LANTHANEIN
RESOURCES

Minerals for an Electric Future

Investor Presentation

ASX: LNR

lanthanein.com

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COMPETENT PERSON'S STATEMENT

The information in this presentation that relates to Exploration Results for the Gascoyne, Mt Clere and Koolya Projects is based on and fairly represents information and supporting documentation prepared by Mr Thomas Langley, a consultant to Lanthanein Resources Ltd. Mr Langley is a Member of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr Langley has sufficient experience that is relevant to the styles of mineralisation and types of deposit under consideration and to the activity being undertaken 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. Mr Langley consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Langley confirms that the entity is not aware of any new information or data that materially affects the information contained in any ASX releases referred to in this report.

The information in this report that relates to Geophysical Results for the Gascoyne, Mt Clere and Murraydium Projects is based on information compiled by Mr Peter Swiridiuk a Member of the Aust. Inst. of Geoscientists. Mr Swiridiuk is a Technical Consultant and Non-Executive Director for Lanthanein Resources Ltd. Peter Swiridiuk has sufficient experience which is relevant to the type of mineralisation and type of deposit under consideration to qualify as Competent Person as defined in the 2012 Edition of the Australasian Code of Reporting Exploration Results, Mineral Resources and Ore Resources. Peter Swiridiuk consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. Additionally, Mr Swiridiuk confirms that the entity is not aware of any new information or data that materially affects the information contained in any ASX releases referred to in this report.

Corporate

BRIAN THOMAS
Technical Director

Brian is an experienced Director and Corporate Executive with significant domestic and international resources management experience

DAVID FRANCES
Non-Executive Chairman

David is an international executive of 30 years with a track record transacting, discovering, funding, developing and operating assets in Australia and Africa

PETER SWIRIDIUK
Non-Executive Director

Peter holds a BSC (Hons), DipEd, MAIG. Peter has over 32 years' experience exploring for copper, gold, diamonds, coal and base metals.

MATTHEW FOY
Company Secretary

Matthew is a professional company secretary and active member of the WA State Governance Council of the Governance Institute of WA

THOMAS LANGLEY
Exploration Geologist

Thomas has a BSc Geology and a MSc Economic Geology with a focus on discovery of company making projects, and environmental and resource economics. MAIG, MAusIMM

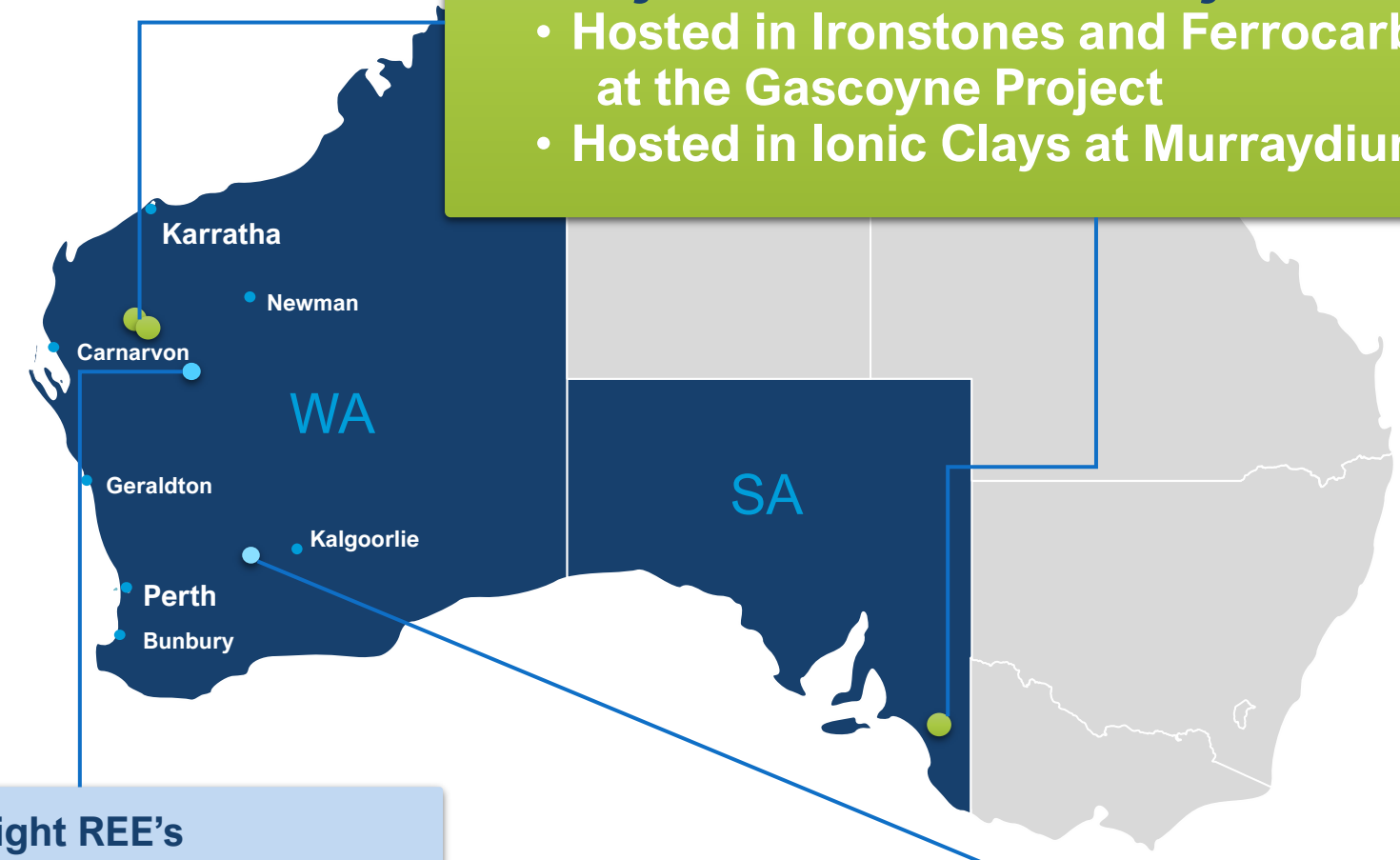
Capital Structure

Shares on Issue	962,825,570	Share Price (12/9/2022)	$0.056
Options	139,250,000	Market Capitalisation	$53.92m
Performance Rights	64,423,076	Cash (post raise)	$ 5.77m
		EV	$48.15m

Project Profile

Light Rare Earth Elements (REE's)
Neodymium and Praseodymium

- **Hosted in Ironstones and Ferrocarbonatites at the Gascoyne Project**
- **Hosted in Ionic Clays at Murraydium Project**



Lithium and Light REE's
Neodymium & Praseodymium

- LCT Pegmatites and Carbonatites at Mt Clere Project

Kaolin and Halloysite (HPA Material)

- Koolya Project

First Nations Groups

Lanthanein Resources acknowledges the traditional custodians of the land on which the company operates and pay respect to their Elders past, present and emerging

- Whadjuk Noongar people on whose lands the company has its offices
- Thiin-Mah Warriyangka, Tharrkari and Jiwarli people whose lands host the Gascoyne Project area
- Nharnuwangga, Wajarri and Ngarlawangga people whose lands host the Mt Clere Project area
- Marlinya Ghoorlie people whose lands host the Koolya Project area in the Yilgarn
- Bindjali people whose lands host the Murraydium Project in South Australia

Thiin-Mah Elder, Peter Salmon, Walking His Land, Sharing Stories and Songs of His Land

ESG

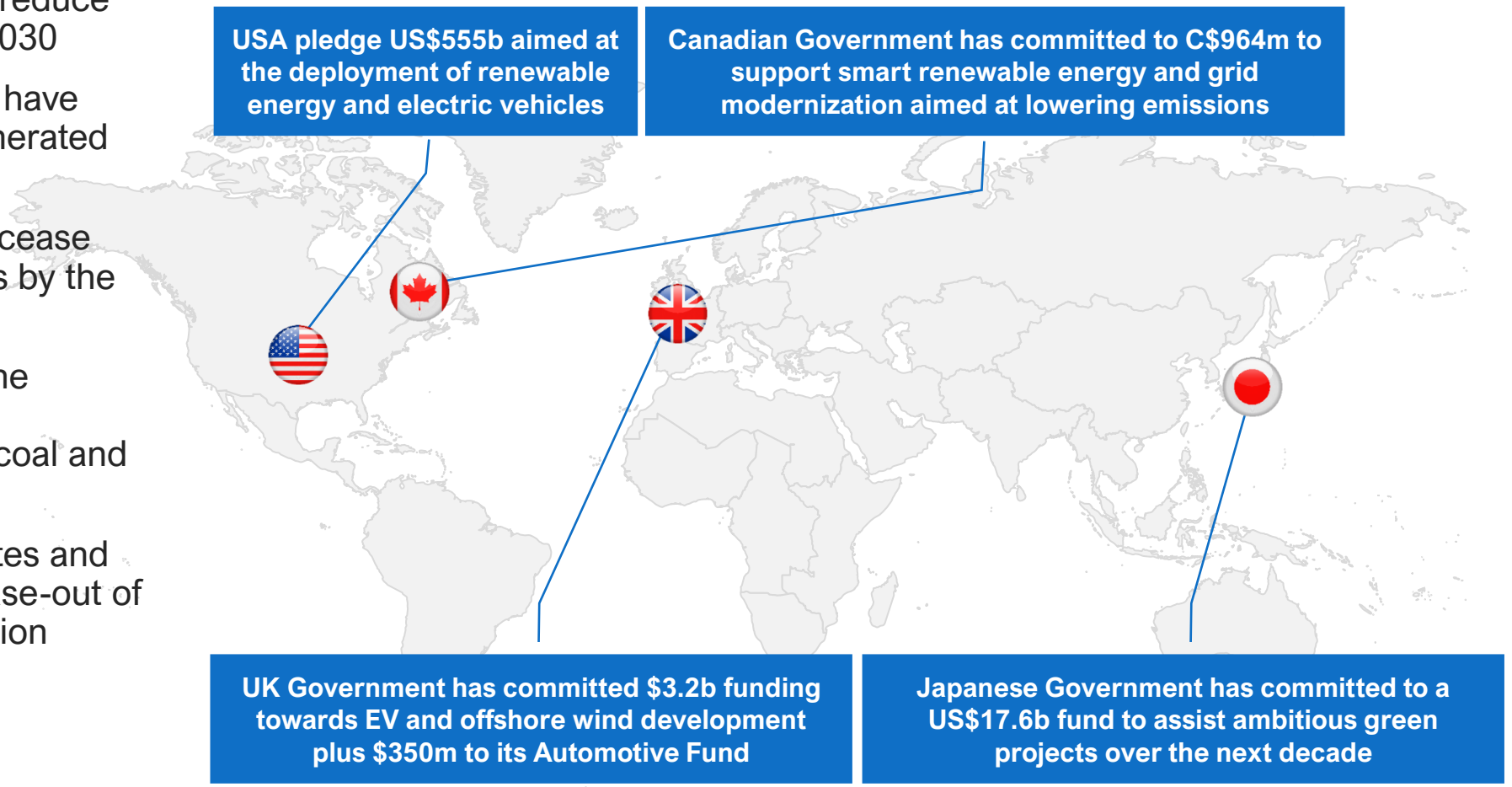
- The team at Lanthanein have a deep respect for the First Peoples of Australia. We are continuously working with the Traditional Owners and Elders from the areas where the projects are located
- In June and more recently in August Lanthanein conducted Heritage surveys on the Thiin-Mah country and had the privilege of walking alongside Peter Salmon, the Elder of the Thiin-Mah lands, hearing his stories and songs about the land and country which were truly insightful.
- Lanthanein are progressively embedding ESG reporting fully into all of our operations and governance systems. Lanthanein will continue to measure, improve, and disclose our ongoing progress with reporting ESG metrics and indicators.

The definition of governance is evolving as organisations are increasingly expected to define and embed their purpose at the centre of their business. But the principles of agency, accountability and stewardship continue to be vital for truly 'good governance'.	An ambition to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations	An ambition to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment	An ambition to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature

WORLD ECONOMIC FORUM

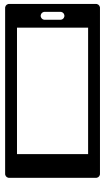
Global Decarbonisation and Electrification Builds Momentum

- 100+ countries have pledged to reduce methane emissions by 30% by 2030
- 190 countries and organisations have committed to phase out coal generated power
- 20 countries have committed to cease funding oil, coal and gas projects by the end of 2022
- 5 large public banks, including the European Investment Bank have committed to cease funding oil, coal and gas projects by the end of 2022
- 30+ countries and dozens of states and cities have committed to the phase-out of the sale of new internal combustion engine (ICE) vehicles by 2035



What are Rare Earth Elements

- Rare earth elements comprise 15 lanthanides plus scandium and yttrium
- Used in many high-tech applications in small volumes but are critical to performance
- **Demand for Neodymium Iron Boron (NdFeB) permanent magnets used in electric vehicles and wind turbines, will support prices for Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb)**

	Lightbulb	Displays	Headphones	Defence	Smartphones
					
21 Sc Scandium 44.955908 2-8-9-2	Y, Eu	Y, Ce, Eu, Tb	Pr, Nd, Gd	Pr, Nd, Sm, Tb, Dy	La, Ce, Pr, Nd
39 Y Yttrium 88.90584 2-8-18-9-2					

Light Rare Earths | Heavy Rare Earths

57 La Lanthanum 138.91 2-8-18-18-9-2	58 Ce Cerium 140.12 2-8-18-19-9-2	59 Pr Praseodymium 140.91 2-8-18-21-8-2	60 Nd Neodymium 144.24 2-8-18-22-8-2	61 Pm Promethium (145) 2-8-18-23-8-2	62 Sm Samarium 150.36 2-8-18-24-8-2	63 Eu Europium 151.96 2-8-18-25-8-2	64 Gd Gadolinium 157.25 2-8-18-25-9-2	65 Tb Terbium 158.93 2-8-18-27-8-2	66 Dy Dysprosium 162.50 2-8-18-28-8-2	67 Ho Holmium 164.93 2-8-18-29-8-2	68 Er Erbium 167.26 2-8-18-30-8-2	69 Tm Thulium 168.93 2-8-18-31-8-2	70 Yb Ytterbium 173.05 2-8-18-32-8-2	71 Lu Lutetium 174.97 2-8-18-32-9-2

Rare Earths Market Opportunity

TRANSITION TO RENEWABLE POWER GENERATION

200kg NdPr Oxide per 1MW of wind generation capacity

- Each direct drive wind turbine uses a permanent magnet motor that generates between 2-6MW of performance
- Each megawatt requires approx. 200kg pure NdPr Oxide
- Wind turbines anticipated to grow at a **CAGR of 17%** through to 2025

MASS PRODUCTION OF EVS HAS COMMENCED

Behind each battery is a **Motor**

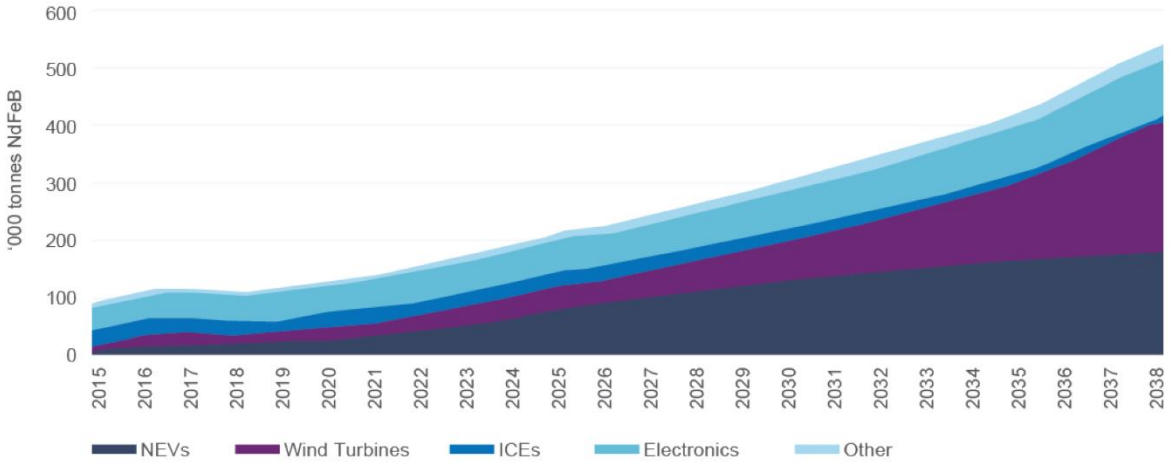
- Over 90% of all EVs will be equipped with an NdFeB permanent magnet
- Each EV consumes an incremental **~1kg** of NdPr Oxide
- EVs anticipated to grow at a **CAGR of 29%** over the next five years
- Hydrogen vehicles also reliant on permanent magnet motor technology
- Hydrogen vehicles also anticipated to grow at a **CAGR of 11%** through to 2025

59	60	66
Pr	Nd	Dy
Praseodymium	Neodymium	Dysprosium
140.91	144.24	162.50
2-8-18-21-8-2	2-8-18-22-8-2	2-8-18-28-8-2

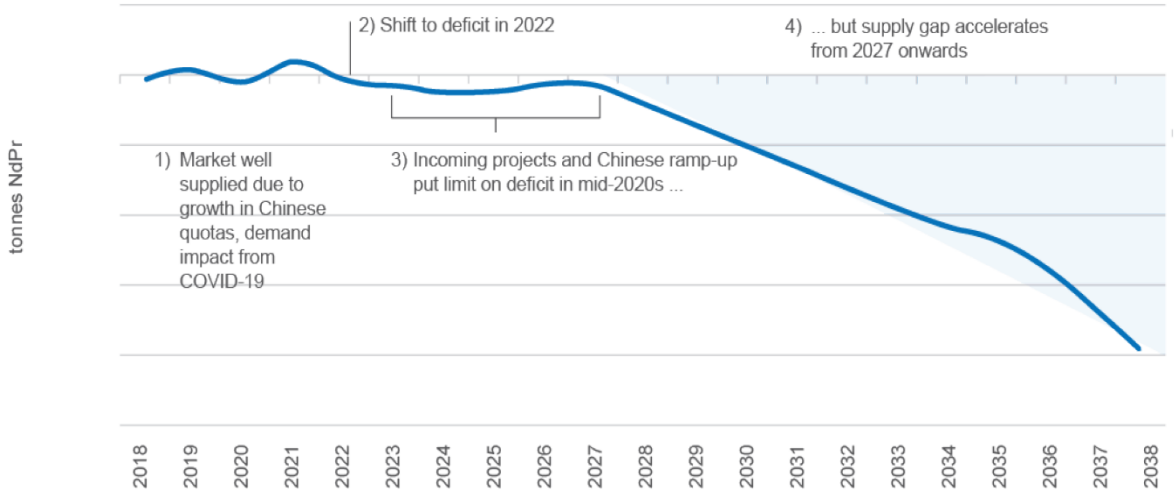
59	60	62	65	66
Pr	Nd	Sm	Tb	Dy
Praseodymium	Neodymium	Samarium	Terbium	Dysprosium
140.91	144.24	150.36	158.93	162.50
2-8-18-21-8-2	2-8-18-22-8-2	2-8-18-24-8-2	2-8-18-27-8-2	2-8-18-28-8-2

Strong Demand for both Neodymium and Praseodymium will result in a supply deficit over coming decade

NdFeB Demand



NdPr Market Balance



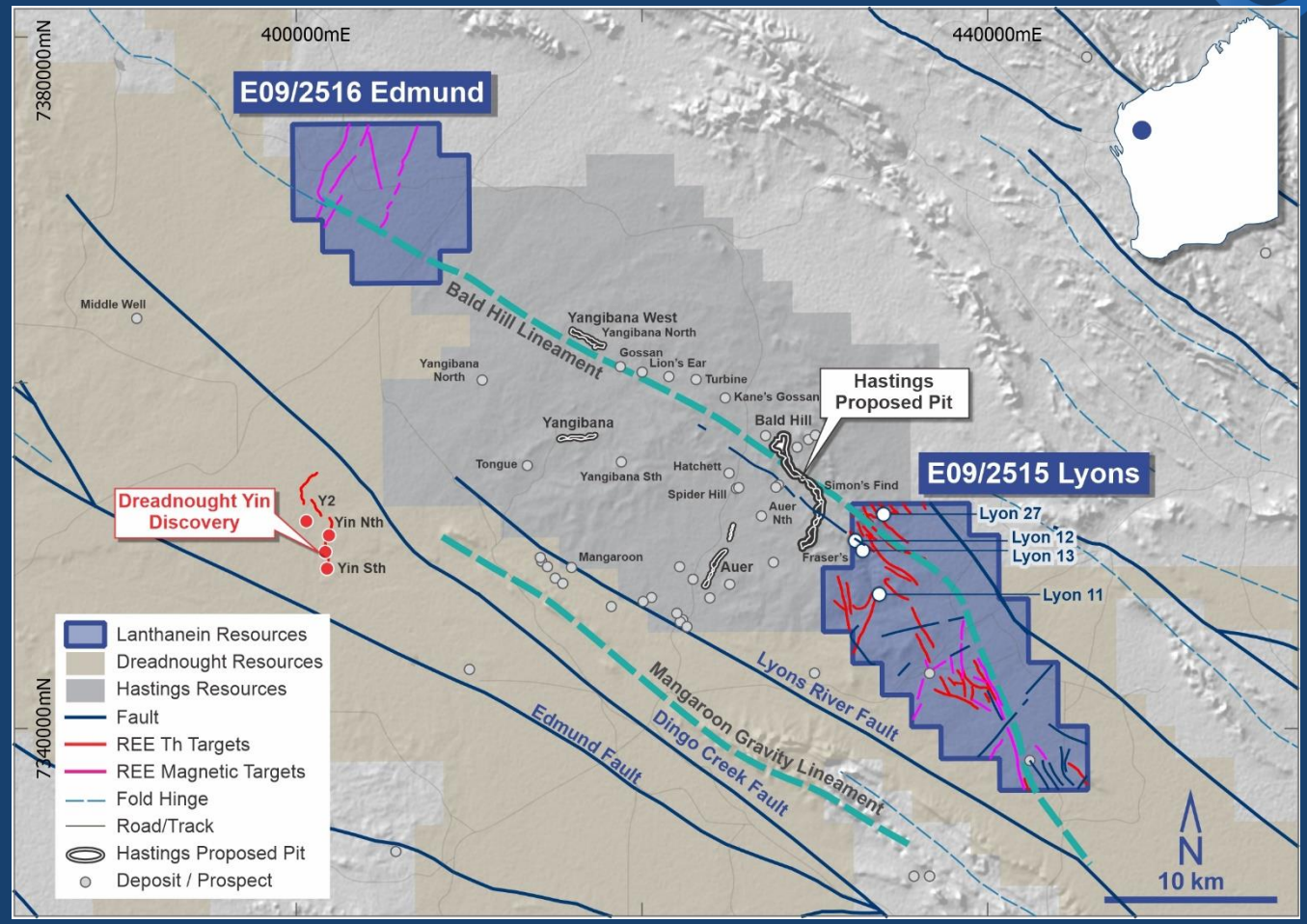
Global NdFeB demand will increase 3.9% over the period 2021-2038 (CAGR 8.3%)

Source: Rare Earth Market Outlook, CRU International Ltd, August 2021
ICE= International combustion engine

Source: Cu

Gascoyne REE Project

- High grade REE's discovered up to 8.01% TREO
- Rare Earth Elements Hosted in the Yangibana Ironstones within the Durlacher Supersuite Rocks
- Source of the REE's is from the Gifford Creek Ferrocarbonatites which have been intruded along the Bald Hill Lineament
- Hastings Technology Metals (HAS ~$500m MC) is developing the Yangibana REE Project, Australia's next REE Mine
- Close proximity to Dreadnought's (DRE ~A$350m MC) recent Yin Rare Earths discovery.
- Lyons and Edmund Project areas both on the Bald Hill Lineament
- No previous exploration for REE's on either area before recent sampling success
- Maiden drill program to test depth extent and width of outcropping ironstones Q3, 2022



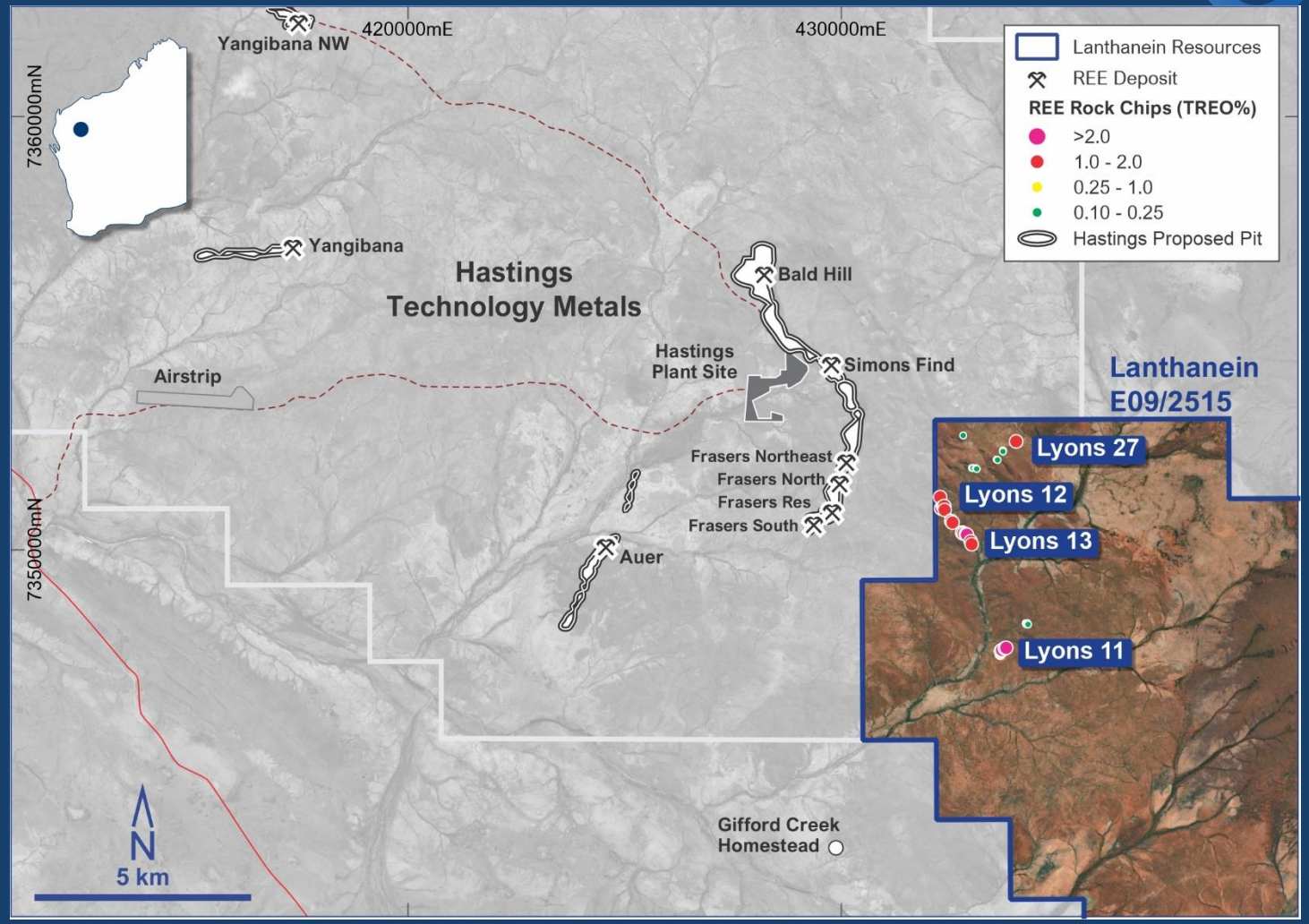
Gascoyne REE Project

- Lyons Prospects are immediately adjacent to Hastings Technology Metals (ASX:HAS) world class Yangibana REE Project
- Hastings REE's hosted in the same ironstones derived from Gifford Creek Ferrocarbonatites present in the Durlacher Supersuite rocks that host the Lyons Prospects
- Mineralogy and metallurgical characteristics of REE's hosted in Lyons ironstones identical to Hastings

Yangibana Project – Total JORC Mineral Resources (1)

AS AT 30 JUNE 2021

Category	Million Tonnes	%TREO	%Nd_2O_3+Pr_6O_{11}	TREO Tonnes
Measured	4.9	1.01	0.38	49,442
Indicated	16.24	0.95	0.33	154,750
Sub-total	**21.14**	**0.97**	**0.34**	**204,192**
Inferred	6.27	0.99	0.31	62,225
TOTAL	**27.42**	**0.97**	**0.33**	**266,417**

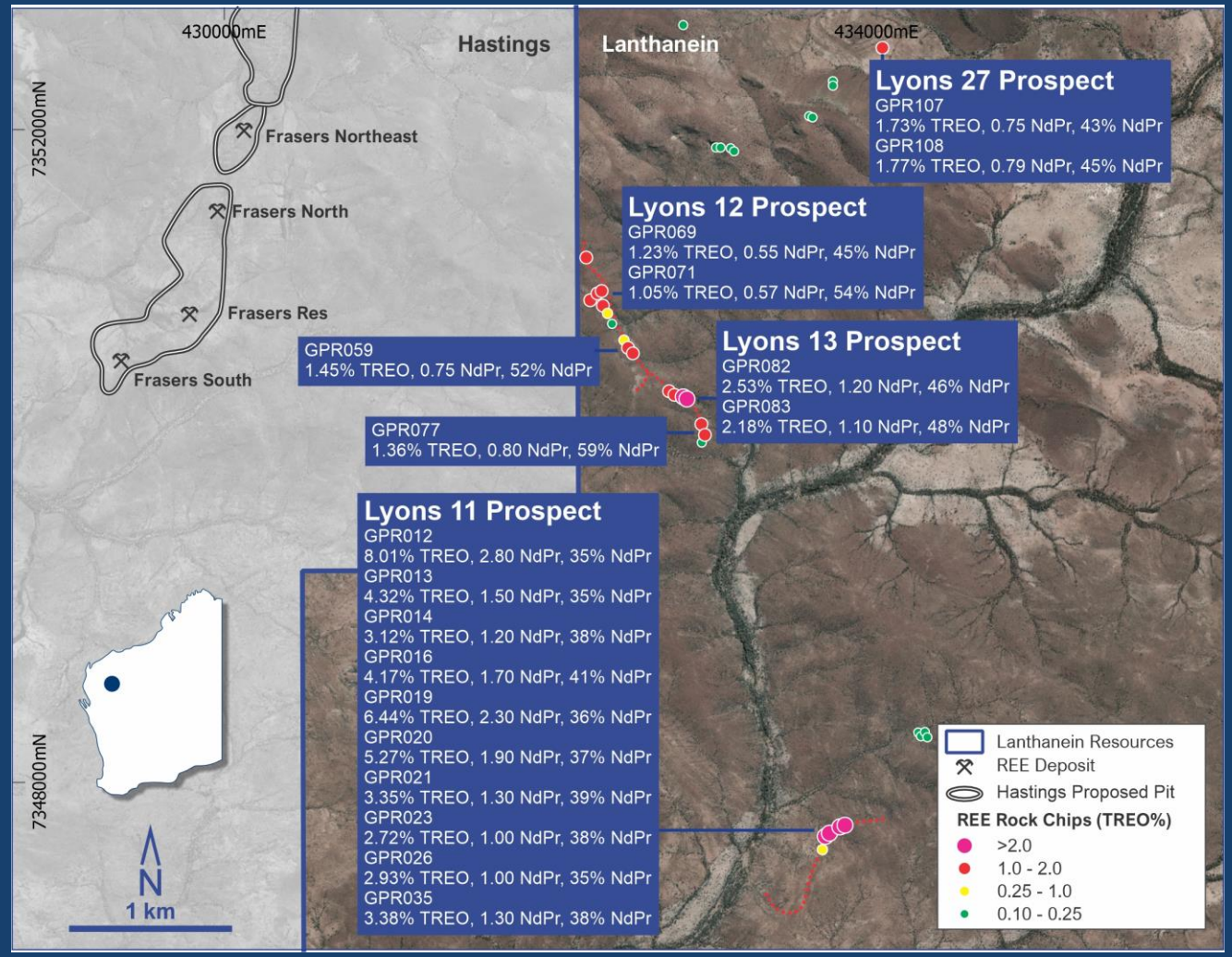


Gascoyne REE Project

- **Multiple high priority outcropping ironstone prospects and carbonatite large tonnage targets to be to drilled Q3, 2022**
- **High grade rare earth discoveries confirmed** with exceptional results from rock chips across multiple targets on the Lyons Project Area.

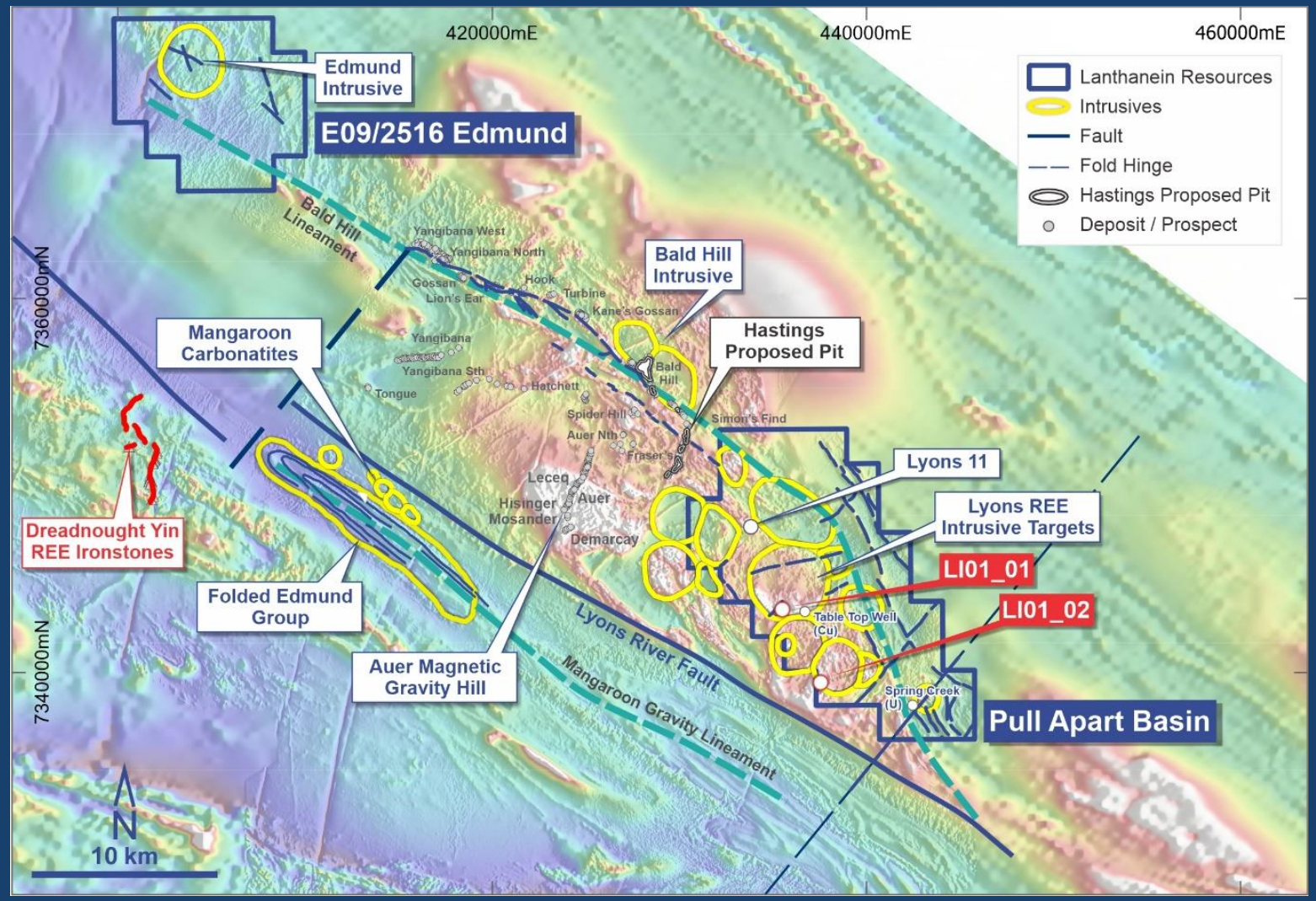
Significant results include:

- 8.01% TREO (2.8% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR012)
- 6.44% TREO (2.3% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR019)
- 5.27% TREO (1.9% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR020)
- 4.32% TREO (1.53% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR013)
- 4.17% TREO (1.69% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR013)
- 3.38% TREO (1.3% Nd_2O_3+Pr_6O_{11}) Lyons 11 (GPR035)
- 2.53% TREO (1.15% Nd_2O_3+Pr_6O_{11}) Lyons 13 (GPR082)
- 1.23% TREO (0.55% Nd_2O_3+Pr_6O_{11}) Lyons 12 (GPR069)
- 1.77% TREO (0.79% Nd_2O_3+Pr_6O_{11}) Lyons 27 (GPR108)



Gascoyne REE Project

- Regional magnetics and radiometrics have picked up ferrocarbonatite targets under cover on Lanthanein's Lyons EL
- Ferrocarbonatites the source of the REE rich ironstones on Lanthanein and Hastings ground
- Applications in for two DMIRS Exploration Incentive Scheme funded deep exploration holes to be put into the two best targets in Q2 2023
- Dreadnought has similar but smaller carbonatite targets at Mangaroon and near Yin



Murraydium REE Project

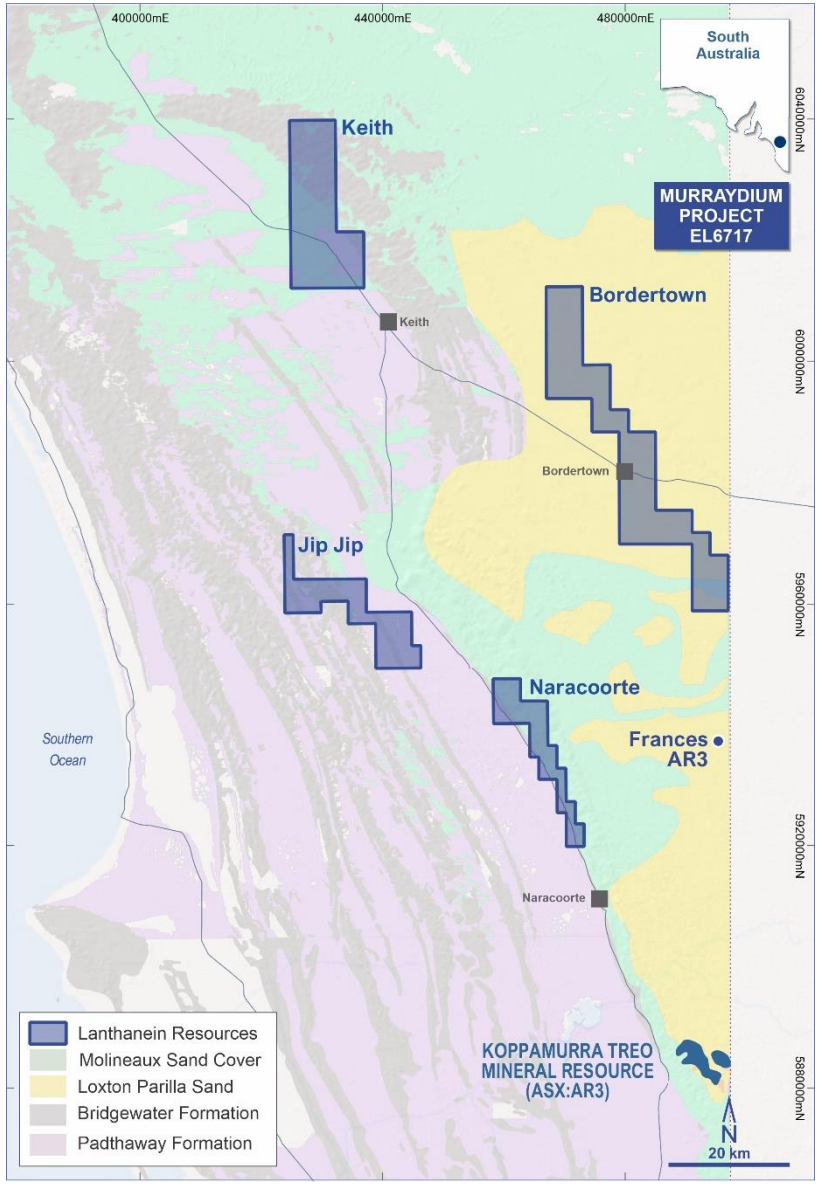
- Targeting Ionic Clay hosted REE's
- Australian Rare Earths (ASX : AR3) have REE Resource at Koppamurra on neighbouring tenement
- Koppamurra Resource and new AR3 prospect Frances hosted in the same Loxton Parilla Sands as present on Bordertown Block
- Drilling on Bordertown Block scheduled for Q4 2022

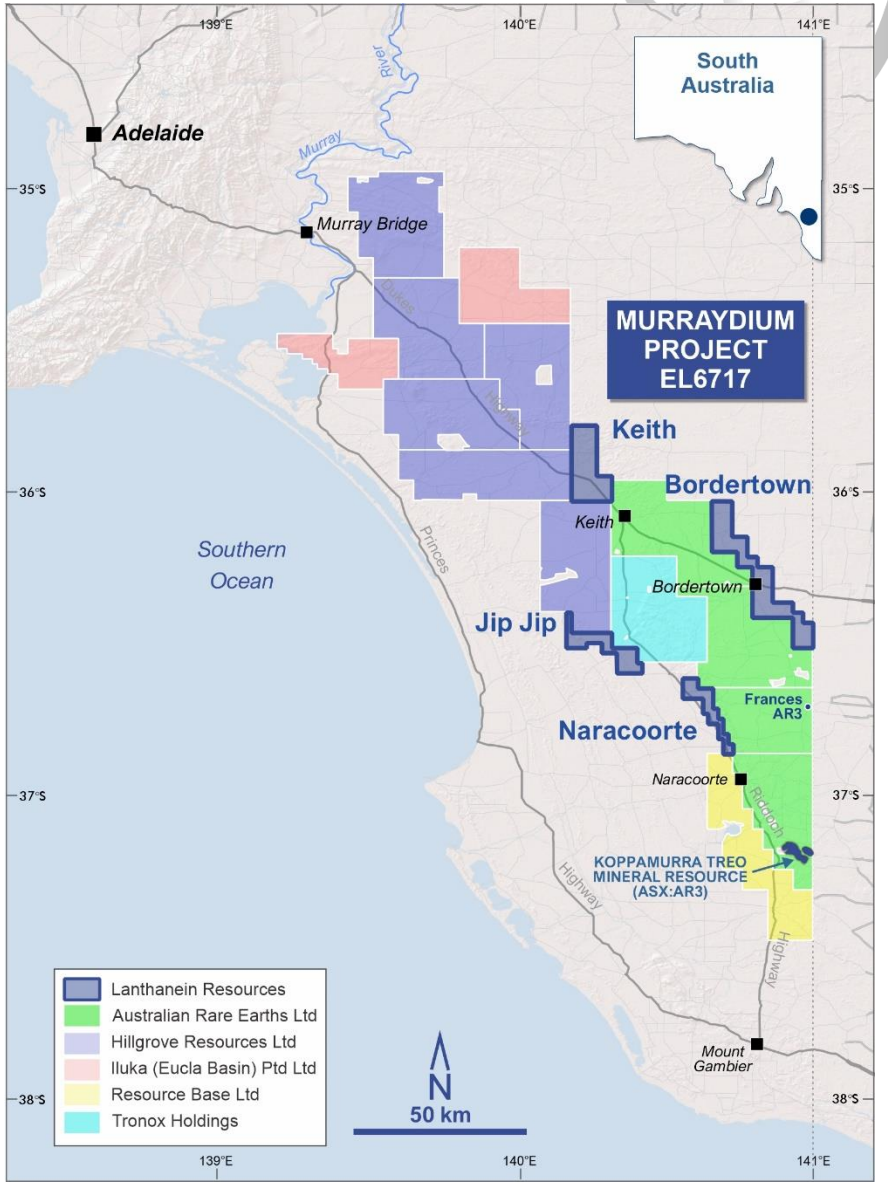
Koppamurra Mineral Resource Estimate – July 2022

			Magnet Rare Earths							
JORC	Tonnes	TREO	Pr_6O_{11}		Nd_2O_3		Tb_4O_7		Dy_2O_3	
Category	Mt	ppm	ppm	% TREO	ppm	% TREO	ppm	% TREO	ppm	% TREO
Indicated	45	835	37	4.4	142	17	4	0.5	22	2.6
Inferred	36	721	32	4.4	122	17	3	0.5	19	2.6
Total	**81**	**785**	34	4.4	133	17	4	0.5	21	2.6
Exploration Target[1]	90-220	629-849	29-41	4.6-4.8	110-150	17-18	3-4	0.5-0.5	16-22	2.5-2.6
April 2021 Initial Resource										
Inferred	39.9	725	32	4.4	124.6	17.2	3.5	0.5	19.2	2.6

Mineral Resources reported at a cut-off grade of 325 ppm TREO-CeO2, consistent with the previous MRE.

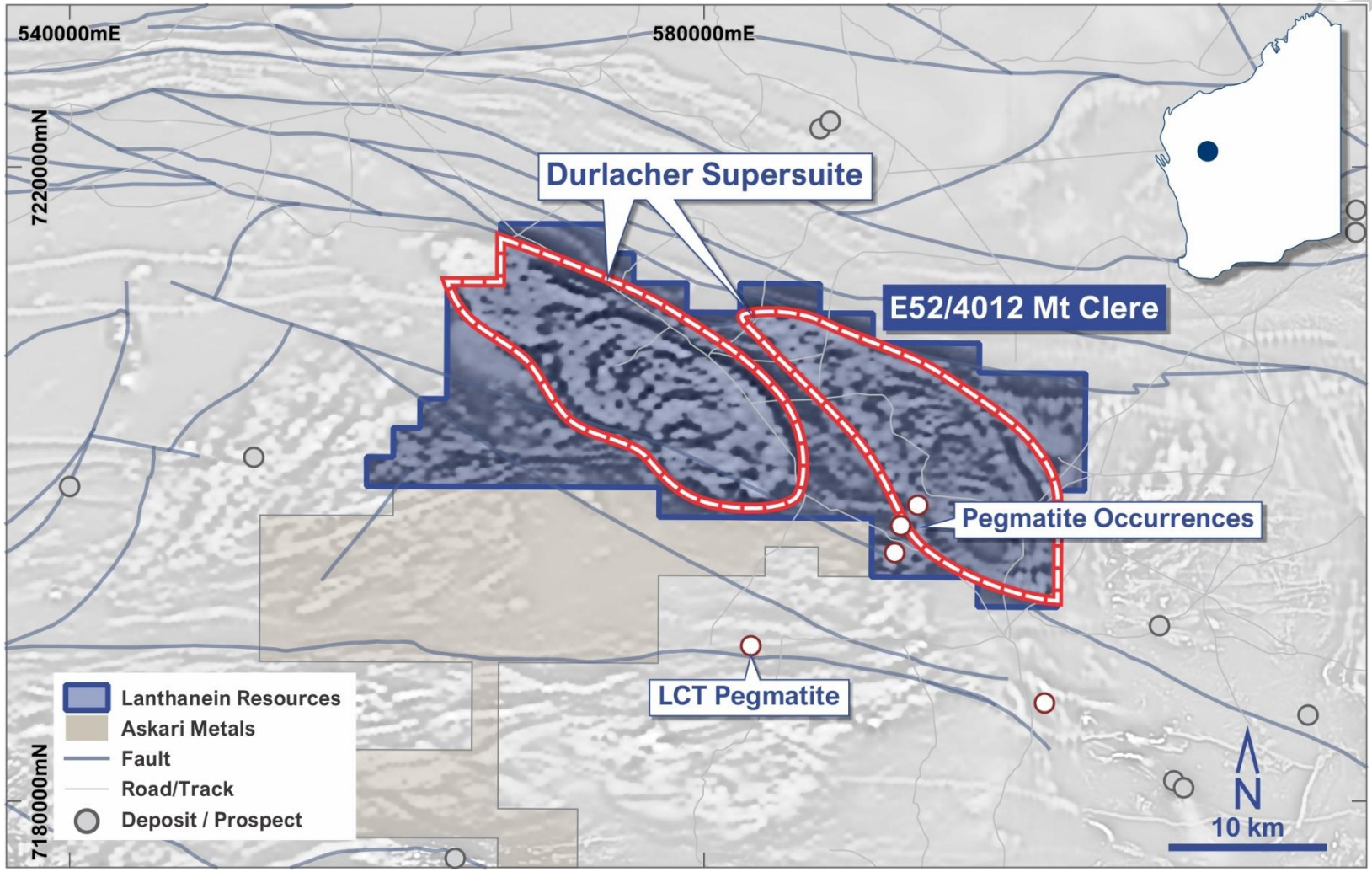
1 - The potential quantity and grade of the Exploration Target is conceptual in nature. Further exploration is required to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.





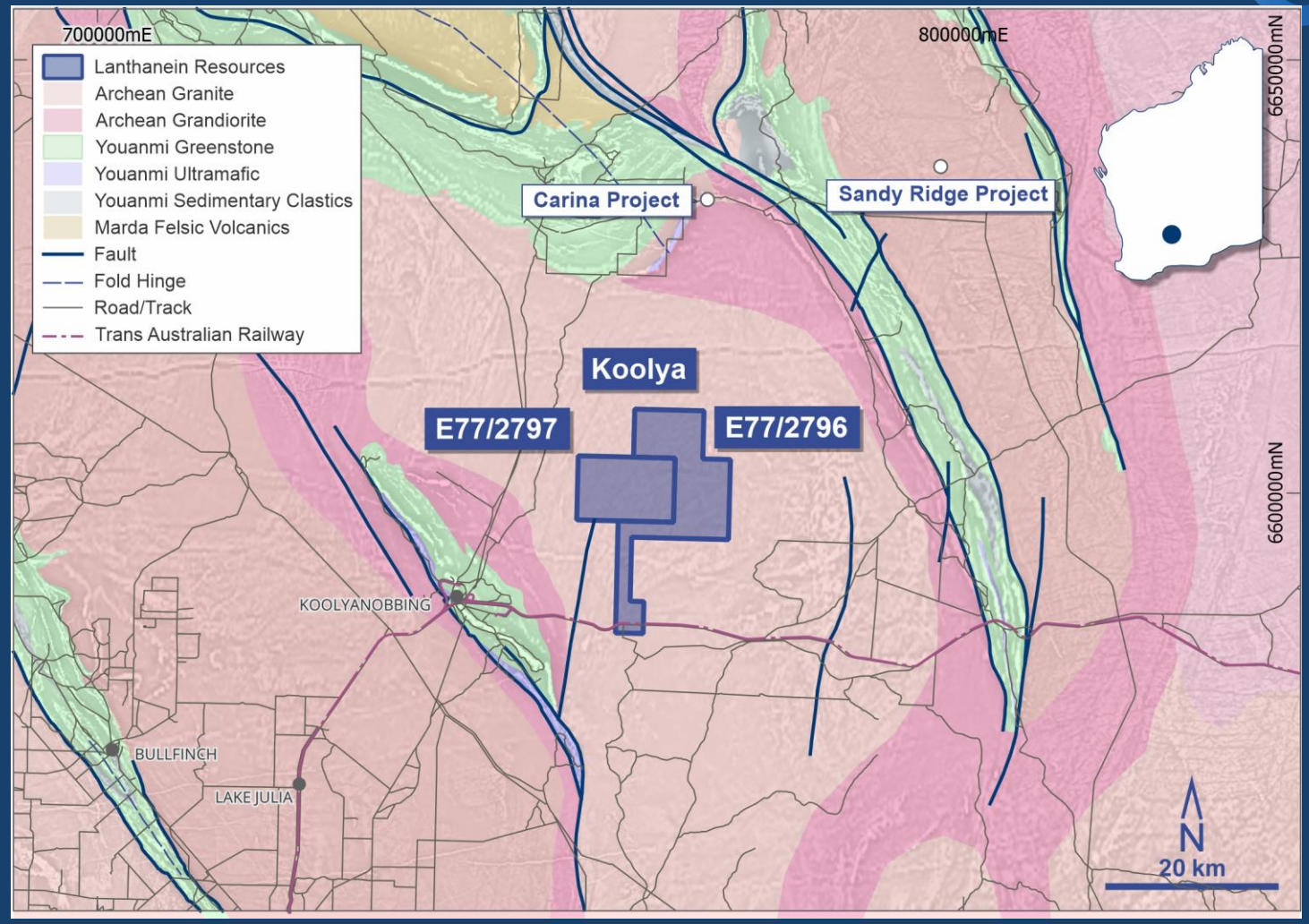
Mt Clere REE and Lithium Project

- Targeting Rare Earth Elements in Durlacher Supersuite sequence of rocks, the same host rocks as Yangibana
- Lithium potential in LCT Pegmatites in the southeast of the tenement
- Field reconnaissance trip completed Q2, 2022 with additional geochemistry sampling and drill programs planned
- Emerging rare earth province highlighted by Krakatoa ASX: KTA discovering ion adsorption clays enriched in REE's to the west of Mt Clere

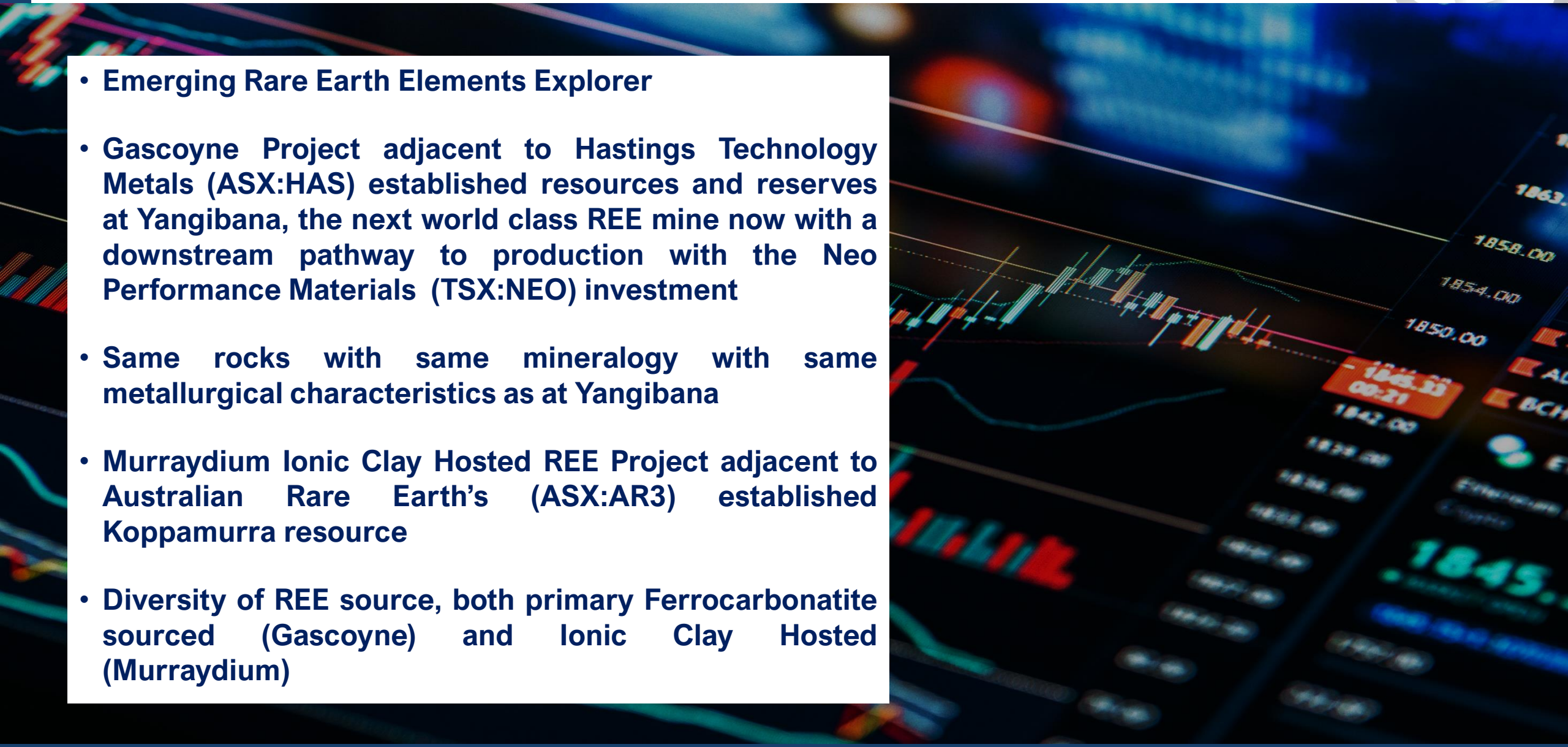


Koolya Kaolin Project

- 240km^2 of kaolinised granite prospective for bright white kaolin clay and high purity alumina (HPA) feedstock
- Tenure supportive for large scale development
- No competing land ownership, pastoral lease or freehold farmland
- Excellent infrastructure with Trans Australian Railway allowing bulk transport up to 5,000t per train
- HPA market growth due to investment in EV and battery market



The Opportunity / Investment Thesis



- **Emerging Rare Earth Elements Explorer**
- **Gascoyne Project adjacent to Hastings Technology Metals (ASX:HAS) established resources and reserves at Yangibana, the next world class REE mine now with a downstream pathway to production with the Neo Performance Materials (TSX:NEO) investment**
- **Same rocks with same mineralogy with same metallurgical characteristics as at Yangibana**
- **Murraydium Ionic Clay Hosted REE Project adjacent to Australian Rare Earth's (ASX:AR3) established Koppamurra resource**
- **Diversity of REE source, both primary Ferrocarbonatite sourced (Gascoyne) and Ionic Clay Hosted (Murraydium)**

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