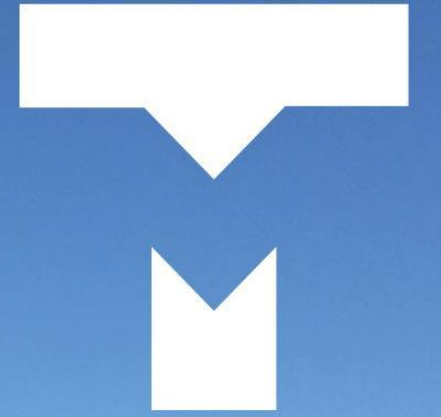


# NEW RARE EARTH AND VANADIUM DEPOSIT

## LARGEST TENEMENT HOLDING IN NORTHERN TERRITORY

---

Company Presentation  
January 2023



TRANSITION  
MINERALS

Revision 1



# DISCLAIMER

This company presentation [the Presentation] of Transition Minerals Limited [the Company] has been prepared by the Company solely for information purposes and for the sole use of the person to whom it is delivered. The Presentation is prepared for discussion purposes only. The Presentation does not constitute, and should not be construed as, any offer or invitation or recommendation to buy or sell any of the securities mentioned or described herein. The Presentation and the information contained herein is strictly confidential and may not be distributed, reproduced or used, in whole or in part, without the consent of the Company and may not be used for any purpose other than the evaluation of the business of the Company by the person to whom the Presentation is delivered. Applications for shares [if any] will only be considered on the terms of the final application terms, if and when issued. The Presentation has not been and will not be reviewed or registered with any public authority or stock exchange.

The Company does not make any representation or warranty [whether express or implied] as to the correctness or completeness of the information contained herein, and neither the Company nor any of its related companies or any such person's affiliates, directors, employees, representatives or advisors assume any liability connected to the Presentation and/or the statements herein.

The contents of the Presentation are not to be construed as financial, legal, business, investment or tax advice. Each recipient should consult with its own financial, legal, business, investment and tax advisers as to financial, legal, business, investment and tax advice. By attending or receiving the Presentation you acknowledge that you will be solely responsible for your own assessment of the market and the market position of the Company and that you will conduct your own analysis and be solely responsible for forming your own view of the potential future performance of the Company's business and any investment in the Company. An investment in the Company involves significant risks, and several factors could cause the actual or future results, performance or achievements of the Company to be materially different from any results, performance or achievements that may be expressed or implied by information in the Presentation.

Included in the Presentation are various 'forward-looking statements', including but not limited to statements regarding the intent, opinion, belief or current expectations of the Company and/or its management with respect to, among other things, [i] goals and strategies, [ii] plans for new business development, [iii] marketing plans and the Company's target markets, [iv] evaluation of the Company's markets, competition and competitive position, and [v] trends which may be expressed or implied by financial or other information or statements contained herein. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors that may cause the actual results, performance and outcomes to be materially different from any future results, performance or outcomes expressed or implied by such forward-looking statements.

The distribution of the Presentation and any offering, subscription, purchase or sale of securities issued by the Company may in certain jurisdictions [including but not limited to USA, Canada, Japan, Australia and Hong Kong] be restricted by law. Persons, into whose possession the Presentation may come, are required to inform themselves of and to comply with all applicable laws and regulations in force in any jurisdiction in or from which they invest or receive or possess the Presentation, and they must obtain any consent, approval or permission required under the laws and regulations in force in such jurisdiction, and the Company shall not have any responsibility or liability for these obligations.

The Presentation does not constitute an offer to sell or a solicitation of an offer to buy any securities in any jurisdiction to any person to whom it is unlawful to make such an offer or solicitation to in such jurisdiction. The Company's securities have not been and will not be registered under the U.S. Securities Act of 1933, as amended [the "Securities Act"] or the securities laws of any state of the United States.

The Presentation is made and reflects views as of January 2023. As a recipient of the Presentation, you accept that the information contained herein may be subject to changes. The Company does not intend, and does not assume any obligation, to update or correct any information included in the Presentation.

The Presentation is subject to Australian law. Any dispute arising from the Presentation is subject to the jurisdiction of the Australian courts.

# RARE EARTHS & VANADIUM PROJECT

## COMBINATION REE + V PROJECT TARGETING:



economic, rare earth element deposit



superior scale: 70–420 Mt



superior grade: 1,300–1,950 ppm TREO



superior NdPr%: decarbonisation Holy Grail



overburden = vanadium deposit  
as credit to offset mining cost:  
10–50 Mt @ 0.16–0.20% V<sub>2</sub>O<sub>5</sub>



bulk mining, very low strip



low-cost, modern, heap-leach process recovery

REE Exploration Target  
(JORC, 2012)\*

V Exploration Target  
(JORC, 2012)\*

VAC002		Interval (m)	V <sub>2</sub> O <sub>5</sub> (%)	TREO (ppm)
Vanadium		0–0.5	<b>0.391</b>	194
		0.5–1.0	<b>0.459*</b>	222*
		1.0–1.5	<b>0.255</b>	125
		1.5–2.0	<b>0.158</b>	129
		2.0–2.5	<b>0.146</b>	192
		2.5–3.0	0.019	101
		3.0–3.5	0.027	85
		3.5–4.0	0.054	82
		4.0–4.5	0.064	70
		4.5–5.0	0.105	81
REE		5.0–5.5	0.009	<b>638</b>
		5.5–6.0	0.017*	<b>2896*</b>
		6.0–6.5	0.010*	<b>2541*</b>
		6.5–7.0	0.007	<b>867</b>
		7.0–7.5	0.011	408
		7.5–8.0	0.095	236
		8.0–8.5	0.019	186
		8.5–9.0	0.020	184
		9.0–9.5	0.016*	<b>1132*</b>
		9.5–10.0	0.006	447

\*following Li-Borate fusion analysis ME-MS81

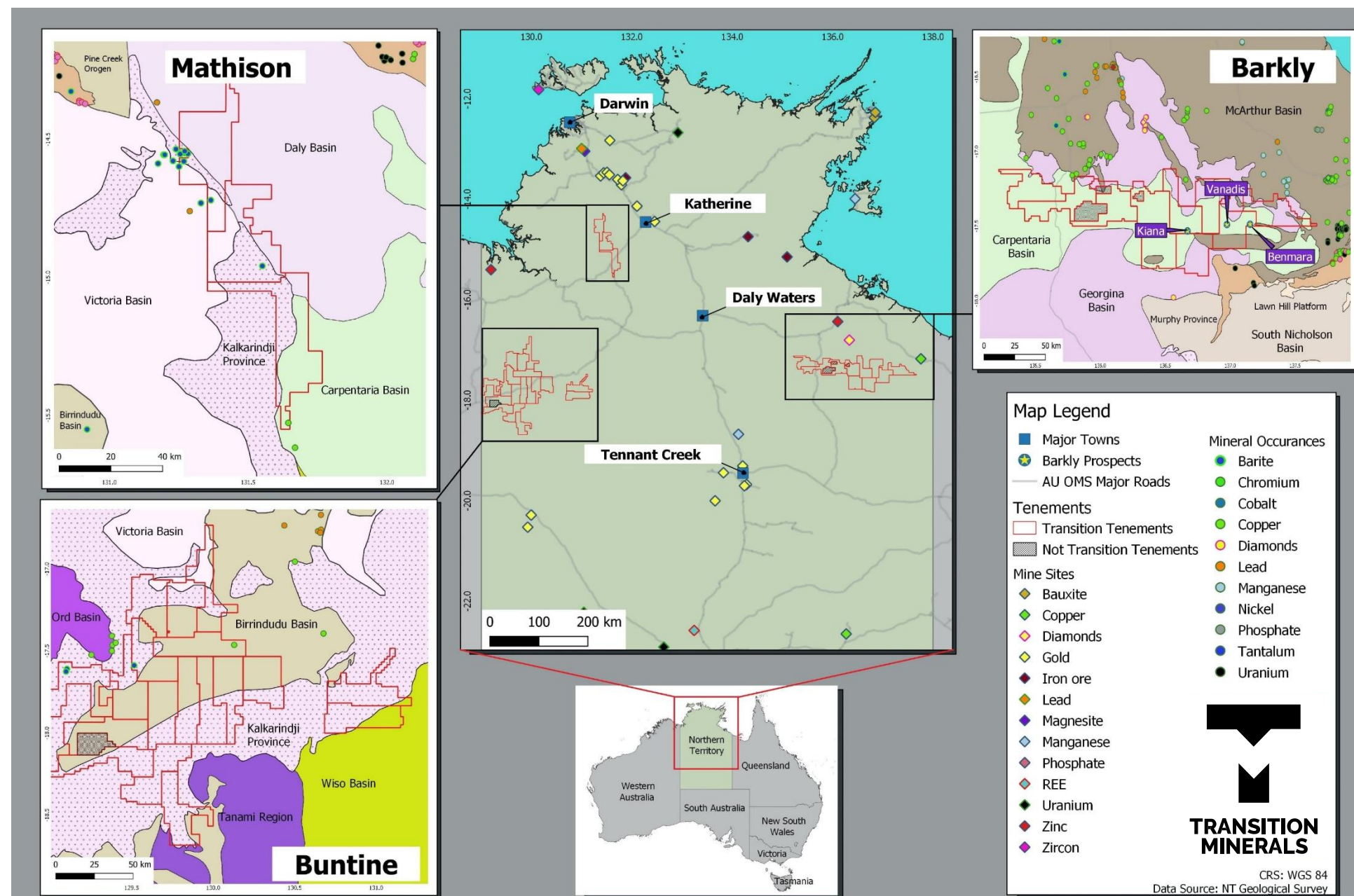
\*Ref: [JORC Table 1](#). The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource. For original announcements and full disclosure, refer to company announcements at [www.transitionminerals.com/announcements](http://www.transitionminerals.com/announcements)



# HIGH-QUALITY ASSET: NEW MINERAL DISTRICT BOX SEAT

## IN THE LAND OF GIANTS — SEDIMENT-HOSTED RARE EARTHS, VANADIUM & BASE METALS

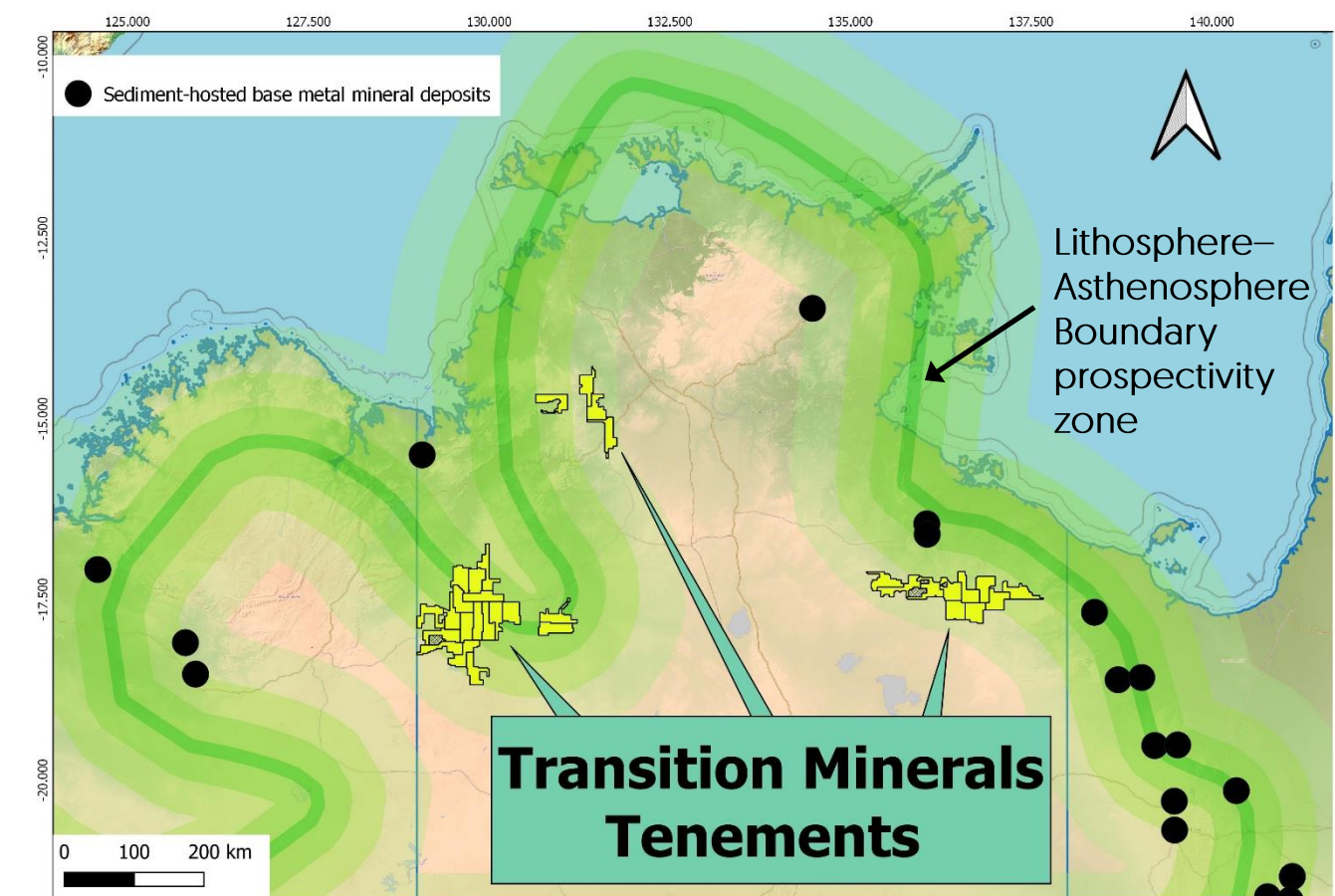
### TRANSITION MINERALS TENEMENTS: 2% OF NORTHERN TERRITORY



### WHY WE ARE HERE

“85% of the world’s sediment-hosted base metals, including all giant deposits (>10 Mt of metal), occur within 200 km of the edge of thick lithosphere”.

[https://spiral.imperial.ac.uk/bitstream/10044/1/81277/2/134991\\_00\\_0.pdf](https://spiral.imperial.ac.uk/bitstream/10044/1/81277/2/134991_00_0.pdf)





# TRANSITION MINERALS: HIGHLIGHTS

## UNMATCHED, FIRST-MOVER, PRE-IPO RARE EARTHS AND VANADIUM OPPORTUNITY

### First-Mover Advantage

New NT REE + V district  
32 ELs granted  
Expansive holding 100% of  
**2.5 million hectares**

### Flagship High-Grade

Barkly Clay-Hosted Rare Earths  
Exploration Target JORC [2012]\*  
**70–420Mt @ 1,300–1,950ppm TREO**  
with overlying vanadium

### Blue Sky Potential

Barkly Vanadium prospects with  
drilling results to **0.51% V<sub>2</sub>O<sub>5</sub>**  
with underlying REE deposit  
and rock chips up to **1.26% V<sub>2</sub>O<sub>5</sub>**  
surface anomaly over 100's km<sup>2</sup>

### Market-Leading NdPr Ratio 33% Critical Material for:

- permanent magnets
- electric vehicles
- wind turbines
- energy transition & decarbonisation

### Potential Supply Game Changer Rare Earths and Vanadium

- low strip
- bulk mining
- low OPEX

### Future Upside: Giant Cu/Pb/Zn/Au System in Emerging District Discovery Holes Results:

7 m @ 1.1 g/t Au  
6 m @ 4173 ppm Cu incl. 2 m @ 9250 ppm  
4 m @ 1525 ppm Cu, 9 m @ 1749 ppm Cu  
4 m @ 2420 ppm Zn and 775 ppm Pb

### NT is a Top Mining Destination

Solid history of large-scale,  
fully developed mining projects

### Rapidly Expanding Demand

**REE:** global electrification, rejection  
of Chinese monopoly

**Vanadium:** stored-energy,  
aerospace and steel markets

### Experienced Technical and Management Team

Proven track record  
of discovery

\*The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.





# HIGH-ENERGY, TOP-QUALITY TEAM

## INDUSTRY-LEADING TECHNICAL TEAM WITH RECORD OF VALUE CREATION AND DISCOVERY



### René Sterk

#### Chairman & Director

MSc FAusIMM CP[Geo] MAIG [RPGeo]  
MSEG MInstD

René holds a master's degree in Structural Geology and Tectonics. He is a Chartered Professional and a Fellow with the AusIMM, and a Member and Registered Professional Geologist with the AIG. René is a director of RSC (international geological consultancy), a director with the AusIMM (peak body for mining professionals with 13,000 members), a director of Straterra (New Zealand's industry lobby group and national voice for the natural resources industries), and a director of Opaxe (an information technology company providing mineral resource intelligence data). He also holds an ex-officio role on the JORC committee.



### Tobias Foster

#### Managing Director

BSc MBA PgCert[Pet.Eng.]

Toby has over 20 years' experience in the resources industry, including as Director of Advent Energy, Operations Manager of a geochemical consultancy successfully acquired by global laboratory group SGS, and Corporate Development Manager for an ASX-listed venture capital group focussed on investment into companies targeting potentially large energy and mineral resources. Toby has led successful exploration and appraisal programmes around Australia and secured multi-million dollar corporate and asset-level transactions.



### Craig Wright

#### Director & Company Secretary

MSc MAusIMM MAICD

Craig has over 20 years' experience in company management, 14 years in mining and exploration, and was a not-for-profit director for 15 years. He founded a highly successful IT-innovation brand that is established in Europe, North America, Asia and Australasia. For nine years, Craig was Chief Operating Officer of RSC's resource development consultancy where he heads up the group's corporate development and strategy. He has a track record of analytical thinking, commercial strategy and detailed financial analysis from his prior work in business management consulting.



### Jim Kerr

#### Exploration Manager

BSc MSc MAusIMM MSEG AWASM

Jim is an economic geologist with over 25 years' experience in the global mining industry, having developed natural resource projects across the commodity spectrum in Australia, Asia-Pacific and Sub-Saharan Africa. Jim has held senior executive roles for companies including Iscor, Barrick Gold Corporation, Mincor, Tethyan Copper, Lithic Metals and Energy (as Managing Director), Hillgrove Resources, Kalbar Resources and Geopacific Resources. He has significant experience working on porphyry copper-gold, epithermal precious metal and base metal deposits.



### Paul Frederiks

#### Board Advisory

Paul is a professional Company Secretary and Chief Financial Officer with over 30 years' experience in the Australian resources sector. Extensive knowledge base in listed public company financial and secretarial management, external reporting, financial modelling and forecasting, project financing, treasury management, corporate governance and hedging. Currently Finance Director and CFO of Duke Exploration and MaxSil.



### Chris Baker

#### Board Advisory

Chris is Chairman of MinEx, the Mining and Quarry sector Health and Safety Council; former Chairman of Explaurum Ltd [ASX:EXU]; and former CEO of Straterra, a group that represents the minerals and mining sector in New Zealand. Chris has worked as a metallurgist, manager and director in Australia and NZ in multiple sectors including gold, mineral sands, uranium, coal, base metals, investment, project development and with listed entities. His specialties include governance, government relations, mining, strategy, business development and climate change policy.





# WORK COMPLETED





## 2022 SEASON DRILLING RESULTS

### BARKLY ZONE — VANADIS, KIANA AND BENMARA PROSPECTS



98 Air Core holes for 1,553 m



Discovery of a new rare earth element deposit: clay-hosted, grades to 4,836 ppm TREO, standout concentrations of payload elements Nd+Pr



Confirmation of continuous zones of enriched vanadium mineralisation, with drill intercepts up to 0.51%  $V_2O_5$  at Vanadis and Kiana prospects



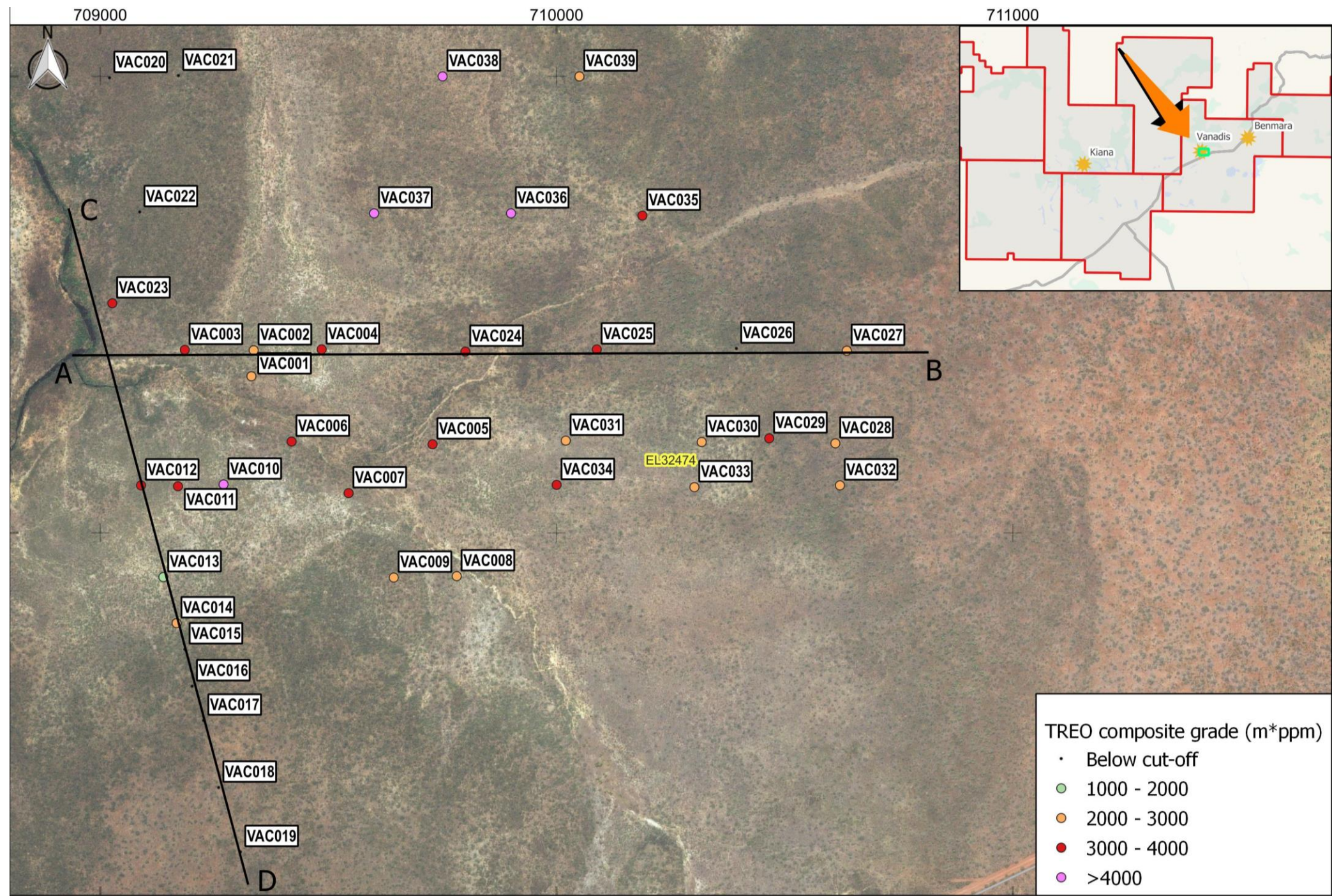
Mineralisation open in all directions



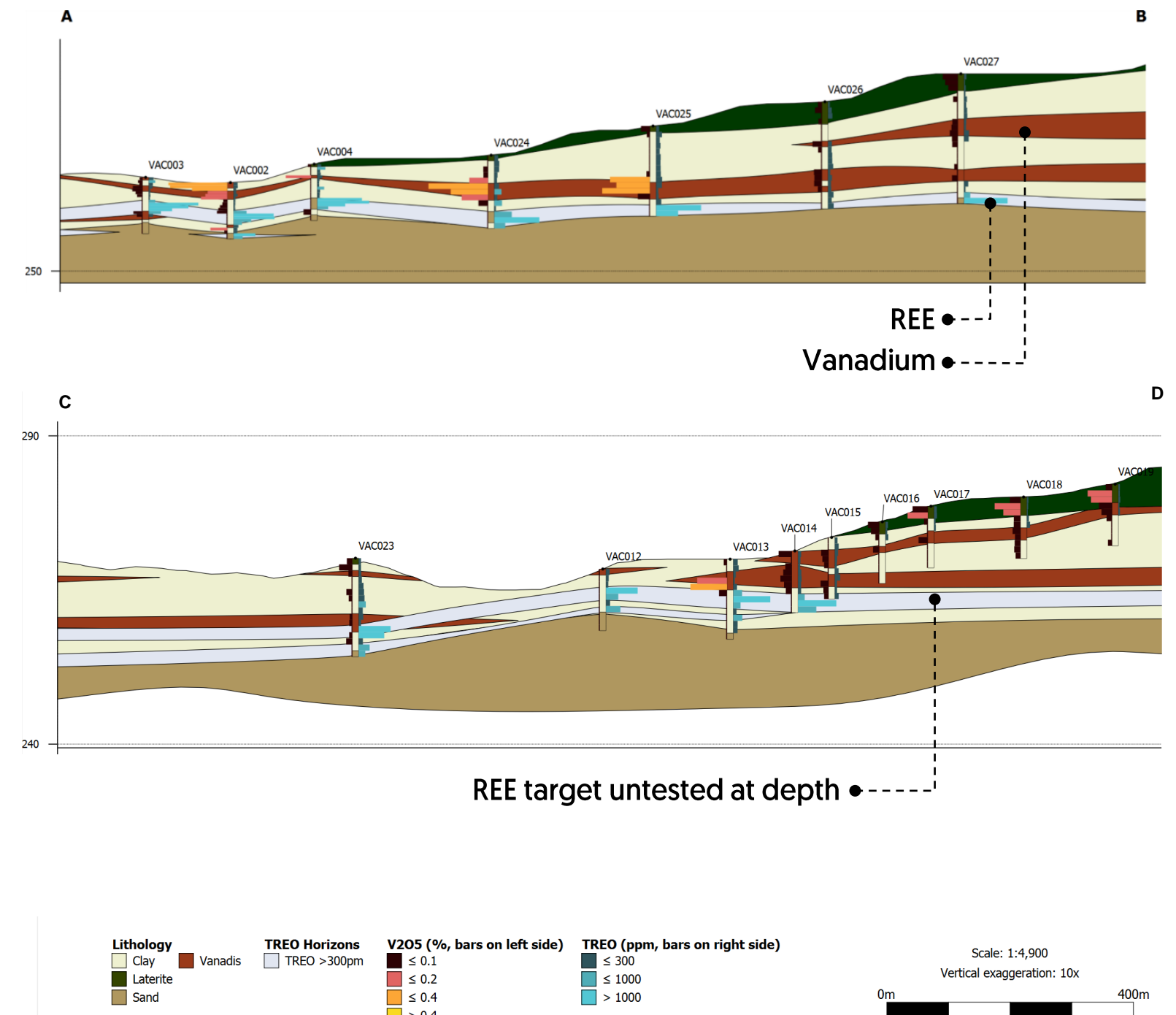


# NEW REE + V DISCOVERY

## EXPANSIVE MINERAL POTENTIAL



22 November 22  
CRS: GDA94/zone53  
Data Source: Bing Aerial

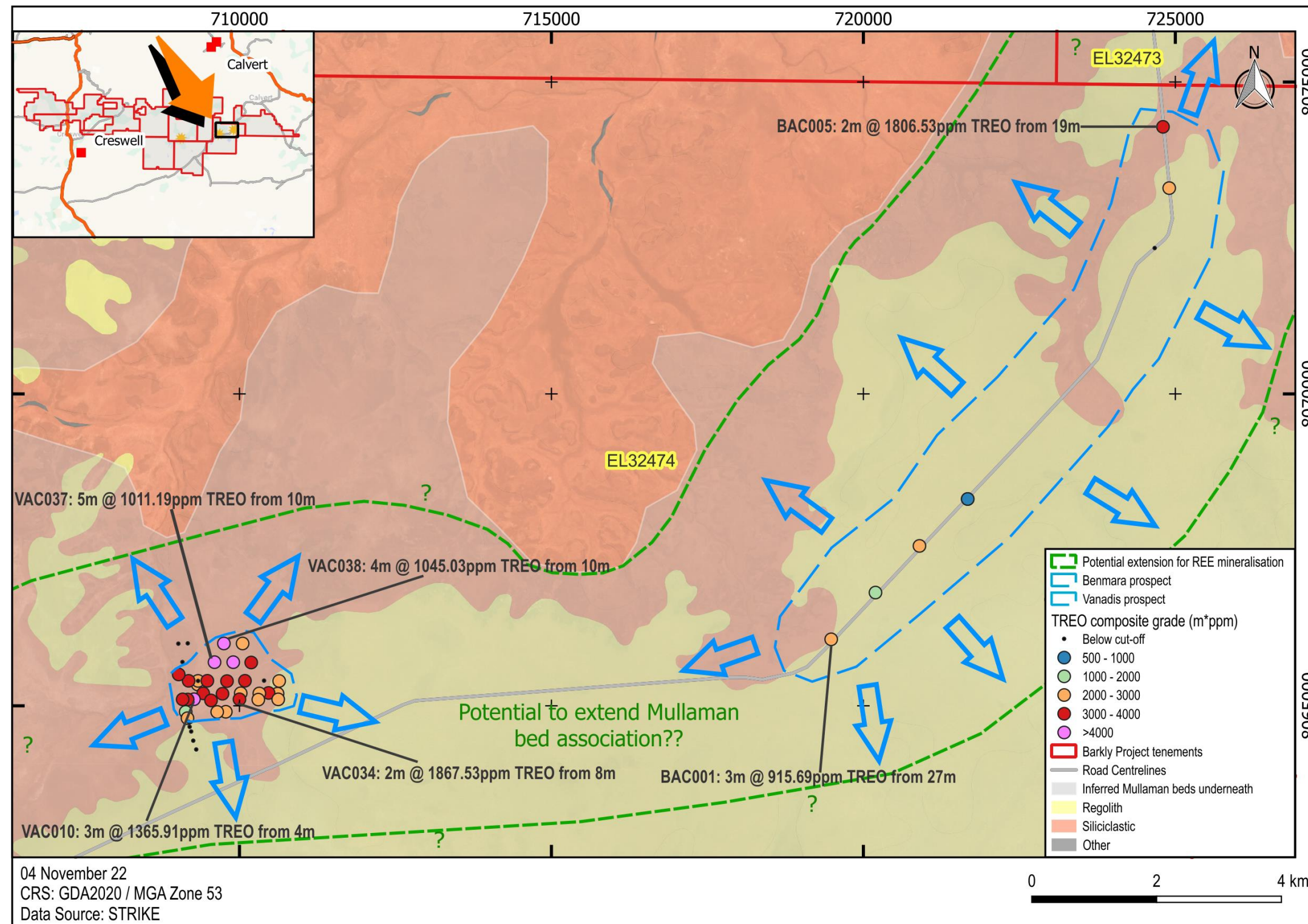




# NEW REE + V DISCOVERY



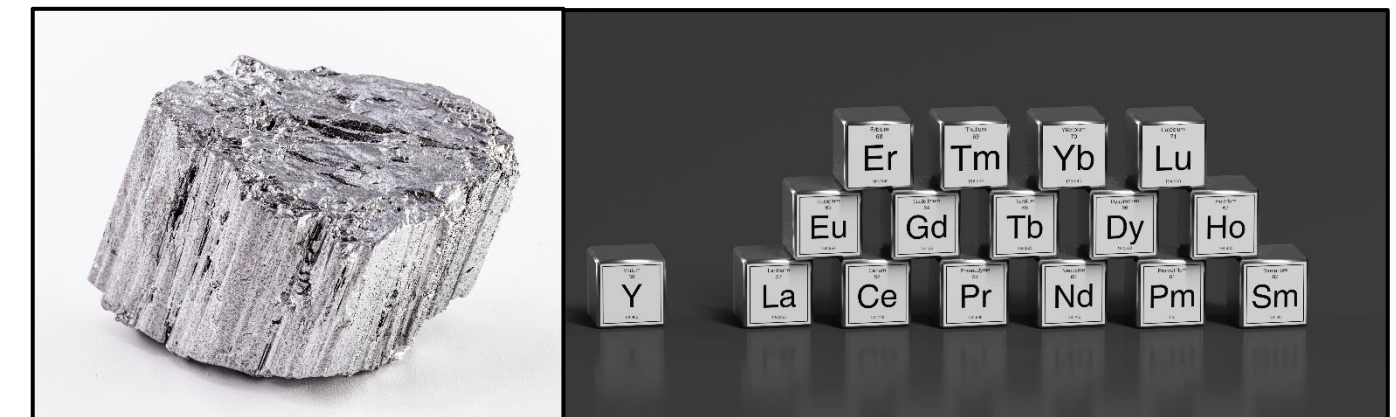
## RARE EARTHS MINERALISATION OPEN IN ALL DIRECTIONS



Vanadium



Rare Earths

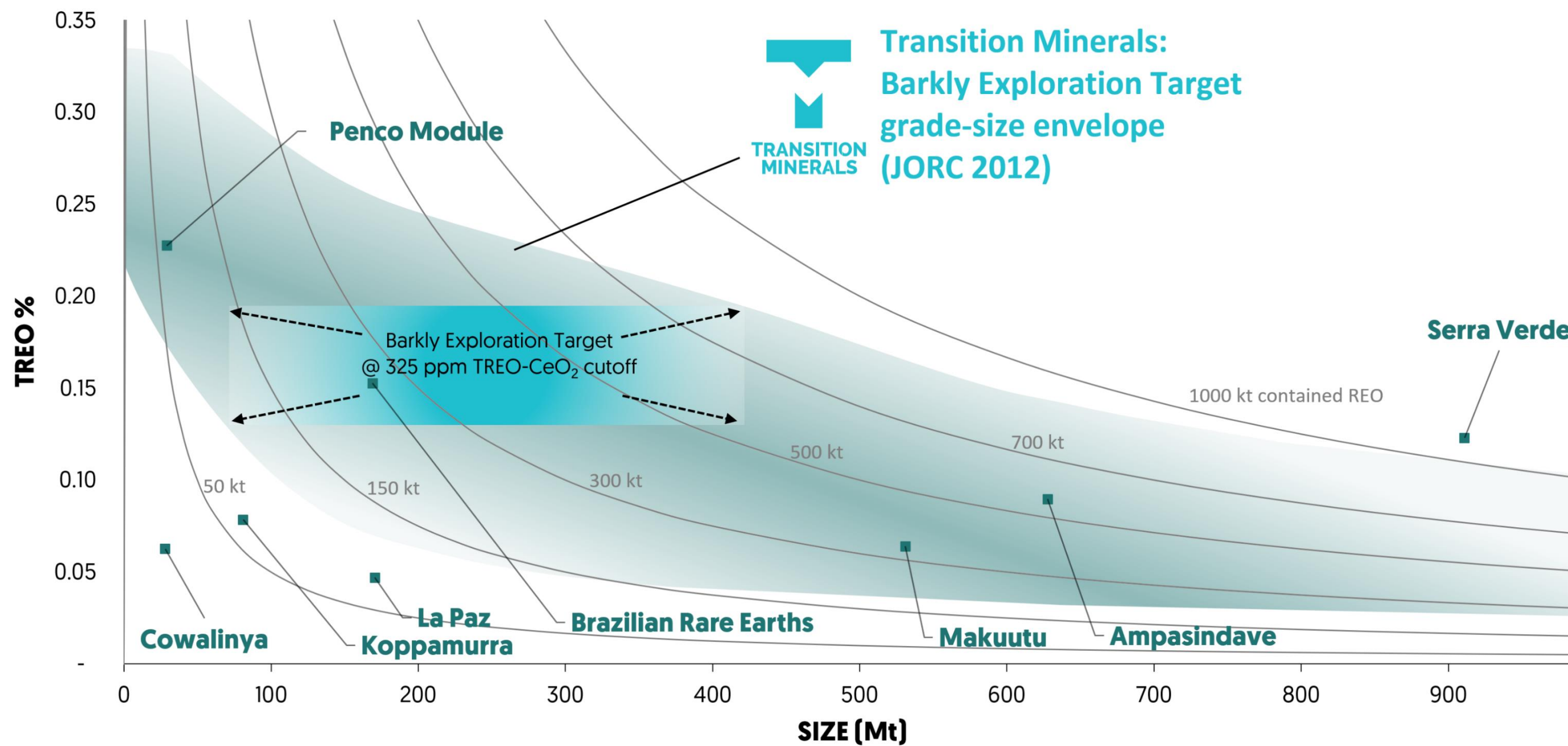




# TRANSITION: A STANDOUT REE DEPOSIT

## GRADES AND TONNES

**Clay-Hosted REE Resources: Grade (TREO) vs Size (Mt)**  
contoured by contained rare earth oxide (kt)



**NOTE:** It is the Company's intent to list on a securities exchange, as yet undefined.

The peer comparison on this page is in accordance with ASX Compliance Update no. 08/18 [19 September 2018] and the Company confirms that in its comparison, it has not used inappropriate reference points, has clearly disclosed the different resource categories that are included (refer to Appendix A), has not biased the selection of data points to benefit the disclosing entity, has clearly disclosed differences in the stage of projects, and has disclosed all material assumptions in this announcement.



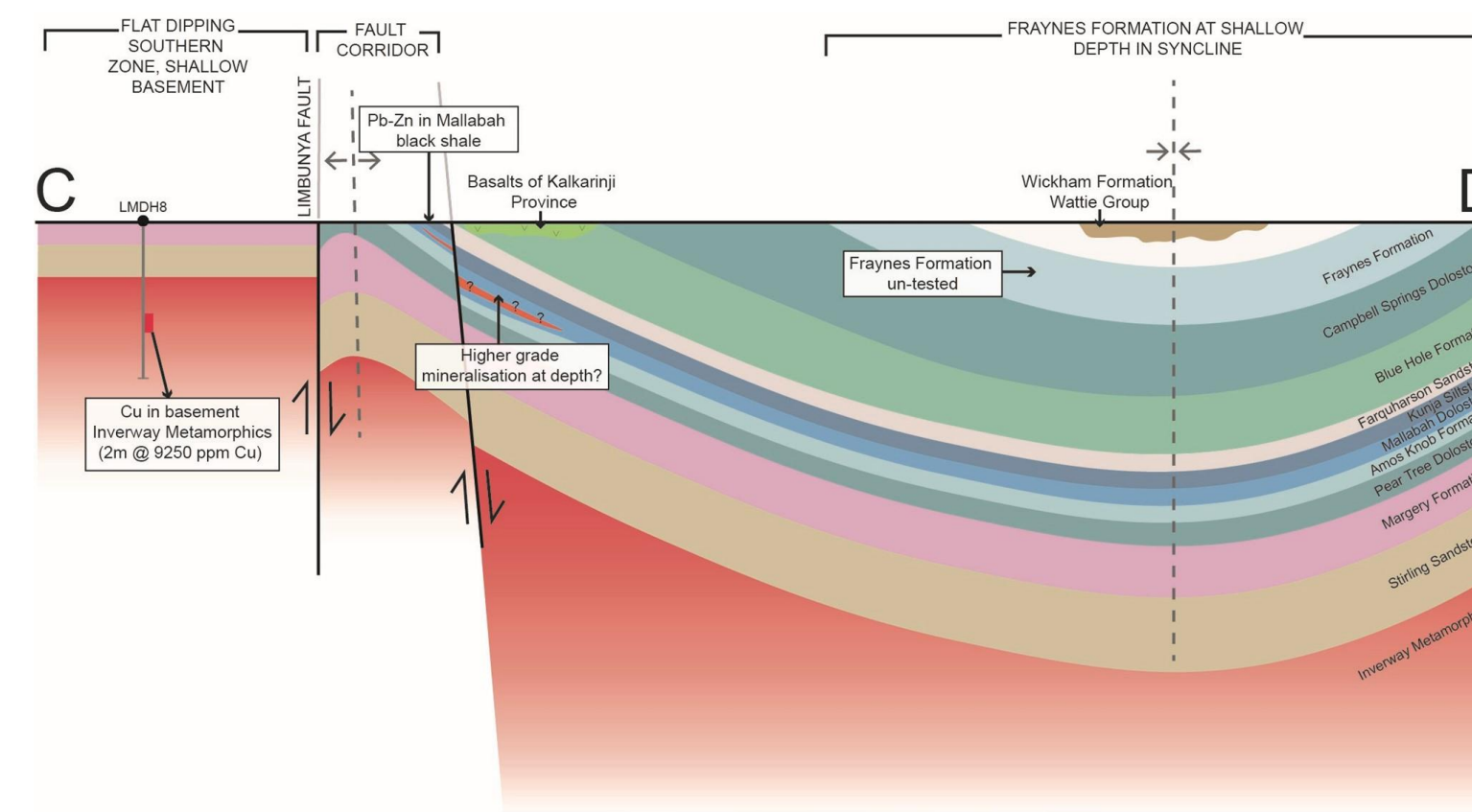
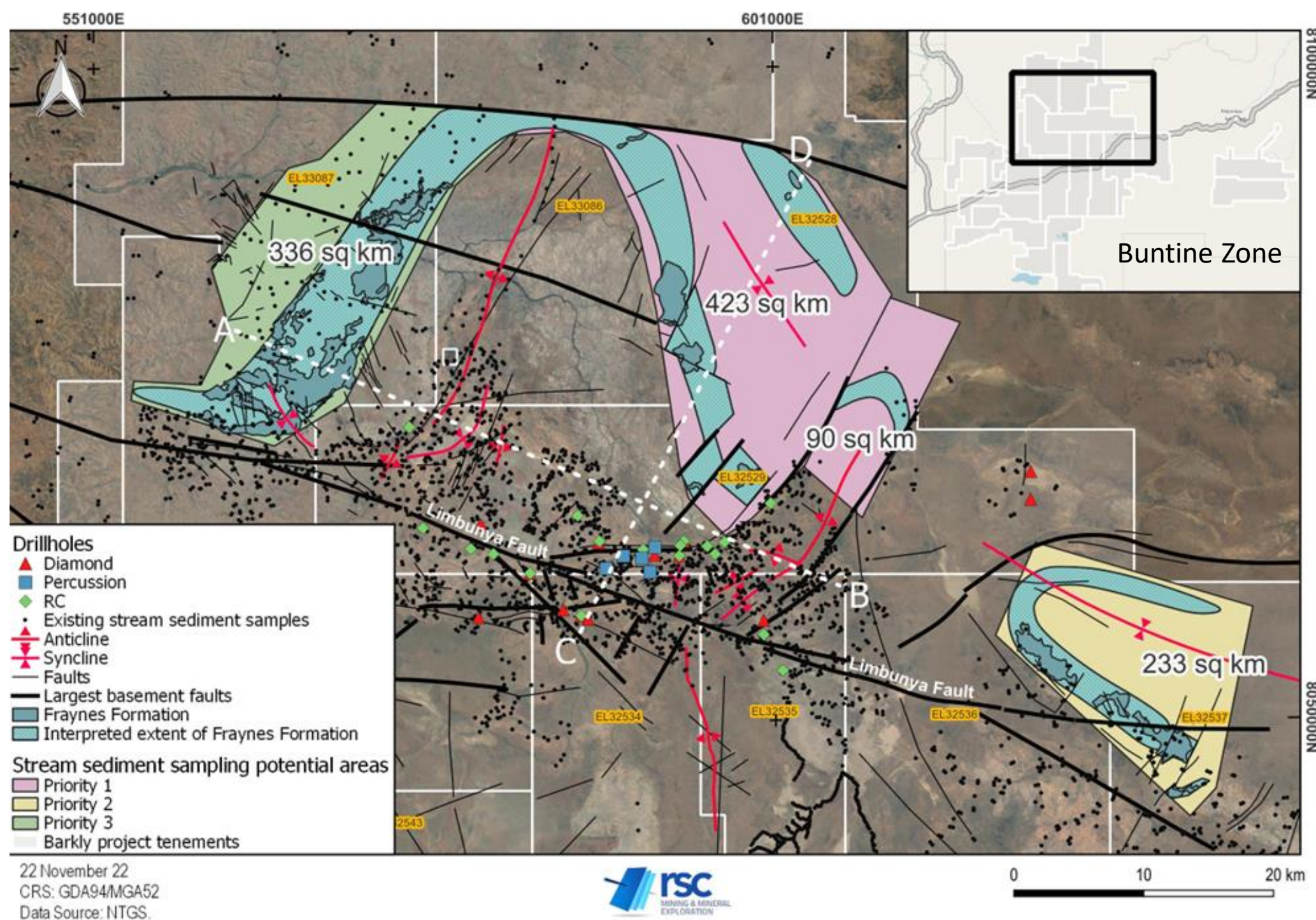
# FUTURE OPPORTUNITY: NEW LEAD-ZINC TARGET



## IDENTIFICATION OF NEW, REGIONAL-SCALE, SEDIMENT-HOSTED BASE METALS SYSTEM

*The Limbunya area has all the important geological ingredients to host a sediment-hosted Pb-Zn deposit*

Dr Michael Gazley  
RSC

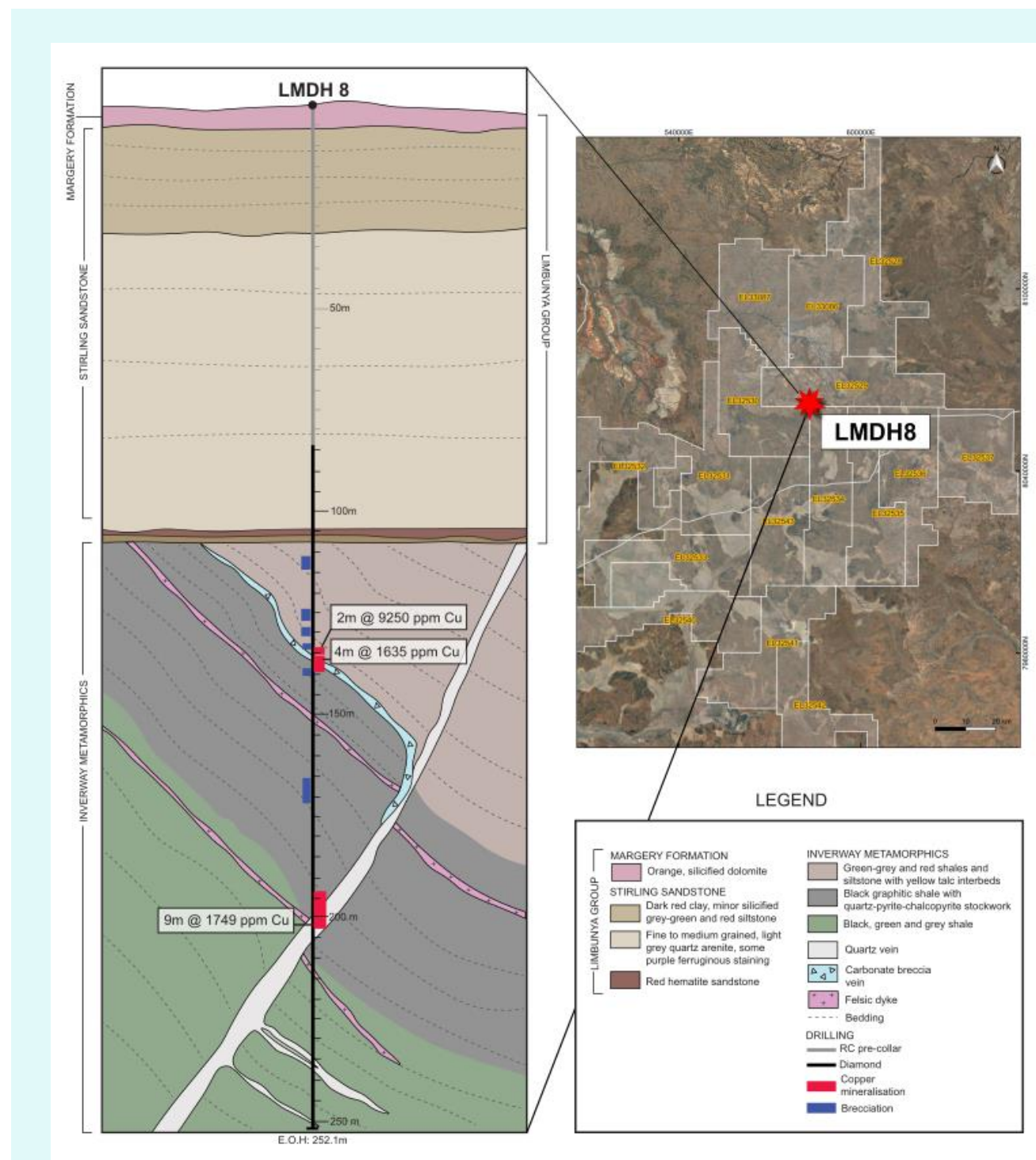




# FUTURE OPPORTUNITY: BASEMENT COPPER TARGET

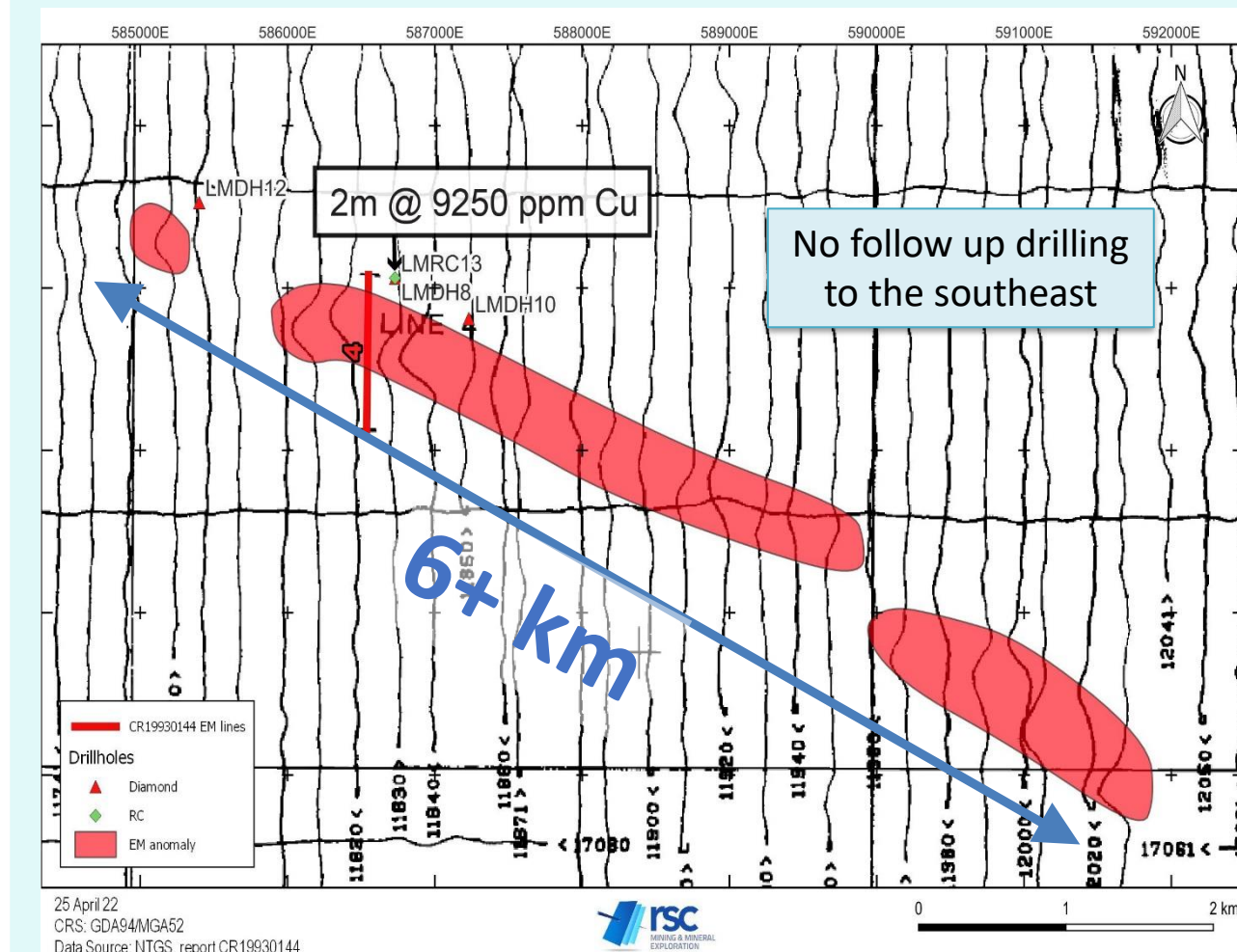


## COPPER DRILL INTERCEPTS ON EM ANOMALY



### Copper, Gold, Cobalt, Manganese Exploration Opportunities for Follow-Up

- ✓ Begging for modern exploration techniques to be applied
- ✓ Copper mineralisation in basement rocks under cover at 100–200 m explorable depths
- ✓ EM anomaly associated with copper mineralisation open and untested along 6 km strike extent
- ✓ Opportunity to utilise modern EM techniques to define new targets
- ✓ Basement rock potential correlates with the highly endowed Tanami Province



### DISCOVERY DRILLHOLE HIGHLIGHTS

LMDH8: 6 m @ 4173 ppm Cu incl. 2 m @ 9250 ppm  
4 m @ 1525 ppm Cu  
9 m @ 1749 ppm Cu

LMBD2: 7 m @ 1.1 g/t Au





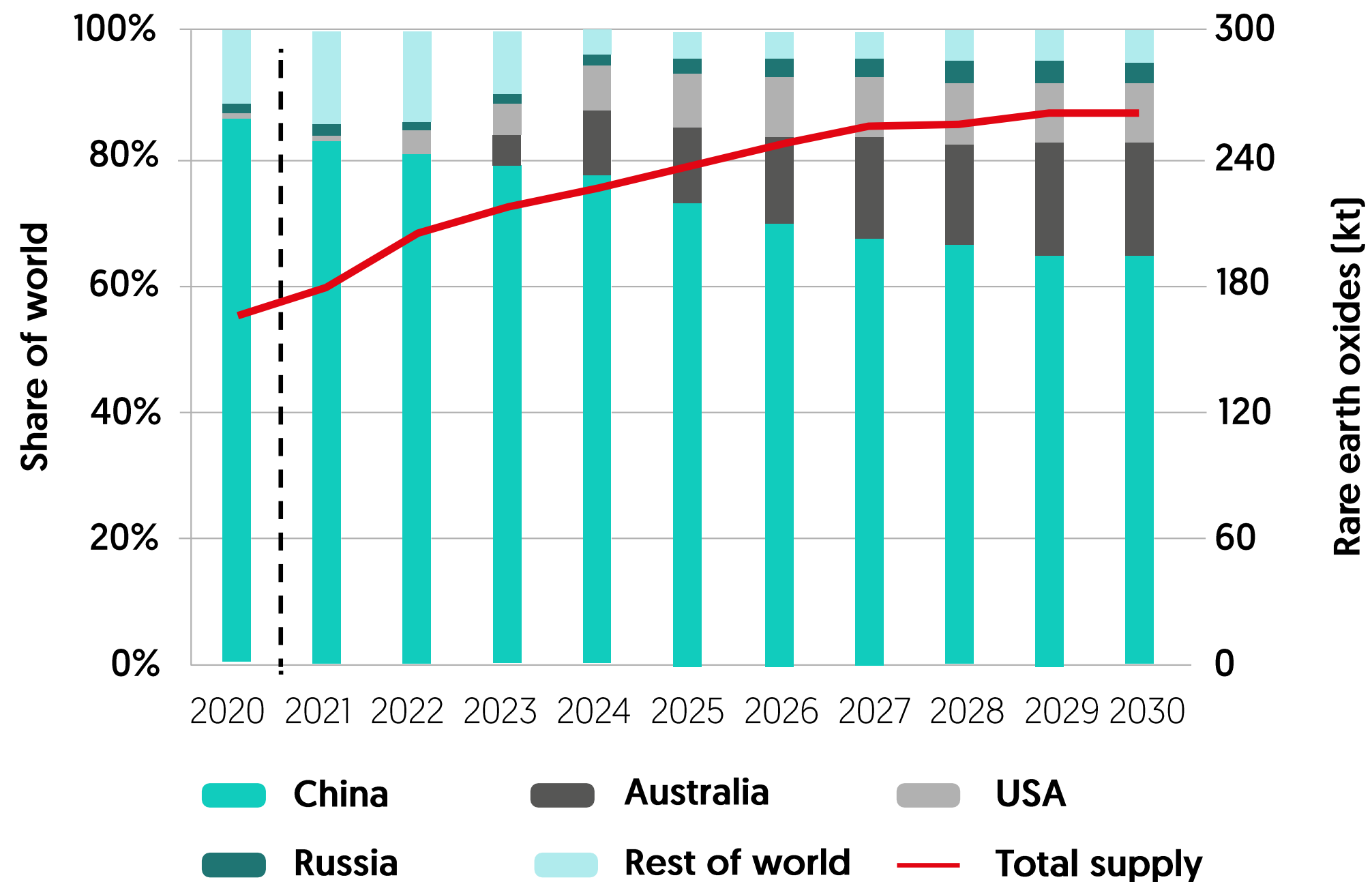
# MARKETS & POINTS OF DIFFERENCE



# RARE EARTH MARKET

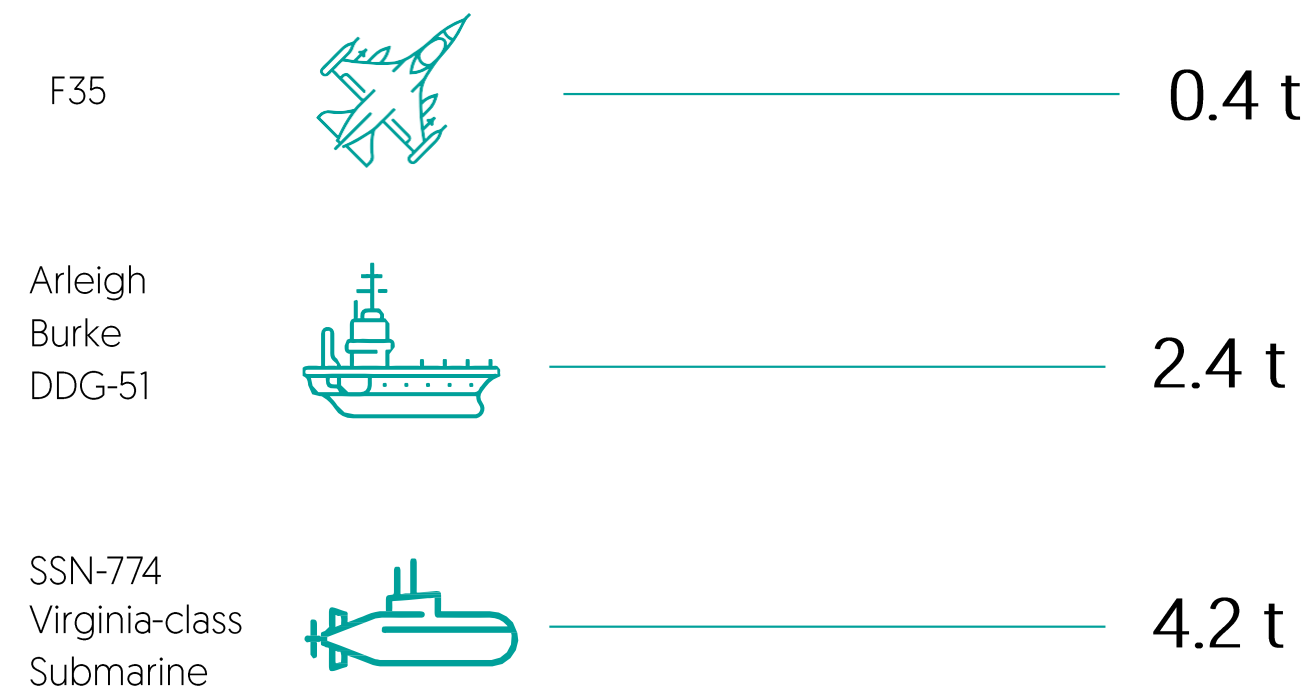
## SOVEREIGN ACTORS PROMOTING RELIABLE SUPPLY SOURCES

### Projected rare earths mine production by country



Source: Roskill [2021]; Department of Industry, Science, Energy and Resources [2021]

### Rare earth materials used to make each



Source: Congressional Research Service/Ionic Rare Earths

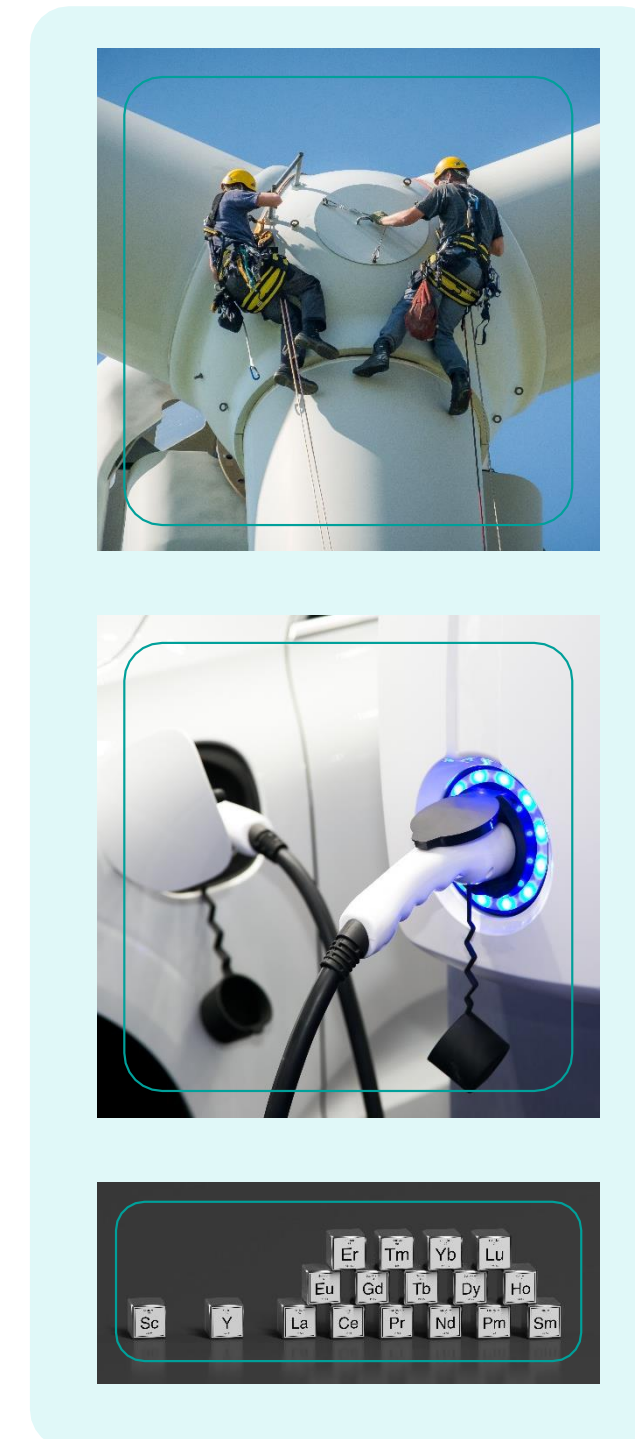
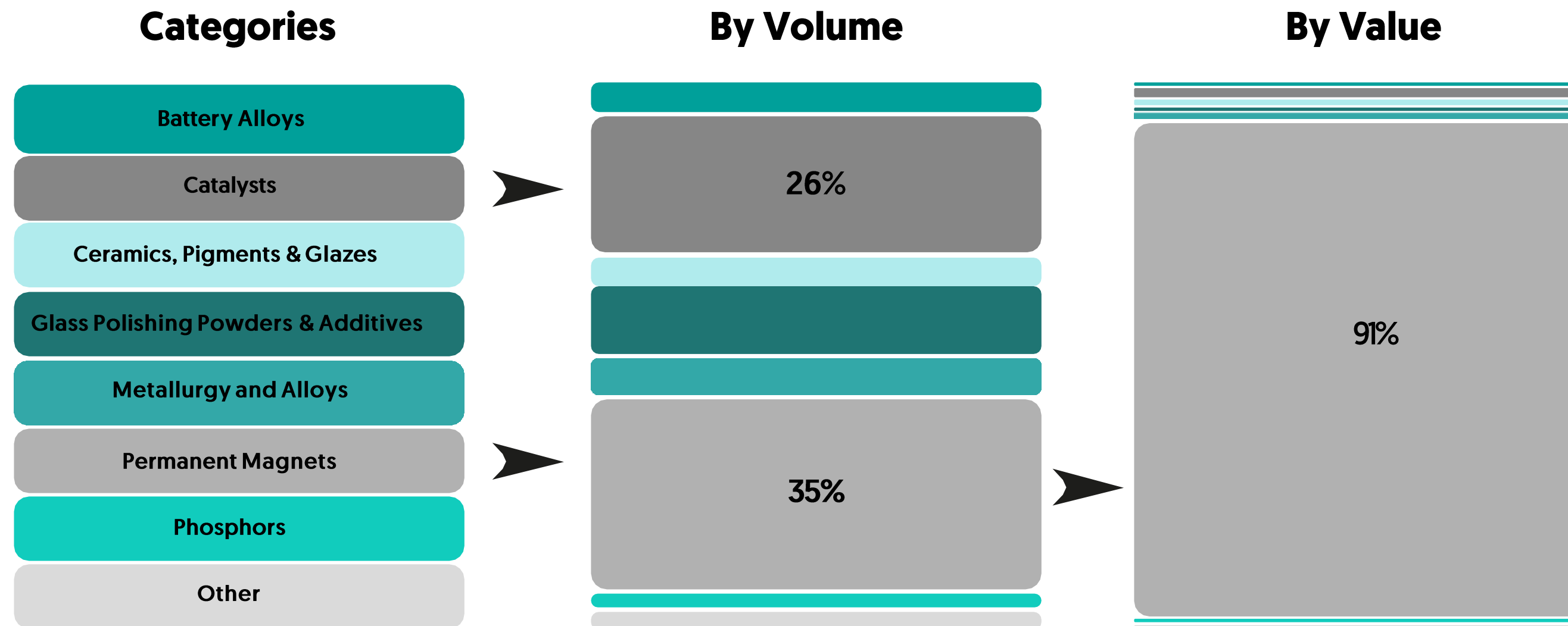
16 August 2022 US Inflation Reduction Act “reclaiming critical minerals chains”; tax incentives for renewable energy and support for addressing climate change.

— only applicable if the materials used come from either the US or nations with which the US has Free Trade Agreements.



# RARE EARTH MARKET

THE HOTTEST MARKET RIGHT NOW: DRIVING THE DECARBONISATION AND GREEN ENERGY TRANSITION



“Not only does demand for neodymium, praseodymium, dysprosium and terbium make up the lion’s share of global value today, but in the years ahead demand for these four rare earth elements is expected to grow faster than demand for all other rare earth elements, challenging the ability of the supply-side to keep up.”

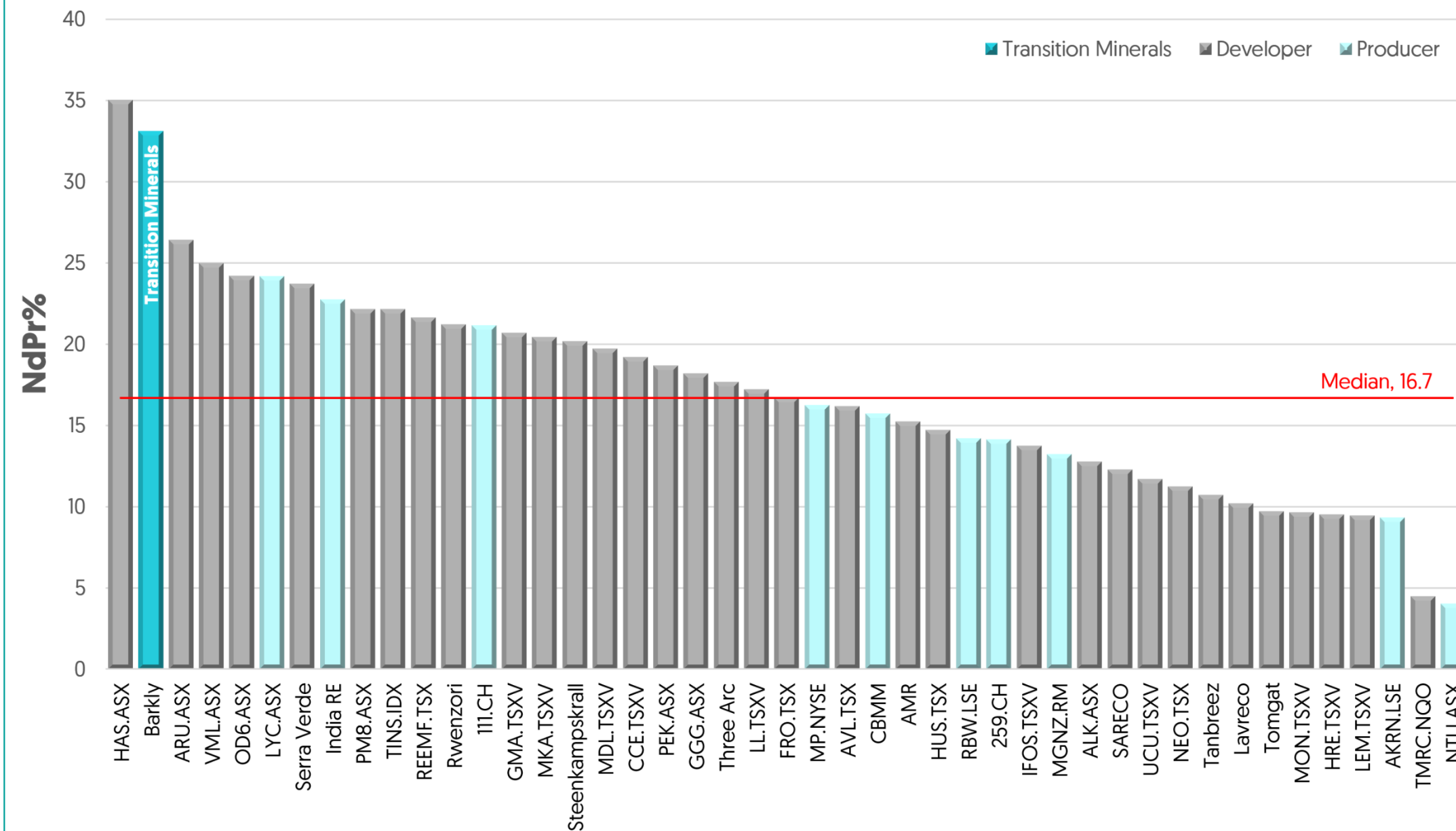
Source: <http://www.adamasintel.com/wp-content/uploads/2019/06/Adamas-Intelligence-Rare-Earths-Small-Market-Big-Necessity-Q2-2019.pdf>



# TRANSITION: A REE MARKET LEADER

## GLOBALY SIGNIFICANT NdPr RATIO AT BARKLY

### NdPr% of Rare Earth Projects

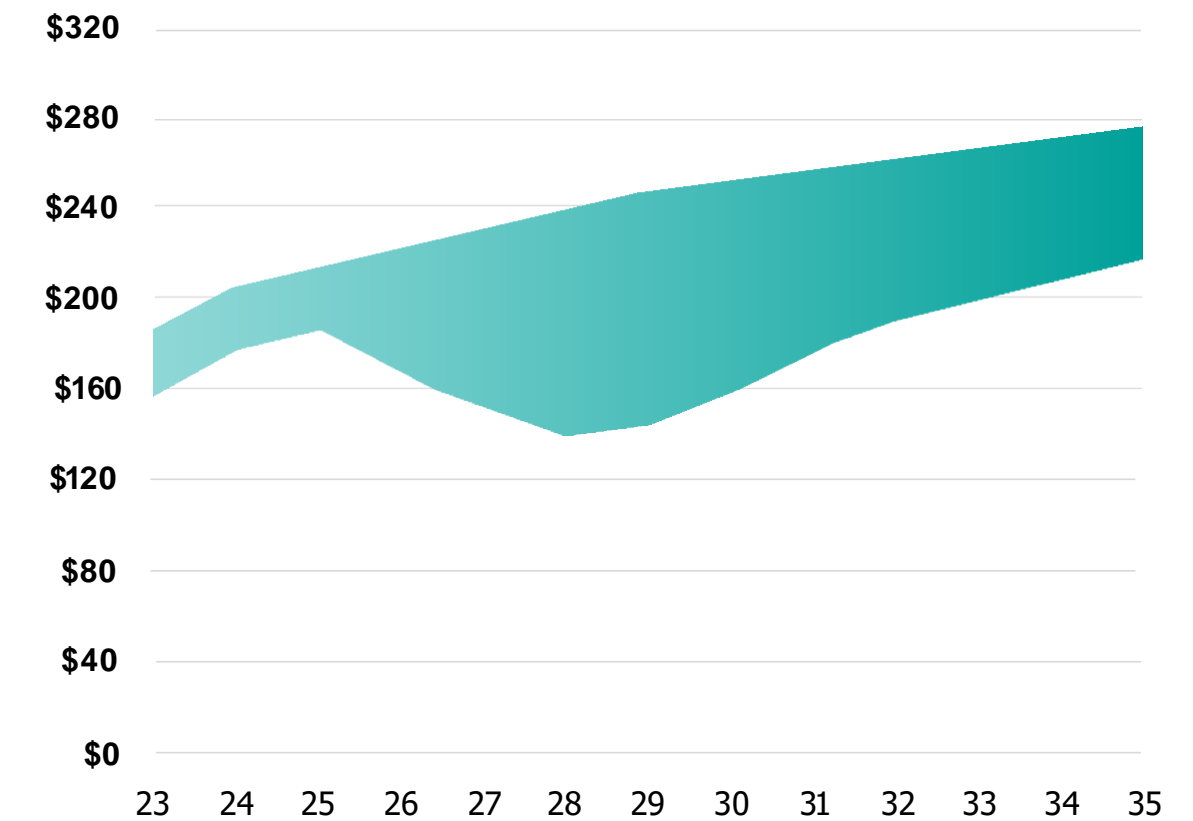


Source: Hastings Technology Metals Ltd

Transition's Barkly Project contains more of the most sought after Rare Earth Elements.

NdPr/TREO: major value influence

### Forecast NdPr Oxide Price (US\$/kg)






Source: Adamas Intelligence as reported by Peak Rare Earths



# FINDING VALUE:

## COMPARISON OF TWO, AUSTRALIAN, PRE-RESOURCE, CLAY-HOSTED REE EXPLORERS

	 TRANSITION MINERALS	 OD6 METALS LTD
Ownership	Pre-IPO	 ASX-listed
Project	Barkly	Splinter Rock
Stage	Exploration Target	Greenfields
<b>Drill Results</b>		
Average TREO*	<b>0.14%</b>	<b>0.11%</b>
Basket price [AUD]§	<b>\$113</b>	<b>\$74</b>
<b>Exploration Target (JORC)†</b>		
Grade [TREO]	0.13–0.195%	undefined
Size [Mt]	70–420	undefined
Share Price [AUD]	<b>\$0.06‡</b>	<b>\$0.40‡</b>
Market Capitalisation [AUD million]	<b>\$8 000 000</b>	<b>\$41 000 000</b>

\* Average TREO of intercepts above cut-off TREO-CeO<sub>2</sub> > 325ppm

§ Basket price of average intercept above cut-off, calculated on individual oxide prices published in Victory Goldfields Announcement referencing Argus' April 2022 REO prices, 15 November 2022, see Appendix D for full disclosure.

† Exploration Target at cut-off grade of 325 ppm TREO-CeO<sub>2</sub>. The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

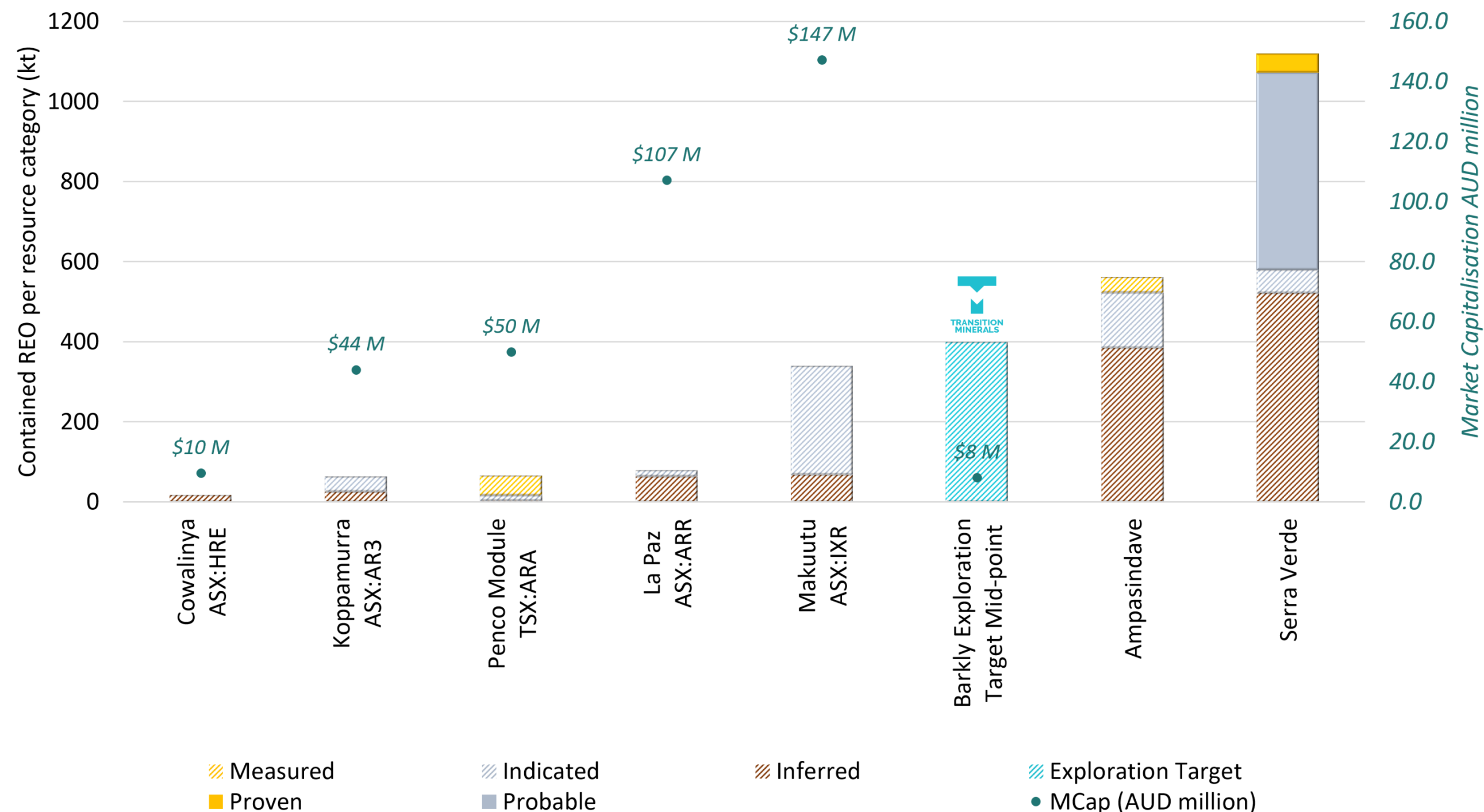
‡ At reporting date 5 December 2022:  
OD6 — closing price, Transition — last subscription price



# TRANSITION MINERALS: A STANDOUT REE DEPOSIT

## COMPARISON WITH CLAY-HOSTED, RARE EARTH ELEMENT MINERAL RESOURCES

### Contained Metal and Market Capitalisation Clay-Hosted Rare Earth Deposits



**NOTE:** The potential quantity and grade of the Company's Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

It is the Company's intent to list on a securities exchange, as yet undefined. The company confirms that it has complied with ASX Listing Rule 5.6.

The peer comparison on this page is in accordance with ASX Compliance Update no. 08/18 [19 September 2018] and the Company confirms that in its comparison, it has not used inappropriate reference points, has clearly disclosed the different resource categories that are included (refer to Appendix A), has not biased the selection of data points to benefit the disclosing entity, has clearly disclosed differences in the stage of projects, and has disclosed all material assumptions in this announcement.

Market capitalisation values are based on the issued capital and closing share price at the reporting date, 5 December 2022.

Other critical economic factors need to be considered when investing, such as potential for economic recovery, operating costs, development and regulatory approval costs and risks, jurisdictional risk, etc.

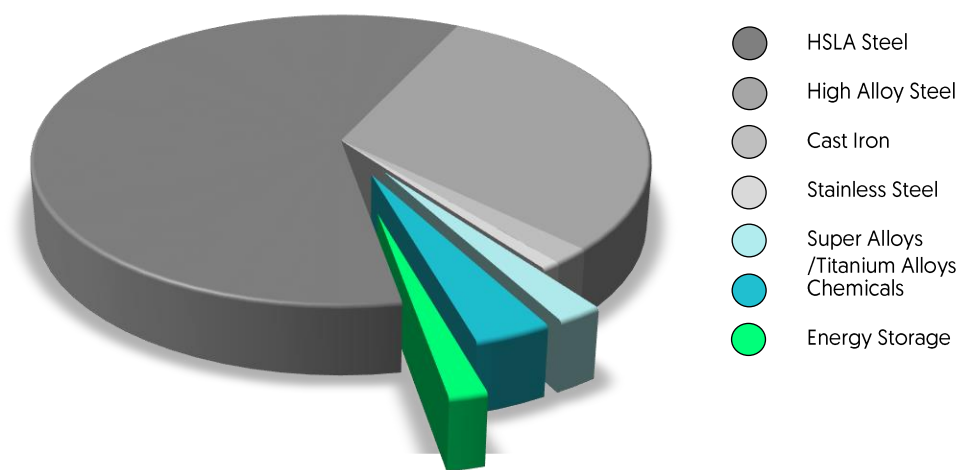


# VANADIUM MARKET

## INVESTMENT RATIONALE: PRIME POSITIONING

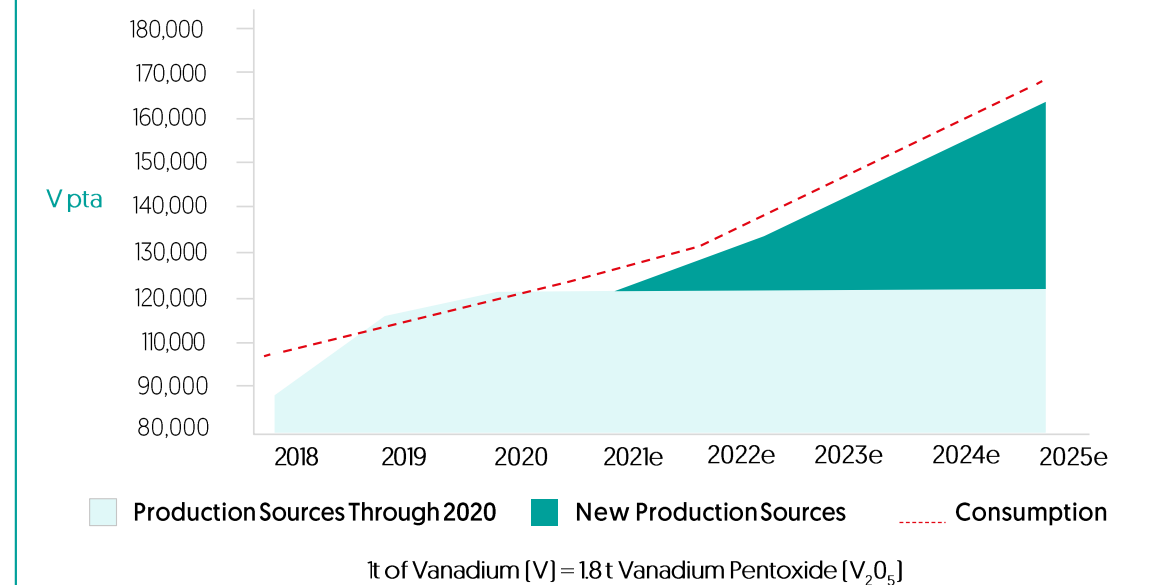


2021 Vanadium Consumption: 118,000 MtV



Source: TTP Squared

Vanadium Demand And Consumption



Source: Technology Metals Australia & TTP Squared

### Vanadium Energy Storage Market

The World Bank Group forecasts that by 2050, vanadium demand from energy storage alone could consume nearly twice the 2018 global vanadium production.

[Minerals for Climate Action: The Mineral Intensity of the Clean Energy Transition; World Bank Group 2020]

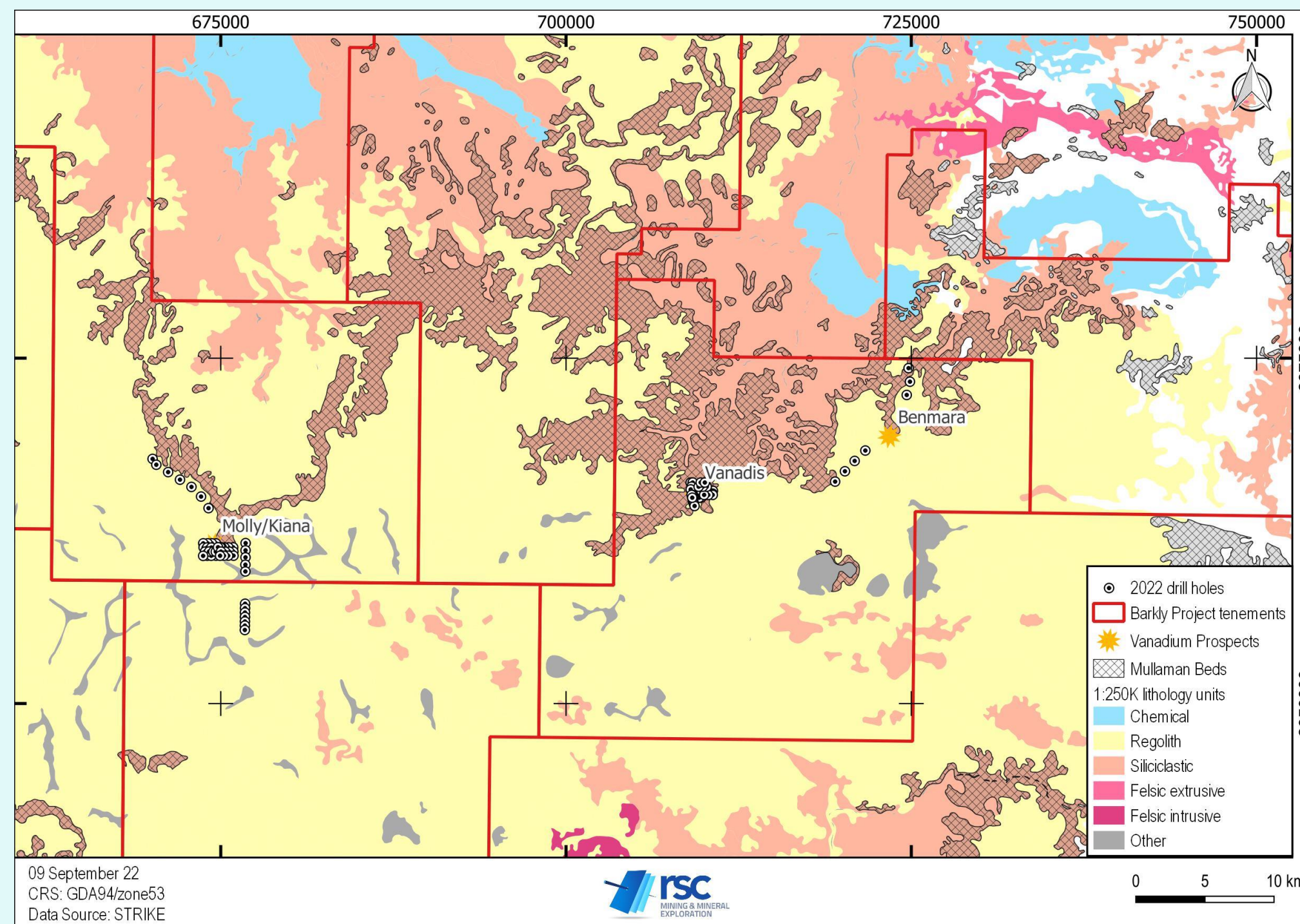
According to Guidehouse Insights, annual VRFB installations will reach ~15,000 MWh in 2027, equating to ~82 kt vanadium annual consumption.

Hornsedale Power Reserve image by Image propriété Neoen [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)



# TRANSITION: VANADIUM

- ✓ Expansive landholding with considerable potential for widespread surficial vanadium mineralisation — demonstrated enrichment via 2022 drilling
- ✓ Grades to 0.51%  $V_2O_5$
- ✓ Shallow mineralisation implies prospective ‘free-dig’ operations
- ✓ Targeting potential low-CAPEX & OPEX heap leach recovery supported by preliminary metallurgical testing
- ✓ Vanadium deposit as credit to offset underlying mining cost:  
10–50 Mt @ 0.16–0.20%  $V_2O_5$ \*  
Acid leach tests up to 94% extraction



\*Ref: [JORC Table 1](#). The potential quantity and grade of the Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.





# FUTURE



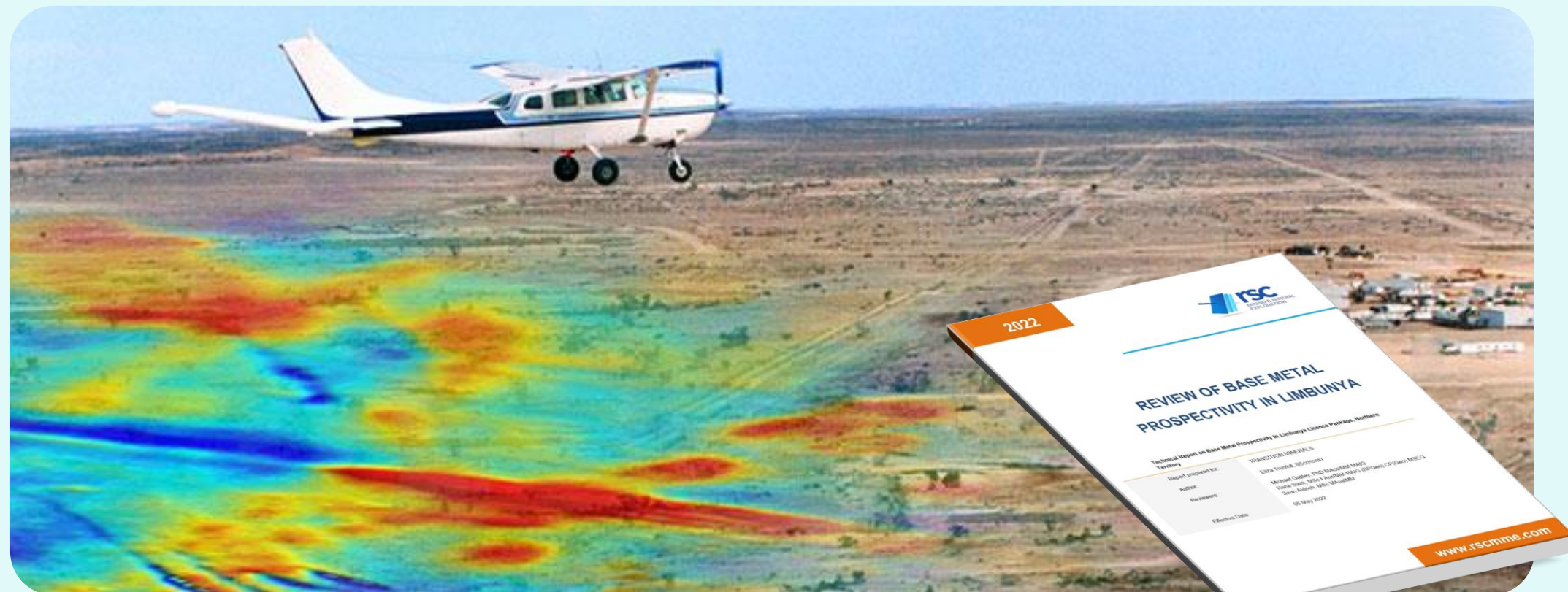
# WORK PLAN

## VALUE GENERATION AHEAD



### Clear Goals for Value Generation 2023

- ✓ IPO
- ✓ Drilling — AC and RC for resource extent and definition
- ✓ Resource reporting [JORC 2012]
- ✓ Regional reconnaissance exploration
- ✓ Further discovery
- ✓ Marketing:
  - Limbunya Base Metals Project promotion
  - Potential offtake partnering
- ✓ Geophysics
- ✓ Metallurgy & Mineralogy
- ✓ Preliminary Scoping





# TIME-VALUE PROGRESSION

## INVESTMENT RATIONALE



**Q1  
2023**

Planning for 2023 Barkly drilling  
Initial resource reporting  
Compile prospectus  
Buntine geophysics review and planning

**Q2  
2023**

IPO  
Drilling of Vanadis + Benmara  
Continuing exploration

**Q3  
2023**

Conclude Barkly drilling  
Resource upgrading  
Field reconnaissance  
Ore characterisation

**Q4  
2023**

IPO [alternative] — with cornerstone investor  
Pre-feasibility





# TRANSITION MINERALS

## Investors

If you are a *sophisticated investor, experienced investor or professional investor\**, or a *wholesale investor\*\**, contact us if you would like to learn more about [Transition Minerals Limited](https://www.transitionminerals.com).

\*as defined in s708(8), (10) and (11) of the *Corporations Act 2001* (Australia)

\*\* as defined in clause 3(2), or clauses 3(3)(a) and 41 of Schedule 1 to the *Financial Markets Conduct Act 2013* (New Zealand)



+61 460 344 628



[admin@transitionminerals.com](mailto:admin@transitionminerals.com)



13–15 Rheola St, West Perth WA 6005 Australia



[www.transitionminerals.com](https://www.transitionminerals.com)





## Clay-Hosted, REE, Resource Data References

This appendix includes the most recent clay-hosted, rare earth mineral resources reported under different codes by companies at different stages of development, as at 5 December 2022.

Company	Project	Stage	Citation	Details	Code	Link
Aclara Resources Inc. [TSX:ARA]	Penco Module	PEA, advancing EIA	Aclara Resources Inc. TSX News Release 1 December 2022, Table 2	29.2 Mt @ 0.2275 ppm TREO [Measured 21.3 Mt @ 2315 ppm; Indicated 6.2 Mt @ 2212 ppm; Inferred 1.7 Mt @ 1999 ppm]	NI 43-101	<a href="https://www.sedar.com/GetFile.do?lang=EN&amp;docClass=8&amp;issuerNo=00053428&amp;issuerType=03&amp;projectNo=03469247&amp;docId=5326562">https://www.sedar.com/GetFile.do?lang=EN&amp;docClass=8&amp;issuerNo=00053428&amp;issuerType=03&amp;projectNo=03469247&amp;docId=5326562</a>
American Rare Earths Limited [ASX:ARR]	La Paz	Advancing PEA	American Rare Earths Limited ASX announcement 3 August 2021, Table 1	170.6 Mt @ 469 ppm TREO [Indicated 35.2 Mt @ 459 ppm; Inferred 135.4 Mt @ 472 ppm]	JORC 2012	<a href="https://americanrareearths.com.au/wp-content/uploads/2021/08/20210803-ASX-Release.pdf">https://americanrareearths.com.au/wp-content/uploads/2021/08/20210803-ASX-Release.pdf</a>
Australian Rare Earths Limited [ASX:AR3]	Koppamurra	Resource definition	Australian Rare Earths Limited ASX announcement 4 July 2022	81.4 Mt @ 785 ppm TREO [Indicated 45 Mt @ 835 ppm; Inferred 36 Mt @ 721 ppm]	JORC 2012	<a href="https://ar3.com.au/4-7-22-104-increase-in-mineral-resource-at-koppamurra-project/">https://ar3.com.au/4-7-22-104-increase-in-mineral-resource-at-koppamurra-project/</a>
Brazilian Rare Earths Limited	Not specified	Not specified	Financial Review media report	169 Mt @ 1526 ppm TREO [category not reported]	JORC [edition not specified]	<a href="https://www.ginarinehart.com.au/gina-rinehart-tips-into-ipo-hopeful-brazilian-rare-earths/">https://www.ginarinehart.com.au/gina-rinehart-tips-into-ipo-hopeful-brazilian-rare-earths/</a>
Heavy Rare Earths Limited [ASX:HRE]	Cowalinya	Exploration	Heavy Rare Earths Limited prospectus lodged with ASX 5 July 2022, Table 5.1, Appendix 7, Annexure A: Cowalinya Resource Report 11 February 2022	Inferred 28 Mt @ 625 ppm TREO	JORC 2012	<a href="https://wcsecure.weblink.com.au/pdf/HRE/02556236.pdf">https://wcsecure.weblink.com.au/pdf/HRE/02556236.pdf</a>
Ionic Rare Earths Limited [ASX:IXR]	Makuutu	Advancing Ore Reserve	Ionic Rare Earths Limited ASX announcement 3 May 2022, Table 1	532 Mt @ 640 ppm TREO [Indicated 404 Mt @ 670 ppm; Inferred 127 Mt @ 540 ppm]	JORC 2012	<a href="https://wcsecure.weblink.com.au/pdf/IXR/02517527.pdf">https://wcsecure.weblink.com.au/pdf/IXR/02517527.pdf</a>
Mineração Serra Verde [Denham Capital]	Serra Verde	Plant construction	Denham Capital presentation, August 2016	911 Mt @ 0.123% TREO [Measured 22 Mt @ 0.21%; Indicated 368 Mt @ 0.15%; Inferred 521 Mt @ 0.10%] including Reserves [Proven 22 Mt @ 0.21%; Probable 329 Mt @ 0.15%]	NI 43-101	<a href="https://clientesinterativa.com.br/bccc-events/uploads/files/2017-03/58c6d7b3e9c66.pdf">https://clientesinterativa.com.br/bccc-events/uploads/files/2017-03/58c6d7b3e9c66.pdf</a>
Reenova Investment Holding Limited	Ampasindave	Resource definition	Tantalus Rare Earths AG Updated NI 43-101 10 June 2016, Table 1-1	627.7 Mt @ 895 ppm TREO [Measured 40.1 Mt @ 975 ppm; Indicated 157.6 Mt @ 878 ppm; Inferred 430 Mt @ 894 ppm]	NI 43-101	<a href="https://reenovagroup.listedcompany.com/newsroom/20160722_174543_5EC_LHQ3DXU7H7RN0R9F.2.pdf">https://reenovagroup.listedcompany.com/newsroom/20160722_174543_5EC_LHQ3DXU7H7RN0R9F.2.pdf</a>



# APPENDIX B: MAKING NEWS



## Net Zero - a once in a generation investment opportunity

The accelerating global decarbonisation push is having a telling effect on the shape of the Australian mining industry. And this reshaping is full of implications for investors.

**BARRY FITZGERALD**

## THE AUSTRALIAN

TREASURER PURSUES MINING 'OPPORTUNITY'

# Rare earths gateway to next boom

**EXCLUSIVE**  
GEOFF CHAMBERS  
CHIEF POLITICAL CORRESPONDENT

Jim Chalmers has outlined his vision for a foreign investment boom in critical mineral industries to seize the "opportunity of the century" and prevent Beijing from controlling the global tech supply chains of the future.

Speaking at The Australian-PwC critical minerals summit in Sydney on Friday, the Treasurer will warn that Australia must be "clear-eyed about the fact that more and more critical minerals will become a locus of geo-economic competition".

Dr Chalmers will warn that countries must avoid the pitfalls of a concentrated global market.

China currently dominates the mining of rare earths, tech supply chains from start to finish and the

**Australia can be a global powerhouse, says US ambassador**

**EXCLUSIVE**  
GEOFF CHAMBERS  
CHIEF POLITICAL CORRESPONDENT

Caroline Kennedy says the world's transition to clean power and technology has the potential to elevate Australia as a global leader in the mining of critical minerals, lithium, rare earths and nickel.

In a pre-recorded speech for The Australian-PwC Critical Minerals Summit, the US ambassador to Australia said governments and industry must work in tandem to "meet increasing global demand and reach our emissions" targets.

Ms Kennedy, who arrived in

**THE AUSTRALIAN CRITICAL MINERALS SUMMIT**  
PRESENTED WITH **pwc**

"This is truly a time of immense opportunity for Australia, with its abundance of lithium, rare earths, nickel and other critical minerals."

## BBC NEWS

Home | War in Ukraine | Coronavirus | Climate | Video | World | Asia | UK | Business | Tech

Business | Market Data | New Economy | New Tech Economy | Companies | Technology of Business | Economy | CEO Secrets | Global Trade | Cost of Living

### Australia challenges China in mining for essential elements

18 October

**Top Stories**

- Ukraine struggles to restore power after strikes 2 hours ago
- India gripped by gruesome 'fridge murder' 1 hour ago
- How Australia's hated bird learnt to wash toxic toads 8 hours ago

Prepare with a finance and HR system

## Critical metals fire up ASX miners and explorers

GOVERNMENTS ARE INCREASINGLY FOCUSED ON SUPPLY CHAIN RESILIENCE

**BARRY FITZGERALD**

The global call for secure and growing supplies of critical metals is proving to be a major fillip for both ASX producers and explorers.

Metals used to be just metals. But now a growing list are seen to be critical to global decarbonisation and electrification efforts in pursuit of net zero emission targets.

Copper, nickel, lithium, rare earths, graphite, vanadium, high purity



Volkswagen ID Buzz electric van

## THE WALL STREET JOURNAL

# \$50m boost

used to make stainless steel and electric vehicle batteries, according to JPMorgan. Russia mines about 4 per cent of the world's cobalt, another battery ingredient; a quarter of its vanadium, used in steelmaking; and 3.5 per cent of its

**TIM DODD**  
HIGHER EDUCATION EDITOR

Scott Morrison will commit \$50m to a Curtin University-led project to build Australia's competitive advantage in the critical minerals needed for batteries, renewable energy and other hi-tech applica-

start-ups linked to the program. The research and development partnership is designed to help Australia to build competitive supply chains for key metals including nickel, cobalt, lithium and vanadium.

The Prime Minister said it would "turbocharge" the critical minerals industry.

## THE WEEKEND AUSTRALIAN

14 THE WEEKEND AUSTRALIAN, NOVEMBER 26-27, 2022

# Strategic minerals are the next mining super cycle

## Australia must keep pace with demand for critical minerals

**EXCLUSIVE**  
NICK EVANS

Australia's critical minerals industry could be worth more than \$40bn a year to the economy by 2035, but only if Canberra and the resources sector pick up the pace to capture the full benefits of high technology processing and manufacturing industries.

New modelling by PwC shows Australia's traditional dig-and-ship approach to mining will capture less than a quarter of the value the nation could extract from its vast reserves of lithium, nickel, and rare earth minerals.

While Australian miners have moved fast to build new lithium operations to capitalise on soaring demand for electric vehicles and homes batteries, China still dominates the downstream processing of the battery-making metal - along

with production and refining of the rare earth elements that are critical in the manufacture of high-density magnets required to build wind turbines.

China is increasingly looking to Africa and South America for the raw materials needed to fill its manufacturing plants, amid continued geopolitical tensions, putting Australia's market share under threat.

PwC energy transition lead Varya Davidson said modelling conducted by the consulting giant showed growth in demand for Australian critical minerals would already add about \$9.7bn to the country's gross domestic product by 2035, based on the

**THE AUSTRALIAN CRITICAL MINERALS SUMMIT**  
PRESENTED WITH **pwc**

Continued on Page 6

## THE WALL STREET JOURNAL

# Pentagon Pushes Defense Companies to Limit Use of Chinese Supplies

Finding China-made alloys in F-35 jets has put U.S. officials on alert as they seek to limit vulnerabilities.



## Forrest's Fortescue joins rare earth race

**NICK EVANS**

Fortescue Metals executive chairman Andrew Forrest has signalled the company hopes to open up a business mining and refining rare earths, as the iron ore giant looks to reshape its mining portfolio.

**Fortescue yields**  
Dividend (\$/share) & payout ratio (%)

Year	Dividend (\$/share)	Payout Ratio (%)
2019	\$3.07	62%
2020	\$3.58	78%
2021	\$3.58	77%
2022	\$3.58	80%
2023 (est)	\$3.58	75%

## E&M ENGINEERING AND MINING JOURNAL

# SETTING THE STANDARD. THEN RAISING THE BAR.

THE CAT® 992 WHEEL LOADER

### Canada Orders Foreign Companies to Divest From Critical Minerals Developers

November 3, 2022 | **Breaking News**

Canada's Minister of Innovation, Science and Industry, the Honourable François-Philippe Champagne, discussed the government's recent decision on investments in Canadian critical minerals companies.



"While Canada continues to welcome foreign direct investment, we will act decisively when investments threaten our national security and our critical minerals supply chains, both at home and abroad," Champagne said. "In accordance with the Investment Canada Act, foreign investments are subject to review for national security concerns, and certain types of investment—such as those in the critical minerals sectors—receive enhanced scrutiny."

## THE AUSTRALIAN

Wednesday, November 30, 2022 Today's Paper Mind Games


HOME THE NATION WORLD BUSINESS COMMENTARY SPORT ARTS ALL

HOME / NATION

### Rare minerals sector to be off limits for Chinese investment

**EXCLUSIVE**  
BY DENNIS SHANAHAN  
NATIONAL EDITOR

6:20AM NOVEMBER 30, 2022  
132 COMMENTS



The Lynas Rare Earths processing plant in Kalgoorlie, Western Australia. Lynas is a key supplier of critical minerals. Picture: Bloomberg via Getty Images

The Albanese government is considering ways to limit China's investment and influence in Australia's \$20bn critical minerals industry, which is crucial for defence, space and communications equipment, on the grounds of Australia's national security.





## Competent Person Statement

The information in this Company Presentation that relates to an Exploration Target is based on information evaluated by René Sterk who is a Fellow of The Australasian Institute of Mining and Metallurgy [FAusIMM], a Certified Practising Geologist, a Registered Professional Geologist, holds an ex-officio position on the JORC committee and who has sufficient experience relevant to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves [JORC Code 2012]. Mr Sterk is Chairman of Transition Minerals Limited and he consents to the inclusion in this report of the information in the form and context in which it appears. Mr Sterk indirectly holds shares in Transition Minerals Limited, and is the main shareholder and managing director of RSC, the geological service company contracted to undertake the exploration work on behalf of Transition Minerals Limited.

Ref: [JORC Table 1](#).



# APPENDIX D: BASKET PRICING COMPARISON

## Drilling Result Comparison: Barkly and Splinter Rock grades and basket price, effective 5 December 2022

Company				Transition Minerals			OD6		
Project				Barkly <sup>3</sup>			Splinter Rock <sup>4</sup>		
Mineral Type				Laterite (clay)			Clay		
Development Stage				Exploration			Exploration		
Location				Australia			Australia		
Rare Earth	Oxide	REO price <sup>1</sup> (USD/kg)	REO price <sup>2</sup> (AUD/kg)	ppm	% of basket	Basket <sup>5</sup> Price AUD/kg	ppm	% of basket	Basket Price AUD/kg
Lanthanum	La <sub>2</sub> O <sub>3</sub>	\$ 1.52	\$ 2.23	150	11%	\$ 0.25	242	22%	\$ 0.49
Cerium	CeO <sub>2</sub>	\$ 1.58	\$ 2.32	419	31%	\$ 0.72	427	39%	\$ 0.89
Praseodymium	Pr <sub>6</sub> O <sub>11</sub>	\$ 137.50	\$ 201.84	98	7.3%	\$ 14.65	59	5.3%	\$ 10.73
Neodymium	Nd <sub>2</sub> O <sub>3</sub>	\$ 139.00	\$ 204.04	443	33%	\$ 66.79	202	18%	\$ 37.23
Samarium	Sm <sub>2</sub> O <sub>3</sub>	\$ 3.60	\$ 5.28	96	7.1%	\$ 0.37	30	2.7%	\$ 0.14
Europium	Eu <sub>2</sub> O <sub>3</sub>	\$ 31.50	\$ 46.24	21	2%	\$ 0.71	5	0%	\$ 0.19
Gadolinium	Gd <sub>2</sub> O <sub>3</sub>	\$ 74.00	\$ 108.62	61	4.5%	\$ 4.89	21	1.9%	\$ 2.04
Terbium	Tb <sub>2</sub> O <sub>3</sub>	\$ 2,210.00	\$ 3,244.06	6.1	0.45%	\$ 14.51	2.8	0.26%	\$ 8.33
Dysprosium	Dy <sub>2</sub> O <sub>3</sub>	\$ 408.00	\$ 598.90	19	1.4%	\$ 8.54	16	1.4%	\$ 8.51
Holmium	Ho <sub>2</sub> O <sub>3</sub>	\$ 193.00	\$ 283.30	2.0	0.15%	\$ 0.42	2.9	0.26%	\$ 0.74
Erbium	Er <sub>2</sub> O <sub>3</sub>	\$ 69.00	\$ 101.29	3.4	0.25%	\$ 0.25	8.0	0.72%	\$ 0.73
Thulium	Tm <sub>2</sub> O <sub>3</sub>	\$ 850.00	\$ 1,247.72	0.3	0.03%	\$ 0.31	1.1	0.09%	\$ 1.18
Ytterbium	Yb <sub>2</sub> O <sub>3</sub>	\$ 16.30	\$ 23.93	1.7	0.12%	\$ 0.03	6.3	0.57%	\$ 0.14
Lutetium	Lu <sub>2</sub> O <sub>3</sub>	\$ 805.00	\$ 1,181.66	0.2	0.02%	\$ 0.21	0.9	0.08%	\$ 0.94
Yttrium	Y <sub>2</sub> O <sub>3</sub>	\$ 14.30	\$ 20.99	32	2.4%	\$ 0.50	85	7.6%	\$ 1.60
<b>Total</b>				<b>1352</b>	<b>100%</b>	<b>\$ 113</b>	<b>1108</b>	<b>100%</b>	<b>\$ 74</b>

### Notes and Disclosure

- Independent rare earth oxide prices were sourced from Victory Goldfields Announcement ref Argus April 2022 REO prices, 15 November 2022: [https://www.asx.com.au/asxpdf/20221115/pdf/45hlqwf\\_nv5snxv.pdf](https://www.asx.com.au/asxpdf/20221115/pdf/45hlqwf_nv5snxv.pdf)
- A USD/AUD conversion price of 1.4679 was applied at the reporting date, 5 December 2022.
- Barkly (Vanadis and Benmara prospects) average drill results (laboratory method ME-MS61r) with laboratory-applied top cuts of Ce 500 ppm and Nd 1000 ppm. A TREO-CeO<sub>2</sub> cut off of 325 ppm was applied.
- Splinter Rock average drill results (laboratory method ME-MS61r) from table on pages 22–29 of OD6 ASX market announcement on 10 November 2022 and pages 24–34 of announcement on 1 December 2022. For comparison to Barkly, Tb<sub>4</sub>O<sub>7</sub> was converted to Tb<sub>2</sub>O<sub>3</sub> using a factor of 0.9786, a TREO-CeO<sub>2</sub> cut off of 325 ppm and a top cut of 500 ppm Ce was applied.
- Basket price is calculated as the sum of:  
$$\text{oxide (ppm)} / \text{TREO(ppm)} \times \text{price/kg}$$

Basket price comparison of similar multi-element deposits is a tool for informing decisions about exploration priorities, and for transparently reporting the materiality of early-stage drilling results. The concept of basket price holds no economic significance in the absence of other information such as recovery rates, Mineral Resource, product marketability and operating costs.