

American Rare Earths

“Pioneering the future of clean energy”

Investor Presentation
February 2024

(ASX: ARR | ADRs - OTCQX: AMRRY | Common Shares - OTCQB: ARRNF)

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Competent Person Statement

The information in this report that relates to Exploration Results or Resource Estimates is based on information compiled by Mr. Dwight Kinnes and personnel directly under his supervision. Mr. Kinnes is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc, #4063295). Mr. Kinnes is an employee of American Rare Earths. Mr. Kinnes has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Kinnes consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this report that relates to Exploration Results or Resource Estimates is based on information reviewed by Mr. Jim Guiling. Mr. Guiling is a Member of a Recognised Overseas Professional Organisation included in a list promulgated by the ASX (SME Registered Member of the Society of Mining, Metallurgy and Exploration Inc). Mr. Guiling is Principal of independent consultants World Industrial Minerals LLC. Mr. Guiling has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking 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. Guiling consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

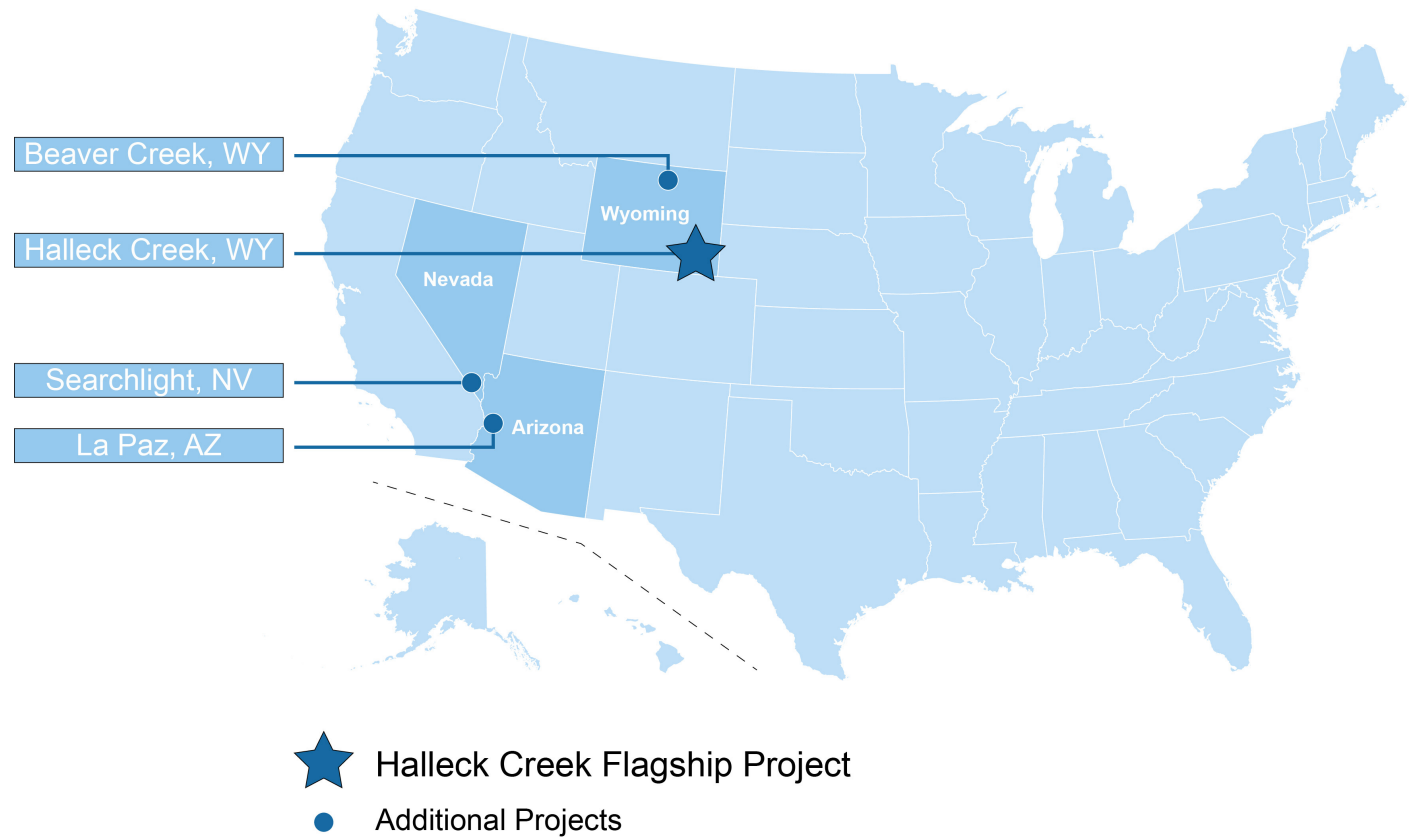
This work was reviewed and approved for release by Mr Kelton Smith (Society of Mining Engineers #4227309RM) who is employed by Tetra Tech and has sufficient experience which is relevant to the metallurgical testing and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 JORC Code. Mr Smith consents to the inclusion in the report of the matters based upon the information in the form and context in which it appears.

ARR confirms it is not aware of any new information or data that materially affects the information included in the original market announcement, and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. ARR confirms that the form and context in which the Competent Person’s findings presented have not been materially modified from the original market announcement.

About American Rare Earths

We are committed to developing our projects featuring sustainable practices, inclusive principles and leading technologies to support the United States' national security and economic transformation goals.

- Largest ASX-listed portfolio of strategic rare earth element assets in the United States.
- Flagship Halleck Creek Project (100% owned) has potential to be largest rare earths deposit in the U.S.
- Projects across southwest U.S. in favorable mining jurisdictions together covering 17,400 acres.
- 1.42 billion tonnes of measured and indicated resources were estimated at a grade of 3,296 ppm TREO using a 1,000ppm TREO cut-off*
- February 2024 JORC Resource is 2.34 billion tonnes, including inferred*



*Refer to ASX Announcement 7 February 2024 and Table 1 on slide 4 of this presentation

Snapshot

Share Price (market close 07/02/2024)	\$0.13
Shares Outstanding	446.4 million
Market Cap (07/02/2024)	\$58 million
Cash Position (31/12/23)	\$6.3 million
Invested Financial Assets (31/12/2023) ¹	\$5.2 million

(in AUD, except shares)

Classification	Tonnage	Grade				Contained Material			
		TREO	LREO	HREO	MREO	TREO	LREO	HREO	MREO
	t	ppm	ppm	ppm	ppm	t	t	t	t
Measured	206,716,068	3,720	3,352	370	904	769,018	692,935	76,550	186,836
Indicated	1,210,173,301	3,223	2,838	349	780	3,899,931	3,434,947	422,124	943,421
Meas + Ind	1,416,889,369	3,295	2,913	352	798	4,668,949	4,127,881	498,674	1,130,257
Inferred	924,698,618	3,041	2,696	339	737	2,812,121	2,493,178	313,187	681,138
Total	2,341,587,986	3,196	2,828	347	774	7,481,070	6,621,059	811,861	1,811,395
Rounded	2,342,000,000	3,196	2,828	347	774	7,481,000	6,621,000	812,000	1,811,000

Table 1: Estimated Rare Earth Resources at Halleck Creek (1000ppm TREO cut off)



Donald Swartz
Chief Executive Officer



Jose Rico
Chief Financial Officer



Dwight Kinnes
Chief Technical Officer



Joe Evers
General Counsel



Wayne Kernaghan
Company Secretary

1. Represents investments in Cobalt Blue and Godolphin, inclusive of promissory notes receivable.

Geologic Characteristics Offer Best of Both Worlds

Deposit Comparison	Halleck Creek	Conventional Hard Rock	Ionic Clay
Location	Tier 1	Tier 1	Sovereign Risk
Grade	4-5 % TREO ¹	~6% TREO	0.07 %
Low Penalty Elements (U / Th) ²	✓	✗	✓
Processing	Tank Leaching	Acid Bake / Cracking	In-Situ Leaching
ESG Positive Inputs ³	✓	✗	✗
Reduced Capex and Opex ⁴	✓	✗	✓
Scalable / Homogenous Deposit ⁵	✓	✗	✗

1. Following low-cost extraction and beneficiation and increase in grade following the JORC update. See ASX announcement 7 February 2024

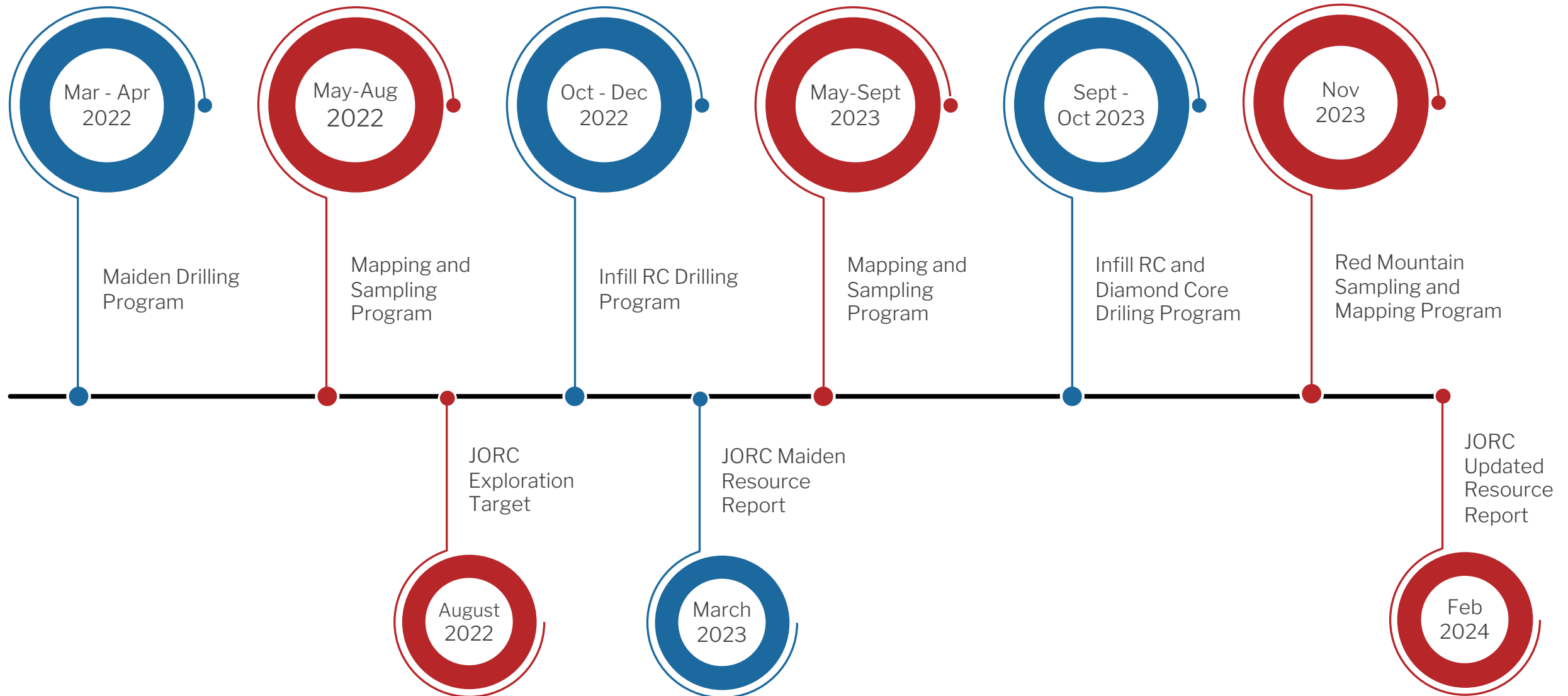
2. Less than 500ppm confirmed prior to beneficiation. Test work/analysis is in process post beneficiation

3. Refer to Slide 23

4. Lower CapEx and OpEx of physical separation and conventional tank leaching at 90°C, relative to acid bake/cracking processing at +600°C. See ASX Announcements 22 January 2024, and 19 October 2023

5. 2.34 Bt JORC resource, with only 25% of project explored. See JORC update ASX announcement 7 February 2024

Halleck Creek – Progress to date



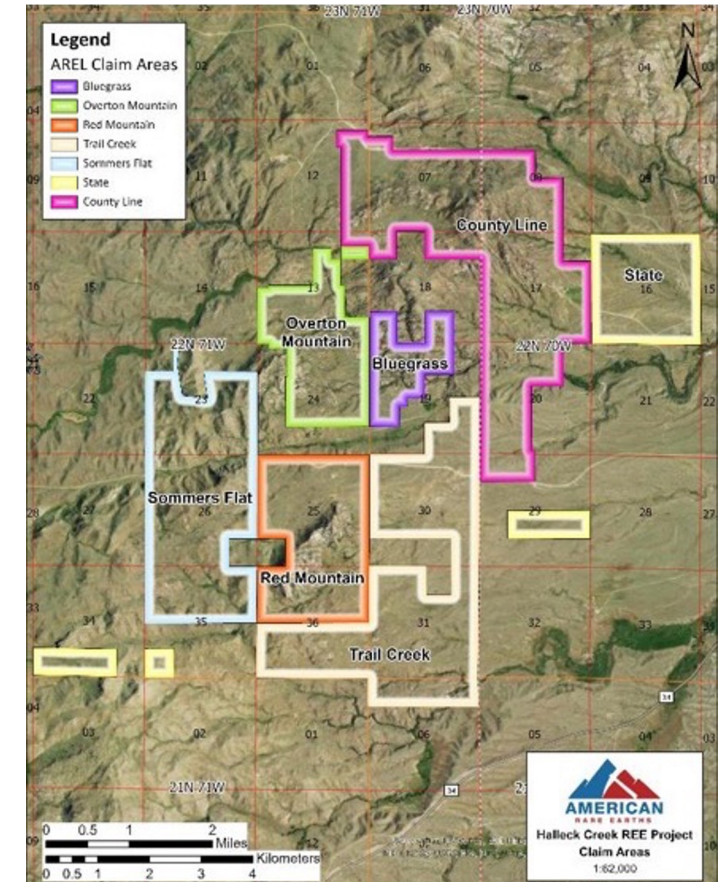
Halleck Creek Project Overview (100% owned)

Potential to be the largest rare earth Deposit in the U.S.

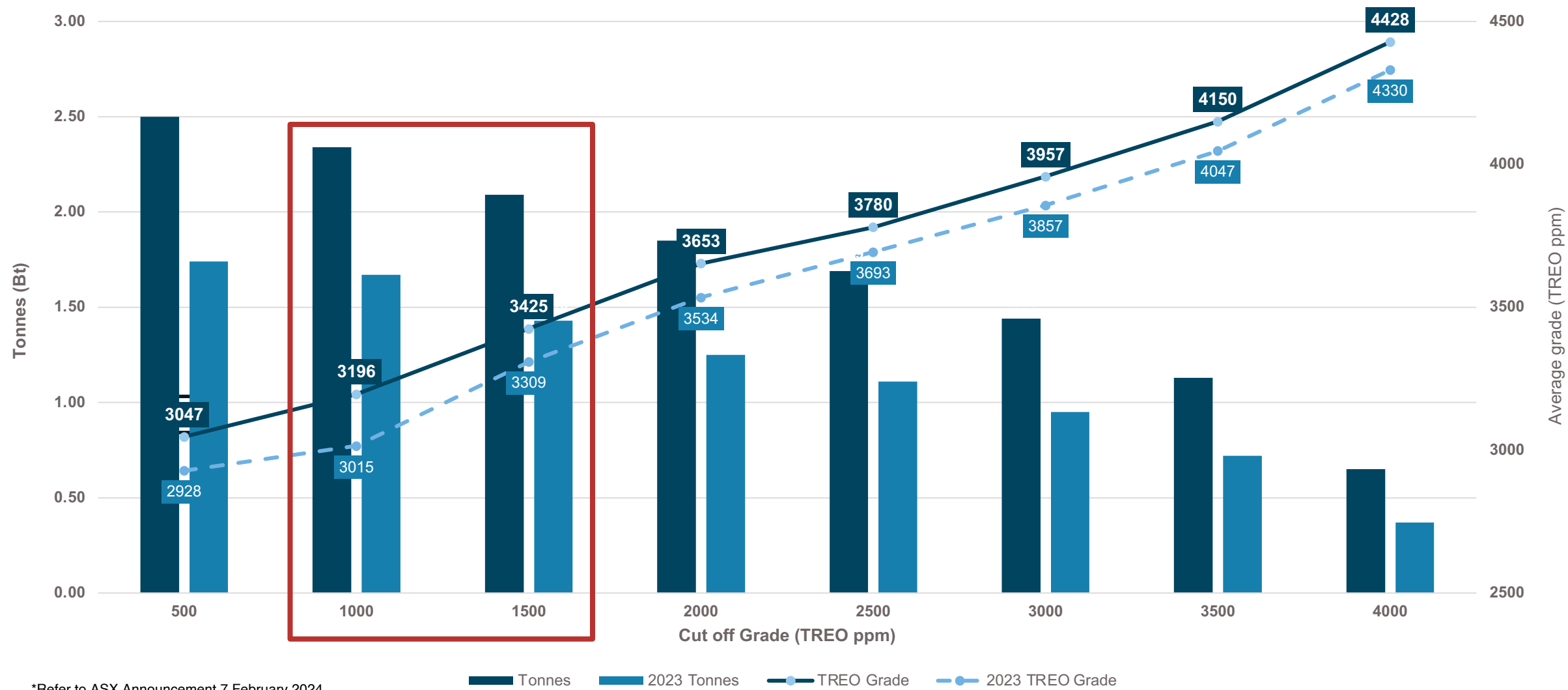
- February 2024 JORC Resource is 2.34 billion tonnes*
- 1.42 billion tonnes of measured and indicated resources were estimated at a grade of 3,296 ppm TREO using a 1,000ppm TREO cut-off*
- Economic and technical evaluation supports cut-off grade at 1,000ppm TREO based on the net-smelter return*
- Successfully preconcentrated TREO at a 12:1 upgrade ratio, representing a ~200% increase from existing flowsheet design using low cost, conventional Dense Medium Separation**
- Deposit remains open at depth and along strike
- In-Situ Resources of 419 million tonnes with a TREO grade of 3,349 ppm exists within ARR controlled Wyoming state mineral leases.
- Close to infrastructure and a highly skilled workforce.
- Potential for remarkable scalability, with 75% of mineralised zones yet to be drilled and deposit remaining open at depth.
- Deposit is from surface with consistent grades throughout making it ideal for large scale, low-cost open pit mining.
- Breakthrough metallurgy and mineralogy results reduce capital and operating costs opening the path to early production.
- Environmentally and socially responsible with low penalty elements.

*Refer to ASX Announcement 7 February 2024 and slide 4 of this presentation

** Refer to ASX Announcement 22 January 2024



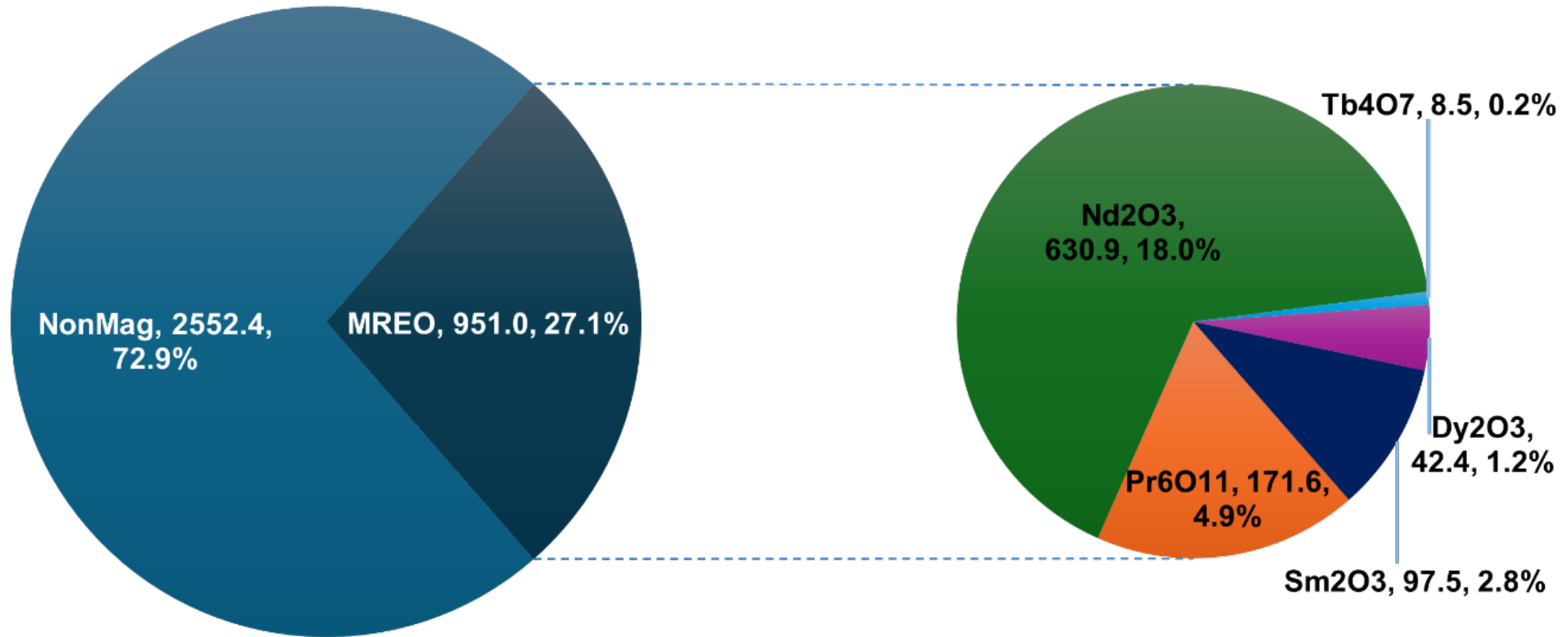
2023 vs 2024 Tonnages and Grades*



*Refer to ASX Announcement 7 February 2024

Rare Earth Distribution

MREO (ppm) Distribution

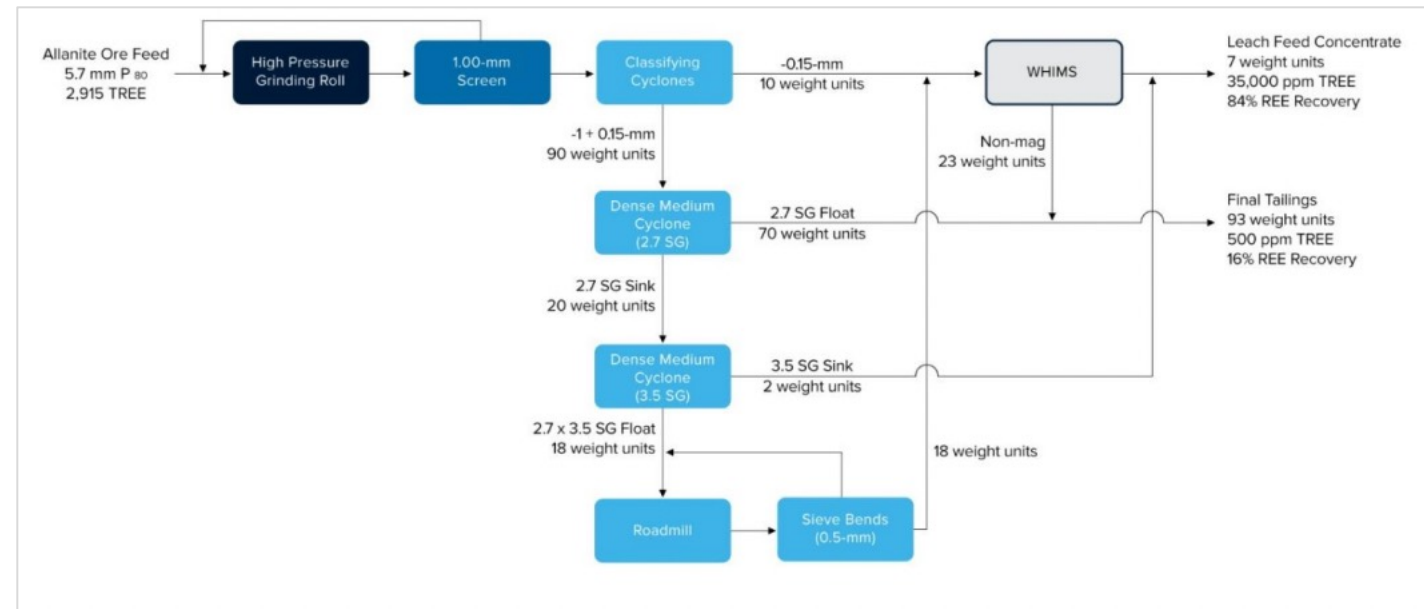


Based on all drilling data to date

Breakthrough Metallurgical Results*

- Halleck Creek ore has been successfully preconcentrated to 3.5% TREO at a 12:1 upgrade ratio, representing a ~200% increase from existing flowsheet design using lowcost, conventional Dense Medium Separation (“DMS”).
- Preconcentrating reduces Wet High Intensity Magnetic Separator (“WHIMS”) needs by 70% from existing design, significantly reducing capital and operating expenditures.
- The feed mass leading into direct leaching was reduced to 7% from 16%, a 56% reduction of material reporting to leach circuits, providing another significant reduction in operating costs.
- The project has been selected to advance to the next phase of study and the company is engaged in discussions around funding and next steps.

The proposed flowsheet modifications emphasising DMS work for concentrating REE’s at Halleck Creek is shown below:



*Refer to ASX Announcement 22 January 2024

1000 ppm Cutoff*

Net-smelter return (NSR) shows an economic cut-off grade of 1000 ppm TREO

- Cut-off grade = expectation of economic extraction at that grade
- Based on recovery of five primary expected products: **Dy, Tb, Nd, Pr, and La**

1000 ppm TREO cut-off grade

<

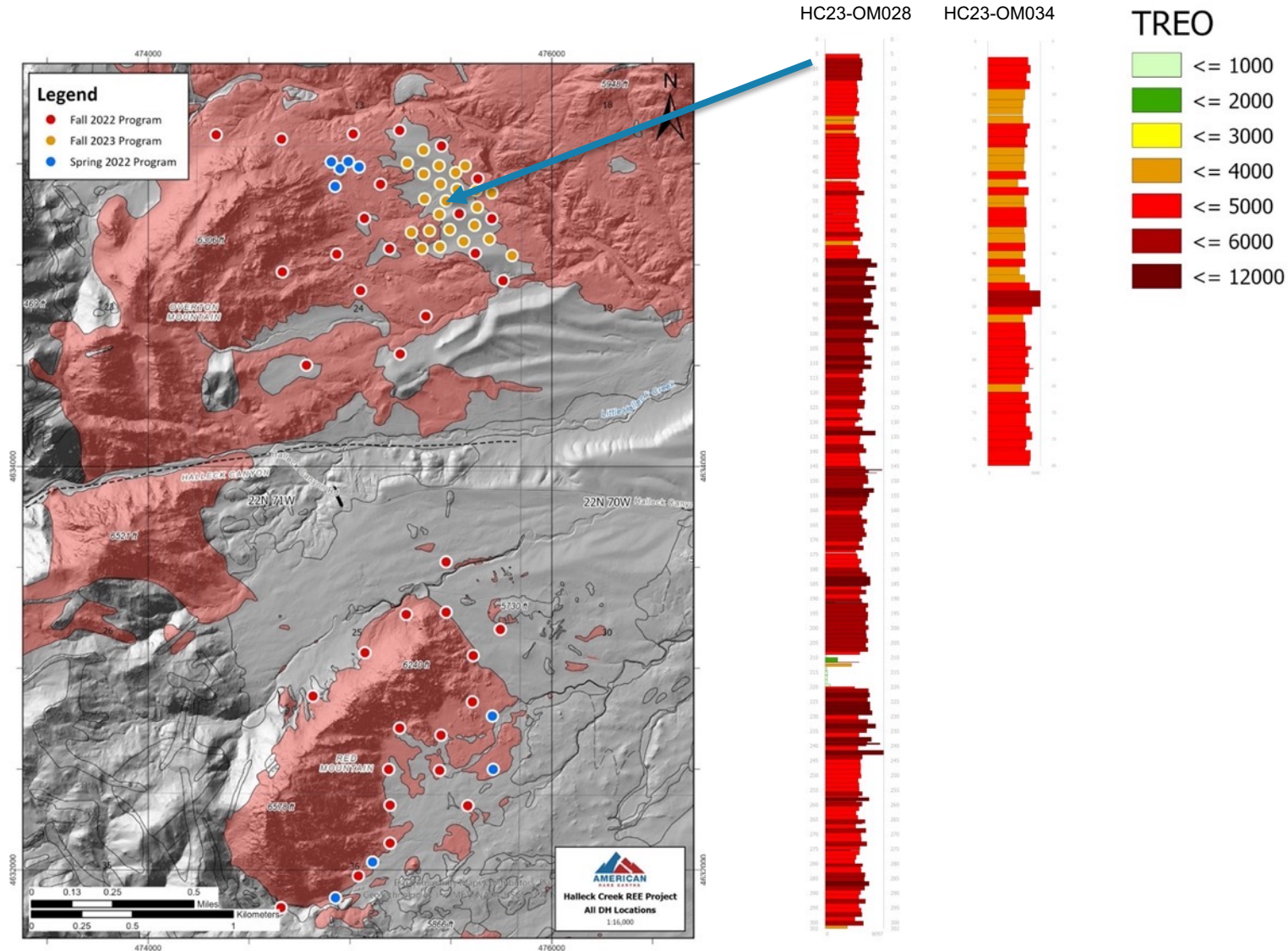
3195 ppm TREO average grade

=

low-cost mining!

*Refer to ASX Announcement 7 February 2024

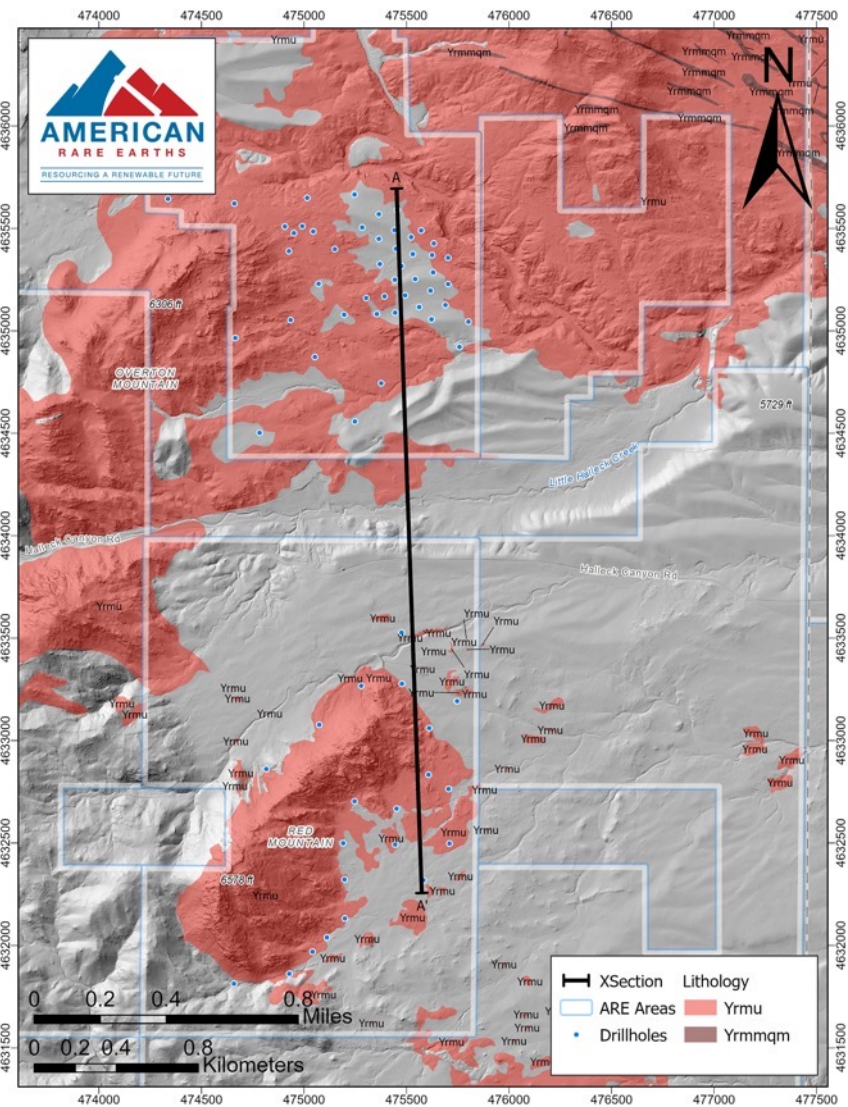
Halleck Creek Potential Resource Extent



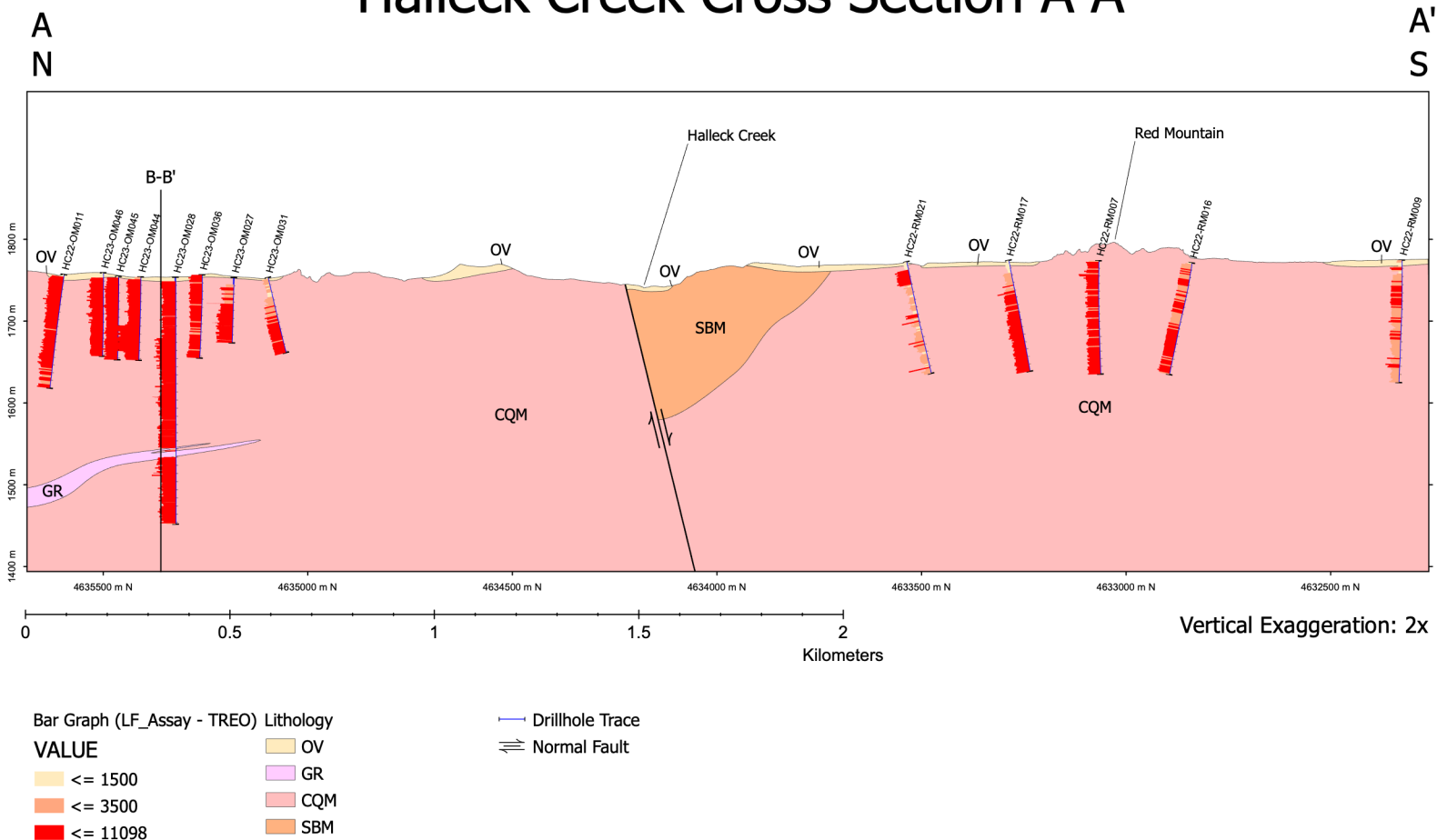
Deepest hole, HC23-OM028

- 302 m
- Average 5088 ppm TREO

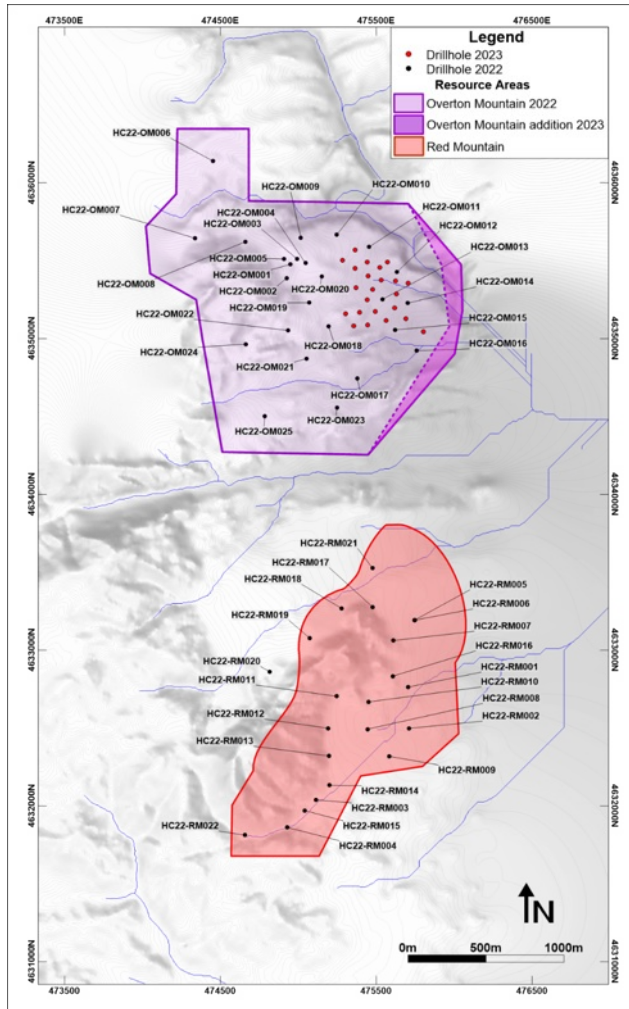
Cross Sections



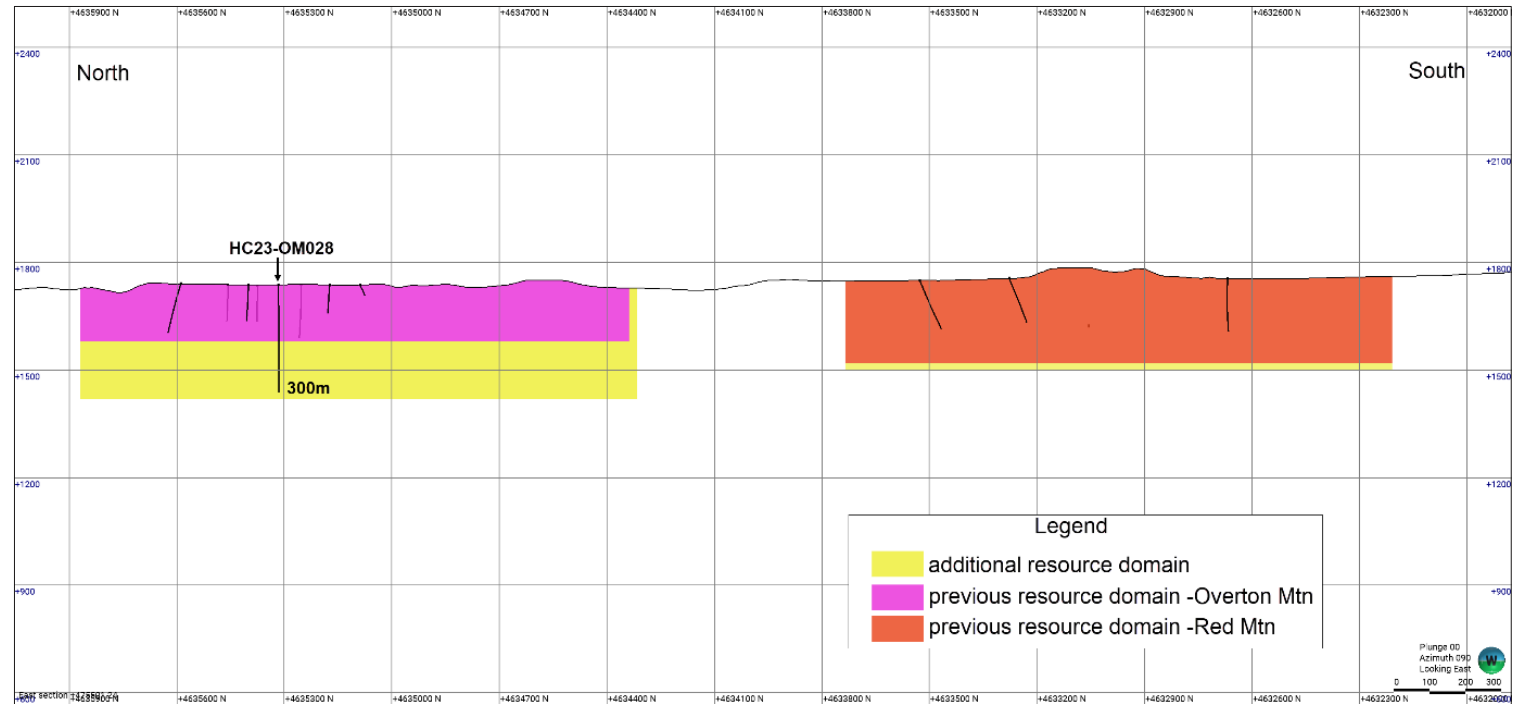
Halleck Creek Cross Section A-A'



Halleck Creek drill holes and model extent

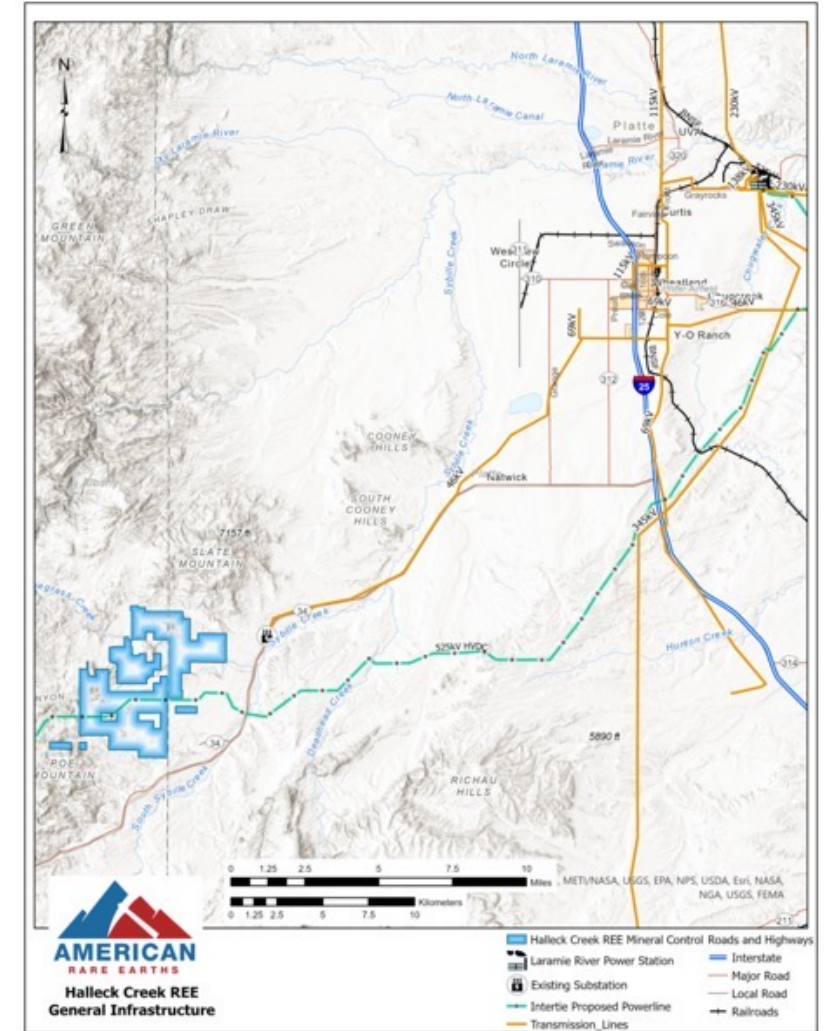


- Only 25% claims have been drilled
- Open along strike and at depth



Infrastructure

- Close to infrastructure, a highly skilled workforce and the University of Wyoming.
- Located in the Central Laramie Mountains, between Laramie and Wheatland.
- Interstate and railroad access via existing state roads.
- Burlington Northern Santa Fe mainline railroad runs through Wheatland.
- Union Pacific railroad runs through Laramie.



Halleck Creek Development Strategy

Three-phased parallel path to permitting

Phase 1:

- Finalise scoping study Q1 2024.
- Pursuing test mine authorisation from the State of Wyoming (Timeframe less than 1 year).
- Test mine and piloting.
- Low-cost path to de-risking project.
- Flowsheet provided in Appendix.

Phase 2:

- Pursue full state permit for expanded area (Timeframe 1-3 years).
- Scaled operations and processing across state and private land.

Phase 3:

- Modular processing design to mitigate forecasted US supply deficit (Timeframe TBD based on project plan).



Expediting permitting, development by pursuing a parallel path to permitting

Investment Overview

- Domestic sourcing of magnet metals have strategic importance for U.S.
- Forecasted deficit for magnet metals.
- Flagship deposit test results indicate:
 - Low-cost, conventional processing
- Scalable development within homogenous rare earth mineralisation
- Expedited permitting pathway
- Low penalty elements
- Strong, experienced management and board
- Established industry partnerships

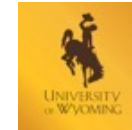
American Rare Earths is in the right place, at the right time,
with the right commodity



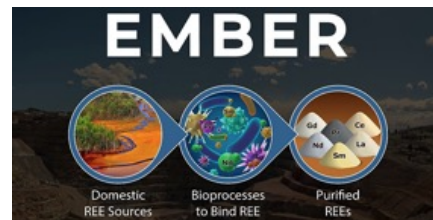
Appendix

An aerial photograph of an industrial site, possibly an oil or gas wellhead, with a blue color overlay. The site features a tall drilling rig, several large storage tanks, and various pieces of equipment. A road or path leads from the bottom left towards the center of the site. The background shows a vast, flat landscape under a clear sky.

Strong Partners



U.S. Department of Energy



U.S. Department of Defense Advanced Research Projects Agency's EMBER program



U.S. Department of Energy Critical Materials Institute (CMI)

About Rare Earths

Of the 17 rare earth elements, we are focused on primary magnet metals (neodymium (Nd) and praseodymium (Pr)), which are both present at our flagship project, Halleck Creek.

Nd

Pr

These elements are essential to:



Advanced
Electronics



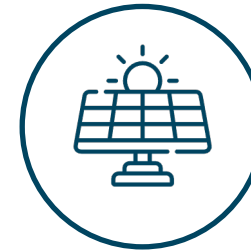
Wind
Turbines



Electric
Vehicles



Electric
Aviation



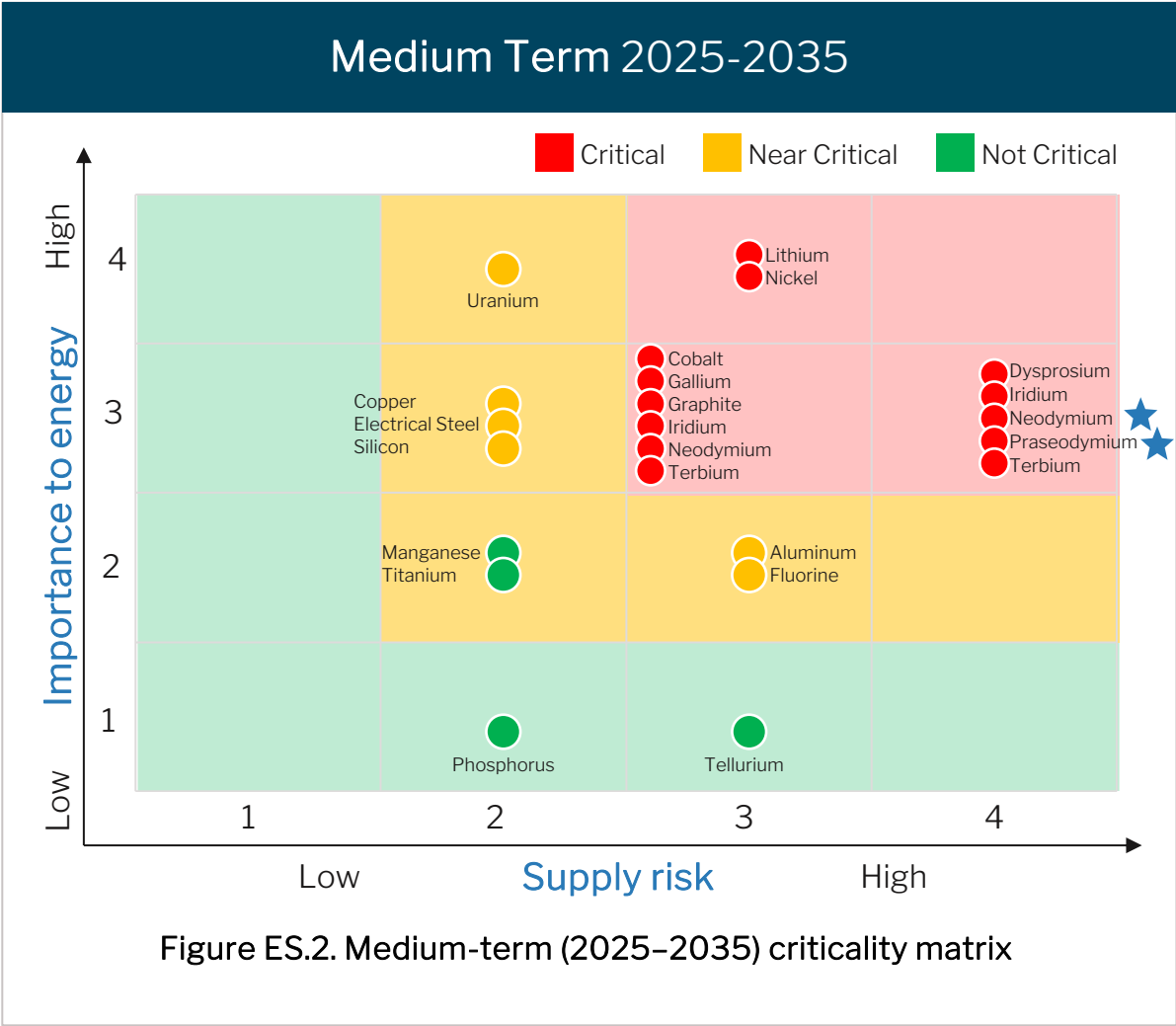
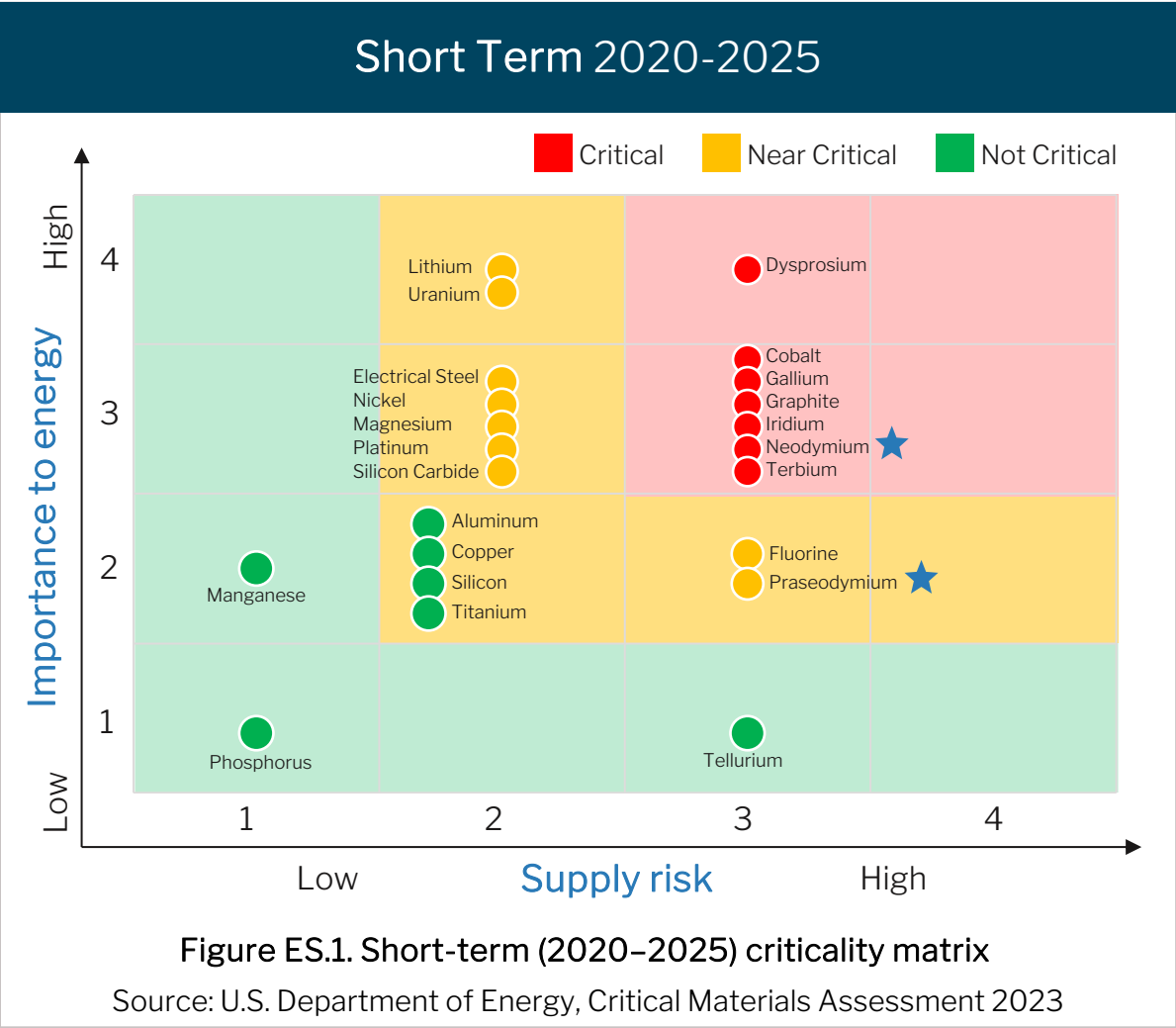
Solar
Panels



Weaponry/
National Defense

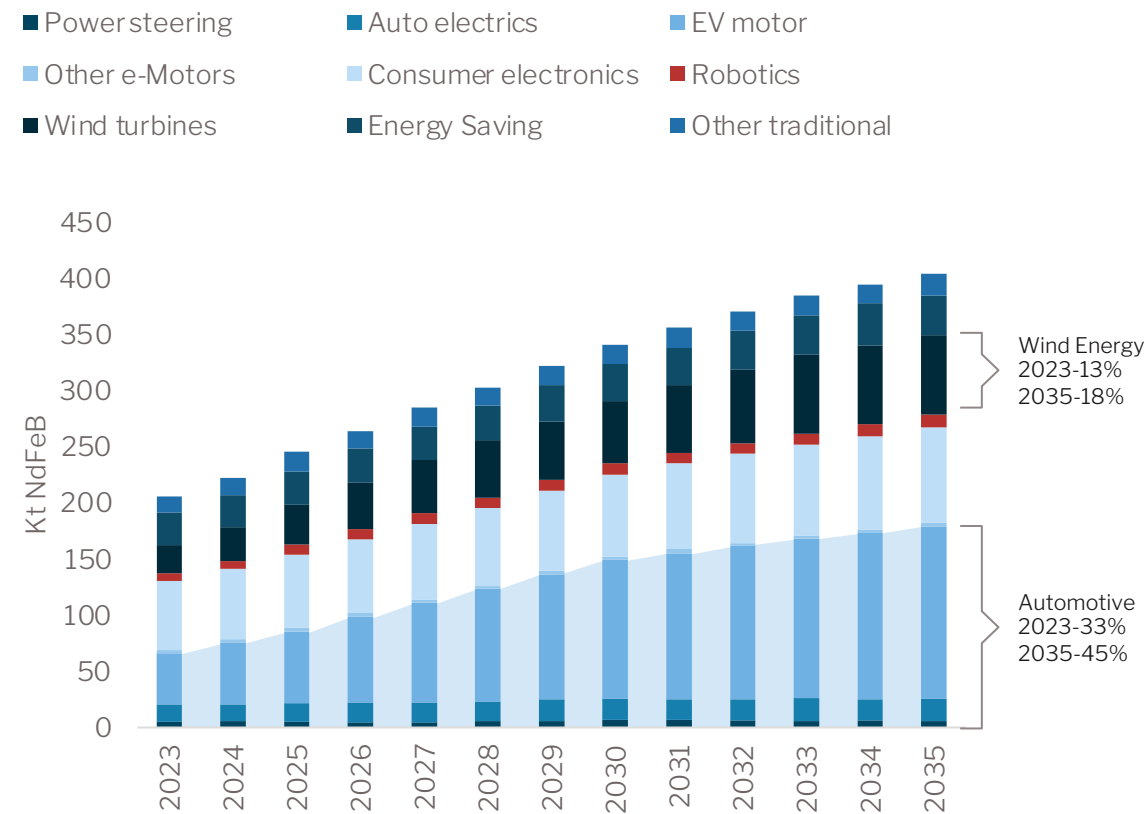
Nd and Pr are critical to national security, the economy, and the environment

Critical to Global Supply Chains

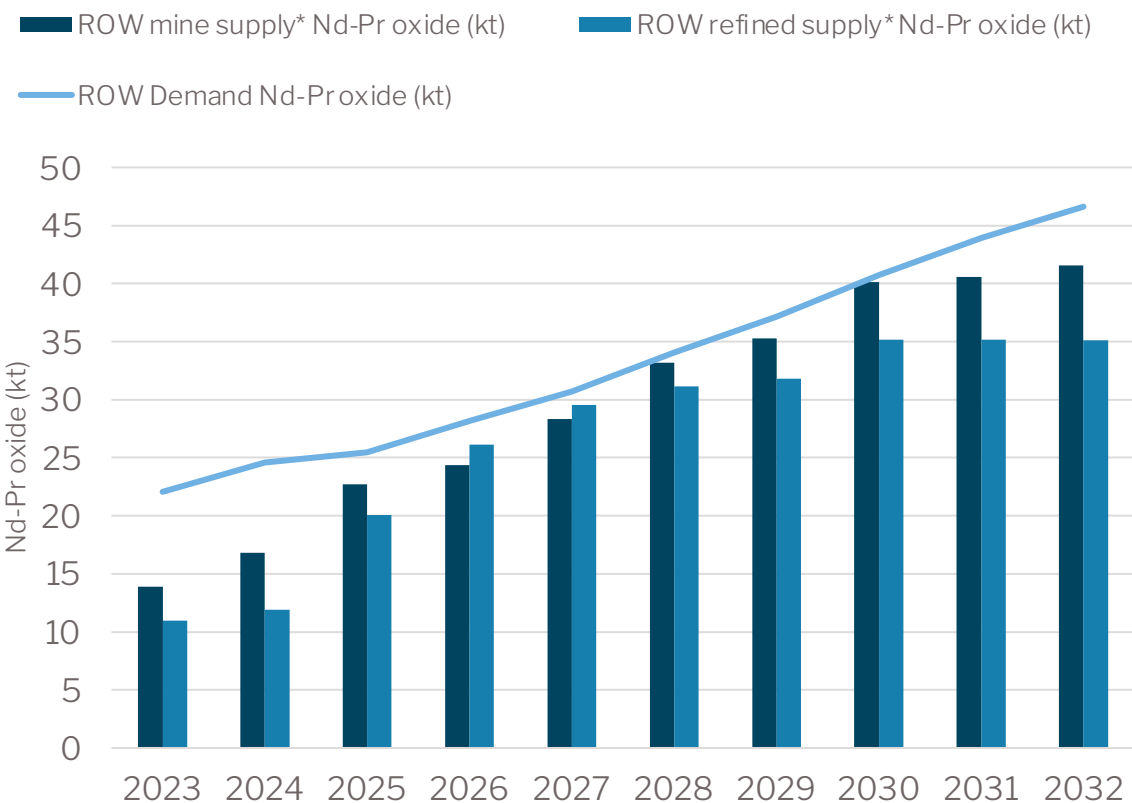


Forecasted Deficit in Magnet Metals NdPr

NdFeB demand by end-use application



ROW* Nd-Pr oxide supply and demand (base case)



Non-Chinese capacity is insufficient to meet increasing demand across end-use applications

Credit: Project Blue presentation "Does a detachment from the Chinese rare earth market threaten the global energy transition?" 19 Oct, 2023.

Environmental, Social and Governance



- Culture of safety driving strong safety record.
- Processing technology does not require Acid Bake/cracking.
- Closed processing system, minimising environmental impact.
- Dry tailings.
- De minimis radioactivity (thorium and uranium).
- Strong female representation in geology team, on board
- Effective and transparent relationships at state, federal and local levels in communities where projects are located
- Integrity in environmental stewardship evidenced by recent exploration bond releases.