

Heavy Rare Earths Limited

ACN 648 991 039



*Supporting a cleaner and sustainable  
future through critical minerals*

ASX: HRE

April 2023

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By accepting this Document, Recipient's acknowledge and agree to be bound by the above statements.

## COMPETENT PERSONS STATEMENT

The Exploration Results and Mineral Resources contained in this Document have been extracted from the Independent Geologist's Report included in the Company's IPO Prospectus, a copy of which was lodged with ASIC on 5 July 2022. The Company confirms that it is not aware of any new information or data that materially affects the Exploration Results or Mineral Resources as contained in the Company's IPO Prospectus. All material assumptions and technical parameters underpinning the Mineral Resources in the Company's IPO Prospectus continue to apply and have not materially changed.

# Value Proposition

**Rare Earths:** Ongoing supply side issues and forecast demand side strength in e-mobility and wind power supports a high rare earth price environment

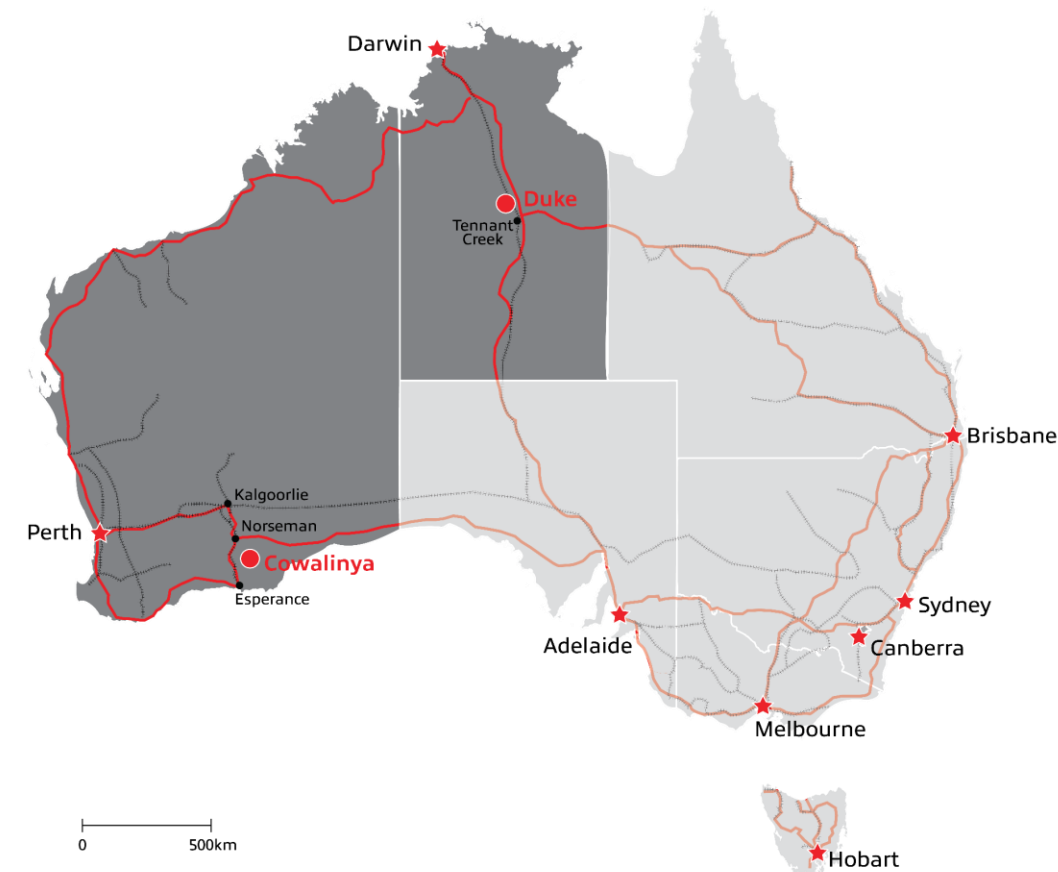
**Key Project:** Cowalinya (100% owned) is a clay-hosted rare earth project, located on vacant crown land, 70 kilometres south-east of Norseman in Western Australia, one of the world’s premier mining jurisdictions

**Maiden Resource<sup>1</sup>:** Shallow Inferred Resources of **28 million tonnes @ 625 ppm TREO** (Total Rare Earth Oxides) with magnet rare earths Pr, Nd, Tb and Dy comprising 25% of the mix

**Drilling Program:** 12,569-metre drilling program in 2022 (some assays still pending) encountered thick intervals of rare earth mineralisation across a large area – numerous high-grade assays up to 7222 ppm TREO

**Resource Expansion:** Planning to deliver an **updated Mineral Resource in Q3 2023**

**Strong Team:** Richard Brescianini – technical, supply chain, stakeholder management, 15 years’ rare earths experience at Arafura Rare Earths (ASX: ARU); John Byrne – development, 45 years’ experience bringing mines into production



<sup>1</sup> See pp 109 of the Independent Geologist’s Report contained in HRE’s IPO Prospectus.

# Corporate Snapshot

Capital Structure	ASX: HRE
Shares on Issue	68.3 million
Market Capitalisation (@ \$0.10)	~\$7 million
Cash	~\$2.5 million
Debt	Nil
Enterprise Value	~\$4.5 million
Options	14.2 million (ex price \$0.30 and \$0.40)
Top 20 Holders	40%

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## Non-Executive Chairman – John Byrne

Mr Byrne has 40 years' experience in the natural resource industry as a financial analyst, investor and mine developer. John has been Chairman and CEO of numerous successful resource companies, including Western Coal Corp which was capitalised at less than C\$1 million when he joined, and was sold for C\$3.3 billion in 2010.

## Executive Director – Richard Brescianini

Mr Brescianini is a qualified geoscientist with an Honours degree from the University of Tasmania and is a member of the Australian Institute of Geoscientists and Australian Society of Exploration Geophysicists. Richard commenced his career in mineral exploration with BHP Minerals in 1987 working in teams focused on the discovery of base and precious metal deposits across Australia and North America. More recent experience includes Director of the Northern Territory Government's Geological Survey and working for rare earths developer, Arafura Rare Earths, in the executive management team.

## Non-Executive Director – Ryan Skeen

Mr Skeen has a background in financial and economic markets, with expertise in providing investment and strategic advice to emerging companies. Ryan is largely focused on exploration in gold, rare earths and base metals. He is currently Chief Executive Officer of a junior gold and base metals explorer with projects in Victoria and Western Australia.

## Company Secretary & Chief Financial Officer – Justin Mouchacca

Mr Mouchacca is a Chartered Accountant and Fellow of the Governance Institute of Australia with over 15 years' experience in public company responsibilities including statutory, corporate governance and financial reporting requirements. Since July 2019, Mr Mouchacca has been principal of JM Corporate Services and is Company Secretary and Financial Officer for a number of ASX-listed entities and unlisted public companies.

# Clay-Hosted Project – Cowalinya WA

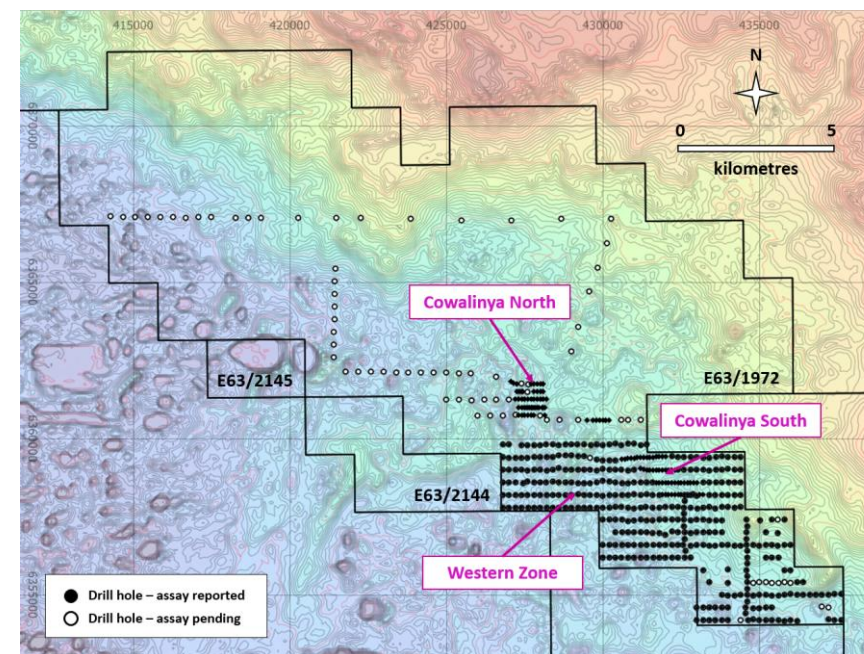
- The **Cowalinya clay-hosted rare earth project** is 100 per cent-owned by HRE and comprises three granted exploration licences covering 250 km<sup>2</sup>
- Cowalinya is on **unallocated crown land** 70 kilometres south-east of Norseman, 45 kilometres east of the Coolgardie-Esperance Highway and rail line, and 110 kilometres north-north-east of the Port of Esperance in Western Australia
- The mineralisation being investigated is shallow, flat-lying, supergene concentrations of rare earths in saprolite, similar in style to the southern Chinese ion adsorption clay deposits, the **world's main supply source of heavy rare earths**
- Drilling at Cowalinya by HRE in 2021 established the project's maiden Inferred Mineral Resource of **28 million tonnes @ 625 ppm TREO<sup>1</sup>**
- Drilling by HRE in late-2022 **discovered extensive new developments of rare earth mineralisation**
- Metallurgical test-work on clay-hosted rare earths mineralisation from Cowalinya **has delivered encouraging results**



<sup>1</sup> See pp 109 of the Independent Geologist's Report contained in HRE's IPO Prospectus.

# Cowalinya Drilling – 2023

- HRE completed a 441-hole, 12,569-metre exploration and resource expansion drilling program on E63/1972 in September-December 2022
- Drilling discovered a **substantial new 13 km<sup>2</sup> Western Zone of rare earth mineralisation** west and south-west of the existing Cowalinya resource
- Western Zone mineralisation is flat-lying, extensive, **averages 11 metres thick** and is overlain by an average of 19 metres of overburden
- Significant mineralised drill intercepts included:
  - 19 metres @ 3190 ppm TREO including 8 metres @ 5382 ppm TREO (AC225)
  - 26 metres @ 1201 ppm TREO including 8 metres @ 3057 ppm TREO (AC360)
  - 42 metres @ 790 ppm TREO (AC226)
  - 14 metres @ 1164 ppm TREO including 2 metres @ 4839 ppm TREO (AC359)
  - 26 metres @ 1133 ppm TREO including 10 metres @ 1559 ppm TREO (AC274)
- The Western Zone discovery will allow an **upgraded Mineral Resource to be reported in Q3 2023**
- **HRE anticipates a material increase in Mineral Resources** for the project

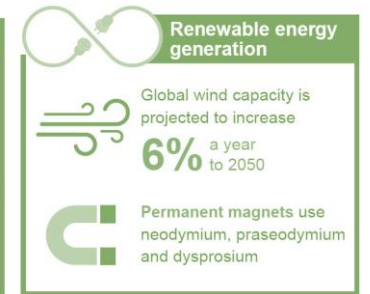
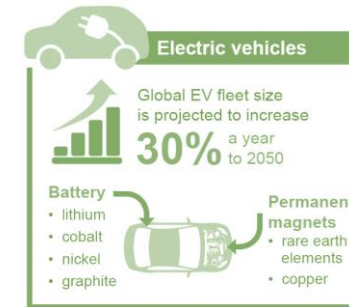
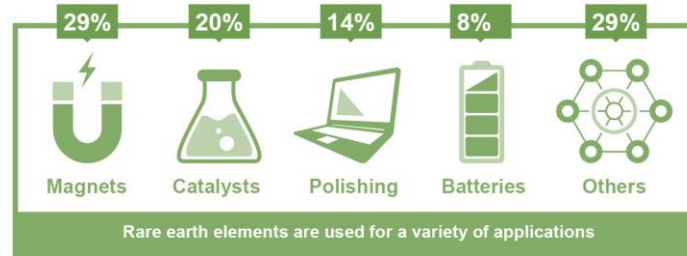


	COWALINYA	WESTERN ZONE
<b>Area drilled</b>	2.0 km <sup>2</sup>	13.0 km <sup>2</sup>
<b>Drill spacing</b>	50 metres x 150 metres 100 metres x 150 metres 100 metres x 400 metres	200 metres x 400 metres
<b>No. of mineralised intercepts<sup>1</sup></b>	78	159
<b>Average mineralised width</b>	10 metres	11 metres
<b>Average depth to mineralisation</b>	19 metres	19 metres
<b>Length-weighted average grade</b>	697 ppm TREO	720 ppm TREO
<b>Best<sup>2</sup> mineralised intercept</b>	19 metres @ 1659 ppm TREO (AC29)	19 metres @ 3190 ppm TREO (AC225)

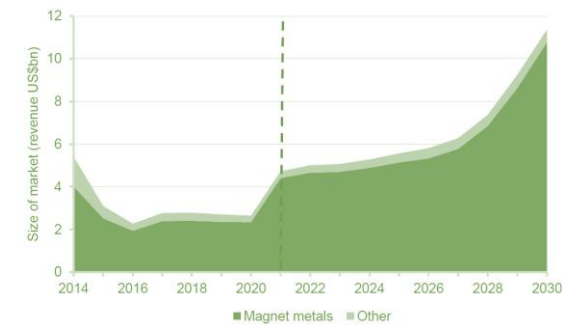
<sup>1</sup> ≥ 4 metres @ ≥ 300 ppm TREO    <sup>2</sup> Based on grade-thickness

# Rare Earth Market Overview

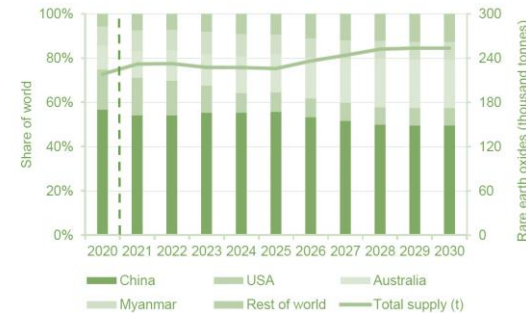
- Rare earths are featured in the official Australian, U.S., European Union and Canadian critical minerals lists
- According to Roskill and the Department of Industry, Science, Energy and Resources in 2021:
  - The global rare earths market was valued at US\$2bn in 2020 and is forecast to grow to \$12bn by 2030
  - Global mine supply is projected to grow by 1.5% p.a. over 10 years to 2030, and refined production of rare earths is projected to grow by 4.6% p.a. to 2030
  - Global consumption of rare earths is projected to grow at 4.0% p.a. to 2030, with rare earth permanent magnet consumption to grow by 6.2% p.a. driven by the strong take-up of low carbon emissions technologies
- In 2022 Adamas Intelligence forecast that:
  - Global production of the magnet rare earths Pr, Nd, Tb and Dy will collectively grow at 5.4% p.a. during 2022 to 2035
  - Global demand for rare earth permanent magnets will increase at a compound annual growth rate of 8.6% over the same period, following an 18.1% jump in consumption in 2021
- The Australian Government actively encourages the development of Australia's rare earths and has provided \$1.74bn in grants and loans to domestic rare earth projects via critical minerals initiatives



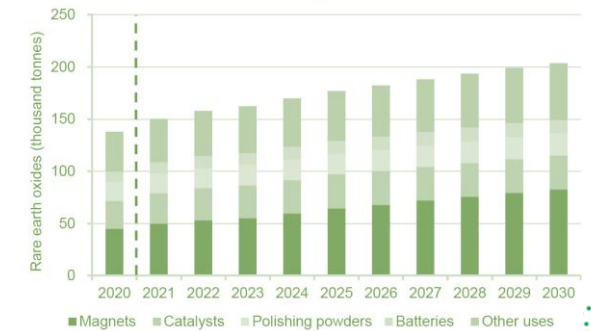
Rare earths market size outlook



Projected rare earths refined production by country



Projected rare earths consumption by end use



All graphics from Australian Government Department of Industry, Science, Energy and Resources, Office of the Chief Economist (2021): Outlook for Selected Critical Minerals.



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