometers in 2021
- ✓ All holes contained elevated rare earths, intercepts include 32m at 1179ppm TREO and 35m at 1017ppm TREO
- ✓ Light rare earths with 20% NdPr

Red Dragon

Regolith hosted rare earths

- ✓ Located 150km south-west of Laverton
- ✓ Contains highly elevated soils up to 0.4% TREO
- ✓ large untested strong magnetic target undercover. Not stratigraphic.
- ✓ Funding supported though EIS

"Kimberley 'offseason' exploration projects"

RAREXPLORATION





Relevant Investments In Listed Companies

Electrification metals exposure across the globe providing investor upside and funding contingency

Curating good investments

Kincora – Cu-Au

Lead explorer in Macquarie Arc is Australia's foremost, world class, copper porphyry district

- ✓ Board seat
- ✓ 45 million shares*
- ✓ 1% NSR on 5 projects

Cosmos (ASX:C1X) – Li-RE-Cu

Emerging lead explorer in the corvette east district of Ontario Canada, proximate to Patriot Battery Minerals

- ✓ Board seat
- \checkmark 10 million shares (c. 18%)
- ✓ 25% free carry to BFS on Orange East, NSW project.

CREC – Rare Earth trading

Developing a vertically integrated rare earth industry by connecting exploration to mining to refining to customer

- \checkmark No current board seat
- ✓ 25 million shares
- 🗸 Canadian based

* Note:

KCC shareholder approved: RareX will transition its free carry in 5 tenements into 40M new shares totalling 45M shares post transaction. Until then RareX maintains a 35% free carry Trundle, Fairholme, Jemalong, Cundumbul and Condobolin exploration licences in NSW, in addition to 5M shares.



CCSMOS



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An Evolved Board Of Company-Building Directors

Phosphate Enabled Rare <u>Earths</u>



Jeremy Robinson Chairman

Fund raising, Strategy, Corporate Development

Founder of RareX and Managing Director for 5 years leading the Company through massive resource expansion

18 years in **corporate finance** both in investment firms and in-house

Bachelor of Commerce from the University of Western Australia majoring in Corporate Finance, Investment Finance and Marketing Danny Goeman Non-Executive Director *Offtake, Marketing, Shipping*

Ex FMG director of sales and marketing and advisor to the CEO, following 20 years with Rio Tinto in management, sales and marketing, strategy development and high level commercial negotiations

As Head of Marketing, then CEO; responsible for the 2018, 10-year **binding take-or-pay offtake deal** for junior SOP developer Danakali (ASX: DNK)

Holds a **Masters in Business** Administration and Postgraduate Diploma in leadership & Management from **Curtin University**





Cameron Henry Non-Executive Director

Construction, Operations

Founding managing director of EPCM engineering firm, Primero Group Limited

Over 20 years' experience in development and **delivery of global minerals processing, energy and NPI projects**

Holds a Masters in Project Management from Curtin University and is a Member of the Australian Institute of Company Directors (MAICD)

John Young Non-Executive Director Geology, Development, Growth

Co-founder and executive director of successful **ASX200 lithium producer Pilbara Minerals Limited** (ASX: PLS)

Led the growth of Pilbara from a junior ASX-listed company to a globally significant \$2 billion lithium producer in the Pilbara region of Western Australia

Holds a **Bachelor of Geology** from **Curtin University** and is a director on a number of ASX listed companies





Shaun Hardcastle Non-Executive Director Corporate Law, Finance Law, Governance

Partner at Hamilton Locke law firm covering corporate and finance law, corporate governance, risk management and compliance

Involved in a broad range of crossborder and domestic transactions including joint ventures, corporate restructuring, **project finance**, resources and asset/equity sales and acquisitions

Bachelor of Law from UWA and currently a non-executive director of a number of ASX listed companies

Growing in-house capability Discovery, development, ops



James Durrant Chief Executive Officer

Mining and Mechanical Engineer with nearly 20 years across Tier 1 operations and junior company project development in Africa and Australia



Guy Moulang Head of Geology

Geologist and AIG Member with 20 years experience in technology metals, base metals and gold exploration. 5 years with RareX on Cummins Range

Kay Hofmann Study & Approvals Manager

Ex Mineral Resources Limited and BHP. Lead engineering and operational teams across mine planning, production, drill & blast, A&I, hydrogeology and environmental baselines

Greg Wynne Senior Geologist

Geologist, project manager and mines rescue qualified

Lu Zhang Process & Product Engineer

Metallurgist and process engineer. Ex Mets Group

Damien Krebs Lead Metallurgist

Rare Earth and Phosphate metallurgist

Gavin Beer Consultant Metallurgist

Rare Earth process designer and metallurgist



Phosphate Enabled Rare Earths



Monetising In A Sustainable Manner

ESG Framework

- WEF consistent designed by Top5 advisor
- Aligned to stakeholders' expectations
- Mapped out through exploration, development and into operations

Social Performance Framework

- Designed to **International standards** UN and IFC
- Maximises potential for **positive** indigenous relations
- Provides for progressive development of social performance for all project stages

What we're currently doing

- ✓ TO negotiations towards a Mining Heritage Agreement
- Environmental Baselines +70% complete
- Aboriginal impact assessment defined for execution
- Recruitment process to remove barriers for aboriginals and minority groups
- Agreement pending with EKJP for local and regional TO training
- ✓ Jaru contracting agreement with locally known TO owned mining contracting company pending
- ✓ Jaru Ranger programme being investigated in conjunction with KLC

"Doing the right things, the right way and holding ourselves accountable" Environmental, Social & Governanace Framework Sustainability and Self-Assessment Report

2023

RARE

Phosphate Enabled Rare Earths

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Investor Milestones Cummins Range - Project Delivery 2024_{н1} 2024_{н2}

Mining heritage agreement

Pre-Strip DSO quarry (Stage 1)

- Finalised plant trials
- Binding Offtake
- Mining contractor selection
- Finalised supply chain contracts
- DFS study and economics
- Pre-Strip (Stage 1) enviro submissions

RE-Phos bene plant (Stage 2)

- Product samples and derivatives
- Mineral concentrate offtake MOUs
- PFS study and economics

- Maiden ore reserve
- Ops-readiness (Stage 1)
- Mining approvals
- Construction contracts
- Operational contracts
- FID

Financing

and the second s

First Ore (pre-strip)

202

- Grade definition & control drilling
- Pre-Strip ops-readiness (Stage 1)
- Construction readiness & Early Works
- First Ore from pre-strip

- Metallurgical optimisation
- **Binding offtake**
- DFS study and economics
- Enviro submissions

- Final engineering
- Ops-readiness (Stage 2)
- Mining approvals
- Construction contracts
- FID for bene plant
- Financing

RAREX

Phosphate Enabled Rare Earths

Investor Milestones RARE PLORATION 2023 Q4 2024 Q1

Cummins Range 'Near-Mine"

- ✓ Geophysics
- Cummins Range "Near-Mine" target generation
- "Near-Mine" geochem surveys
- Cummins Range "Near Mine" tenement growth
- "Near-Mine" target drilling

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"Near-Mine" growth tenements: Target generation

RARE

Phosphate Enabled Rare Earths

Kimberley projects

- Mt Mansbridge data re-interp
- Maude Creek data re-interp
- Portfolio growth

- Mt Mansbridge: Geophysics
- Maude Creek: tenement finalisation and heritage agreement
- Mt Mansbridge: target generation
- Maude Creek: Soils programme
- Maude Creek: target generation

East Yilgarn"

 Field programme planning for Red Dragon East Yilgarn: Geophysics & geochemistry EIS application Red Dragon mag drilling

Board of Directors

Jeremy Robinson – Non-Executive Chairman John Young - Non-Executive Director Danny Goeman – Non-Executive Director Shaun Hardcastle - Non-Executive Director Cameron Henry – Non-Executive Director

Company Secretary Oonagh Malone

Chief Executive Officer James Durrant

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ASX: REE







<u>range</u>

source

CUMM

Minera

JORC

Cummins Range Deposit Remote But Well Connected



Deposit Location Overview

130km SW of Halls Creek access via Tanami Road

Deposit at surface ease of exploration

Jaru Traditional Owners consulted and supportive

Part of the Great Sandy Desert on unused pastoral lease

Connected to Wyndham Port via established mineral corridor

1 Port Wyndham

2 Lake Argyle, Ord River Hydro Plant Cummins Range

Western Australia Phosphate Enabled Rare Earths

R A R E 🔀

2023 JORC Resource 519.3Mt: 4.6% P₂O₅; 0.32% TREO

1.6Mt TREO contained

Basis of Resource

Estimated by industry experts at CSA Global

Phosphate CoG used to capture the extensive Phosphate mineralisation and low to highgrade rare-earths

c. 70Mt of Indicated resource located within the regolith, top 100m

Highlights

24Mt P₂O₅

contained

- ✓ Large igneous, low deleterious, Phosphate deposit discovered from surface
- ✓ High grade Rare Earth core still remains: concentrated around the Dykes: +50Mt at >1% TREO
- ✓ Underlying fresh rock resource with higher-grade Rare Earths and favourable mineralogy

Global Resource (JORC 2012)

2.5% P ₂ O ₅ Grade Cut	Tonnes Mt	TREO ppm	P ₂ O ₅ %	NdPr ppm	Nb ₂ O ₅ ppm	HREO ppm
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Inferred	452.7	2,900	4.2	630	550	170
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"This new resource reframes the project as one of Australia's most significant rare earth projects"



Rare Earths

Cummins Range Radionucleotides



Radionuclides Comparison



"Cummins Range is one of the lowest radionuclides containing deposit"



Projec Econor Cumm Range

Key Inputs And Assumptions

Genera	l Parameters and	Assumptions

Discount Rate	8%
Owners Costs	8% of direct and indirect capital costs for each stage
Sustaining Capital	2% of deployed capital each operating year
Product Price	Pricing as indicated in result tables below
	90% for P2O5
	20% for REE
State Royalties	7.5% for DSO; 5% for Concentrate
Native Title Royalties	Based on draft Heritage Mining Agreement
Depreciation	Reducing balance method applied over 20yrs
Mine Closure	10% of all CAPEX applied after the last operating period
Contingency	20% applied to direct and indirect capital costs





Phosphate Enabled Rare Earths



Costs

CAPEX	Stage 1 [A\$m]	Stage 2 [A\$m]	Stage 3 [A\$m]
Mine	0.5	17	
Processing	0.25	164	63
NPI	10	4	-
New road	15		-
TSF		12	-
Port upgrades	9	-	
Owners Costs (incl. EPCM)	3	56	- 1
Subtotals	37	253	63
Contingency (20%)	7	51	-
Total	45	304	63

OPEX	Stage 1 [A\$/t product]	Stage 2a [A\$/t product]	Stage 2b [A\$/t product]	Stage 3 [A\$/t product]
Mining	40	18	36	57
Beneficiation	13	115	167	201
Haulage	54	54	54	54
Transhipping	16	16	16	16
Total	123	203	273	328

Product Pricing	Low-Case [A\$/t]	Mid-Case [A\$/t]	High-Case [A\$/t]
Stage 1 - DSO Rock Phos	203	254	304
Stage 2a – High Phos-RE Con	515	584	652
Stage 2b – Mid Phos-RE Con	480	545	611
Stage 3 - RE-Phos Con	404	468	532

Outcomes



Product Pricing	Low-Case [A\$/t]	Mid-Case [A\$/t]	High-Case [A\$/t]
Stage 1 - DSO Rock Phos	203	254	304
Stage 2a – High Phos-RE Con	515	584	652
Stage 2b – Mid Phos-RE Con	480	545	611
Stage 3 - RE-Phos Con	404	468	532

Economic Performance	Low-Case	Mid-Case	High-Case
NPV8 (pre-tax), [A\$m]	227	549	872
NPV8 (post-tax), [A\$m]	101	333	562
IRR (pre-tax), [%]	23%	39%	54%
IRR (post-tax), [%]	15%	27%	38%
Stage 1 Average EBITDA, [A\$m/a]	12	23	33
Stage 2a Average EBITDA, [A\$m/a]	173	216	259
Stage 2b Average EBITDA, [A\$m/a]	69	97	125
Stage 3 Average EBITDA, [A\$m/a]	8	35	61
Average EBITDA LOM, [A\$m/a]	54	81	107
Tax and Royalties	Low-Case [A\$m]	Mid-Case [A\$m]	High-Case [A\$m]
Government tax (30%)	212	406	607
Government royalty (7.5% DSO, 5% Con)	178	205	231
Native title contributions	74	84	94

Cumulative Cashflows before Tax [A\$M]





ON

RARE

RareX tenements and prospectivity

RAREXPLORATION

Tenement ID	Name	Jurisdiction	Locality	Prospectivity
E80/5092	Cummins Range	WA	Kimberley	Rare Earths and Phosphate
M80/0648	Cummins Range	WA	Kimberley	Rare Earths and Phosphate
E80/5372	Cummins Range	WA	Kimberley	Rare Earths and Phosphate
E80/5888	Cummins Range	WA	Kimberley	Rare Earths and Phosphate
E80/5943	Maude Creek	WA	Kimberley	Heavy Rare Earths
E80/5430	Mt Mansbridge	WA	Mt Mansbridge	Heavy Rare Earths
E80/5942	Mt Mansbridge	WA	Mt Mansbridge	Heavy Rare Earths
E39/2213	Red Dragon	WA	Red Dragon	Rare Earths
E38/3455	Weld North	WA	Laverton	Rare Earths
E38/3530	Weld North	WA	Laverton	Rare Earths
E38/3531	Weld North	WA	Laverton	Rare Earths



References

List Of Sources For Grade And Resource Graphs

Resource	RAREX	Source of data		Source of data		SM Source of data		Source of data
Measured Resource, Mt	0	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	5	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	43	https://asm-au.com/dubbo-project/resources-and-reserves/	0	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Indicated Resource, Mt	67	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	30	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	0	https://asm-au.com/dubbo-project/resources-and-reserves/	14	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Inferred Resource, Mt	453	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	21	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	32	https://asm-au.com/dubbo-project/resources-and-reserves/	38	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Measured TREO Grade, %	0.00%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	3.20%	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	0.88%	https://asm-au.com/dubbo-project/resources-and-reserves/	0.00%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Indicated TREO Grade, %	0.50%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	2.70%	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	0.00%	https://asm-au.com/dubbo-project/resources-and-reserves/	1.25%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Inferred TREO Grade, %	0.29%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf	2.30%	https://wcsecure.weblink.com.au/pdf/ARU/02651944.pdf	0.88%	https://asm-au.com/dubbo-project/resources-and-reserves/	0.94%	https://wcsecure.weblink.com.au/pdf/REE/02660886.pdf
Measured TREO Contained, Mt	0.00	Calculation	0.16	Calculation	0.38	Calculation	0.00	Calculation
Indicated TREO Contained, Mt	0.33	Calculation	0.81	Calculation	0.00	Calculation	0.17	Calculation
Inferred TREO Contained, Mt	1.31	Calculation	0.48	Calculation	0.28	Calculation	0.36	Calculation
Market Capitalisation, AUD Billion (29.09.2023)	0.023	https://www2.asx.com.au/markets/company/ree	0.51	https://www2.asx.com.au/markets/company/aru	0.25	https://www2.asx.com.au/markets/company/asm	0.02	https://www2.asx.com.au/markets/company/ree

Resource		Source of data	Ŵ	Source of data		Source of data
Measured Resource, Mt	4.97	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	a o	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	0.14	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Indicated Resource, Mt	20	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	a 6	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	5	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Inferred Resource, Mt	5	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	a 25	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	6	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Measured TREO Grade, %	0.96%	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	^a 0.00%	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	0.70%	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Indicated TREO Grade, %	0.88%	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	^a 1.23%	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	0.78%	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Inferred TREO Grade, %	1.05%	https://www.investi.com.au/api/announcements/ha s/befee282-f7d.pdf	a 0.97%	https://www.investi.com.au/api/announcements/dre/2c555 82-089.pdf	0.73%	https://wcsecure.weblink.com.au/pdf/NTU/02649250.pdf
Measured TREO Contained, Mt	0.05	Calculation	0.00	Calculation	0.00	Calculation
Indicated TREO Contained, Mt	0.17	Calculation	0.07	Calculation	0.04	Calculation
Inferred TREO Contained, Mt	0.06	Calculation	0.25	Calculation	0.04	Calculation
Market Capitalisation, AUD Billion (29.09.2023)	0.09	https://www2.asx.com.au/markets/company/has	0.17	https://www2.asx.com.au/markets/company/dre	0.16	https://www2.asx.com.au/markets/company/ntu

List Of Sources For Production Forecasts And Grade, Economics And Radionuclides

Parameter		Source of data		Source of data		Source of data
Total LOM Production Forecast						
Tonnage, Mt	31.7	https://investors.rarex.com.au/announcements/4396391	29.5	https://wcsecure.weblink.com.au/pdf/ARU/02712231.pdf	20.9	https://www.investi.com.au/api/announcements/has/befee282- f7d.pdf
TREO Grade, %	0.7%	https://investors.rarex.com.au/announcements/4396391	2.9%	https://wcsecure.weblink.com.au/pdf/ARU/02712231.pdf	0.9%	https://www.investi.com.au/api/announcements/has/befee282- f7d.pdf
Project Economies						
TREO Output, ktpa	11.5	https://investors.rarex.com.au/announcements/4396391	4.9	https://wcsecure.weblink.com.au/pdf/ARU/02597137.pdf	8.1	https://www.investi.com.au/api/announcements/has/befee282- f7d.pdf
CAPEX, USD Billion	0.22	https://investors.rarex.com.au/announcements/4396391	1.14	https://wcsecure.weblink.com.au/pdf/ARU/02597137.pdf	0.42	https://www.investi.com.au/api/announcements/has/befee282- f7d.pdf
Radionuclides						
U, ppm	58	https://investors.rarex.com.au/announcements/4396391	153	https://www.arultd.com/wp- content/uploads/2022/11/202211_Fact_SheetRADIATION- Optimised.pdf	254	https://www.investi.com.au/api/announcements/has/cd45de38- d0f.pdf
Th, ppm	62	https://investors.rarex.com.au/announcements/4396391	2,373	https://www.arultd.com/wp- content/uploads/2022/11/202211_Fact_SheetRADIATION- Optimised.pdf	527	https://www.investi.com.au/api/announcements/has/cd45de38- d0f.pdf

Parameter	Australiam Stretegic Materiada	Source of data		Source of data	Lynas Rare Earths Ltd	Source of data
Total LOM Production Forecast						
Tonnage, Mt	18.9	https://asm-au.com/dubbo-project/resources-and-reserves/	3.3	https://northernminerals.com.au/browns-range/resource-and- exploration/#:~:text=Northern%20Minerals%20has%20100%25%20owr ership,held%20100%25%20by%20Northern%20Minerals.	-	-
TREO Grade, %	0.9%	https://asm-au.com/dubbo-project/resources-and-reserves/	0.7%	https://northernminerals.com.au/browns-range/resource-and- exploration/#:~:text=Northern%20Minerals%20has%20100%25%20owr ership,held%20100%25%20by%20Northern%20Minerals.	-	-
Project Economies						
TREO Output, ktpa	3.1	https://asmd.irmau.com/site/PDF/ad9dcf23-41ca-4ebb-a779- b2cbc200217e/DubboProjectOptimisationDeliversStrongFinancials	3.1	https://announcements.asx.com.au/asxpdf/20150302/pdf/42wzybv98yc 8n.pdf	-	-
CAPEX, USD Billion	1.08	https://asmd.irmau.com/site/PDF/ad9dcf23-41ca-4ebb-a779- b2cbc200217e/DubboProjectOptimisationDeliversStrongFinancials	0.29	https://wcsecure.weblink.com.au/pdf/NTU/01708988.pdf	-	-
Radionuclides						
U, ppm	120	https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService /mp/01/getContent?AttachRef=SSD- 5251%2120190227T000941.536%20GMT	30	https://announcements.asx.com.au/asxpdf/20150302/pdf/42wzybv98yc 8n.pdf	25	https://www.rainbowrareearths.com/wp- content/uploads/2023/01/Rainbow-Investor- Presentation_February-2023.pdf
Th, ppm	375	https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService /mp/01/getContent?AttachRef=SSD- 5251%2120190227T000941536%20GMT	24	https://announcements.asx.com.au/asxpdf/20150302/pdf/42wzybv98yc 8n.pdf	659	https://www.rainbowrareearths.com/wp- content/uploads/2023/01/Rainbow-Investor- Presentation February-2023.pdf

Note:

1: Radionuclide levels are for element U and Th. Oxide to element conversion factors of 1.1792 (U to U₃O₈) and 1.1379 (Th to ThO₂) were used to convert to element levels where oxides were reported.

2. ASM U & Th levels is calculated as average of the reported range.

3, Northern Minerals TREO output and CAPEX based on 2015 DFS, 2016 business plan and 2018 annual report