



RIU Explorers Conference

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

Encounter at a glance

Creating value through project generation and discovery



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 (17 Feb 25)	\$0.25
Shares on issue	499M
Options	19.6M
Market capitalisation	~\$125M

Major shareholders

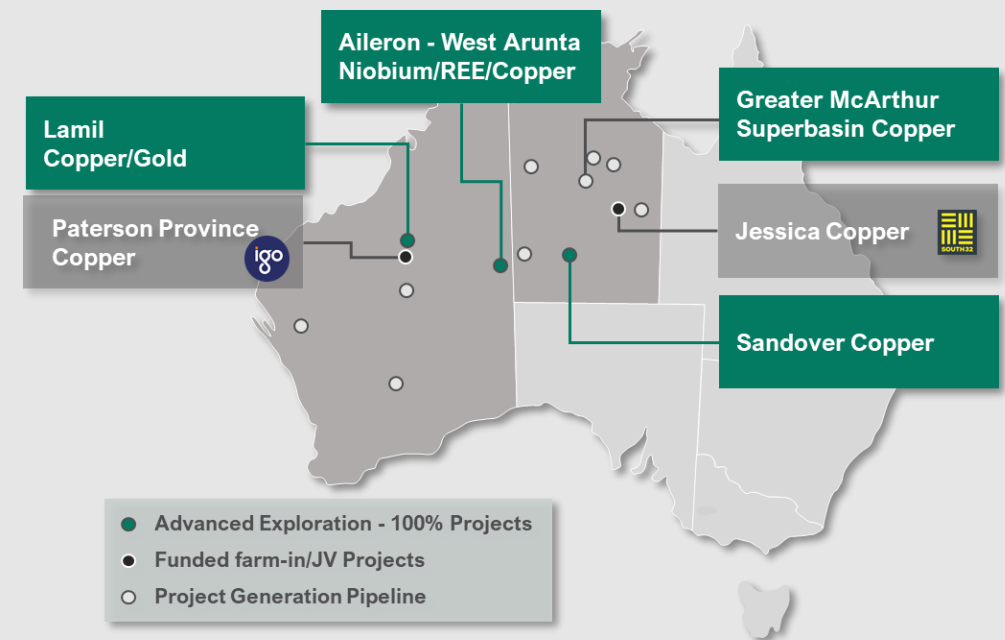
Board and Management	~10.2%
IGO	~5.7%
Chalice Mining	~5.5%
Paradice Investment Mgt	~5.9%
Top 20 Shareholders	~51.1%

Cash (Dec 24)

~\$23M

Enterprise value

~\$102M



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

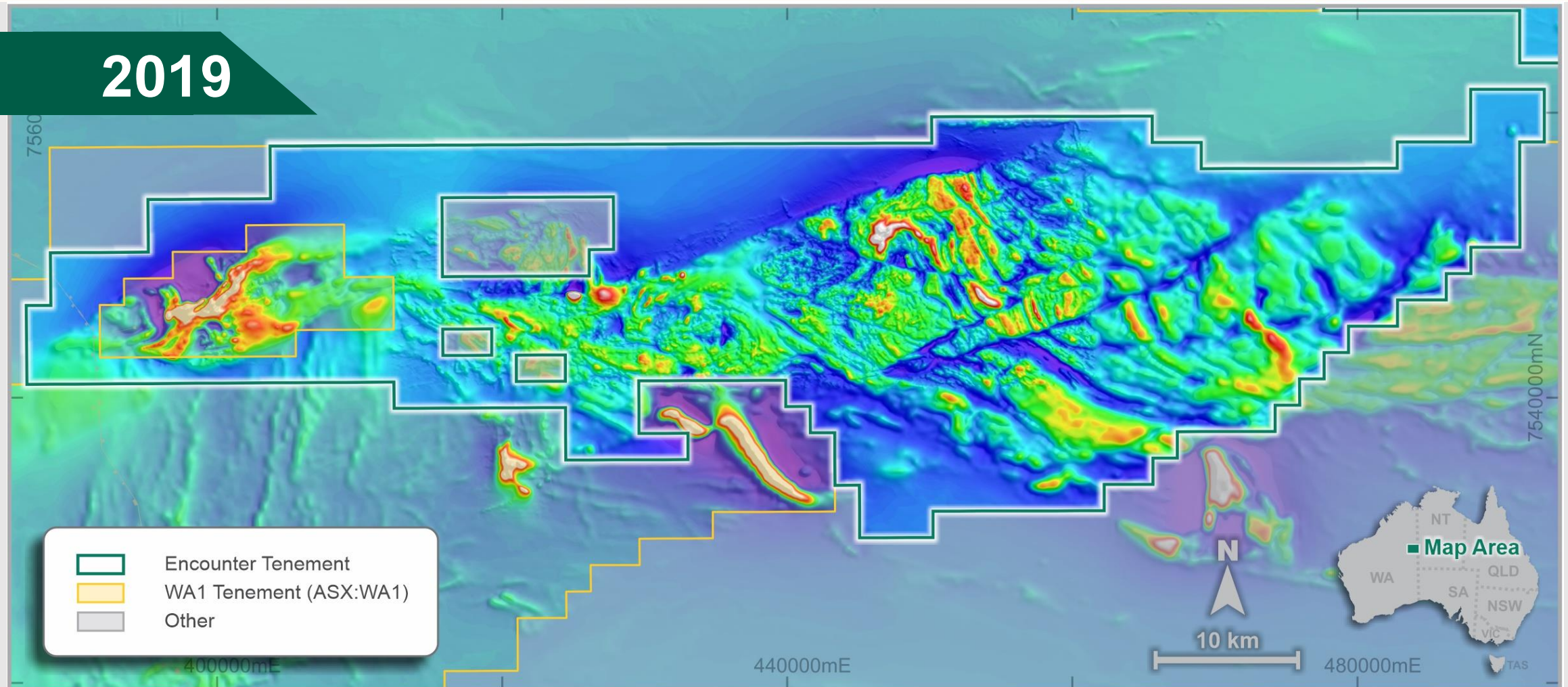


Collaborating with high-quality exploration teams at major companies

Aileron Project – West Arunta

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

2019

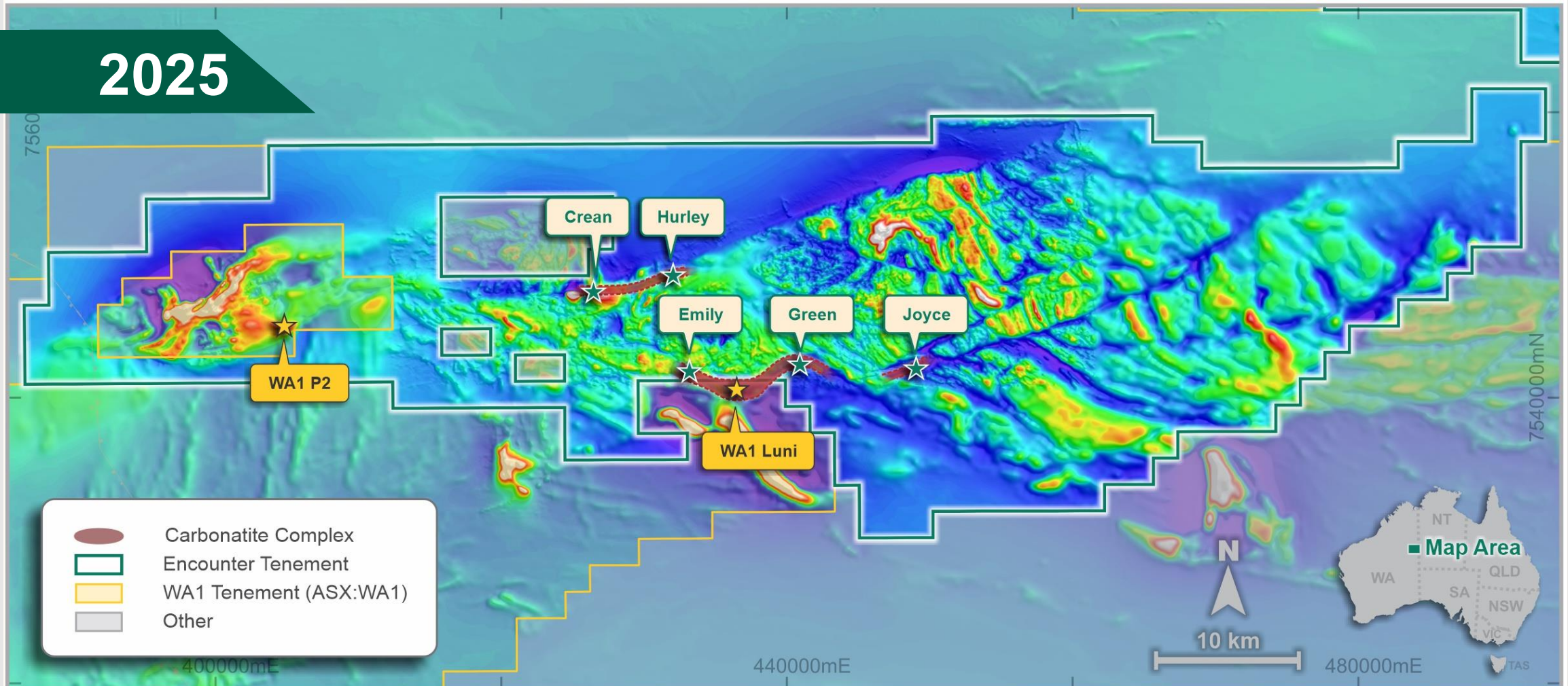


Aileron project – Magnetics (RTP)

Aileron Project – West Arunta

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

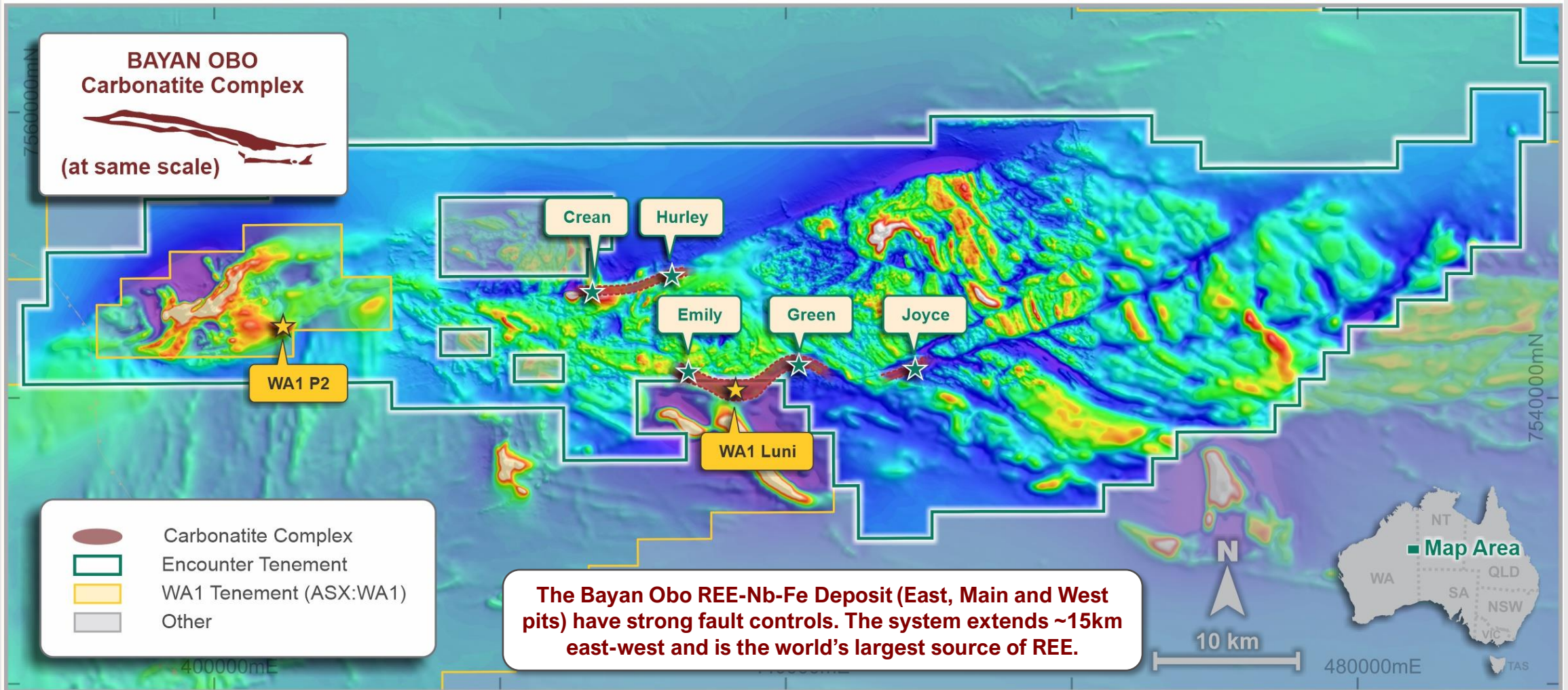
2025



Aileron project – Magnetics (RTP)

Aileron Project – West Arunta

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



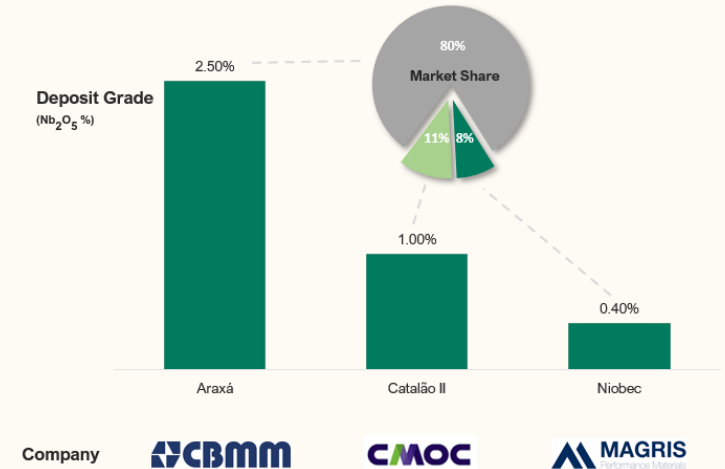
Aileron project – Magnetics (RTP)

Niobium

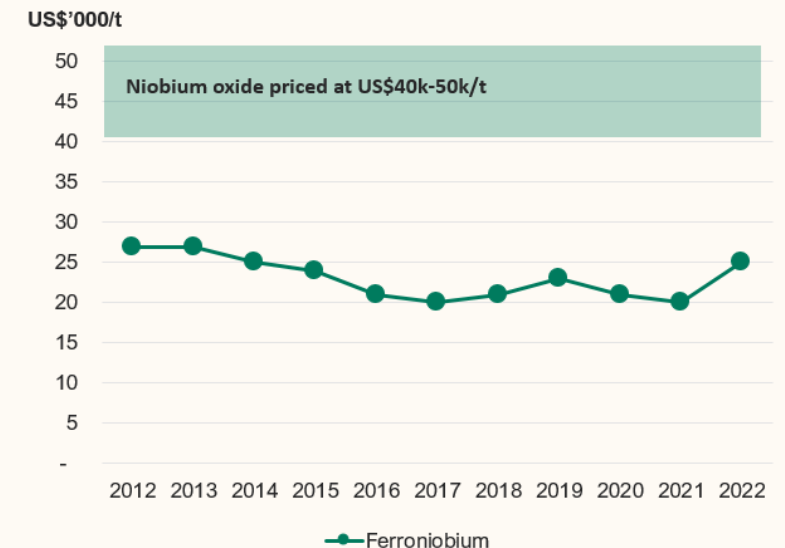
Niobium leveraged to global growth and the energy transition

- 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 Deposits¹

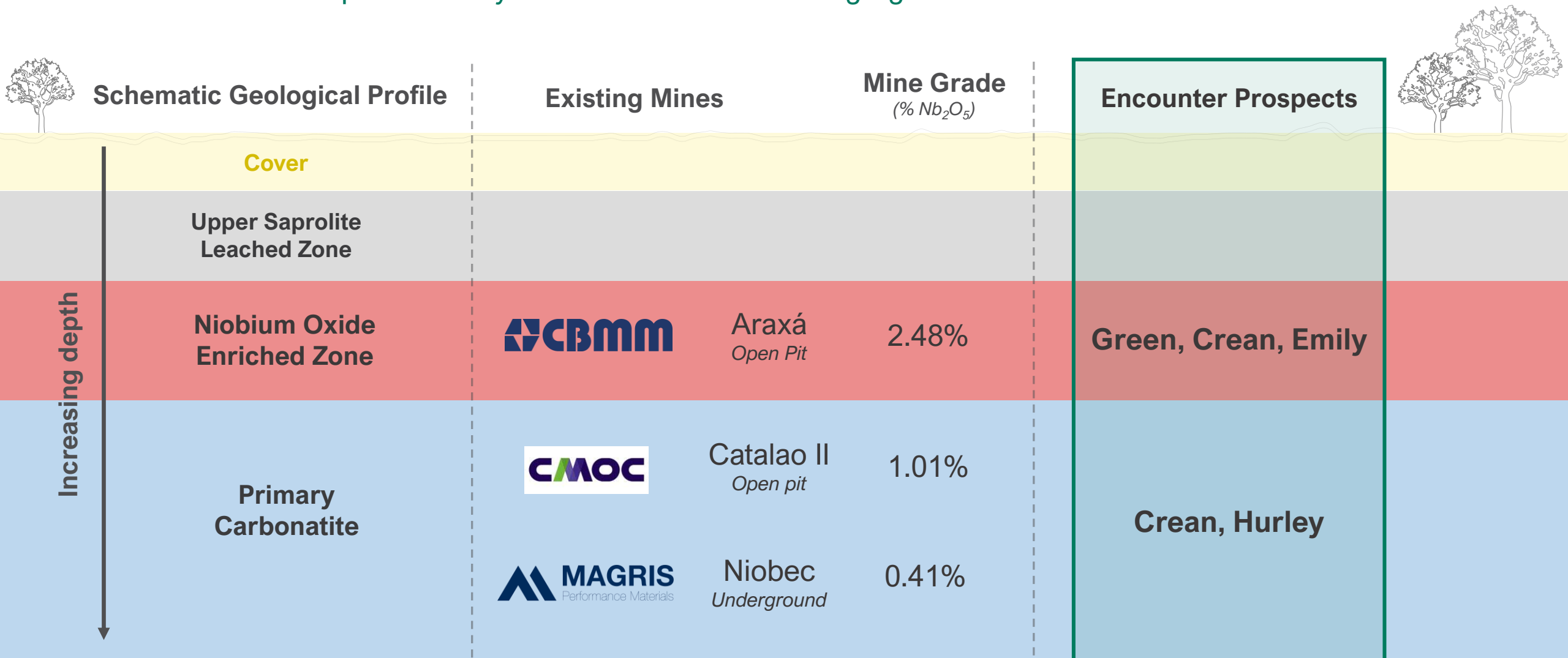


Niobium Product Pricing²



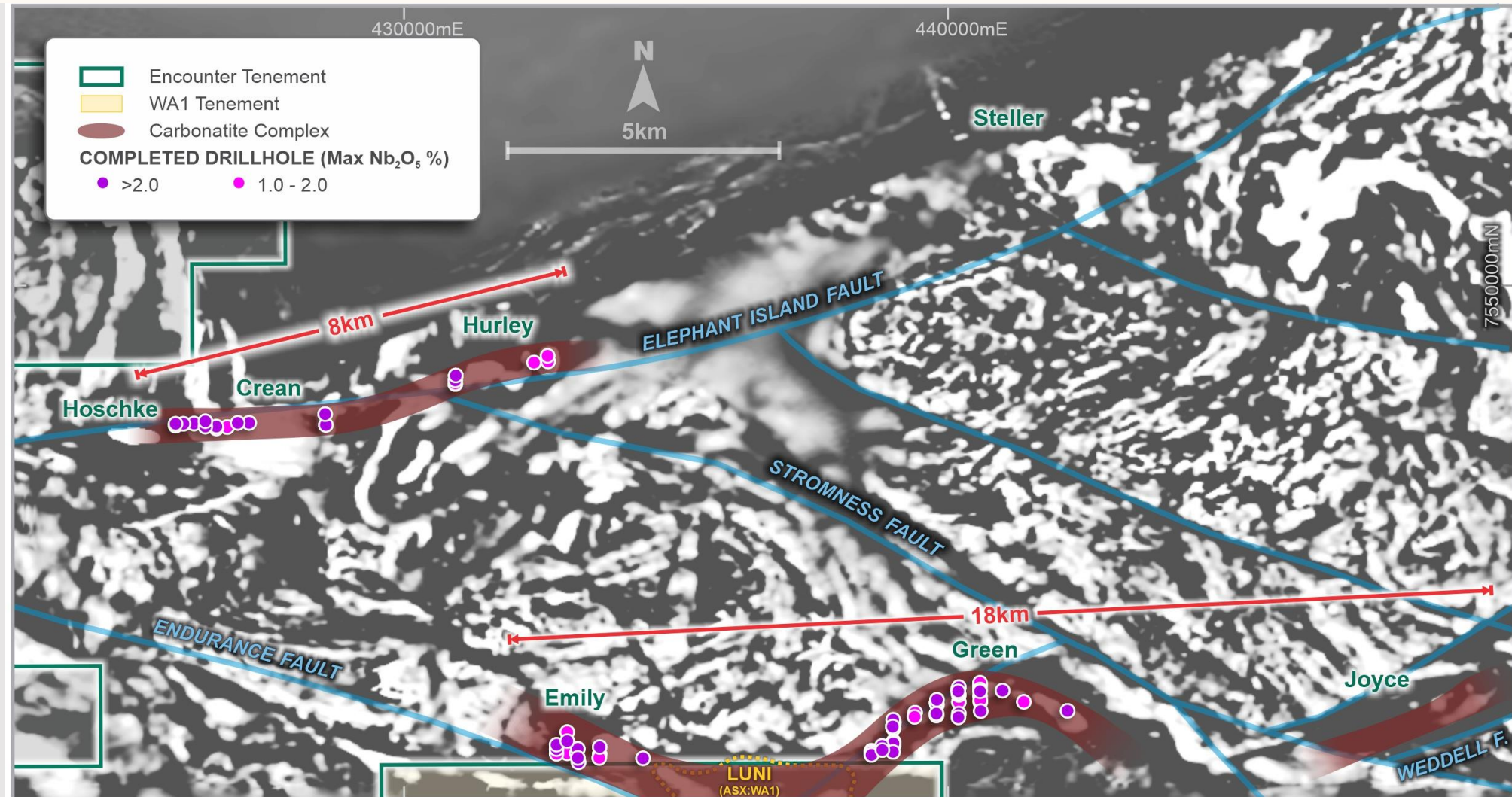
Carbonatite hosted niobium mineralisation

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



Aileron Project – West Arunta

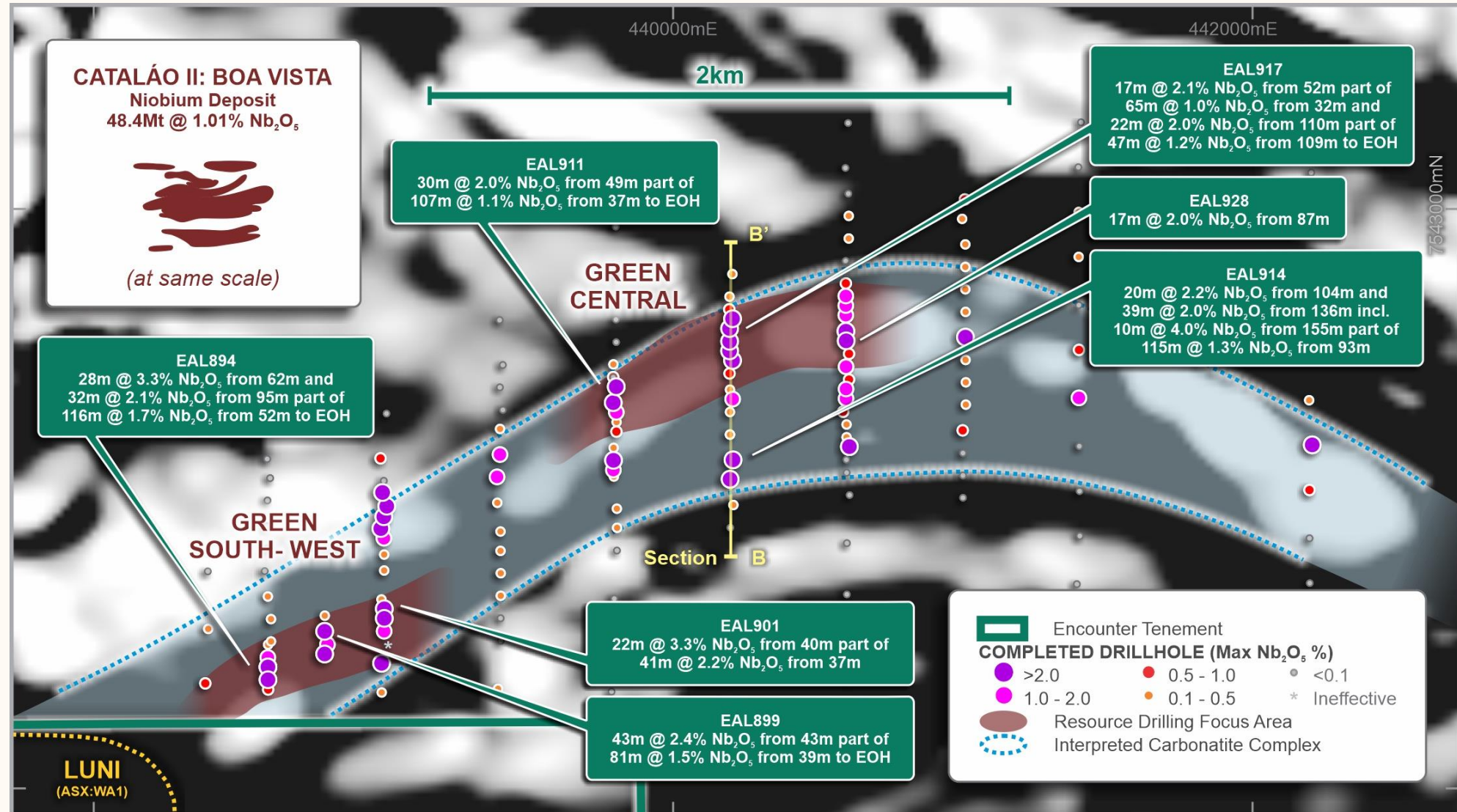
Aircore drilling in 2024 intersecting shallow, high-grade niobium-REE mineralisation across multiple targets



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

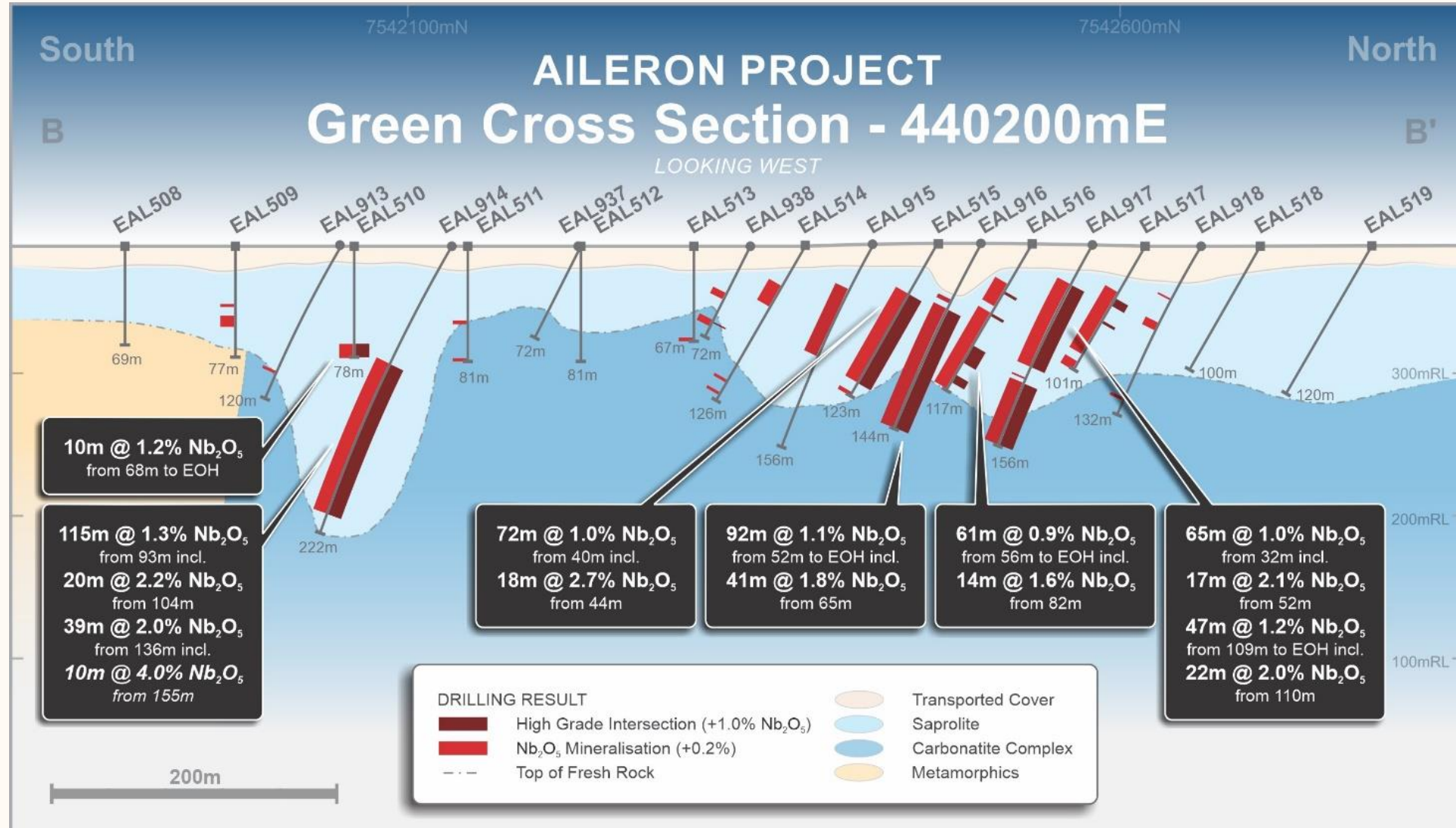
Green is a carbonatite complex of significant scale

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



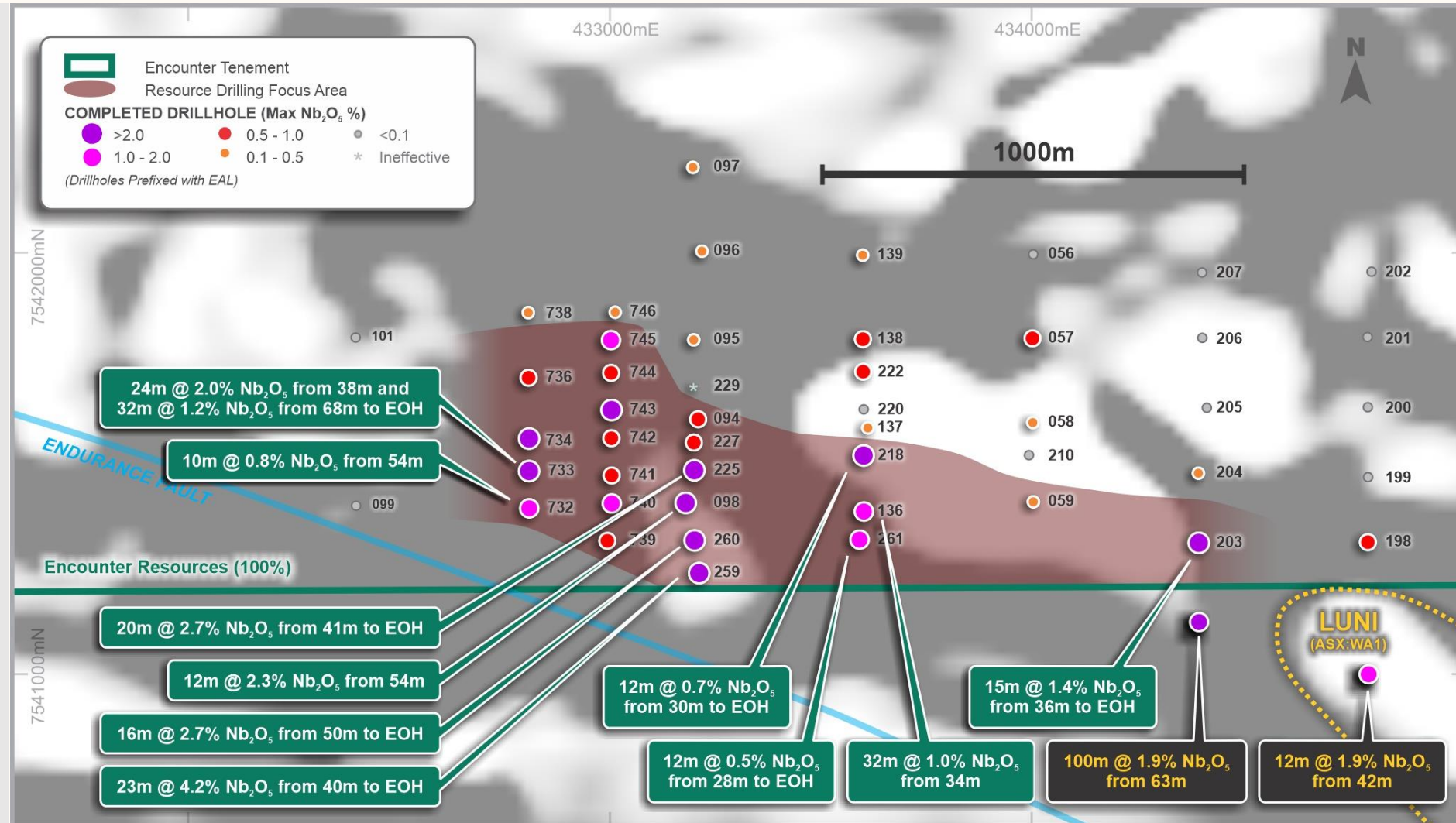
Aileron Project – Green Central

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



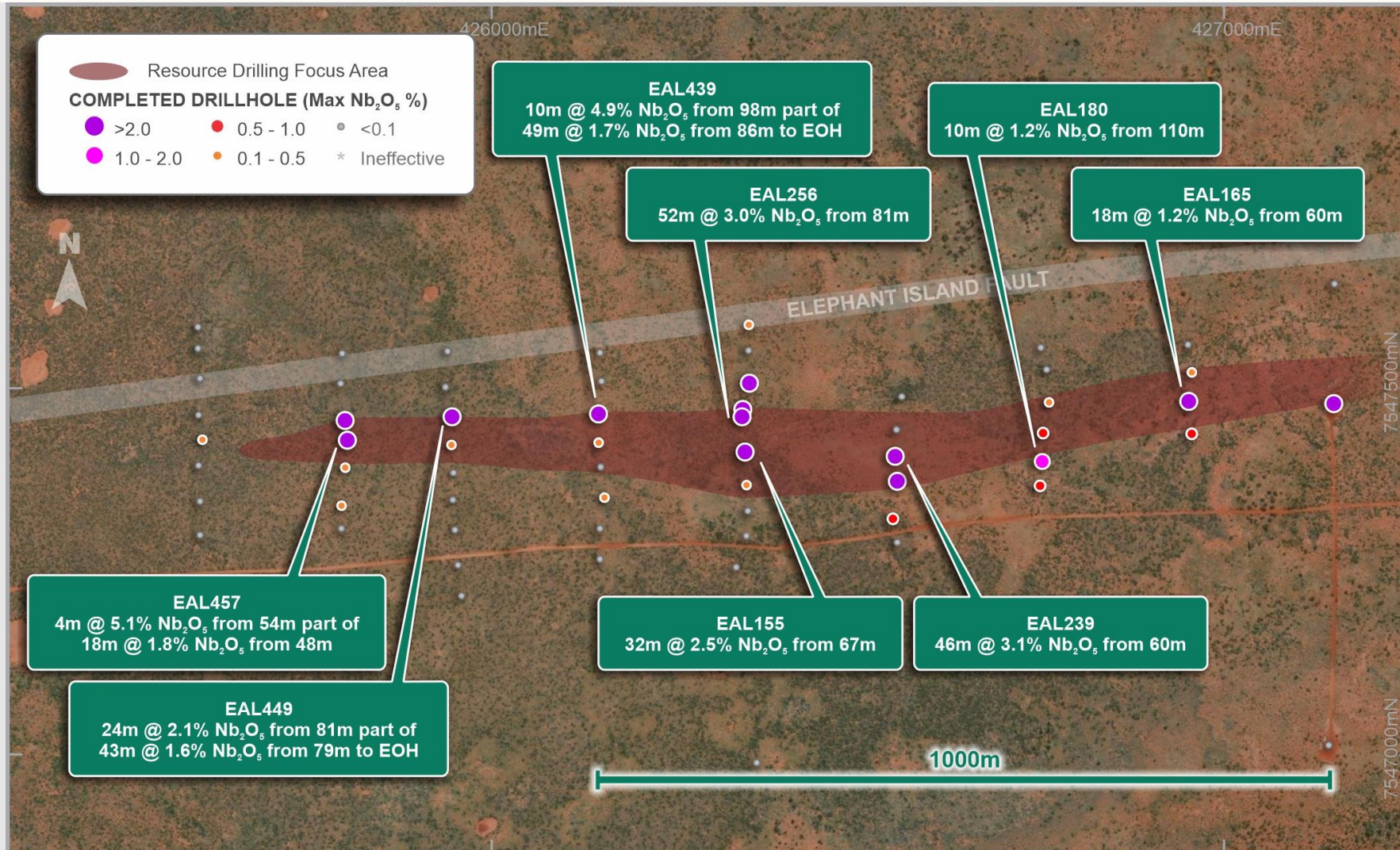
Aileron Project – Emily

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



Aileron Project – Crean

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

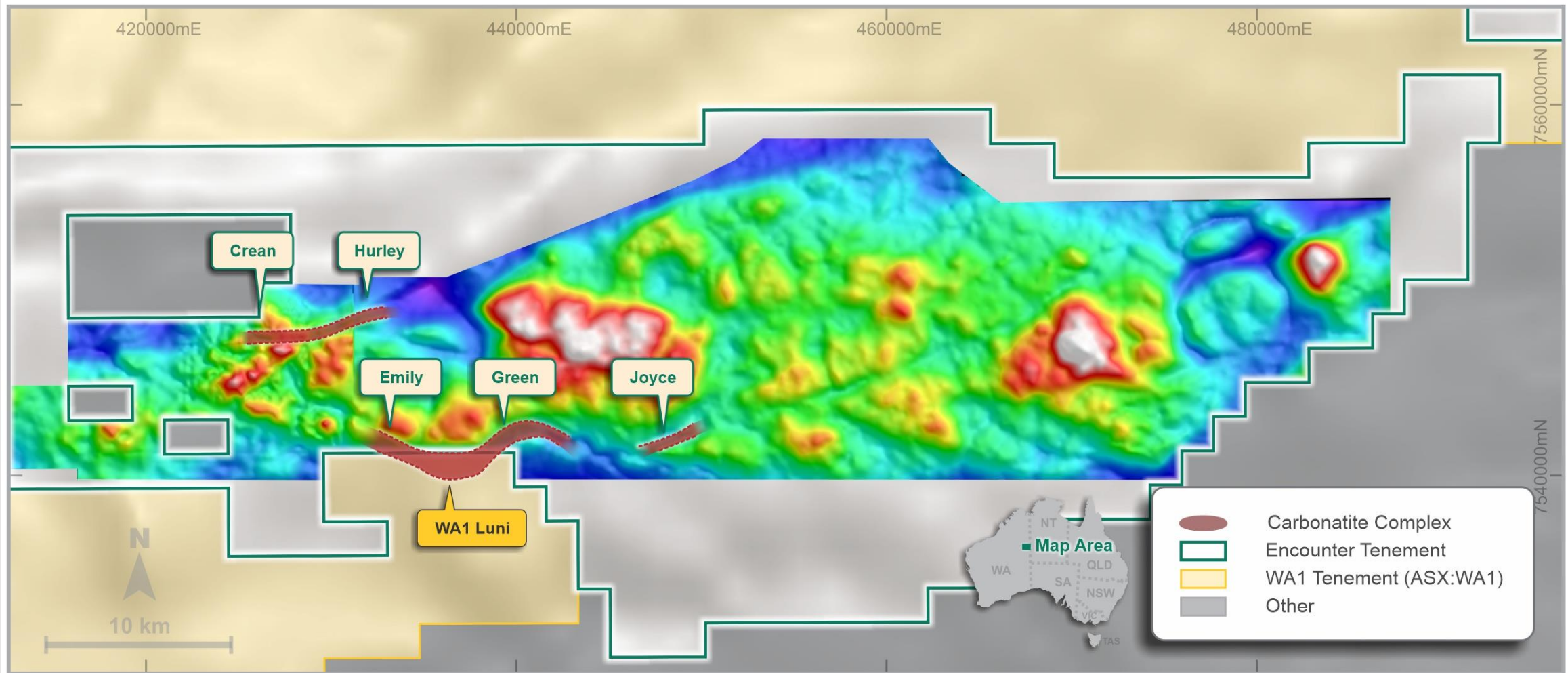


High-grade niobium at multiple prospects

Prospect	Best Select Intersections	Current Status	Next Steps
Green	• 116m @ 1.7% Nb₂O₅ from 52m (EAL894) • 43m @ 2.4% Nb₂O₅ from 43m (EAL899) • 16m @ 3.0% Nb₂O₅ from 47m (EAL500)	• Carbonatite complex of significant scale that remains open to the east • Numerous holes <u>end in mineralisation</u>	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Crean	• 52m @ 3.0% Nb₂O₅ from 81m (EAL256) • 46m @ 3.1% Nb₂O₅ from 60m (EAL239) • 32m @ 2.5% Nb₂O₅ from 67m (EAL155)	• Coherent high-grade mineralisation over 1.2km • Numerous holes <u>end in mineralisation</u>	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Emily	• 23m @ 4.2% Nb₂O₅ from 40m (EAL259) • 20m @ 2.7% Nb₂O₅ from 41m (EAL225) • 16m @ 2.7% Nb₂O₅ from 50m (EAL260)	• Broad spaced aircore drilling completed, open to the west • Numerous holes <u>end in mineralisation</u>	• RC drilling to delineate zones of high-grade mineralisation • Mineral resource definition
Hurley	• 24m @ 0.9% Nb₂O₅ from 66m (EAL034) • 28m @ 0.7% Nb₂O₅ 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 ₂ O ₅ and 0.5% TREO	First aircore drilling confirmed another carbonatite complex	Systematically explore Joyce with aircore drilling in 2025

Aileron Project – West Arunta

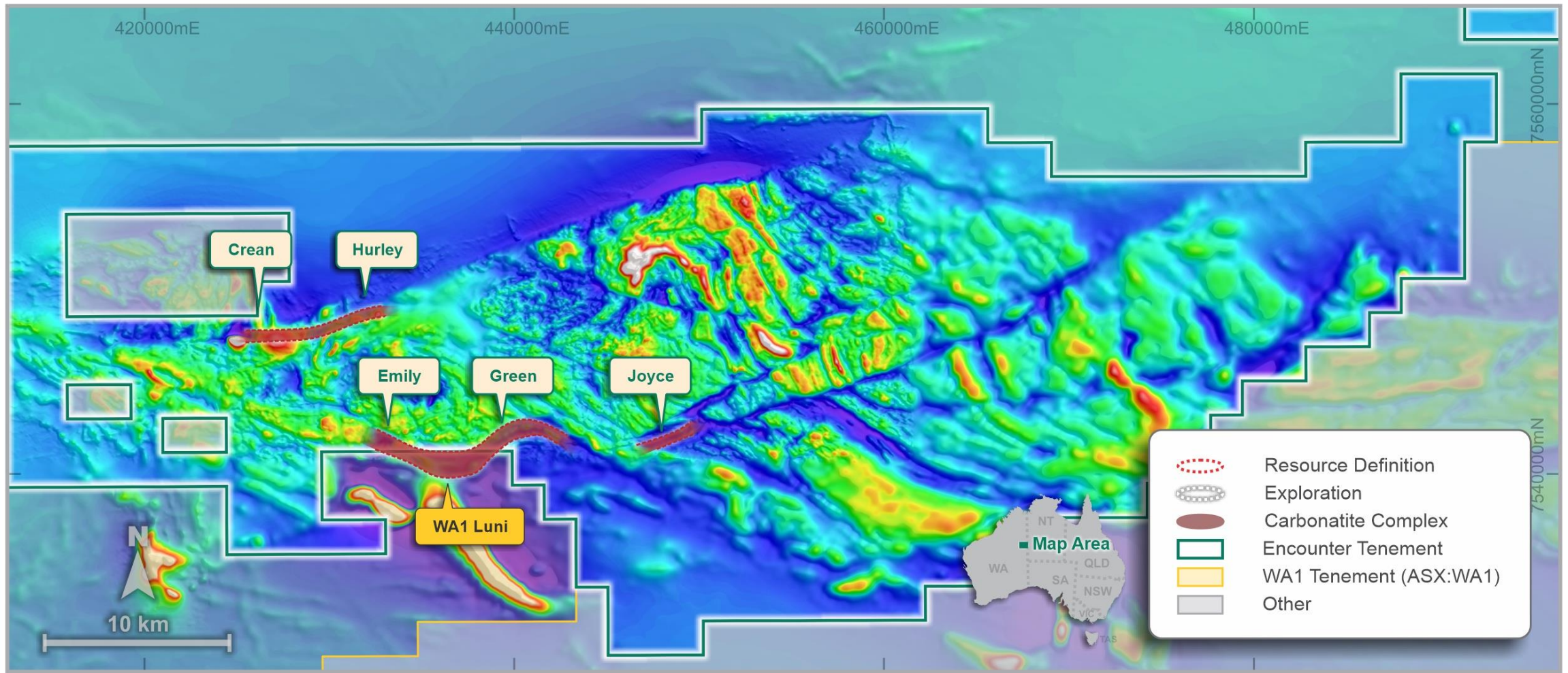
Exploration Upside - commanding land position and aircore drilling is fast and cost-effective



Falcon gravity survey has highlighted key structures and high priority targets

Aileron Project – West Arunta

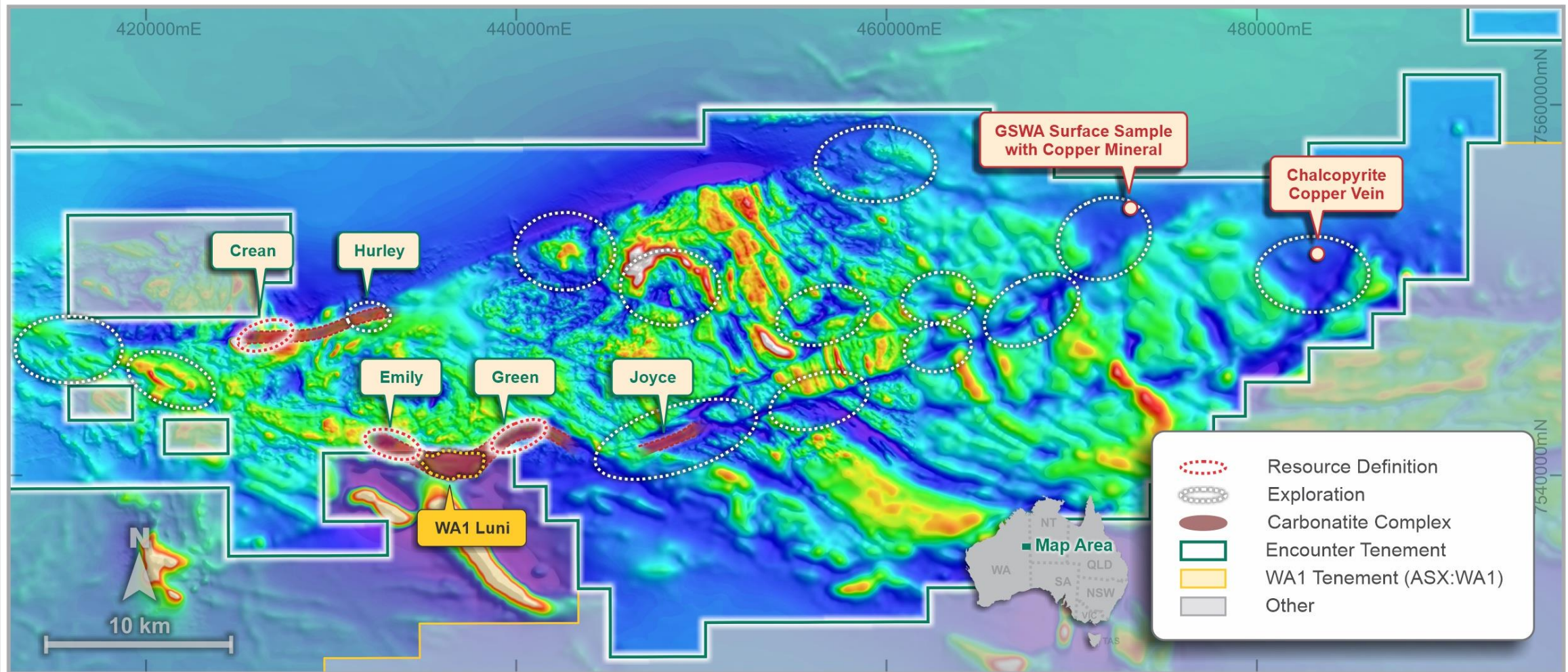
Key structures are highlighted in multiple datasets - magnetics and gravity



Aileron project – Magnetics (RTP)

Aileron Project – West Arunta

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



Aileron project – Magnetics (RTP)

Major Copper Exploration Portfolio

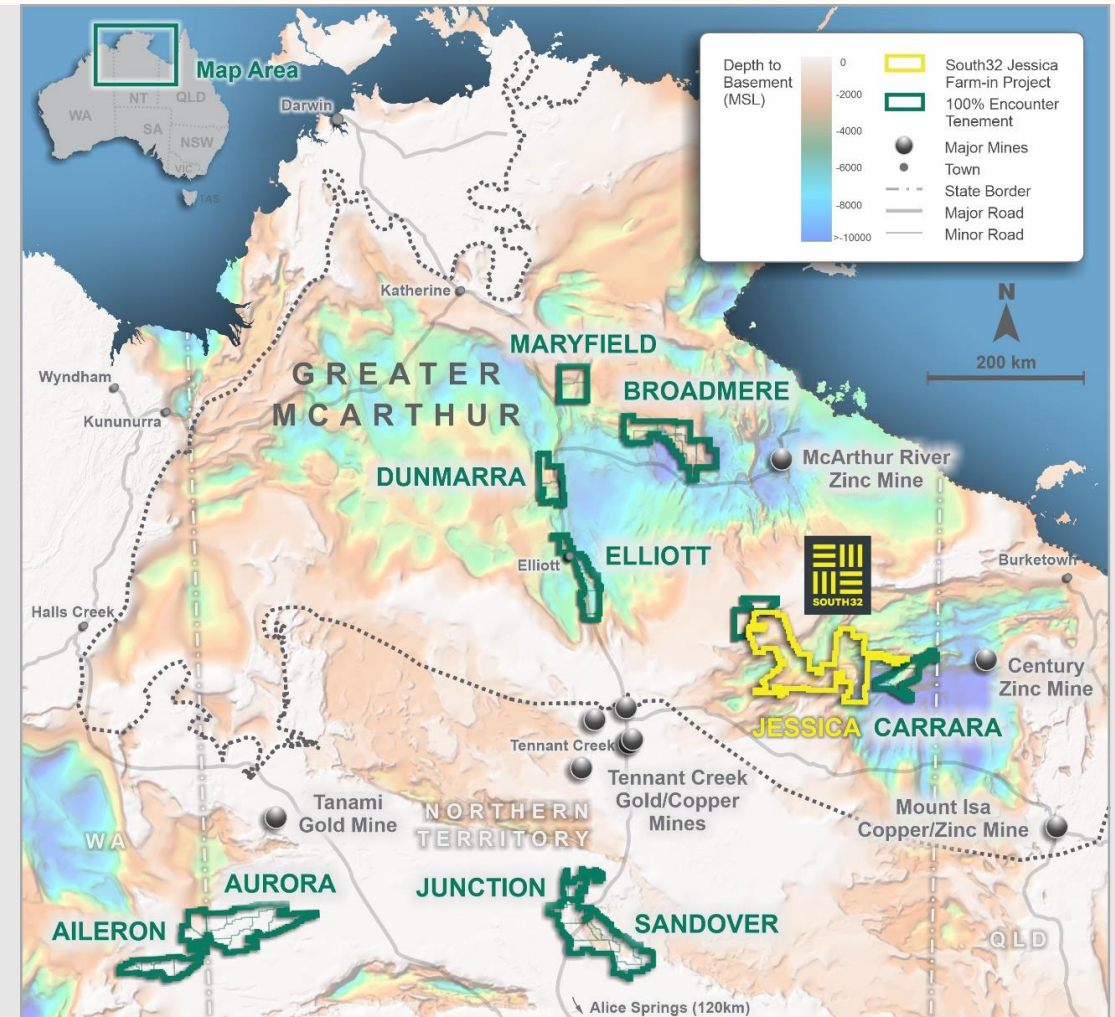
A globally significant copper opportunity

Northern Territory

- Encounter has a large portfolio of first mover copper opportunities in the Northern Territory - highly prospective for sedimentary hosted copper deposits
- Jessica farm-in with South32
 - ENR carried to Scoping Study
- Sandover Project (100% ENR) – copper mineralisation in first hole at basement unconformity

Western Australia

- Lamil Copper-Gold Project – highly mineralised drill intersections with multiple copper-gold targets located 25km NW of Telfer
- Yeneena Copper Project (IGO JV) – Paterson Province WA

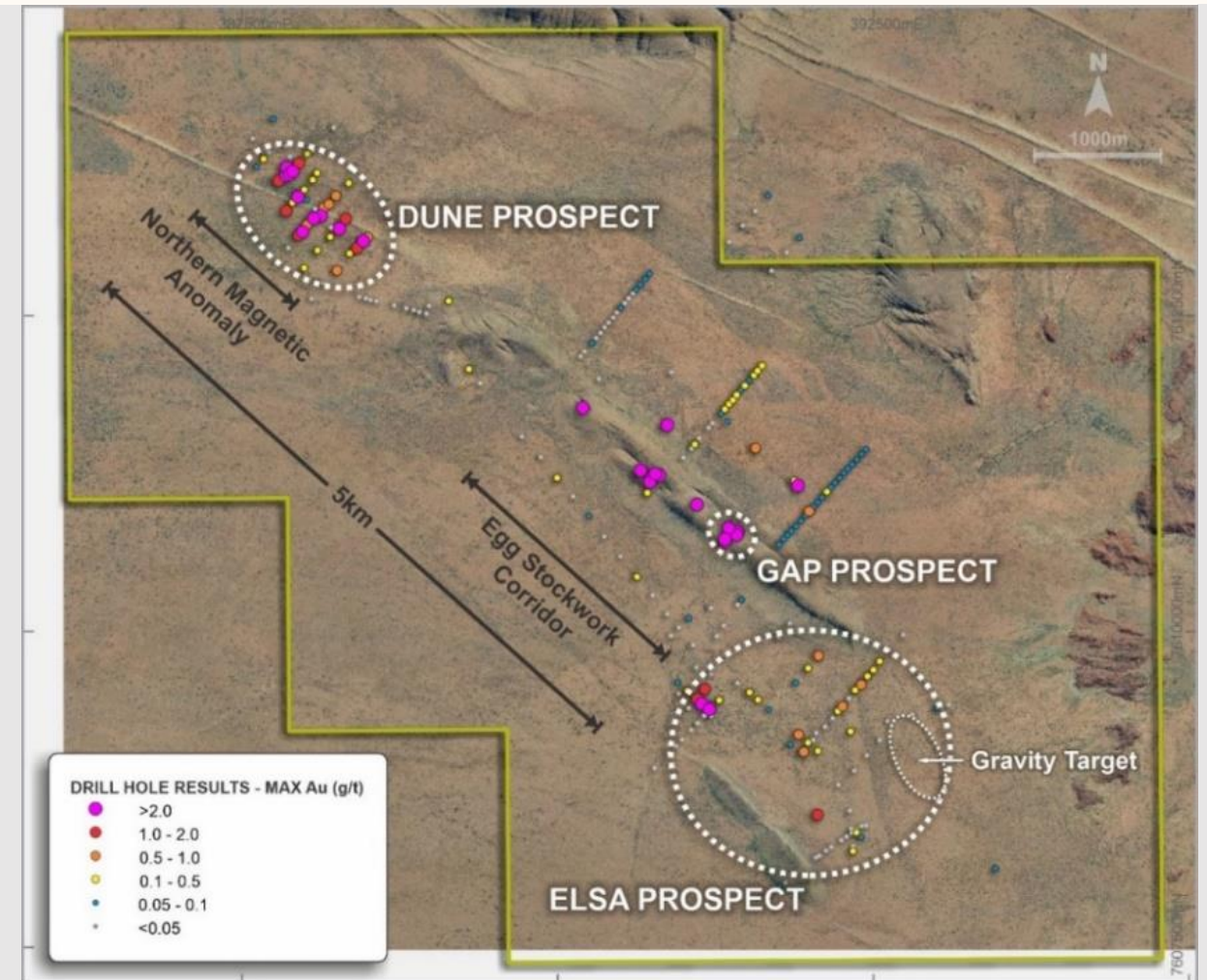


Encounter copper projects in the Northern Territory – Project Location Plan

Lamil Copper-Gold Project

Paterson Province, WA (100% ENR)

- The 100%-owned Lamil Project located 25km northwest of the major copper-gold mine at Telfer
- Drilling by Encounter has returned highly mineralised 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)
- Dune prospect an expansive copper-gold system over 1km of strike
- Elsa prospect represents a Havieron-style target adjacent to a depth-extensive breccia zone



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

Key Value Drivers

Resources - resource definition of high-grade, near-surface niobium at Green, Emily and Crean

Project development –metallurgy and mining studies, environmental surveys and marketing discussions

Exploration upside

- Commanding land position in the West Arunta
- Copper/gold at Lamil (WA) and copper portfolio in NT

Valuation upside – potential to re-rate as the scale and value of the West Arunta province is demonstrated

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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 CO2 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 CO₂ emissions by 350kg**
- Potential to create **savings** in China's steel industry of **70Mt/year and 158Mt/year of CO₂ 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%



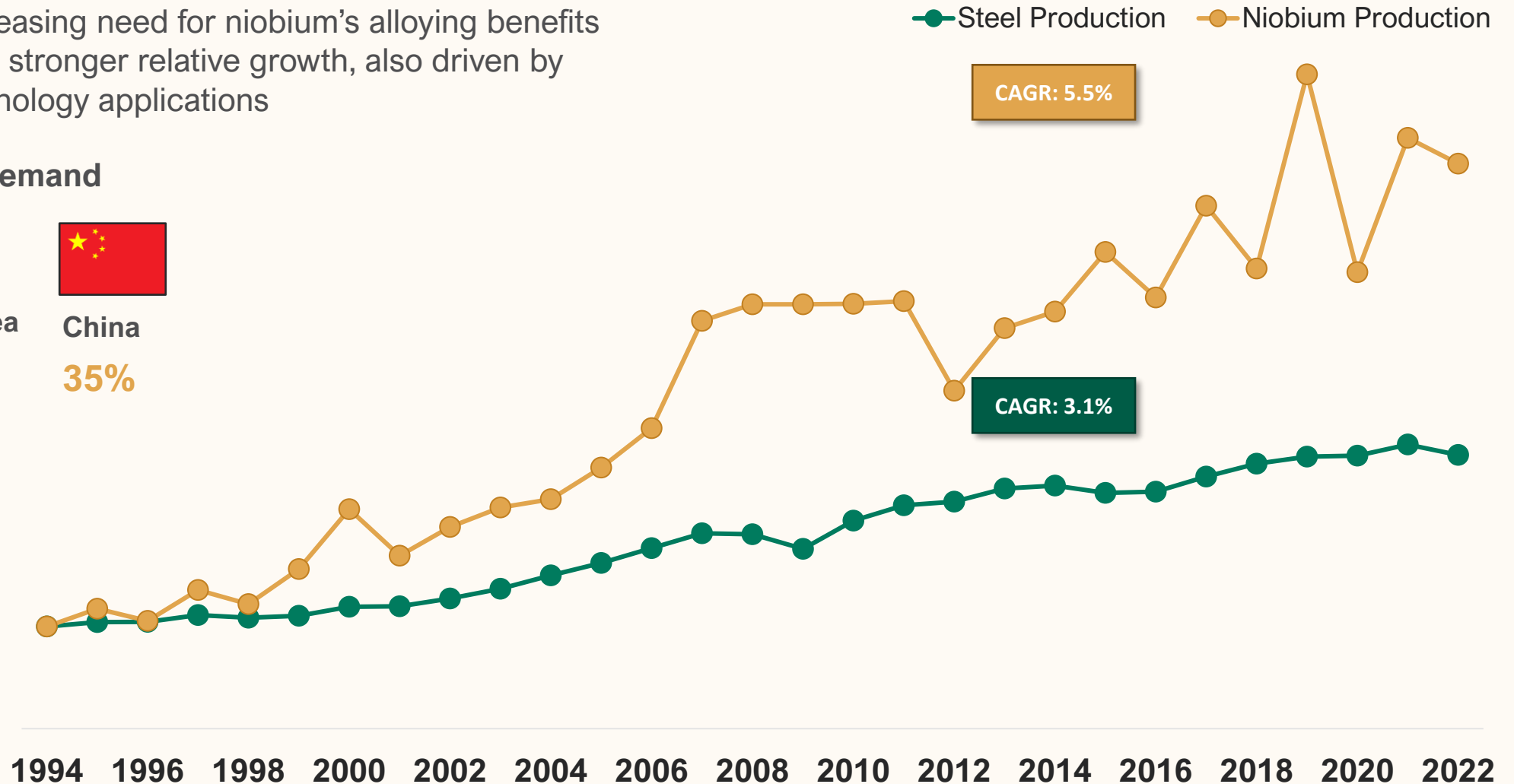
United States

18%



European Union

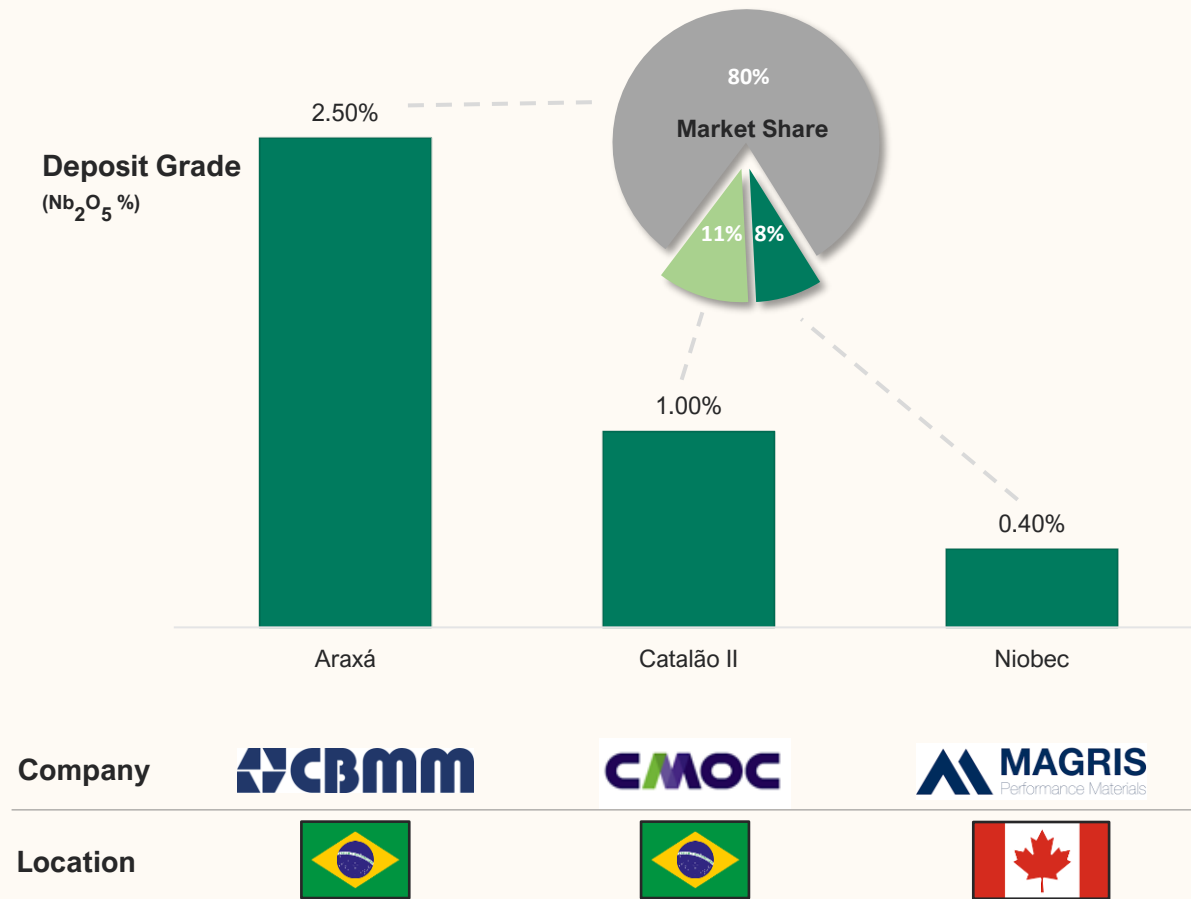
20%



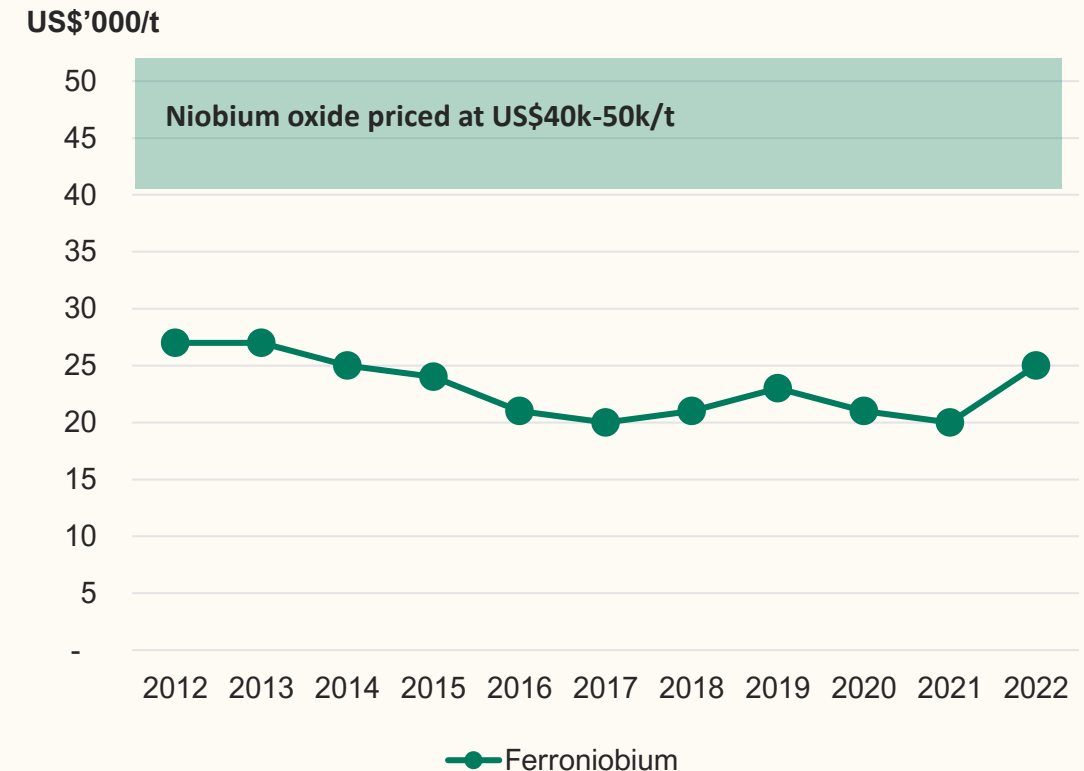
Niobium Supply & Pricing

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

Key Niobium Producers and Deposits



Niobium Product Pricing



Ferroniobium

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

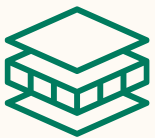
- Ferroniobium (FeNb) is comprised primarily of Nb (~65%) and iron (~30%) with the balance made up of Si, Al, P, C and S¹
- Used as an alloy in the manufacture of high-strength low-alloy steel – minimal additions (<0.1%) lead to significant enhancements in strength, toughness and weldability through grain refinement
- Key industries include²:



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.

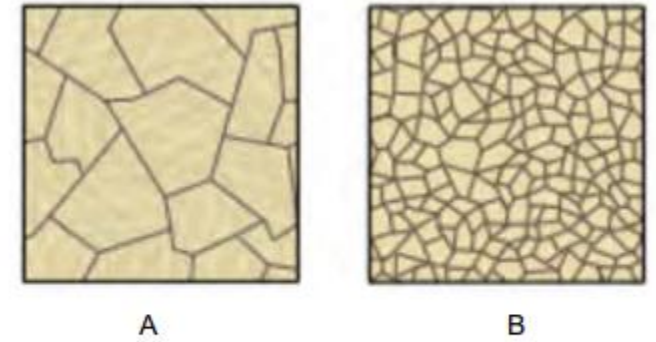


Figure 1: Metal A has not been grain refined, metal B has been.



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 processes⁴

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 Technologies³

November 2024

- CBMM opened a niobium anode production facility in Brazil, producing 2,000 tonnes of Echion Technologies XNO active anode material¹
- 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 Corporation²



- 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 anodes⁵



- CBMM is targeting to sell 30,000 tons per annum of niobium oxide by 2030⁶ 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 2023⁷

Niobium Metal Alloys

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

- **Niobium C103¹** 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 zirconium²** 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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7	1: • CBMM - Shikik. A: 'A review on extractive metallurgy of tantalum and niobium' Journal of Metallurgy. (2020) • CMOC - China Molybdenum Co., Ltd. 'Major Transaction Acquisition of Angle America PLC's Niobium and Phosphates Businesses'. (2016) • Magris - IAMGOLD Corporation, NI 43-101 Technical Report, Update on Niobec Expansion. (2013) 2: USGS Niobium and Tantalum Statistics and Information	28	• 1: Mining Technology, CBMM opens niobium anode production facility in Brazil • 2: GUS Technology and Toshiba Signed Agreement for Next-Generation Niobium Titanium Oxide (NTO) Lithium-ion Batteries • 3: Leclanche Presents Lithium-Ion Cell with Niobium Anode Material • 4: NOVONIX and CBMM Enter into Joint Development Agreement Focused on Cathode Materials • 5: WAE sign strategic collaboration with Nyobolt • 6: Brazil miner CBMM seeks to sell 45,000 tons of niobium oxide by 2030 • 7: Brazilian niobium miner CBMM to invest US\$50mn in technology
10	China Molybdenum Co., Ltd. 'Major Transaction Acquisition of Angle America PLC's Niobium and Phosphates Businesses'. (2016)	29	• 1: Unlocking the Potential of Niobium C103 for the Space Industry, Payload • 2: Production of Zirconium-Niobium Alloys for Nuclear Reactors Fuel Rods via SHS Process
23	• Mordor Intelligence, Global Niobium market. (2022) • CBMM • IAMGOLD Corporation, NI 43-101 Technical Report, Update on Niobec Expansion. (2013) • Tantalum-Niobium International Study Center		
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