

A U S T R A L I A N  
**CRITICAL MINERALS**

**Developing a high-quality  
portfolio of critical minerals to  
support the green revolution**

COMPANY PRESENTATION | DECEMBER 2023

ASX:ACM

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ROVE

SANDSTONE

SOUTHERN CROSS

SUNRISE DAM

KALGOORLIE-BOL

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On 15 May 2023, the Company released a prospectus (Prospectus) for the offer of fully paid ordinary shares in the capital of the Company (Shares), a copy of which can be accessed from the Company's website at <http://auscriticalminerals.com.au/>. All offers of Shares for the capital raising referred to in this document will be made in, or accompanied by, the Prospectus. Investors should consider the Prospectus in deciding whether to acquire Shares and any person who wishes to apply for Shares must complete the application form that is accompanied by the Prospectus.

The information in this document relating to exploration results, exploration targets, mineral resources and ore reserves has been reported by the Company in accordance with the 2012 Edition of the 'Australasian Code for Reporting of Exploration results, Mineral Resources and Ore Reserves' (JORC Code) previously (refer to the Company's Prospectus). The Company confirms that it is not aware of any new information as at the date of this document that materially affects the information included in this document and that all material assumptions and technical parameters underpinning the estimates in the Company's Prospectus continue to apply and have not materially changed. Refer to the Prospectus for further details with respect to all exploration results referred to in this document.

# Demand for Critical Minerals

## The next mining boom is here

The transition to cleaner technologies is fueling significant global demand for critical minerals

ACM is well placed to make the most of this opportunity with a multiple commodity strategy:

- Lithium
- Rare Earth Elements (REE)
- Gold
- Iron Ore
- Kaolin
- 6 projects spanning a massive 1,861km<sup>2</sup> of highly prospective exploration tenements
- Advanced exploration projects adjacent to producing mines
- Excellent infrastructure
- Experienced management with a track record of exploration and corporate success



## Capital Structure

	Shares
Shares on Issue	32,076,250
Restricted Shares	11,455,010
Options on Issue	35,943,754
Performance Rights (Restricted)	4,200,000
<b>Total Shares on Issue</b>	<b>43,531,260</b>
<b>Total Rights/Options</b>	<b>40,143,754</b>
Cash (30 September 2023)	\$3.7m

- **Strong combination of corporate and exploration experience**
- **Committed to adhere to best environment, social and governance (ESG) practices**

## Executive Board

### Dean de Largie

MANAGING DIRECTOR

Dean has been key to identifying all the exploration opportunities in the ACM portfolio. He has a Bachelor of Applied Science in Geology from Curtin University and is a Fellow of the Australian Institute of Geoscientists.

With over 30 years of diverse global exploration he provides technical direction, exploration services and project assessments to several entities in Australia, Peru and Mexico through his firm Allied Rock Pty Ltd.

Experienced in most geological terranes for gold, silver, copper, lead, zinc, nickel, iron ore, coal, petroleum, uranium, kaolin and silica Dean has worked on projects in Australia, Peru, Chile, Bolivia, Argentina, Brazil, Mexico and Nevada, for ASX, TSX and US listed entities.

### Michael Wright

NON-EXECUTIVE CHAIRMAN

Michael Wright has had over 35 years' experience in the resource sector in a corporate and financial capacity. For over 20 years, he was an executive director of Herald Resources Ltd, one of the early WA listed gold miners. During that time, he was instrumental in Herald developing 5 gold mines in WA and eventually a zinc mine in Indonesia, culminating in a takeover of that company for \$580 million.

Subsequently he was a founding director and Chairman of General Mining Corp which held the Mt Cattlin lithium mine in WA, prior to its takeover by Galaxy Resources Ltd (subsequently Allkem Ltd). He is also currently the Chairman of unlisted public company Corona Resources Ltd, and formerly held directorships with a number of public companies in the resources sector.

### Gary Brabham

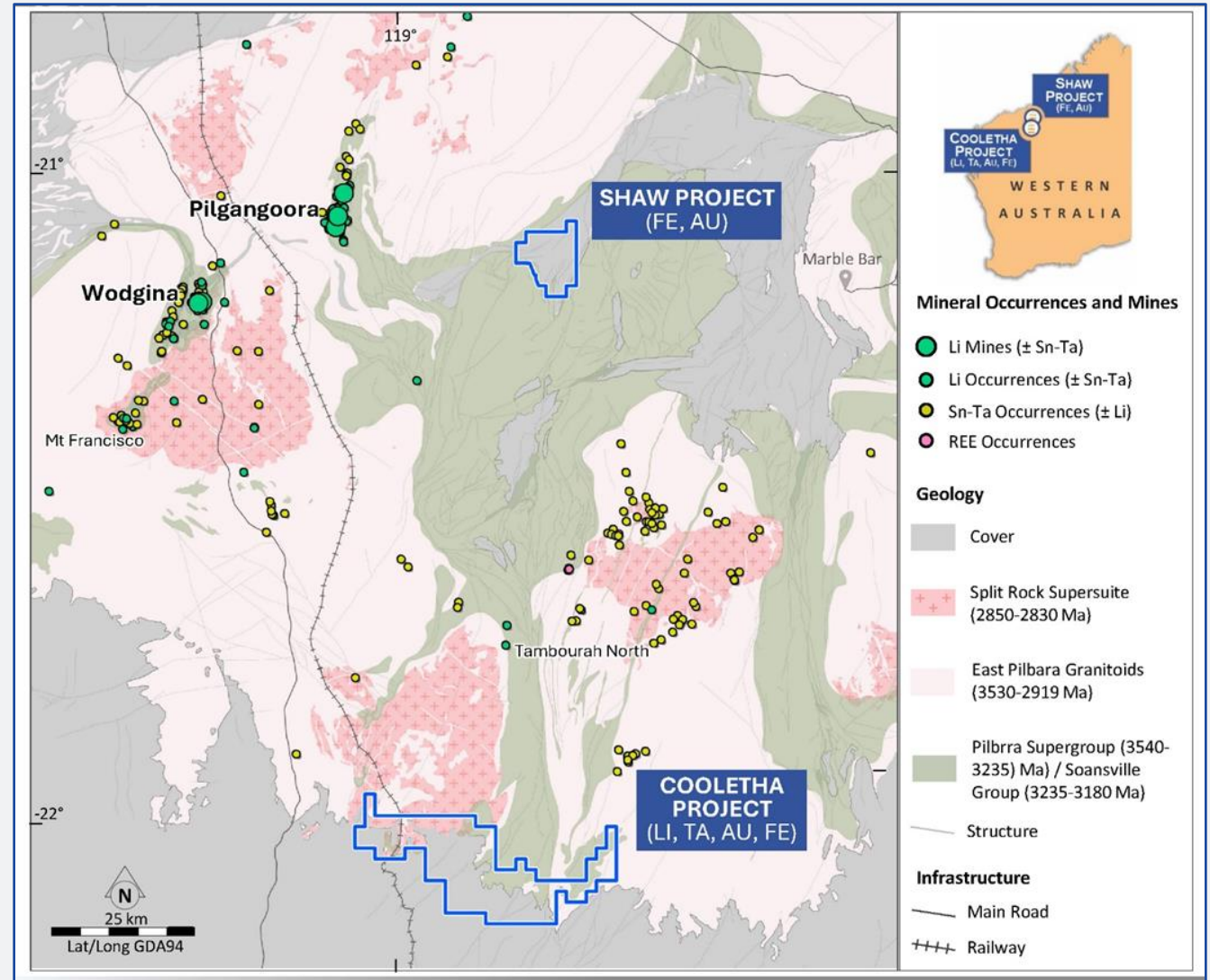
NON-EXECUTIVE DIRECTOR

Mr Gary Brabham is a Fellow of the AusIMM and a Member of the AIG. He has had more than 40 years of exploration and mining geology experience. Gary has specialist skills in geostatistics, resource delineation and mine development.

Gary has held various directorships including Managing Director of De Grey Mining, Technical Director of Adamus Resources and was a Group Executive of Mawson West Limited. Until recently he held the position of Group Geologist for Perseus Mining Limited.

# Coolletha Project – Pilbara

- Located in the Pilbara alongside significant lithium mines and projects
  - Pilbara Mineral's Pilgangoora (413Mt @ 1.15% Li<sub>2</sub>O)
  - Mineral Resource's Wodgina (259Mt @ 1.17% Li<sub>2</sub>O)
  - Global Lithium's Marble Bar (18Mt @ 1% Li<sub>2</sub>O)
- +100km<sup>2</sup> of lithium prospectivity
- Multiple spodumene fertile opportunities in mapped pegmatite dyke swarms and spodumene and lithium micas observed over a 30km strike
- Exploring for a new discovery belt at Coolletha
- Greenstone/Granitoid contact and zoned pegmatite host, which are known to host economic lithium resources
- Tambourah Monzogranite hosts pegmatites across the northern half of the tenement area

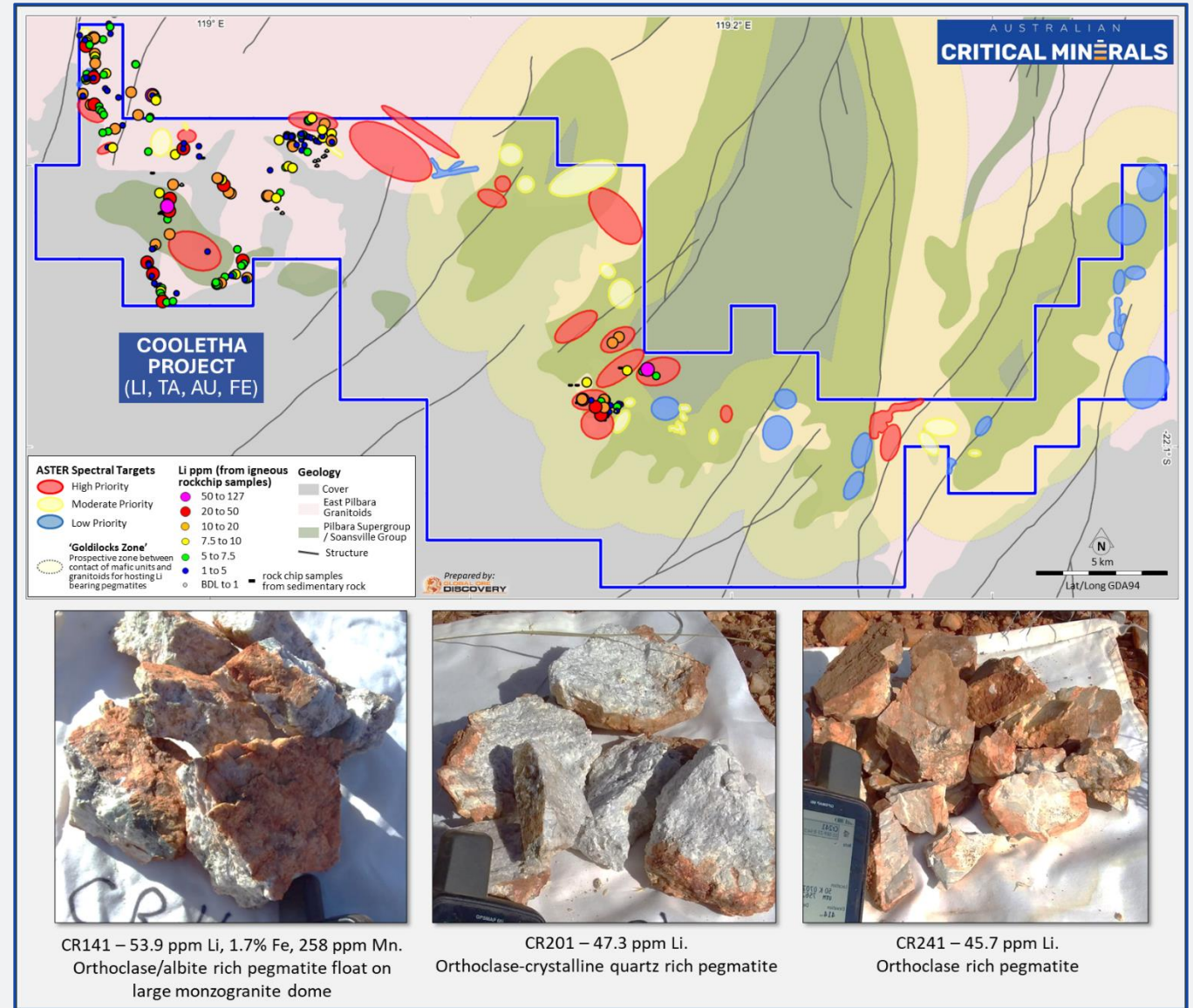


# COOLETHA Project - 2023 Exploration Program

## Initial exploration program

- Covered only 25% of tenure
- 251 rock chip samples, concentrated on western part of tenement
- Rock-chip assays confirm lithium prospectivity
- 10 high priority targets, over 24km in length
- Lithium and lithium-caesium-tantalum (LCT) pegmatite indicator minerals confirmed
- Multi-element assays have identified vectors toward evolved intrusive rocks
- Multispectral analysis confirm multiple exploration locations
- Hyperspectral imagery interpretation identified 25 linear kms of target areas

Identifying the location and vectors in fractionated rocks is the first important step to the discovery of evolved pegmatitic LCT systems.



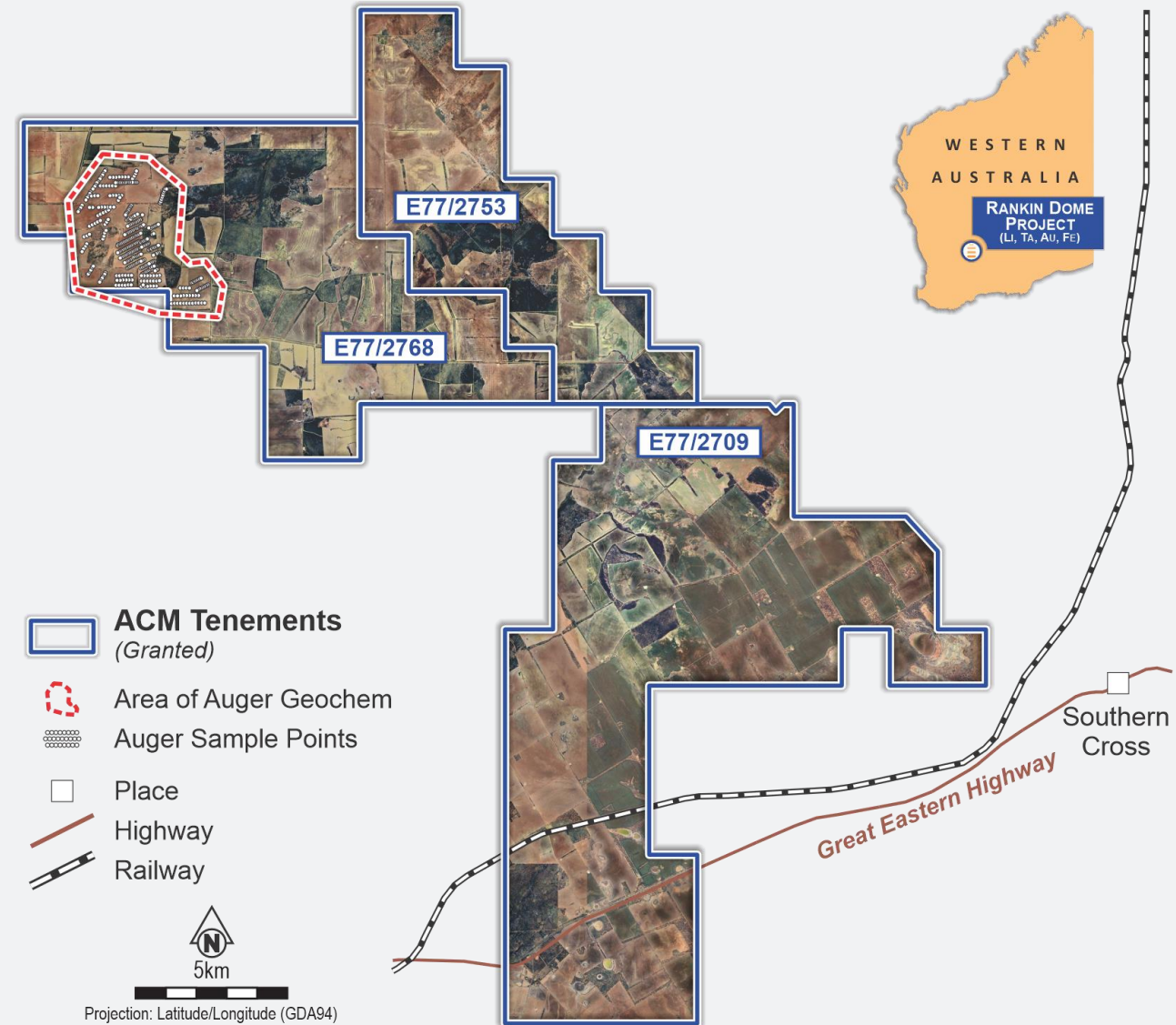
# ☰ Cooletha Project – Future Exploration

- Initial exploration program purpose was to:
  - gain understanding of broader geology and prospectivity
  - plan future exploration
- Central and eastern side of the Cooletha Project covers the southern extension of the Soansville Group
  - host to Pilgangoora and Wodgina Lithium Projects.
- Ongoing sampling program resumes in Q1 2024
- Evaluate iron-ore and manganese potential



# Rare Earths Rankin Dome, Southern Cross

- Located near Southern Cross - an established Mining Centre
- Close to Highway with good local access
- 3 Exploration Licences
- 51% Farm-in with Kula Gold (**ASX: KGD**)
- Previous auger samples REE results **up to 1,080ppm, 74% of samples > 115ppm TREE**





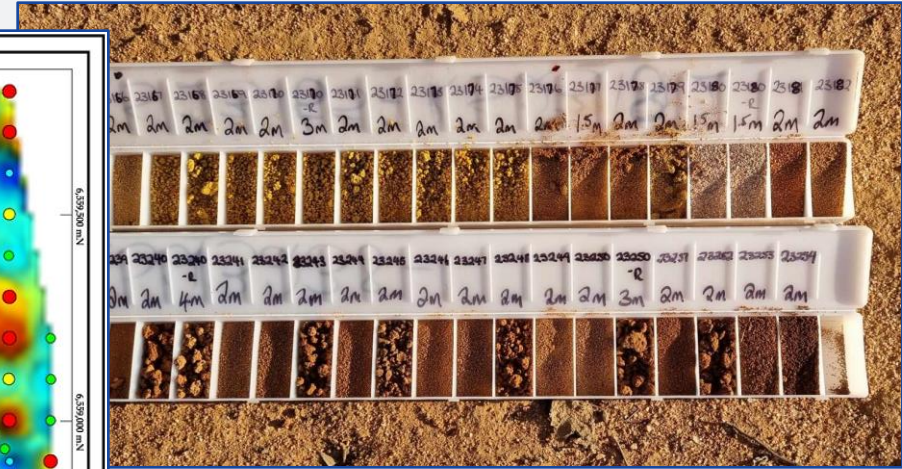
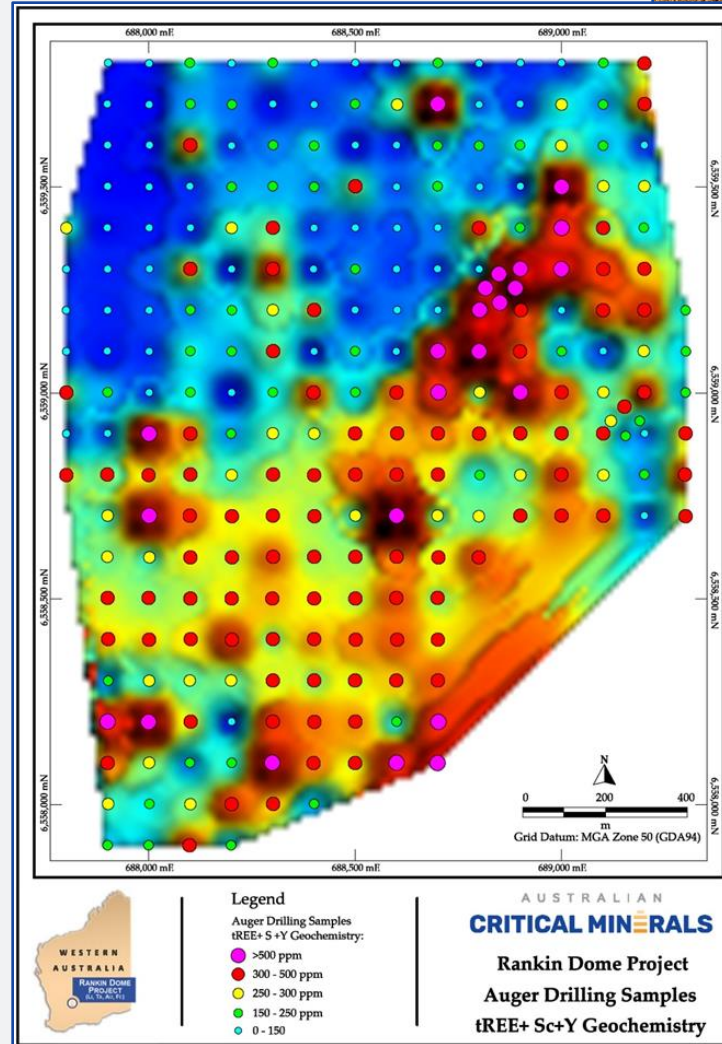
# Rare Earths Rankin Dome

## Geophysics and Geochemistry

- Geochemistry matches structure & geophysics
- +8x Crustal enrichment - **in soil!**
- Large +8km<sup>2</sup>, highly anomalous TREE soil geochemistry

## 2023 Auger Sampling Program

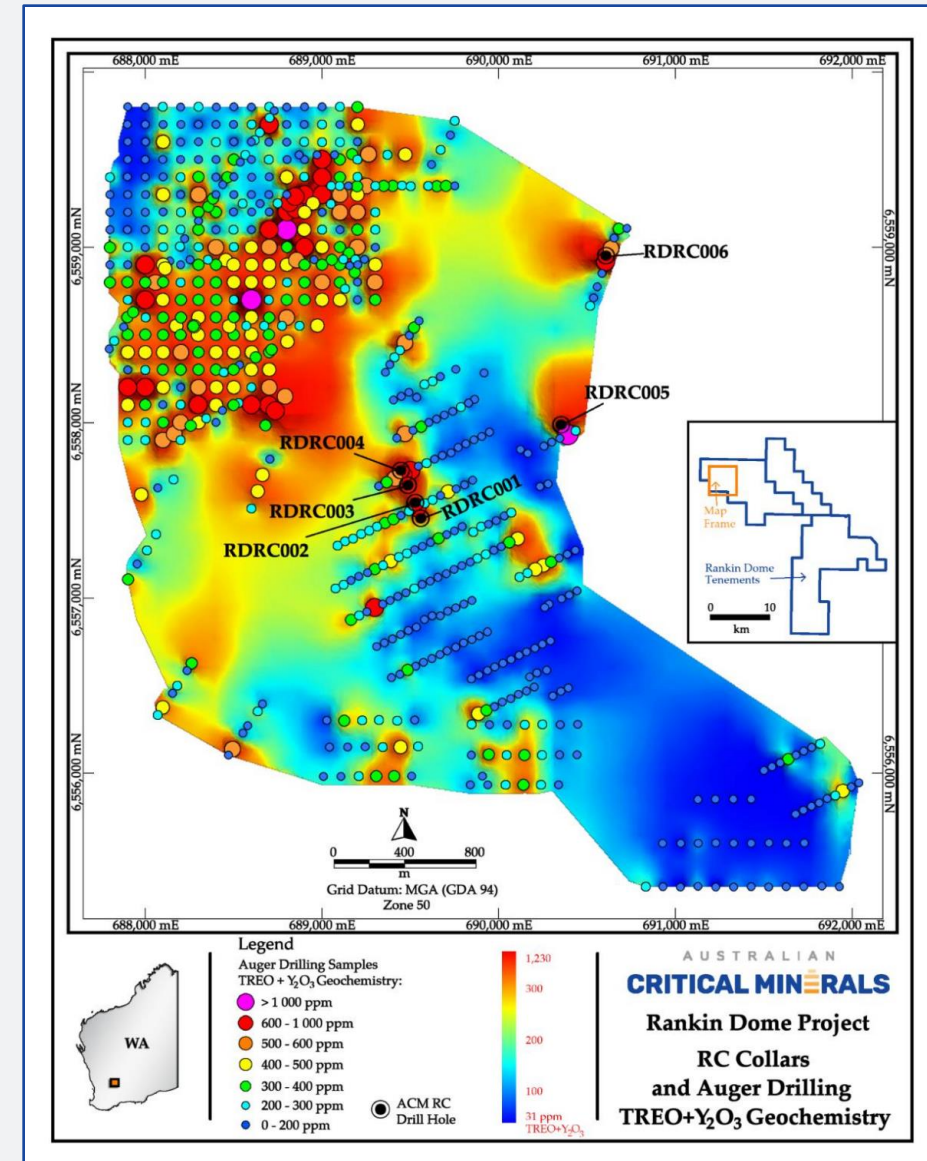
- 254 holes over ~ 2.5km<sup>2</sup>
- Rare earth anomaly delineated
- 500m x 200m zone of strongly anomalous rare earth geochemistry
  - Peak value of 1297 TREO
- Plans underway for RC drilling program



# Rankin Dome – 2023 Exploration Program

- 6-hole, 864m Reverse Circulation Drilling
  - 5 drill holes to 150m
  - 1 drill hole to 114m
- Drill holes were planned over areas as having anomalous rare earth geochemistry in shallow auger samples
- All 6 drill holes returned thick, continuous and significant results in **TREO**
  - Highest grade 1m @ 2534ppm TREO
  - Best intercept 3m @ 2026ppm TREO
  - Longest intercept 111m @ 913ppm TREO
  - Comprised between 20-27% Magnetic Rare Earths (MRE)

**New drill targets defined with RC drill program planned for early 2024**

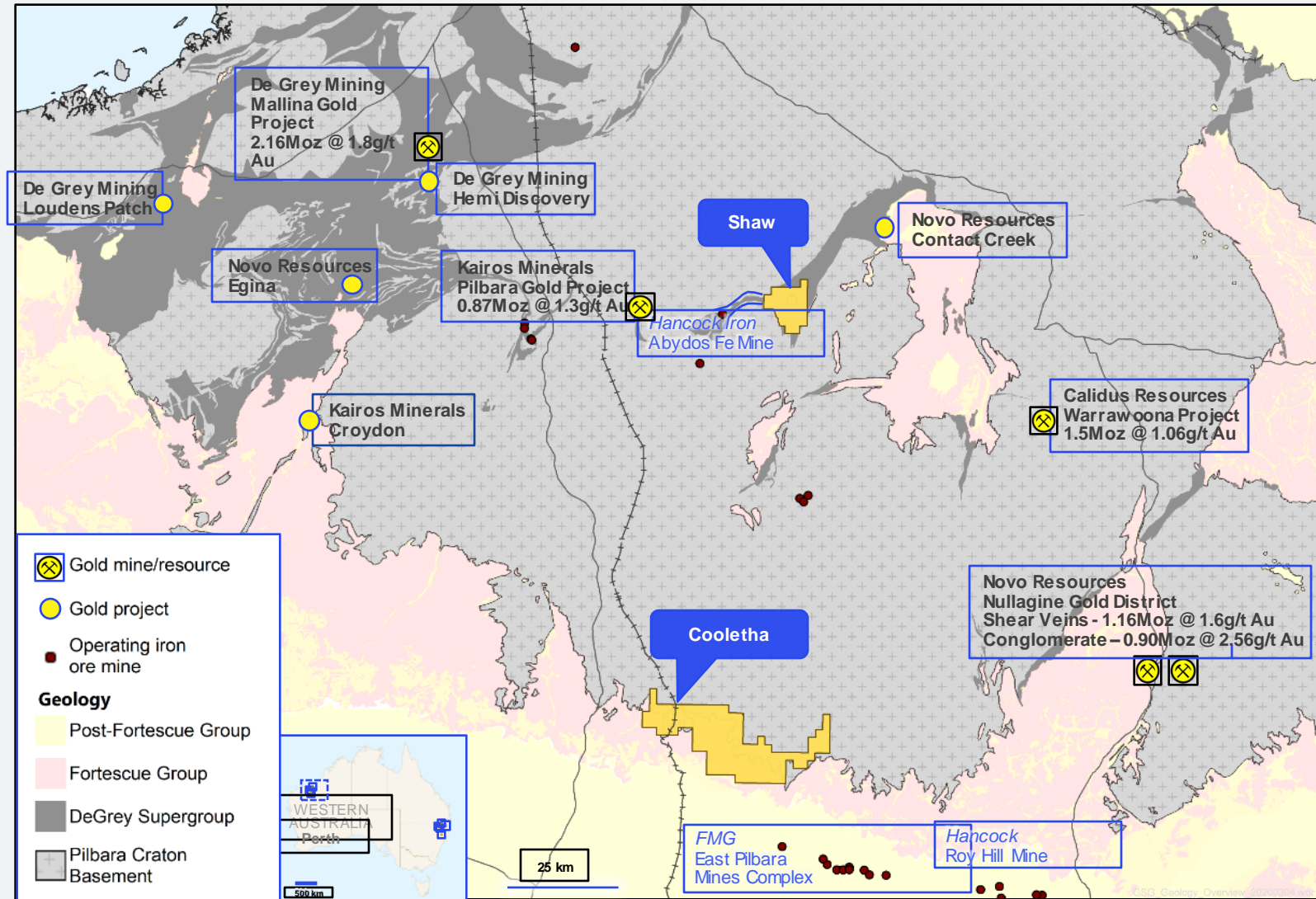


# Pilbara Exploration Portfolio

- The Pilbara portfolio covers 494km<sup>2</sup> including the Shaw and Cooletha Projects
- 100% owned, district-scale projects prospective for:
  - Iron Ore
  - Gold
  - Lithium
  - Uranium
- Underexplored with modern exploration methods
- Land access agreements in place and infrastructure available to support exploration
- Potential to create substantial shareholder value

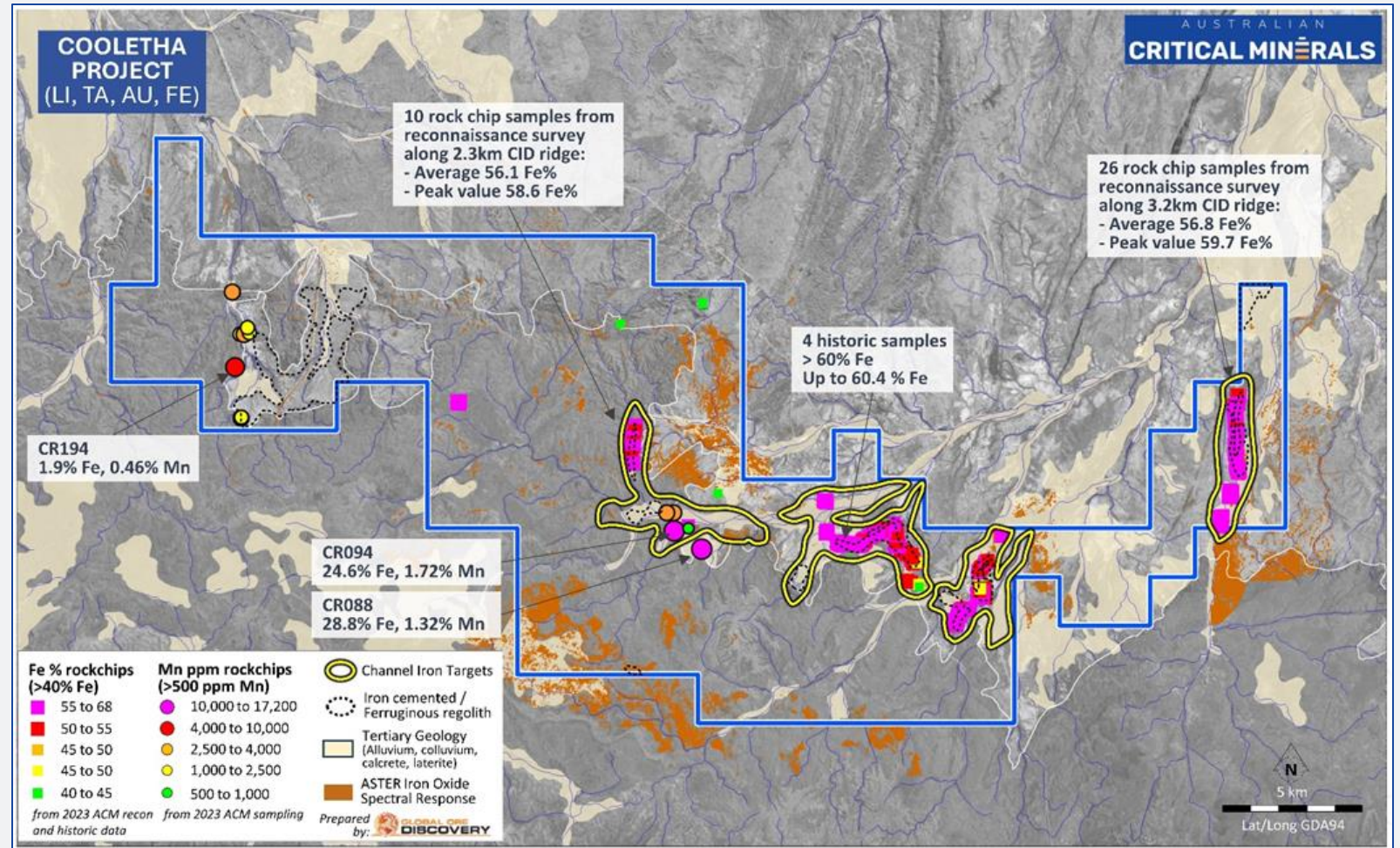
## LOCATED AMONGST THE GIANTS –

adjoins Hancock's Iron Abydos Mine, close to Fortescue's East Pilbara Complex and Hancock's Roy Hill Mine



# Cooletha Iron Ore Targets

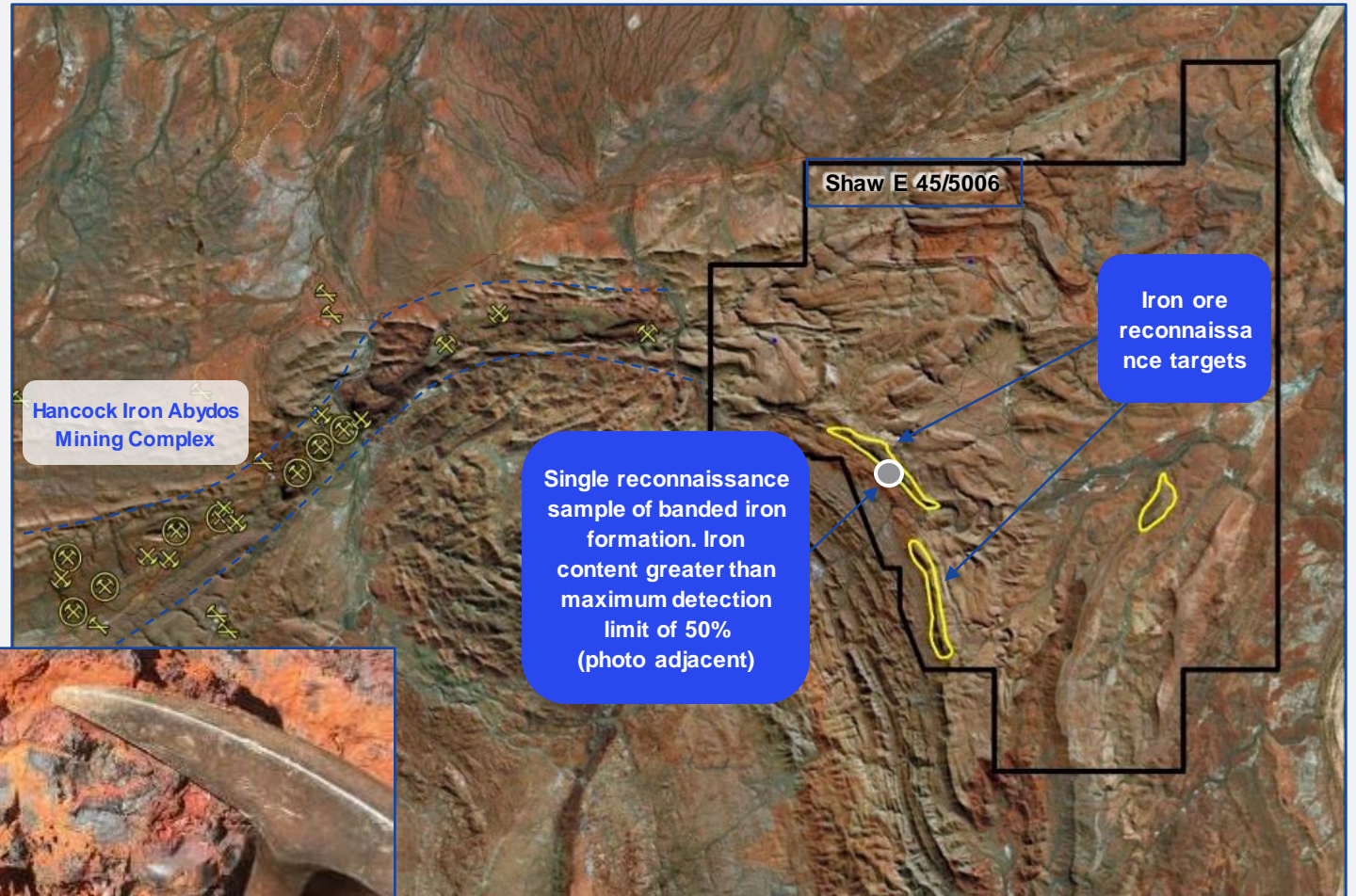
- High grade iron ore targets over 400km<sup>2</sup>
- Advanced yet still under-explored targets with high grade Channel Iron Deposit (CID) potential
- +20km of Channel Iron ridges identified
- **Average grade 56% Fe across all ridges**
- If a substantial resource is defined it may be of significant value to miners in the area such Fortescue and Hancock Prospecting
- Advanced, high-resolution satellite-borne sensor mapping study completed
- **Sampling and drilling planned for 2024**



# Shaw Iron Ore Targets

- Channel Iron Deposits (CID) and Banded Iron Formation (BIF) Targets
- Direct Shipping Ore Potential
- BIF assay exceeded maximum detection limit of 50% Fe
- +5km of BIF and CID Exploration Targets
- Close to mine site infrastructure
- Mapping and sampling to further define and expand known iron ore targets

**POW submitted and awaiting approval with drill program expected Q2 2024**



**>50% Fe**  
in Banded Iron Formation

# Moving Forward: Indicative Exploration Schedule

	2024				2025	
	Q1	Q2	Q3	Q4	Q1	Q2
<b>COOLETHA</b> Hyperspectral Study and initial targets delivered	█					
<b>COOLETHA</b> Heli-supported sampling Li and select Fe Targets. Results expected end March	█					
<b>COOLETHA</b> Ground supported Li & Fe sampling		█	█			
<b>COOLETHA</b> Ground supported Li & Fe results			█			
<b>COOLETHA</b> Lithium drilling program				█		
<b>RANKIN DOME</b> drilling		█				
<b>RANKIN DOME</b> REE drilling Results		█	█			
<b>RANKIN DOME</b> REE extended area sampling		█	█		█	█
<b>RANKIN DOME</b> REE resource drilling			█	█		
<b>SHAW</b> BIF and tenement wide exploration sampling		█	█			

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## Contact Information

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**ASX:ACM**

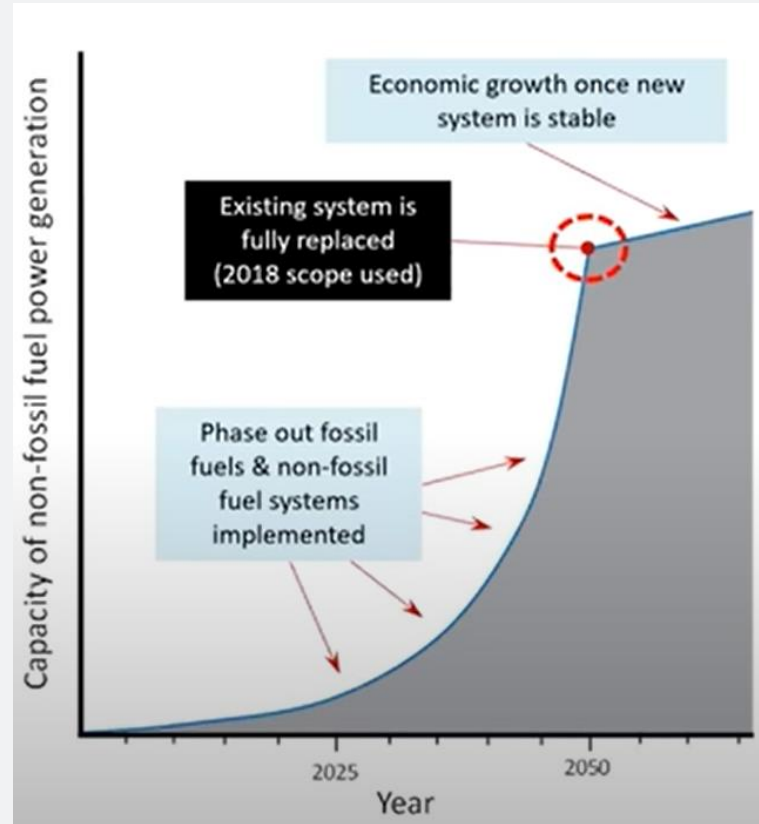
# What is Required to Phase Out Fossil Fuels?

## The Global Power Ecosystem in a Fossil Free World

The transition to cleaner technologies is fuelling insatiable global demand for critical minerals

You have to ask:

- What do fossil fuels do for us now?
- How many motor vehicles are there?
- How many batteries will be needed?
- How many power stations?
- What mix of renewable energy sources will be used?
- How many wind turbines, solar panels, hydrogen, tidal power, geothermal etc?
- AND more importantly.....



EV	4 495.7 TWh	} <b>Additional Annual Electrical Power Requires 36 007.9 TWh</b>
Industry	19 958.6 TWh	
H <sub>2</sub>	11 553.6 TWh	
		=
		<b>586 032 NEW Non-Fossil Fuel Power Stations</b>
		↖
		Power plant fleet in 2018 was 46 423 stations
<small>19.8.2022</small>		
<b>Hydro Power</b>	4,810 TWh 3,628 stations	<b>Solar Power</b> 13,800 TWh <b>393,840 stations</b>
<b>Nuclear Power</b>	2,701 TWh 211 Stations	<b>Geothermal &amp; Tidal</b> 268 TWh 442 stations
<b>Wind Power</b>	13,800 TWh 211 Stations	<b>Biowaste to Energy</b> 624 TWh <b>18,044 stations</b>

.....what quantity of minerals do we need to achieve this!?

Source: Seminar - Assessment of the Extra Capacity Required of Alternative Energy Electrical Power Systems to Completely Replace Fossil Fuels, Assoc Prof Simon P. Michaux, 19 August 2022, <https://www.youtube.com/watch?v=MBVmnKuBoCc>

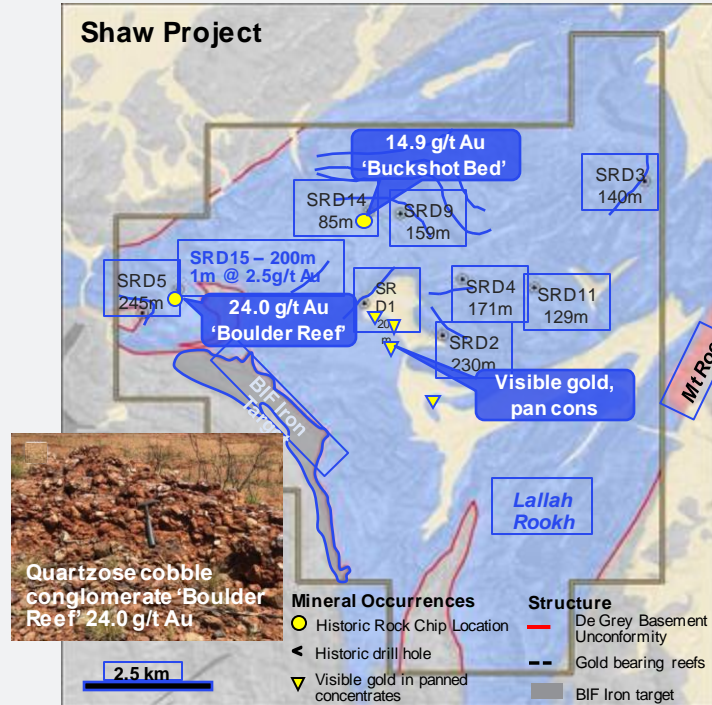


# Appendix: Other Projects

- 2 other exciting prospective projects in Tier 1 mining jurisdictions:
  - ACM's Shaw Project sits among established gold miners and new discoveries, with grades up to 24g/t Au rock chips and 1m intersection @ 2.5g/t Au
  - Forget EVs - Cement production causes 8% of global emissions - more than the global car fleet – and through a simple process, metakaolin can reduce those emissions by 40%
  - ACM holds an expansive prospective kaolin packages - Initial samples exceed the average purity of peers with excellent whiteness and brightness

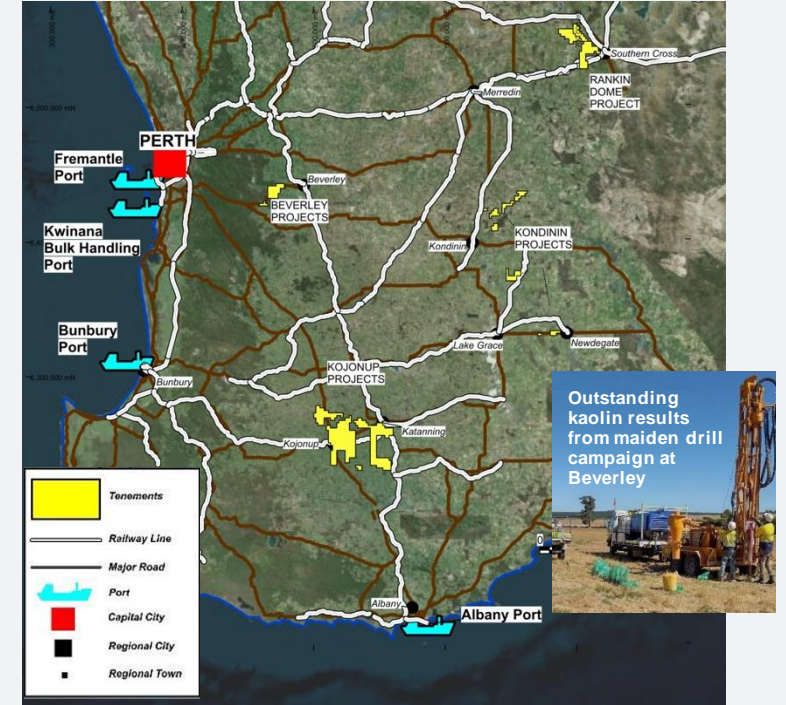
Sources:  
 Kaolin Global Market Report 2022, The Business Research Company, September 2022  
 Zero Carbon Industry Plan Rethinking Cement, Beyond Zero Emissions Inc., 2017  
[https://bze.org.au/research\\_release/rethinking-cement/](https://bze.org.au/research_release/rethinking-cement/)

## GOLD



- Exciting gold region, proximal to De Grey and Novo with new discovery by Kairos (ASX:KA) of 0.87 Moz Au
- Up to 24 g/t Au rock chips, drill intersections up to 1m @ 2.5g/t Au and multiple visible gold panned
- Historically explorers had poor understanding of Witwatersrand style gold which led to incorrect drilling methods and unrepresentative drill results
- ACM targeting multiple stacked gold-bearing conglomerate reefs in the Archean Lalla Rookh Sandstone Formation
- Systematic, modern exploration program planned

## KAOLIN



- Large (1,040km<sup>2</sup>) kaolin land package of highly prospective ELs
- Drilling at Beverley confirmed very-high-quality kaolin
- End-user analysis confirmed excellent purity, brightness and whiteness opening up a number of markets including paper and ceramics
- Samples exceed Wyoming Standard RP-2
- Private cleared land, with excellent access to road, rail, port, water and power
- Land access and POWs in place so further drilling can get underway immediately

# Appendix: Tenement Status

CRITICAL

INDUSTRIAL

TENEMENT	PROJECT	COMMODITY	STATUS	ACM OWNERSHIP	HOLDER	AREA BLKS	AREA km <sup>2</sup>
E 45/5228	COOLETHA	Lithium, Tantalum, Iron Ore, Gold	LIVE	100%	PROTEROZOIC GOLD PTY LTD	40	127.0
E 45/4990	COOLETHA	Lithium, Tantalum, Iron Ore, Gold	LIVE	100%	PROTEROZOIC GOLD PTY LTD	39	123.8
E 45/5052	COOLETHA	Lithium, Tantalum, Iron Ore	PENDING	100%	PROTEROZOIC GOLD PTY LTD	5	15.9
E 45/6375	COOLETHA	Lithium, Tantalum, Iron Ore, Gold	PENDING	100%	PROTEROZOIC GOLD PTY LTD	42	133.4
E 45/5006	SHAW	Iron Ore, Gold	LIVE	100%	PROTEROZOIC GOLD PTY LTD	29	90.0
E 77/2768	RANKIN DOME	Rare Earths	LIVE	51% JV	KULA GOLD LIMITED	36	105.8
E 77/2709	RANKIN DOME	Rare Earths	LIVE	51% JV	KULA GOLD LIMITED	55	160.8
E 77/2753	RANKIN DOME	Rare Earths	LIVE	51% JV	KULA GOLD LIMITED	22	64.7
E 70/5772	KOJONUP	Kaolin	LIVE	100%	BAYZEPHYR PTY LTD	51*	145*
E 70/5773	KOJONUP	Kaolin	LIVE	100%	BAYZEPHYR PTY LTD	132*	376*
E 70/5774	KOJONUP	Kaolin	LIVE	100%	BAYZEPHYR PTY LTD	5	14.2
E 70/5775	KOJONUP	Kaolin	LIVE	100%	BAYZEPHYR PTY LTD	171*	487*
E 70/5608	KONDININ	Kaolin	LIVE	100%	EVEXTRA PTY LTD	39*	112*
E 70/5609	KONDININ	Kaolin	LIVE	100%	EVEXTRA PTY LTD	58*	167*
E 70/5610	KONDININ	Kaolin	LIVE	100%	EVEXTRA PTY LTD	45*	130*
E 70/5574	BEVERLEY	Kaolin	LIVE	100%	NEWNATION HOLDINGS PTY LTD	34	98.7
E 70/6148	BEVERLEY	Kaolin	LIVE	100%	NEWNATION HOLDINGS PTY LTD	5	14.5
<b>17 TENEMENTS</b>	<b>6 PROJECT AREAS</b>	<b>6 KEY COMMODITIES</b>				<b>874 Blocks</b>	<b>2,365 km<sup>2</sup></b>

\*Tenements are subject to voluntary relinquishment which is yet to be processed by the Department of Mines, Industry Regulation and Safety.