encounter resources

Euroz Hartleys Institutional Investor Conference

11-13 March 2025

Building shareholder value through the discovery of niobium and copper in Australia

ASX:ENR

Aircore drilling at Aileron – May 2024

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The information in this report that relates to Exploration Results is based on information compiled by Mr. Mark Brodie who is a Member of the Australasian Institute of Mining and Metallurgy. Mr. Brodie holds shares and options in and is a full time employee of Encounter Resources Ltd and has sufficient experience which is relevant to the style of mineralisation under consideration to qualify as a Competent Person as defined in the 2012 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Brodie consents to the inclusion in the report of the matters based on the information compiled by him, in the form and context in which it appears.

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This announcement has been approved for release by the Board of Encounter.

Encounter at a glance

Creating value through project generation and discovery

encounter resources

Board

Mr Will Robinson
Executive Chairman

Dr Jon Hronsky OAM
Non-Executive Director

Peter Bewick
Non-Executive Director

Mr Philip Crutchfield
Non-Executive Director

Capital structure

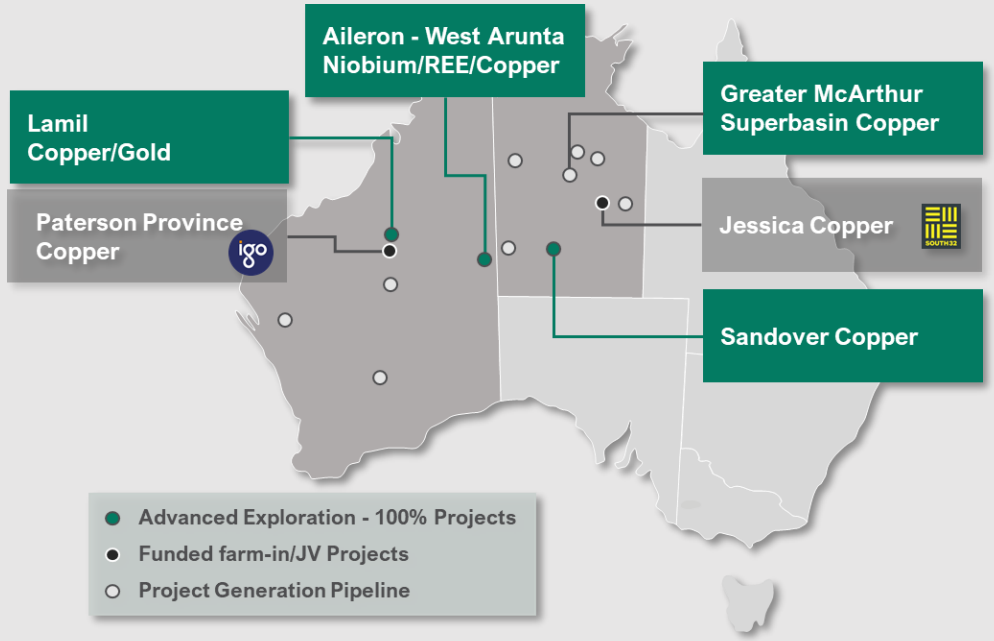
ASX ticker	ENR
Share price (10 Mar 25)	$0.23
Shares on issue	499M
Options	19.6M
Market capitalisation	~$115M

Major shareholders

Board and Management	~10.3%
IGO	~5.7%
Chalice Mining	~5.5%
Paradice Investment Mgt	~5.9%
Top 20 Shareholders	~51.1%

Cash (Dec 24)
~$23M

Enterprise value
~$92M



Targeting the discovery of new, world-class mineral deposits

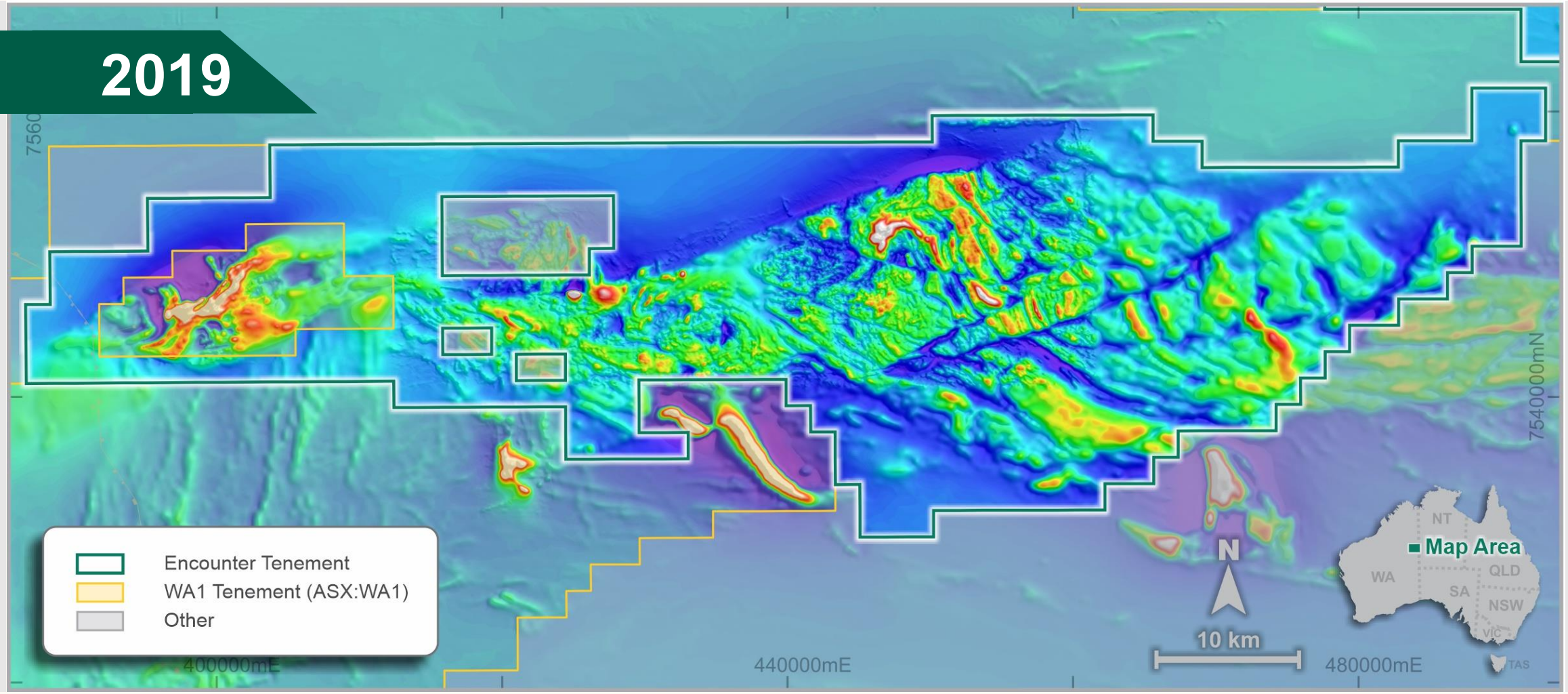
Significant and consistent in-ground exploration investment

Early mover into new regions with the application of new datasets

Collaborating with high-quality exploration teams at major companies

Aileron Project – West Arunta

Targeted for IOCG copper-gold – no previous exploration on the tenements

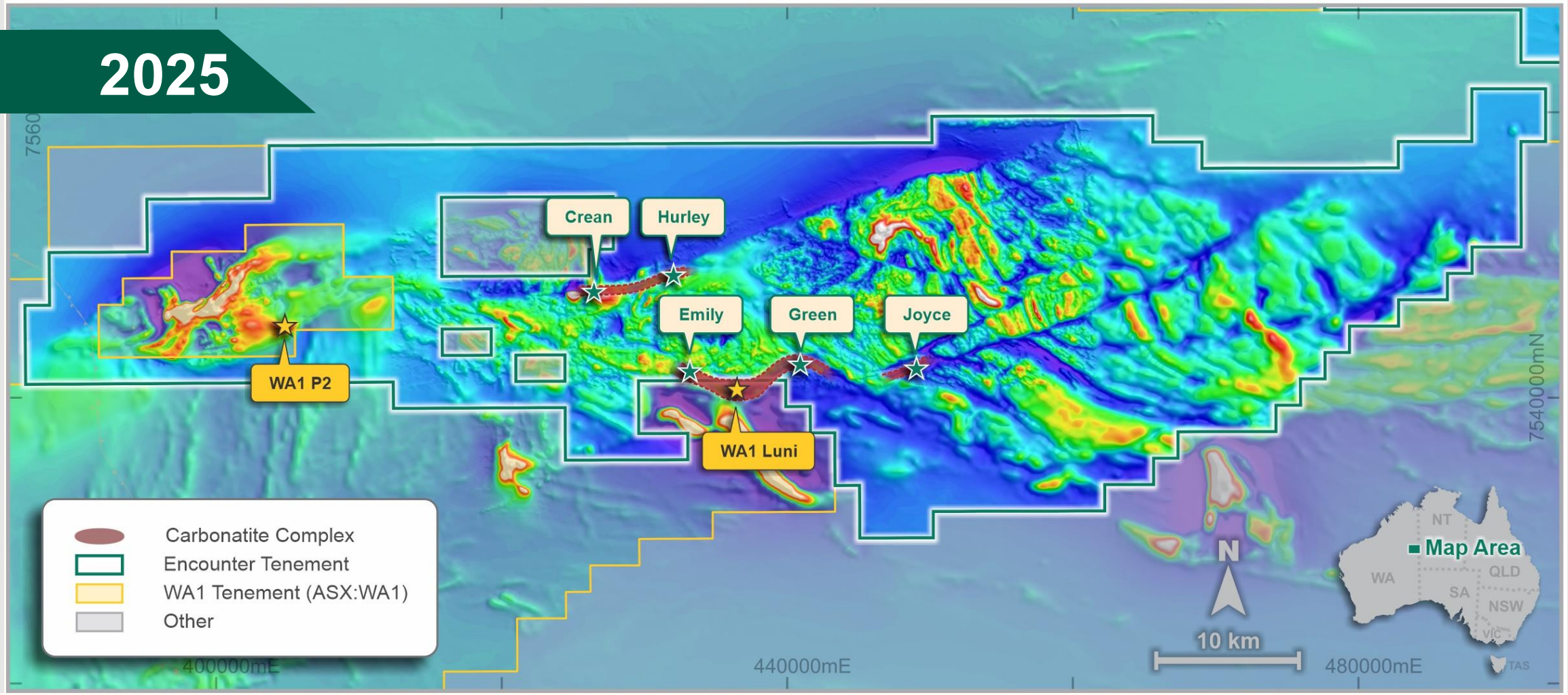


Aileron project – Magnetics (RTP)

Refer to ASX announcement 8 December 2022

Aileron Project – West Arunta

Carbonatite complexes in the West Arunta are strike-extensive and host abundant high-grade niobium

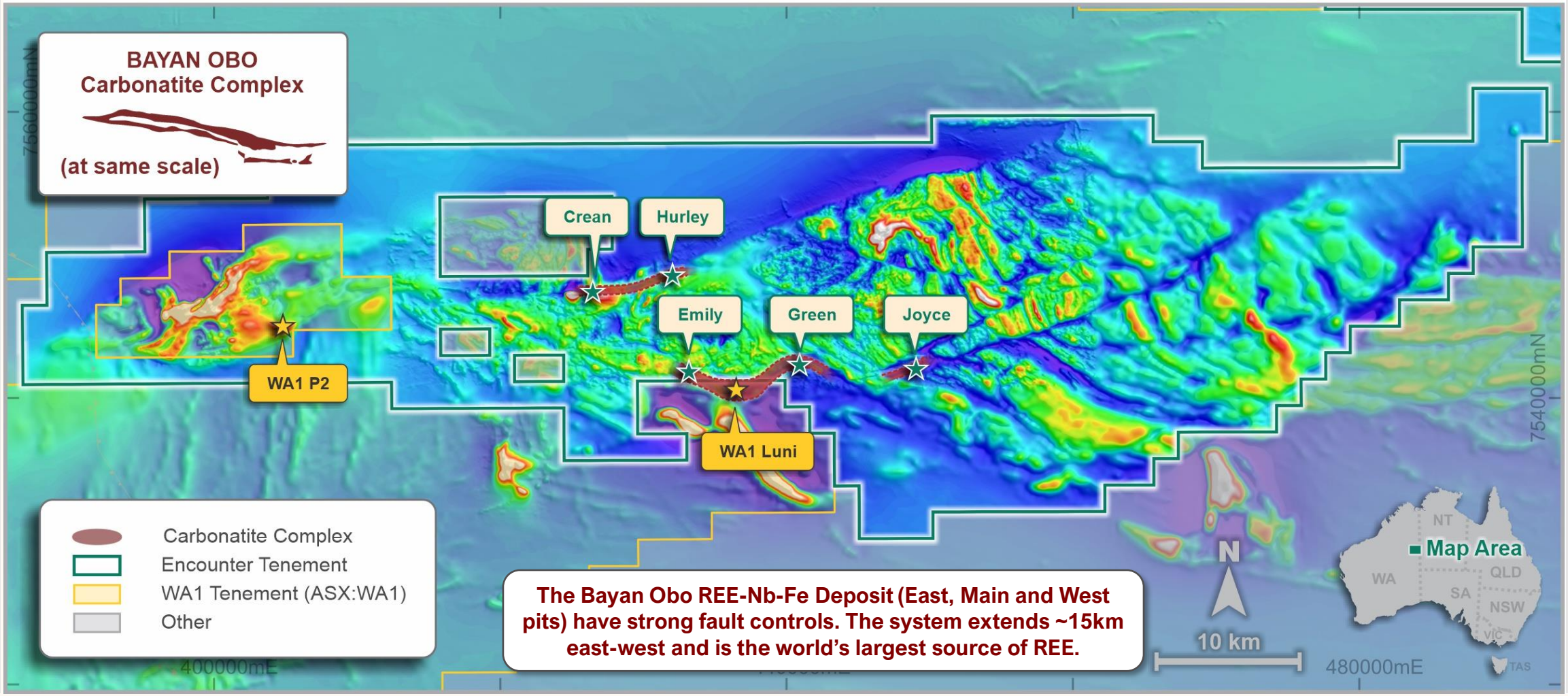


Aileron project – Magnetics (RTP)

Refer to ASX announcement 8 December 2022

Aileron Project – West Arunta

Carbonatites are commonly strike-extensive dyke systems including the world's largest - Bayan Obo (China)



Aileron project – Magnetics (RTP)

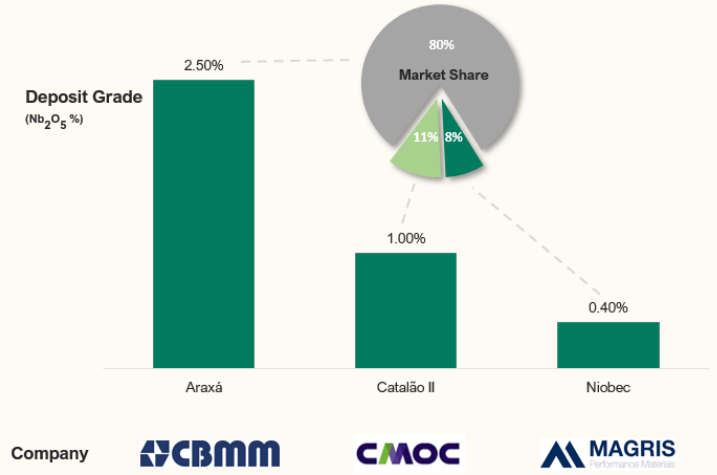
Refer to ASX announcement 8 December 2022

Niobium

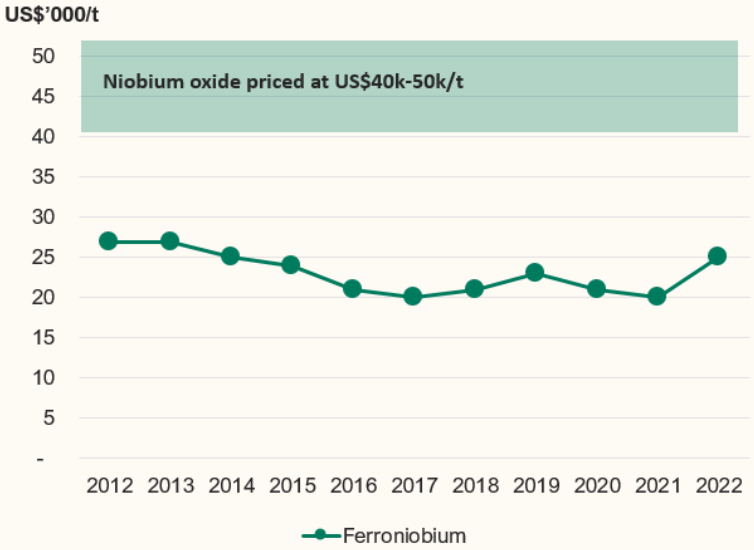
Niobium leveraged to global growth and the energy transition

- **High value ‘commodity’ with stable pricing**
- **Three operating mines with one dominant producer supplying over 80% of global niobium requirements (CBMM)**
- **Processing via conventional flotation and smelting**
- **Critical metal used in defence, nuclear, steel and battery applications**
- **Diverse global customer base – significant demand from US, EU, Japan, South Korea and China**

Key Niobium Producers and Deposits[1]



Niobium Product Pricing[2]



Carbonatite hosted niobium mineralisation

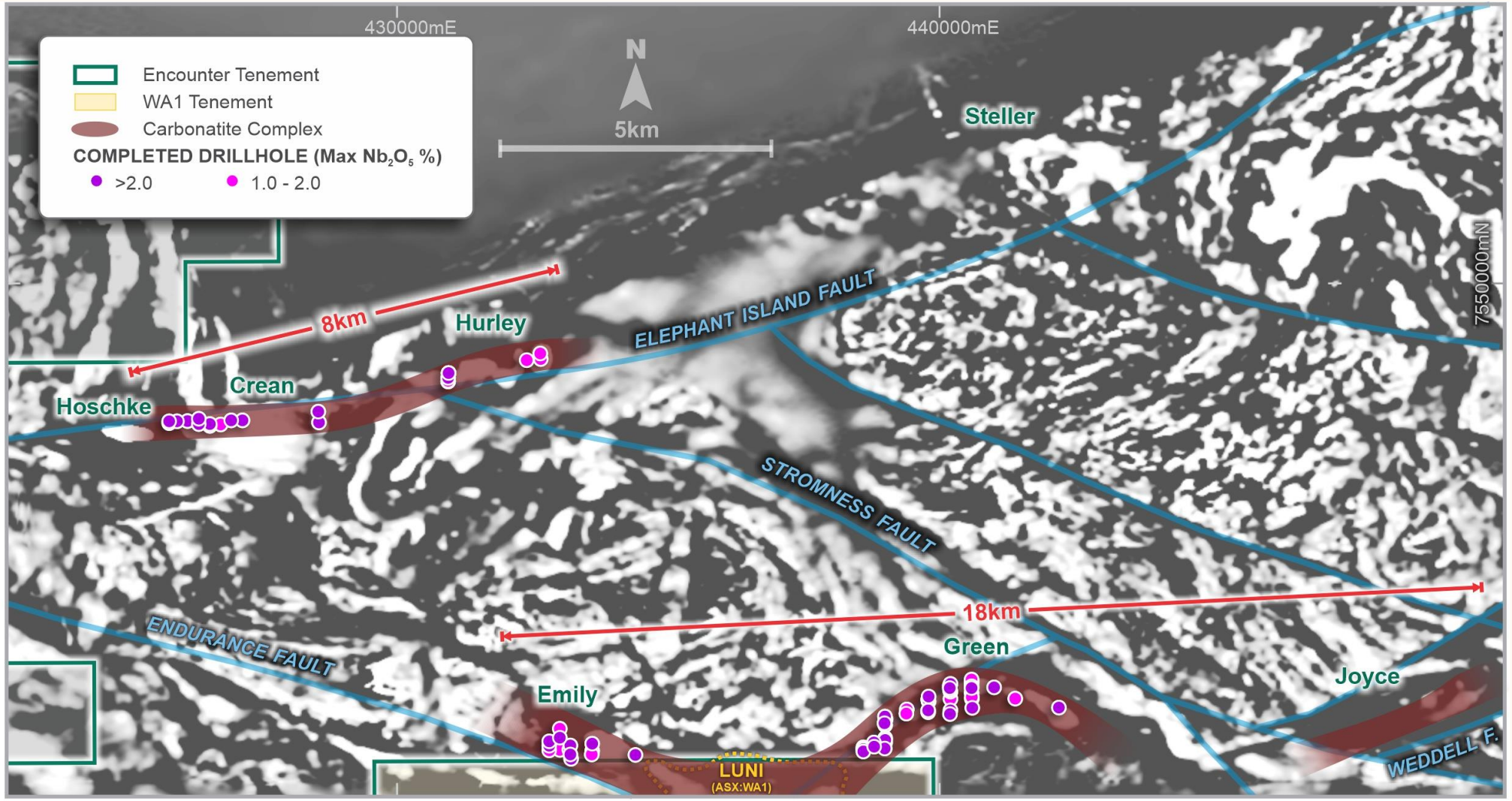
Carbonatites weather preferentially and can host abundant high-grade niobium mineralisation

Schematic Geological Profile	Existing Mines		Mine Grade ($\%\ Nb_2O_5$)	Encounter Prospects
Cover				
Upper Saprolite Leached Zone				
Niobium Oxide Enriched Zone	CBMM	Araxá *Open Pit*	2.48%	Green, Crean, Emily
Primary Carbonatite	CMOC	Catalao II *Open pit*	1.01%	Crean, Hurley
	MAGRIS Performance Materials	Niobec *Underground*	0.41%	

Increasing depth

Aileron Project – West Arunta

Drilling in 2024 intersected shallow, high-grade niobium-REE mineralisation across multiple targets

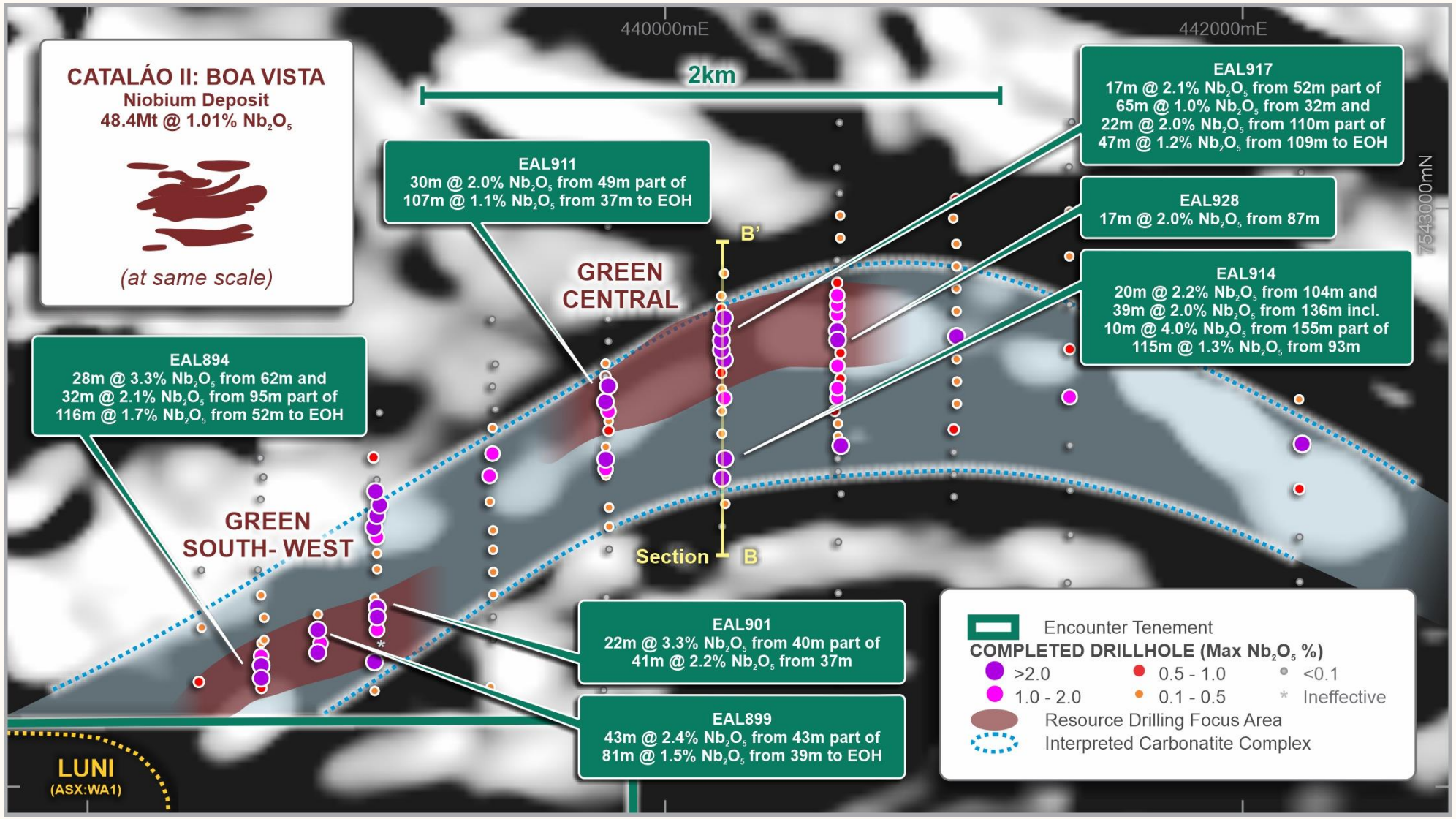


High grade niobium intercepts follow structural corridors defined in geophysics (Magnetics TMI 1vd)

Refer to ASX announcements 8 July, 16 July, 16 September, 14 October, 12 December 2024

Green is a carbonatite complex of significant scale

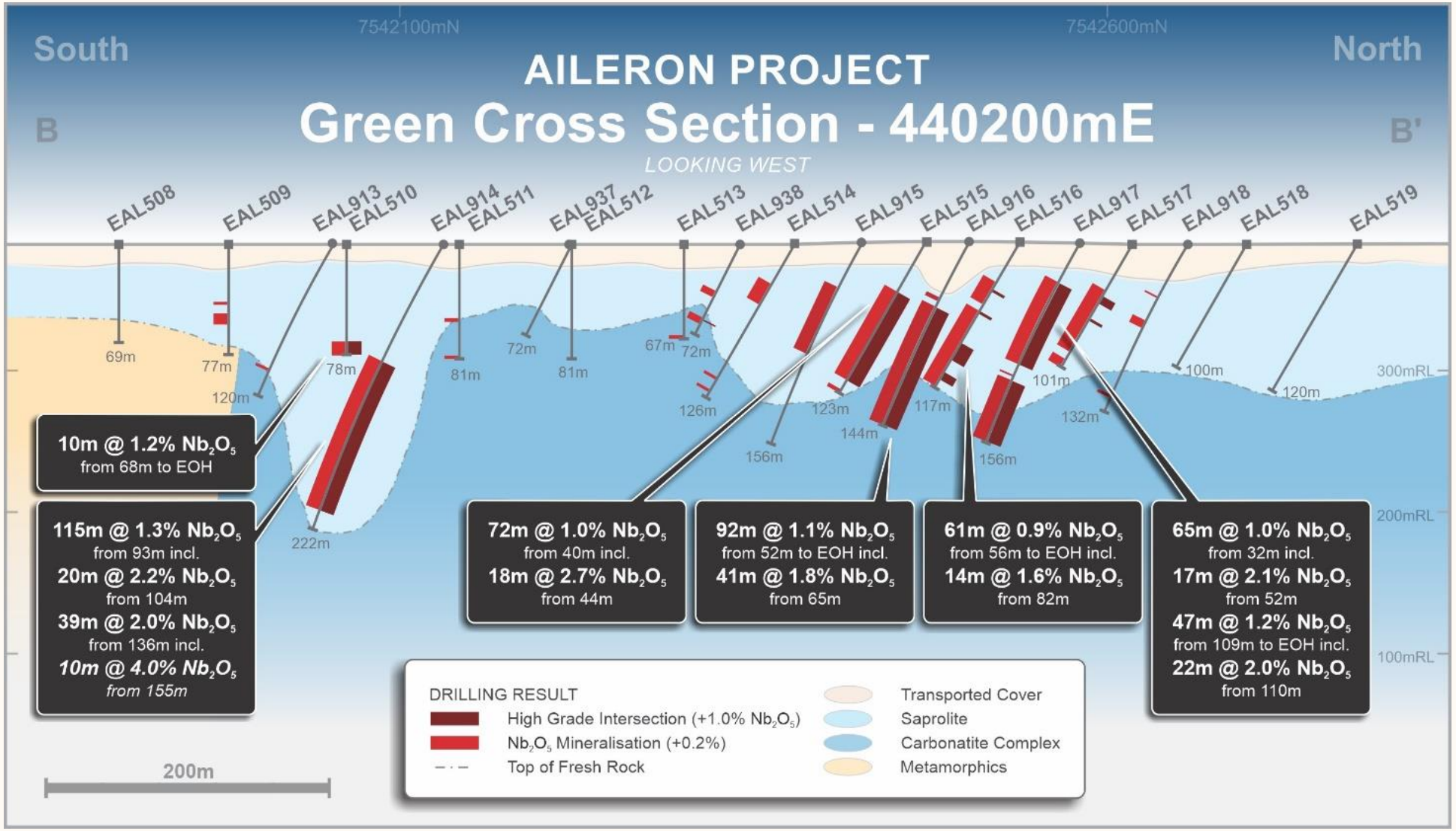
Boa Vista deposit outline shown at the same scale (owned by CMOC producing ~10% of world niobium supply)



Refer to ASX announcement 21 November 2024, 22 January 2025

Aileron Project – Green Central

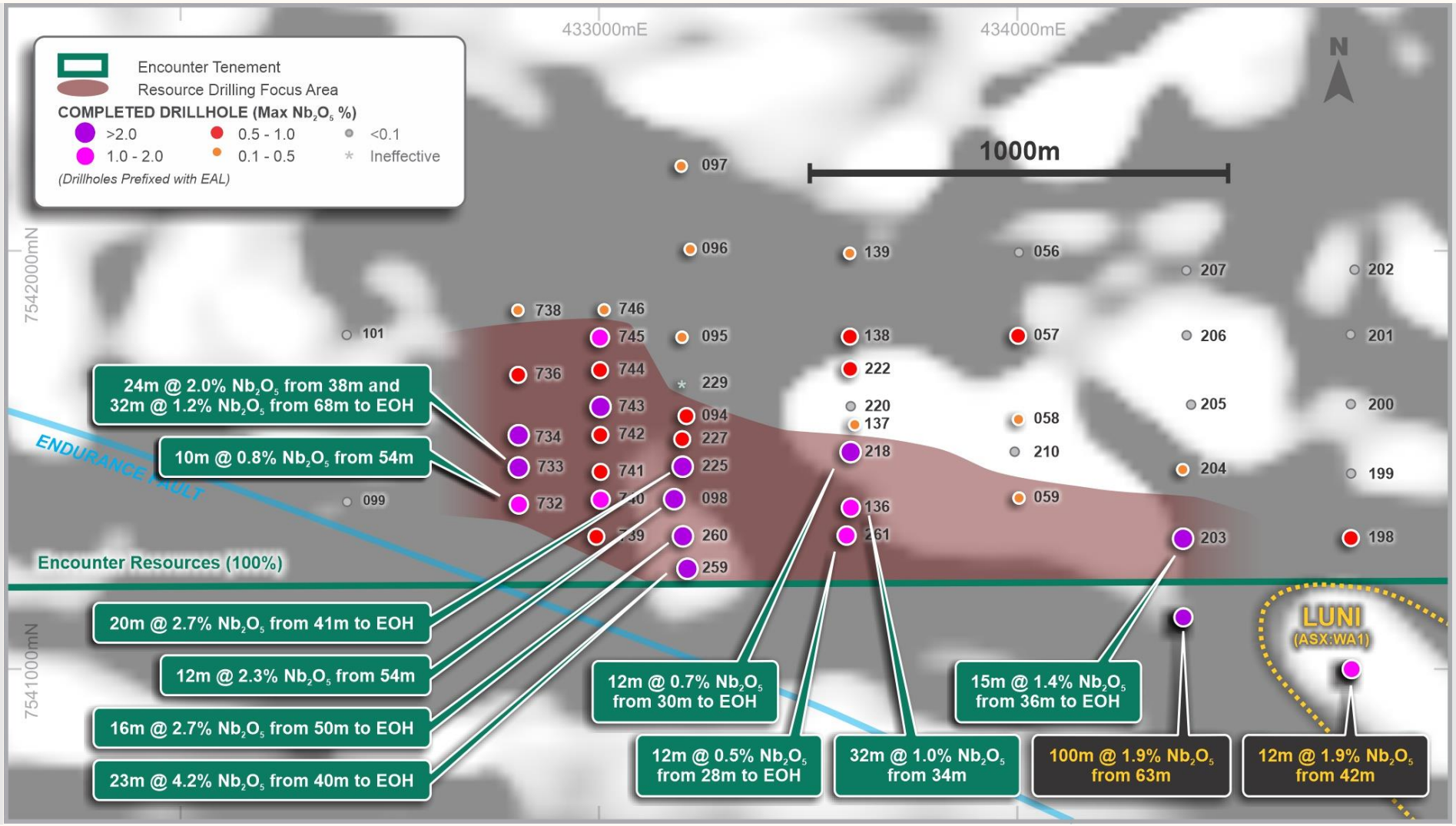
Discovery of a large continuous body over +800m of strike



Refer to ASX announcement 21 November 2024, 22 January 2025

Aileron Project – Emily

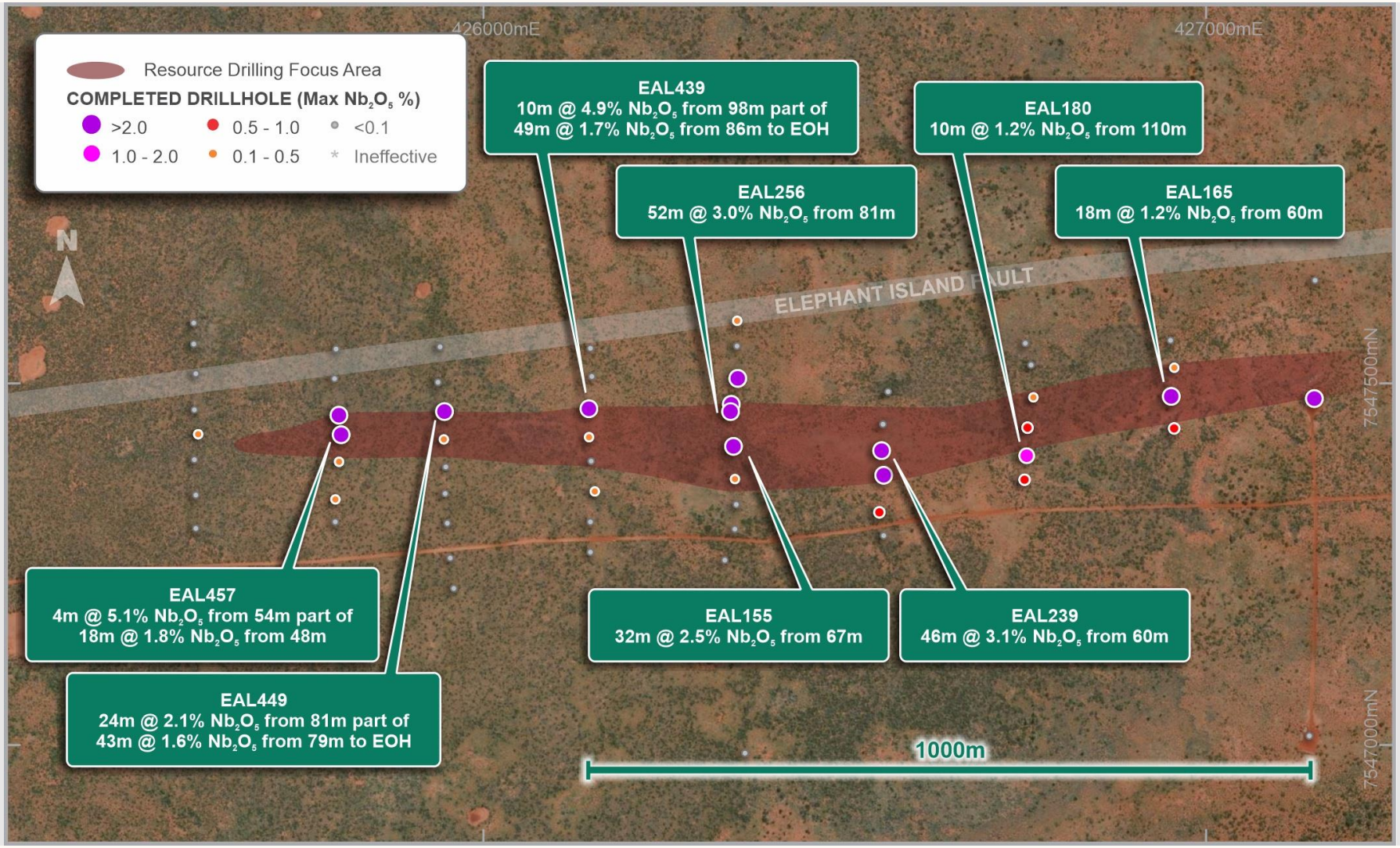
Enriched niobium oxide mineralisation on the north-west structural trend from Luni, open along strike



Refer to ASX announcements 24 June, 8 July, 16 September 2024

Aileron Project – Crean

Coherent body of thick, high-grade niobium mineralisation over 1.2km in strike



Refer to ASX announcements 24 June, 8 July, 16 September 2024

High-grade niobium at multiple prospects

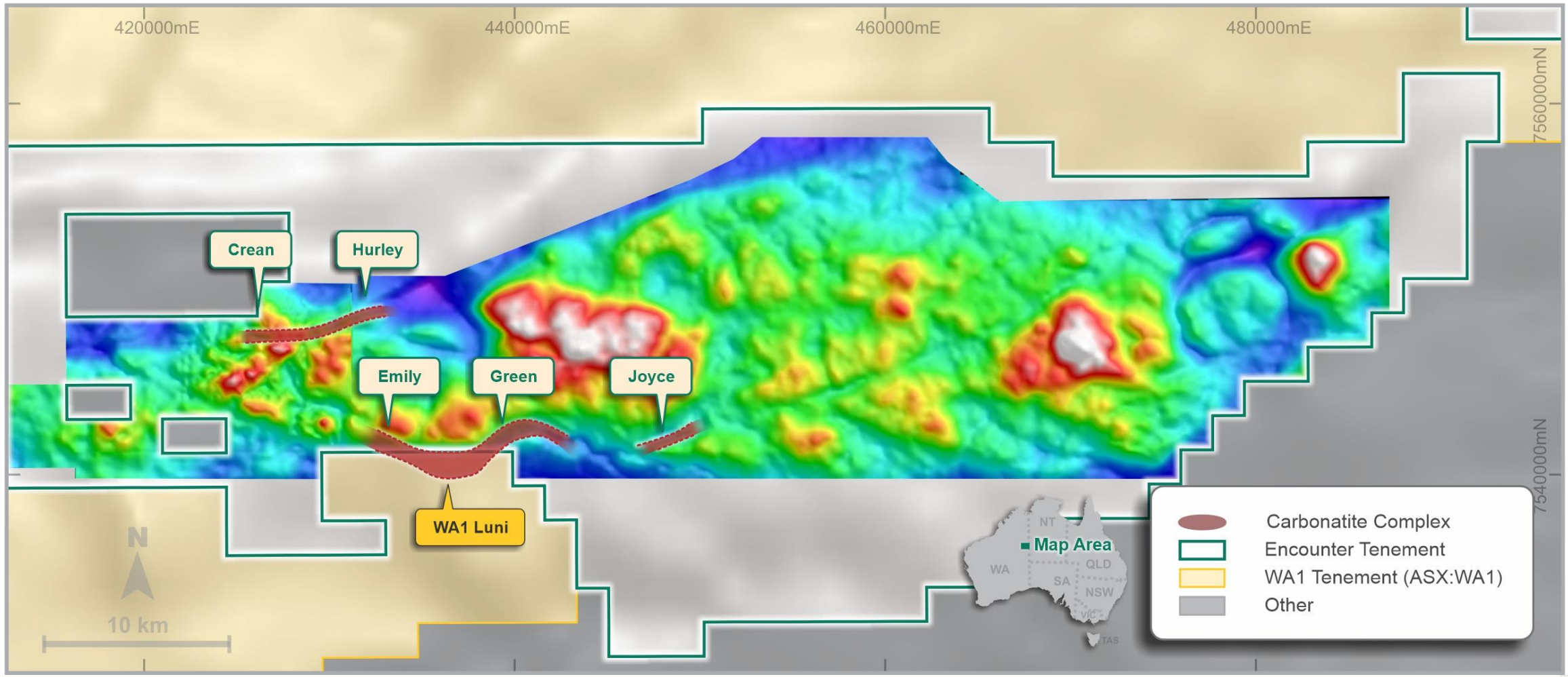
>50,000m of drilling completed in 2024 (41,000m aircore, 6,500m RC & 2,700m diamond)

Prospect	Best Select Intersections	Current Status	Next Steps
Green	• **116m @ 1.7% Nb_2O_5** from 52m (EAL894) • **43m @ 2.4% Nb_2O_5** from 43m (EAL899) • **16m @ 3.0% Nb_2O_5** from 47m (EAL500)	• Carbonatite complex of significant scale that remains open to the east • Numerous holes end in mineralisation	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Crean	• **52m @ 3.0% Nb_2O_5** from 81m (EAL256) • **46m @ 3.1% Nb_2O_5** from 60m (EAL239) • **32m @ 2.5% Nb_2O_5** from 67m (EAL155)	• Coherent high-grade mineralisation over 1.2km • Numerous holes end in mineralisation	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Emily	• **23m @ 4.2% Nb_2O_5** from 40m (EAL259) • **20m @ 2.7% Nb_2O_5** from 41m (EAL225) • **16m @ 2.7% Nb_2O_5** from 50m (EAL260)	• Broad spaced aircore drilling completed, open to the west • Numerous holes end in mineralisation	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Hurley	• **24m @ 0.9% Nb_2O_5** from 66m (EAL034) • **28m @ 0.7% Nb_2O_5** from 210m (EAL115)	Diamond drilling intersected depth extensive primary carbonatite	Explore north and east for enriched oxide mineralisation
Joyce	First assays from reconnaissance drilling returned up to 0.6% Nb_2O_5 and 0.5% TREO	First aircore drilling confirmed another carbonatite complex	Systematically explore Joyce with aircore drilling in 2025

Refer to ASX announcement 14 October 2024

Aileron Project – West Arunta

Exploration Upside - commanding land position and aircore drilling is fast and cost-effective

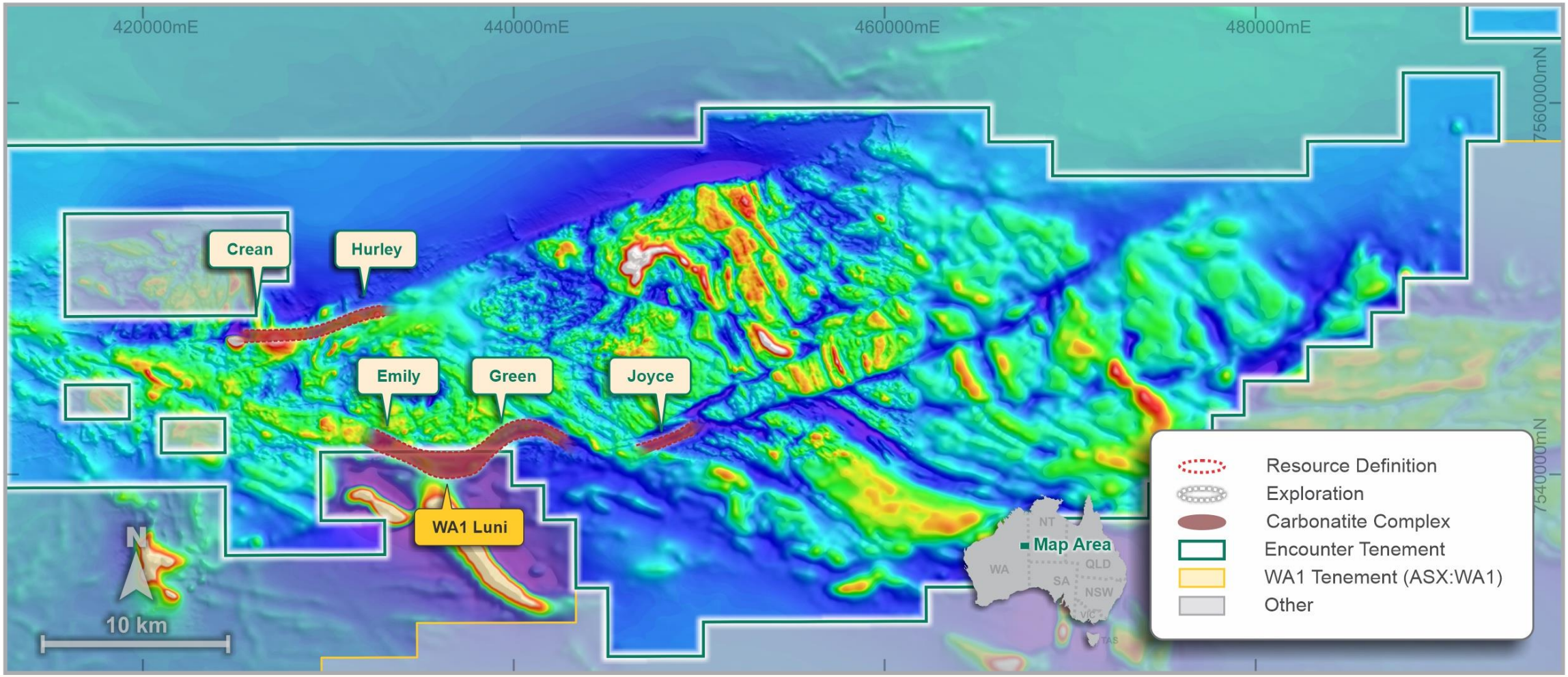


Falcon gravity survey has highlighted key structures and high priority targets

Refer to ASX announcement 8 December 2022

Aileron Project – West Arunta

Key structures are highlighted in multiple datasets - magnetics and gravity

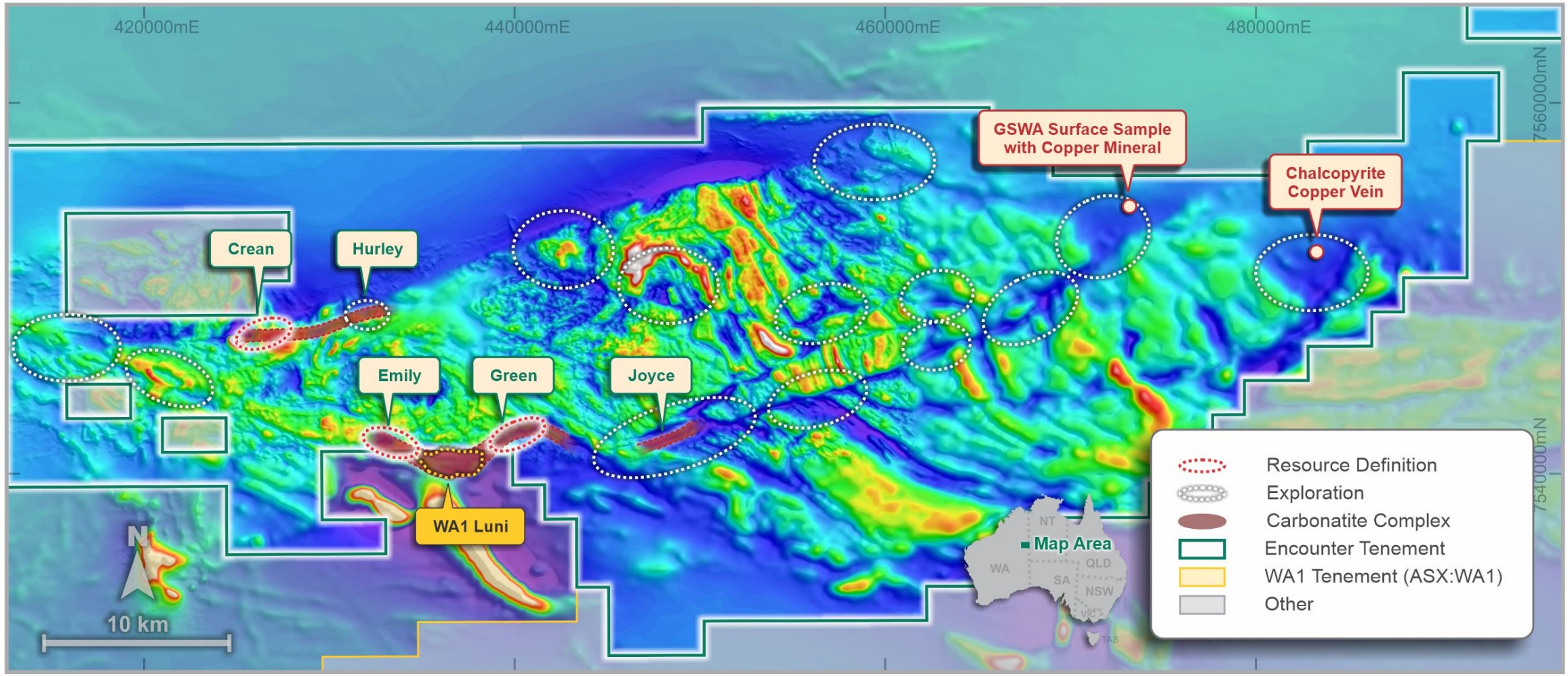


Aileron project – Magnetics (RTP)

Refer to ASX announcement 8 December 2022

Aileron Project – West Arunta

2025 exploration to test niobium-REE carbonatite & copper-gold targets with rapid, low cost aircore/RC drilling



Aileron project – Magnetics (RTP)

Refer to ASX announcement 8 December 2022

Major Copper Exploration Portfolio

Northern Territory

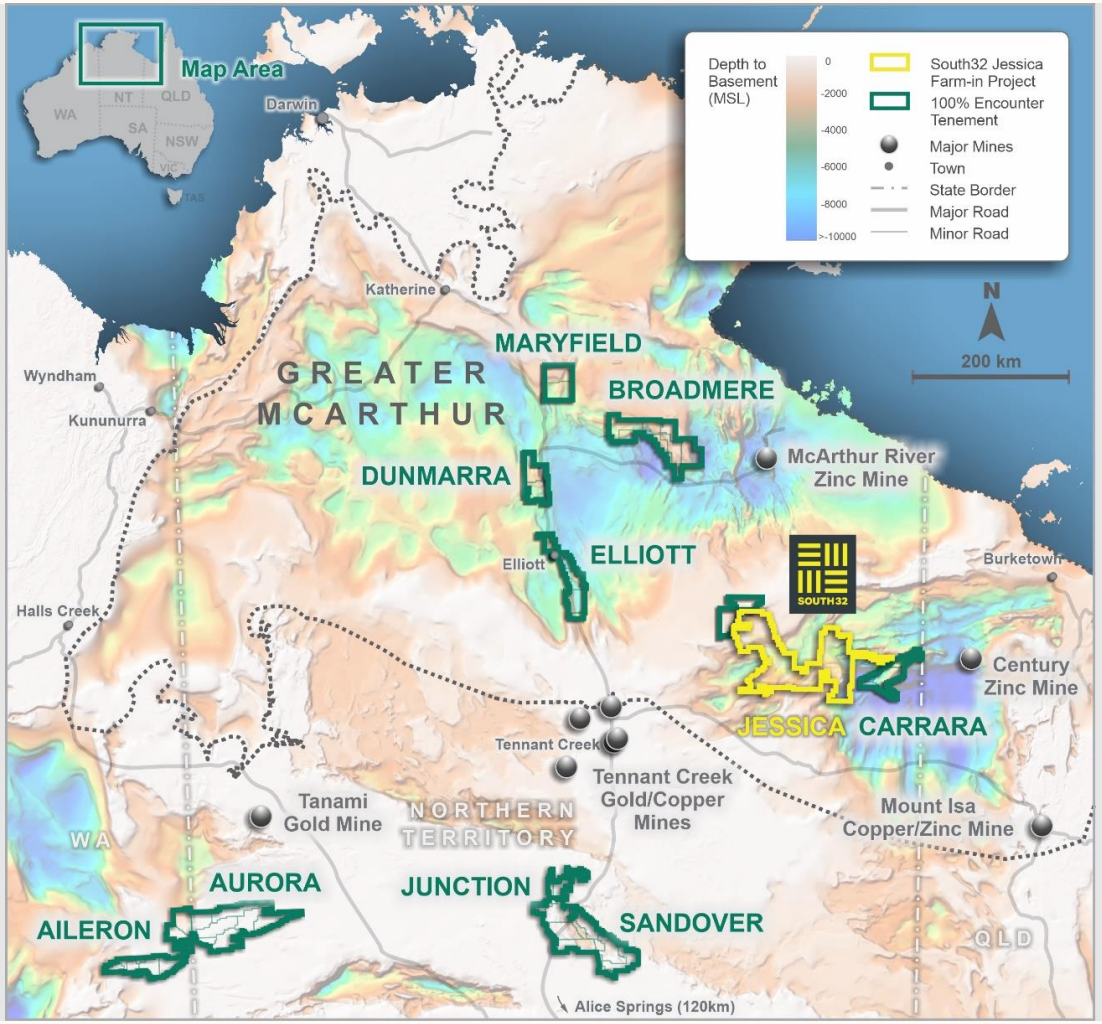
A large portfolio of first mover copper opportunities in the Northern Territory highly prospective for sedimentary hosted copper deposits

Jessica farm-in South32 (ENR carried to Scoping Study)

- First two drill holes at Zeta, drilled 1.3km apart, intersected several key IOCG indicators including:
  - **Intense pervasive red rock hematite alteration**
  - **Chalcopyrite/bornite in quartz-carbonate veins**

Sandover Project (100% ENR)

- Copper mineralisation in first hole at basement unconformity **(0.3m at 2.1% Cu from 634.3m)**



Encounter copper projects in the Northern Territory – Project Location Plan

Refer to ASX announcements 10 April 2024, 17 May 2024

Copper-Gold Exploration Portfolio

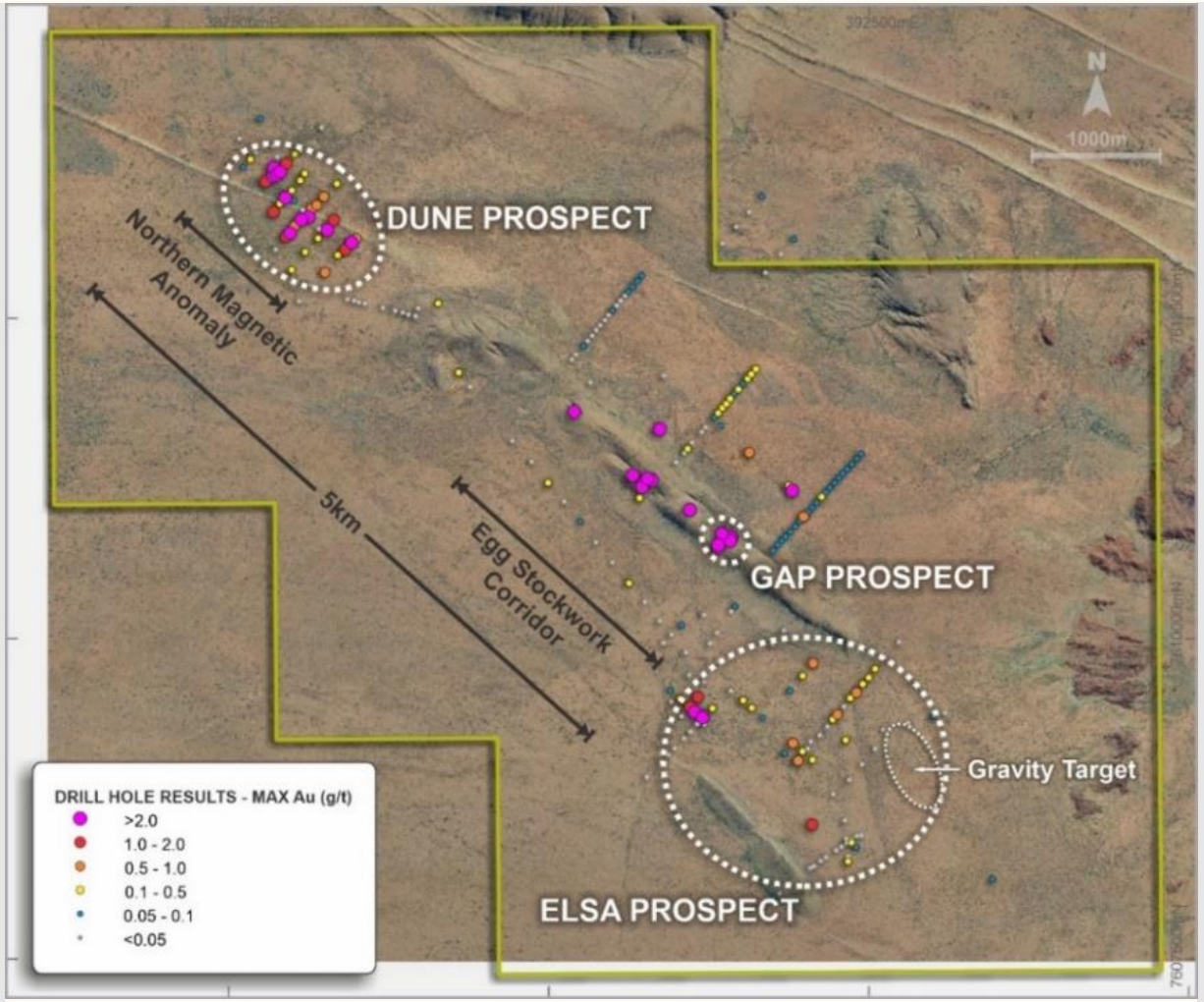
Paterson Province, Western Australia

Lamil Project (100% ENR)

- 25km northwest of Telfer copper-gold mine
- Mineralised copper-gold intersections including:
  - **10m @ 2.8g/t Au from 94m (Dune)**
  - **132m @ 0.3g/t Au, 0.1% Cu from 87m (Dune)**
  - **1.5m @ 19.1% Cu from 409.1m (Dune)**
  - **30m @ 1.1 g/t Au from 96m (Gap)**
  - **33m @ 0.5g/t Au, 0.1% Cu from 97m (Elsa)**

Yeneena Copper Project (IGO JV – ENR 30%)

- Highly anomalous copper-silver assays from regional aircore drilling including:
  - **10m @ 0.23% Cu from 79m (BM5 Target)**



Lamil Prospect locations including Dune the Elsa gravity target. Drill hole collars displaying max Au g/t are shown.

Refer to ASX announcement 5 March 2024, 30 January 2025

Near-Term Catalysts

Valuation upside – re-rate as the value of the West Arunta is demonstrated

Commencing Drilling - ~40,000m aircore/RC/diamond drill program

Initial Mineral Resource - high-grade, near-surface niobium

Exploration Upside – West Arunta is a prodigious new mineral province with substantial upside on Encounter's tenure

Copper/gold portfolio - Paterson Province (WA), NT and the West Arunta!

Contact

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ASX: **ENR**

Niobium Market

Niobium

High-strength, low-alloy (HSLA) steel underpins demand with the battery market set to become a key growth driver

88% Ferroniobium
Global Production: 115kt

Key input into high-strength low-alloy steels, increasing strength, toughness and formability through grain refinement

2kg of Nb in 1,000kg of steel improves efficiency by over 15% and reduces CO_2 emissions by 350kg

Significant improvements in safety, cost and durability across multiple end markets; automobiles, energy and construction

Large continued market growth potential with large steel markets such as China and India using 1/3rd of the niobium used in US, EU, Japan and South Korea steel markets

Consumers

NIPPON STEEL, BAOSTEEL, TISCO, thyssenkrupp, JFE, ArcelorMittal, sojitz, TATA STEEL

12% Niobium Oxide
Global Production: 14kt

Produced through additional hydrometallurgical treatment of ferroniobium or pyrochlore concentrate

Key markets include:

- Superconductive magnets and capacitors
- MRI equipment
- Optical lenses
- High temperature alloys used in aerospace, nuclear, defense and other advanced applications

Batteries becoming key growth market following significant investment by CBMM – **expect niobium oxide sales of 30ktpa by 2030**

Consumers

TOSHIBA, PHILIPS, SIEMENS

Niobium Uses

Niobium is a key input into dematerialisation in the energy, construction and automotive sectors

- **2kg of Nb** in 1.0t of steel improves its efficiency by over 15% - **150kg less steel for the same/better performance**
  - **Reduces CO_2 emissions by 350kg**
- Potential to create **savings** in China's steel industry of **70Mt/year and 158Mt/year of CO_2 emissions**

Niobium Benefits – Case Studies

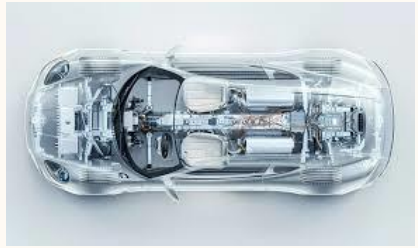
Zandhazen Bridge - Nederlands

8.4kt total steel weight
30% total steel savings
0.03% Nb
Beams and sections

Zun Tower - Beijing

130kt total steel weight
12kt steel savings
0.02% Nb
Rebars, beams, sections and plates

Niobium Benefits

Mobility		Lighter and tougher body Safer in instances of a crash Faster recharging for EVs Energy efficiency
Energy		Increased safety Corrosion resistance Reduced total costs
Structures		Increased toughness Improved structural safety Improved cost-benefit Material optimisation Innovative design

Niobium Demand

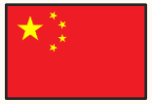
Increasing steel quality control and technology applications have driven niobium's strong demand growth

Quality controls and decarbonisation efforts in steel markets have led to an increasing need for niobium's alloying benefits which has ensured stronger relative growth, also driven by demand from technology applications

Global Niobium Demand


Japan & South Korea

13% combined



China

35%

United States

18%

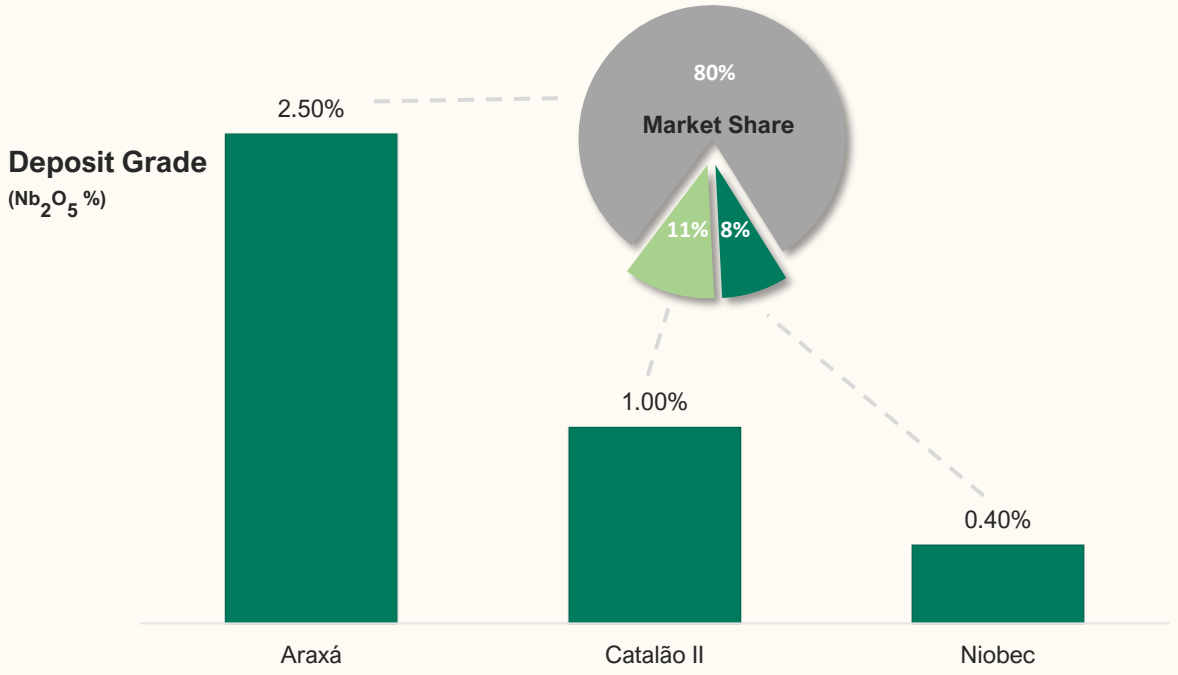
European Union

20%

Niobium Supply & Pricing

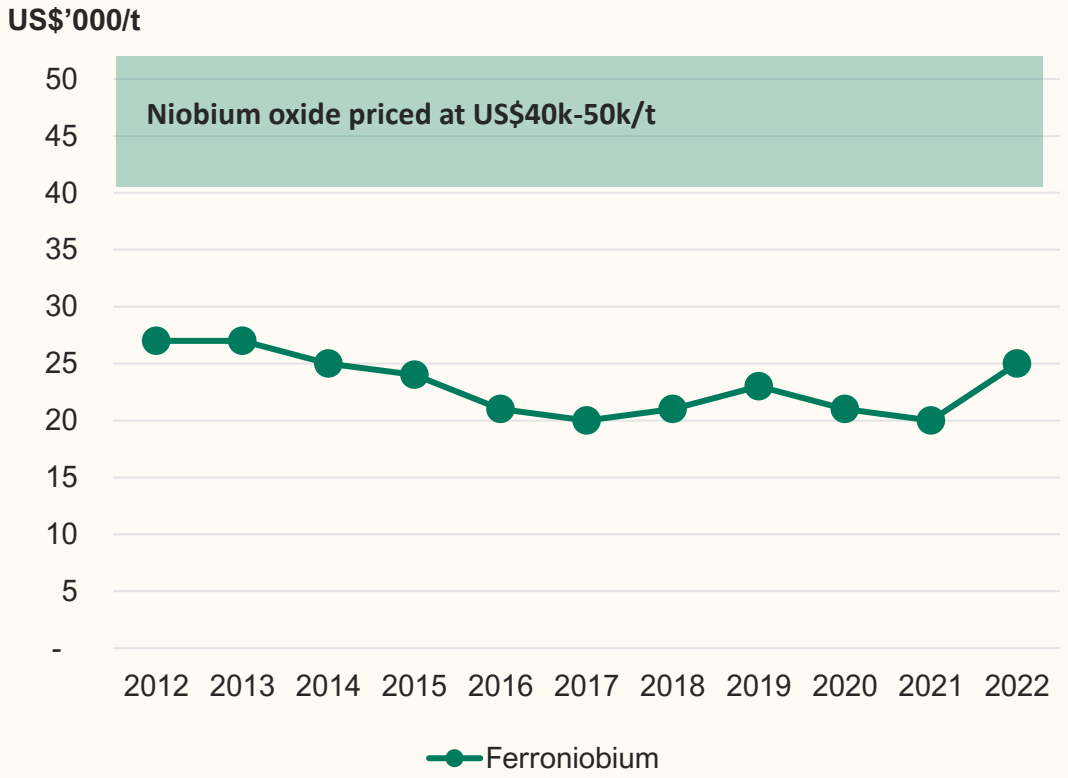
Niobium producers are high margin, with stable pricing driving strong valuations

Key Niobium Producers and Deposits



Company	CBMM	CMOC	MAGRIS Performance Materials
Location	Brazil	Brazil	Canada

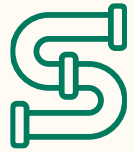
Niobium Product Pricing



Ferroniobium

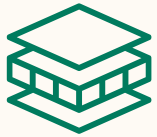
Niobium enhances steel's qualities significantly, allowing customers to do more with less

- Ferroniobium (FeNb) is comprised primarily of Nb (~65%) and iron (~30%) with the balance made up of Si, Al, P, C and S[1]
- Used as an alloy in the manufacture of high-strength low-alloy steel – minimal additions (<0.1%) lead to significant enhancements in strength, toughness and weldability through grain refinement
- Key industries include[2]:



- **Oil & gas:** majority of the world's 3.5 million km of high pressure gas and oil pipelines contain niobium to make them safer, lighter and able to transport large volumes of hydrocarbons at high pressures

- **Automobiles:** Approximately 80% of all automotive sheet steel grades are microalloyed with niobium. This decreases weight and improves durability, enhancing fuel efficiency and safety



- **Construction:** The strength improvements from niobium in HSLA steel mean less is needed for the same outcome; the Millau Viaduct bridge in southern France was constructed using HSLA with 0.025% niobium, reducing the total weight of steel and concrete needed by 60%.
- Utilised in rebar to improve structural safety, particularly in regions subject to earthquakes.

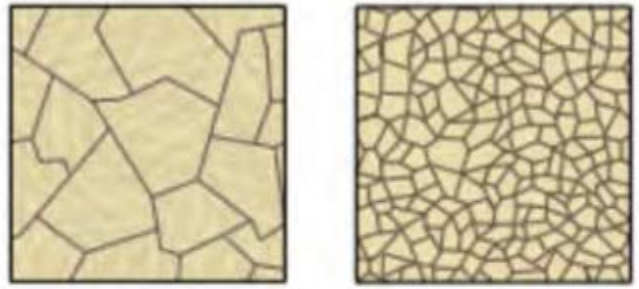


Figure 1: Metal A has not been grain refined, metal B has been.

Millau Viaduct, Southern France

Niobium Oxide – Batteries

Significant momentum building in commercial applications of niobium in batteries

- Niobium oxide (Nb_2O_5) is a chemical form of niobium which is successfully being trialled in new battery technologies.
- The inclusion of niobium has demonstrated faster charging, greater energy density, high cycle life and both greater stability and safety characteristics relative to existing battery technologies.

August 2024

- Australian-based battery and technology company, Novonix signed a partnership agreement with CBMM to trial niobium in its cathode production processes[4]

September 2024

- Swiss-based battery developer Leclanché SA launched the XN50, the world's first commercialised Li-ion cell featuring niobium-based anode material XNO from Echion Technologies[3]

November 2024

- CBMM opened a niobium anode production facility in Brazil, producing 2,000 tonnes of Echion Technologies XNO active anode material[1]
- GUS Technology and Toshiba signed a collaboration agreement to commercialise next generation Li-ion battery cells utilising Niobium Titanium Oxide (NTO) as the anode. The agreement is backed by CBMM and Sojitz Corporation[2]

- Fortescue owned Williams Advanced Engineering and Nyobolt have a partnership agreement progressing battery technology focused on ultra-fast charging and heavy duty power train, underpinned by niobium-based anodes[5]

- CBMM is targeting to sell 30,000 tons per annum of niobium oxide by 2030[6] and is investing heavily to grow the market, with plans to invest US$52m in technology development for niobium use in battery applications in 2024, up from US$44m in 2023[7]

Niobium Metal Alloys

Niobium alloys are integral for a range of high-tech space, nuclear and military applications

- **Niobium C103**[1] is a refractory alloy comprising 89% niobium, 10% hafnium and 1% titanium which shows significant outperformance of other materials in handling the extreme temperatures a highly erosive conditions associated with space travel. Benefits and uses include:
  - High tensile strength in extreme temperatures making it ideal for aerospace components and missile casings
  - Niobium is one of the lowest density refractory alloys. The high strength-to-weight ratio allows for lighter components, enhancing fuel efficiency and payload capacity
  - Ability to withstand significant temperatures drives strong performance in rocket and spacecraft nozzles, injectors and hypersonics. SpaceX utilises Nb C103 for its Merlin engine nozzles and Dragon capsule engines
- **Niobium zirconium**[2] is used in many nuclear applications due to its mechanical strength, heat resistance and radiation resistance:
  - Fuel rod cladding
  - High-temperature instrumentation
  - Reactor structural elements

References

Slide		Slide	
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