



**WESTERN GOLD**  
RESOURCES LIMITED

# EXPLORING FOR A GREENER FUTURE

**GRAPHITE AND RARE EARTH  
ELEMENT PROJECTS IN SWEDEN**

**ASX: WGR**

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The information in this report which relates to Exploration Results is based on information compiled by Dr Warren Thorne, is a member of the Australasian Institute of Mining and Metallurgy (AusIMM) and a full-time employee of the company. Dr Thorne who is an option-holder, has sufficient experience which is relevant to the style of mineralisation 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 Edition of the "Australasian Code for reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves" (JORC Code). Dr Thorne consents to inclusion in the report of the matters based on this information in the form and context in which it appears.

This presentation on the ASX platform has been authorised by the Board of Western Gold Resources Limited (WGR).

**For further information refer to the WGR website [www.westerngoldresources.com.au](http://www.westerngoldresources.com.au) or contact Warren Thorne at [warrent@westerngoldresources.com.au](mailto:warrent@westerngoldresources.com.au)**

# VISION

DEVELOP AND  
SUPPLY GRAPHITE  
AND REE MINERALS  
CRITICAL TO THE  
DECARBONISATION  
OF THE ECONOMY



# CORPORATE OVERVIEW (ASX:WGR)\*



CURRENT



**152.8M**

SOI (incl. capital raise and vendors)



**\$2.1M**

Cash on hand (post completion)



**\$5.3M**

Market capitalisation (@ \$0.035)



**\$3.2M**

Enterprise value



**73%**

Top 20 Shareholders

## POST ACQUISITION

SOI (incl. capital raise and vendors)	152.8M
Cash on hand (post completion)	\$2.1M
Market capitalisation (@ \$0.035)	\$5.3M
Enterprise value	\$3.2M

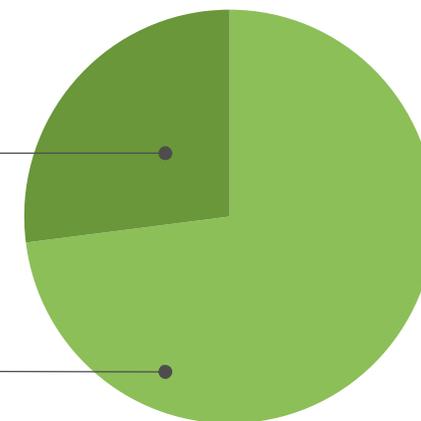
## ASX:WGR SHAREHOLDER SPREAD

**27%**

Outside Top 20 Shareholders

**73%**

Top 20 Shareholders



\*Post acquisition of Euro Metals Pty Ltd (EFM) Excludes 10.0m options issued to directors (\$0.25/1 July 2024) and 3.0m options issued to the IPO JLMs (\$0.25/28 Feb 2024)

# BOARD AND MANAGEMENT TEAM



**GARY LYONS**  
Non-Executive Chairman

Successful and well-respected Director with extensive corporate and ASX experience, especially across the mining sector, including GWR Group (ASX:GWR), Tungsten Mining (ASX:TGN), E-Metals (ASX:EMT) and unlisted Heiniger Group.



**WARREN THORNE**  
Managing Director

Geologist with 22 years of experience across multiple jurisdictions and commodities including gold. Previously with Mineral Resources (ASX:MIN), Rio Tinto (ASX:RIO), Hancock Prospecting, Vale Inco and Gold Road (ASX:GOR).



**PATRICK BURKE**  
Non-Executive Director

Extensive legal and corporate experience across many ASX as well as NASDAQ and AIM companies. Currently a Director of Torque Metals (ASX:TOR), Province Resources (ASX:PRL), Triton Minerals (ASX:TON) and Lycaon Resources (ASX:LYN). Formerly Executive Chair of Meteoric Resources (ASX:MEI) amongst others.



**Teck Siong Wong**  
Non-Executive Director

Experience working in and with steel manufacturing, the iron ore industry and manufacturing. Currently Director of GWR Group (ASX:GWR) and Tungsten Mining (ASX:TGN) and E-Metals (ASX:EMT)

# PROJECT SNAPSHOT

In August 2023 Western Gold Resources entered into a conditional agreement to acquire Euro Future Metals Pty Ltd (EFM)<sup>1</sup>, which holds exploration permit applications over three high grade prospects in world class mining jurisdiction Sweden:

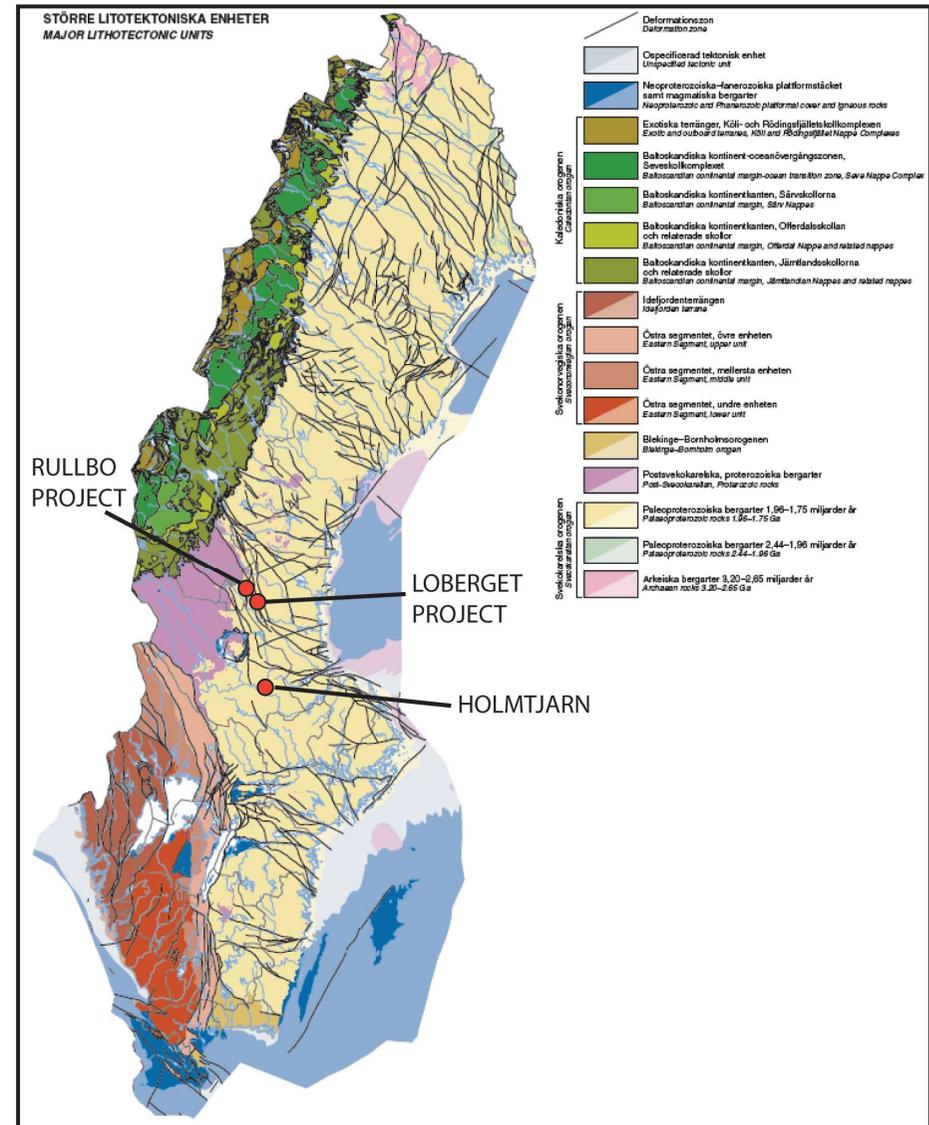
## LOBERGET NR 100 AND RULLBO NR 100 GRAPHITE PROJECTS

The Loberget and Rullbo Graphite Projects are located in the northern Gävleborg County that hosts the Woxna graphite deposit, the only graphite mine in the European Union (EU) and looking to recommence production.

## HOLMTJARN NR 100 REE PROJECT

Hosted within syn- to late orogenic intrusive rocks interpreted to host NYF pegmatites like the famous Stockholm granite and Ytterby pegmatite group, Sweden.

<sup>1</sup> See ASX Announcement 21<sup>st</sup> August, 2023



Lithostratigraphy of Sweden with location of projects shown

# LOBERGET NR 100 GRAPHITE PROJECT

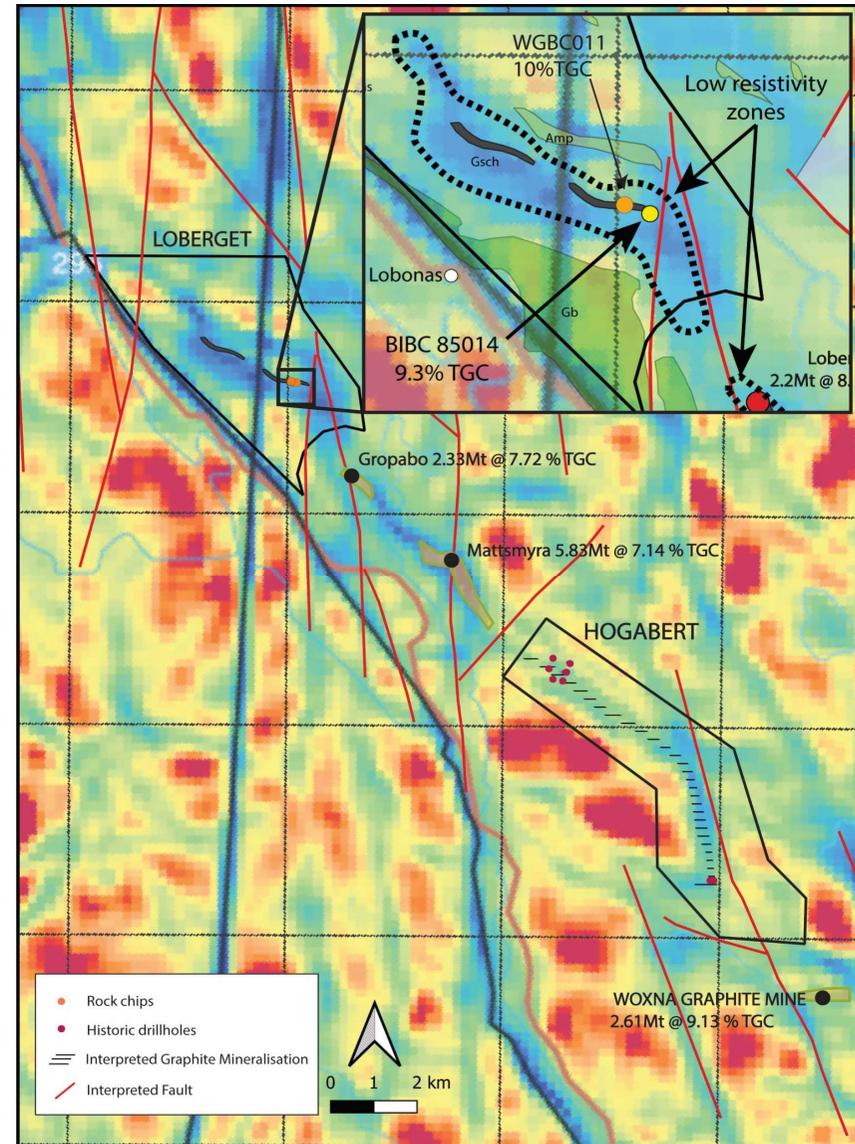
APPLICATION AREA: 15.57km<sup>2</sup>

## HIGHLIGHTS

- Lies adjacent to Leading Edge Materials' (TSXV:LEM) coarse flake Woxna graphite deposit (13.3Mt @ 7.83% TCG for 1040 Kt; 4% C cut-off)
- Two favourable horizons of low resistivity identified that extend to the northwest over a strike length of 4km coincident with rock chip values of 9.3% and 10% TGC<sup>2</sup>
- Significant exploration potential given advances in modern geophysical techniques that can target below the glacial moraine that covers much of the Project area

<sup>2</sup> See ASX Announcement 5<sup>th</sup> October 2023

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Loberget exploration application with exploration targets, rock chip sample locations, targets and geology shown on apparent resistivity

# RULLBO NR 100 GRAPHITE - PROJECT

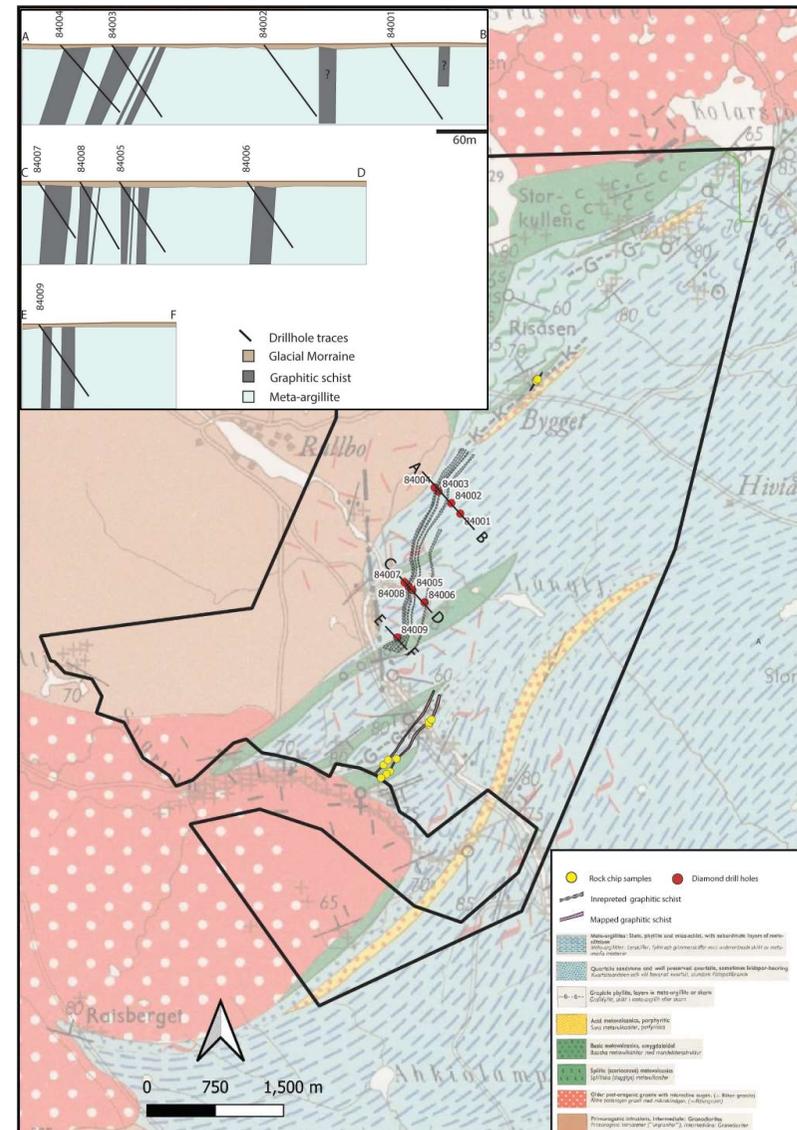
APPLICATION AREA: 35.16km<sup>2</sup>

## HIGHLIGHTS

- Located some 40km southwest of the town of Sveg in the Gävleborg County
- Trenching identified graphite bearing horizons with thicknesses of 5m to more than 40m with visual estimate of graphite content of 5% to 20% TGC<sup>1</sup>
- Mapping and rock chip sampling identified several outcropping graphitic schists that require drill testing<sup>3</sup>

<sup>1</sup> See ASX Announcement 21<sup>st</sup> August 2023

<sup>3</sup> See ASX Announcement 28<sup>th</sup> September 2023



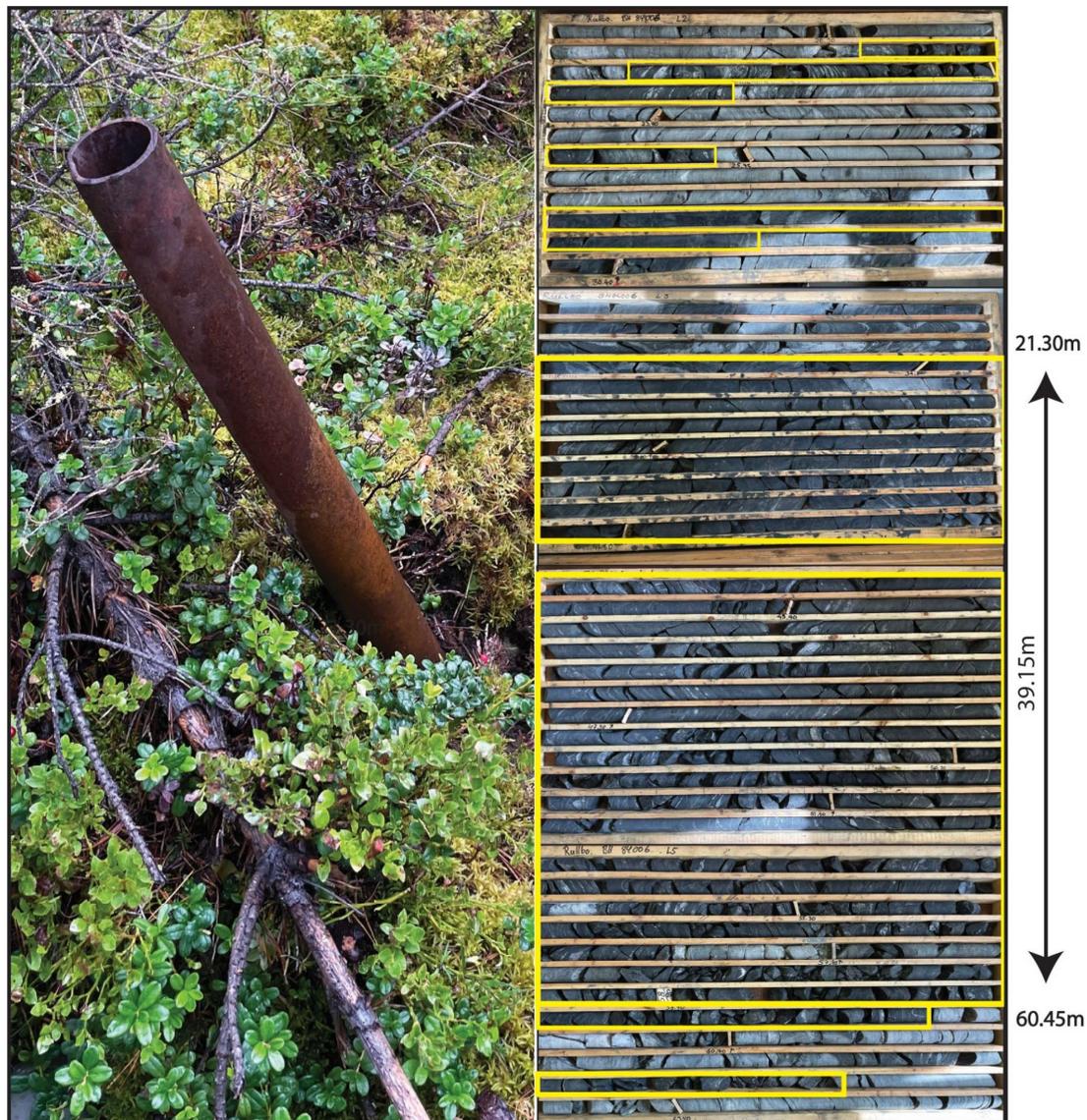
Rullbo exploration application with mapped geology, drillhole locations and structure shown on apparent resistivity. Inset displays cross sections

# RULLBO NR 100 GRAPHITE PROJECT

## HISTORIC DRILLING

- Historic drilling identifies graphite mineralisation up to 120m wide and 1600m long with mineralisation remaining open along strike and at depth<sup>3</sup>.
- Graphite intercepts up to 58m with multiple sub-parallel graphite layers interpreted
- Geophysical reprocessing of previous VLF surveys underway to assist in target generation.
- Metallurgical consultants are being engaged to determine metallurgical test work and front-end engineering program.

<sup>3</sup> See ASX Announcement 28<sup>th</sup> September 2023



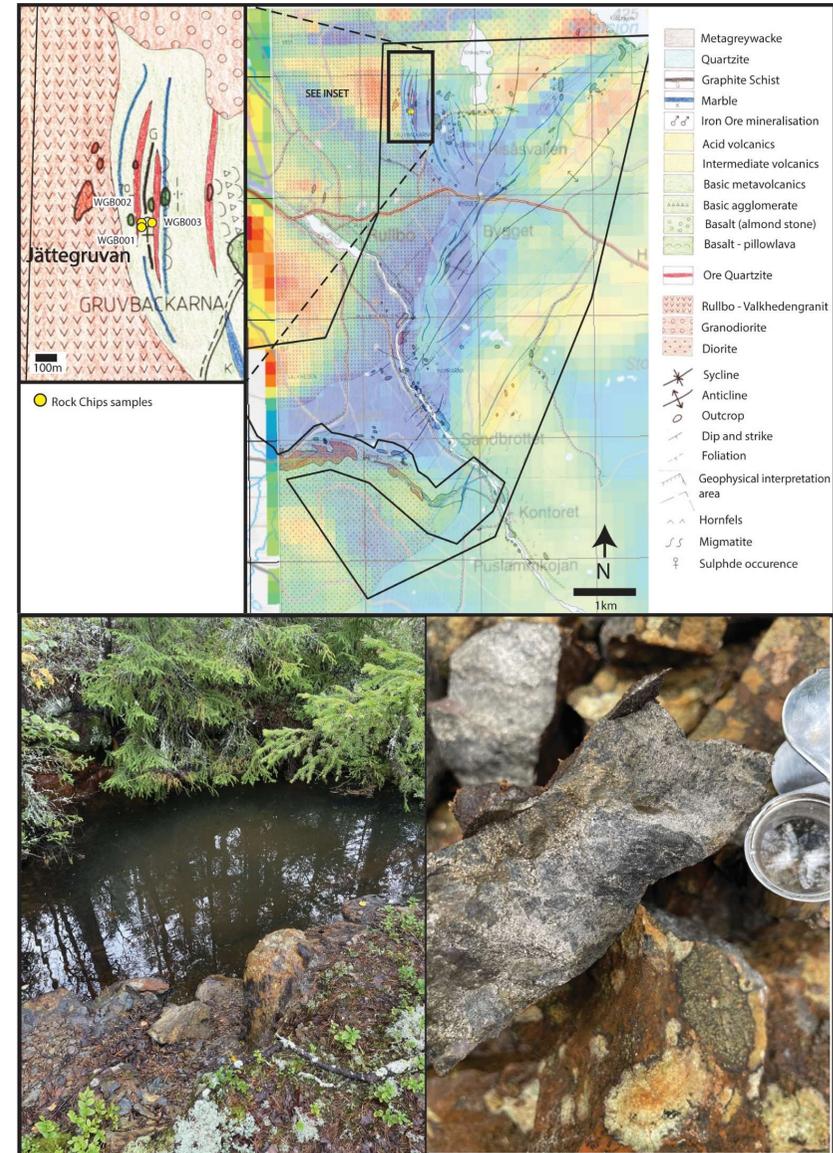
Historic drill collar (84004) and diamond core (84006) displaying mineralised graphitic shale intercepts (in yellow)

# RULLBO NR 100 GRAPHITE PROJECT

## NICKEL PROSPECTIVITY

- Historic Ni-Cu mine Jättegruvan discovered with exceptional rock chips containing up to 20% sulfides<sup>4</sup>.
- Previous geophysical surveys established the presence of a 700m x 100m persistent conductor, coincident with the Jättegruvan Ni-Cu mine.
- According to very early analysis results, the ore has been stated to contain up to 2.37% Ni.
- Geophysical reprocessing of previous VLF surveys underway to assist in target generation.

<sup>4</sup> See ASX Announcement 11<sup>th</sup> September 2023



Rullbo mapped geology (after SGU mapping) with location of rock chip samples shown (top) and Jüttegruven pit and sulphide sample (below)

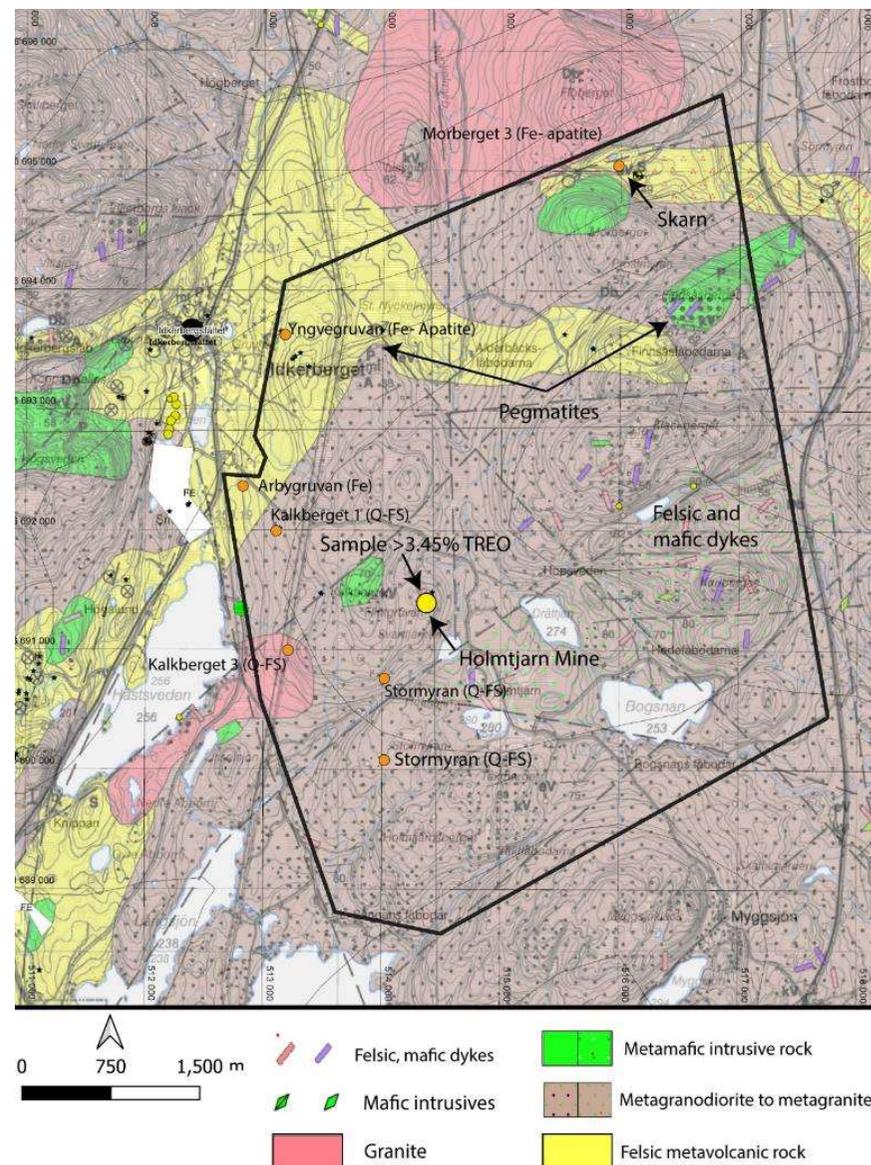
# HOLMTJARN NR 100 REE PROJECT

APPLICATION AREA: 24.43km<sup>2</sup>

## HIGHLIGHTS

- A rock chip sample of greater than 3.45% (34,448 ppm) Total Rare Earth Oxide (TREO) with a ratio of Magnetic Rare Earth Oxide (MREO) to TREO of 25% recorded in historic sampling of pegmatites<sup>1</sup>
- The actual quantity of TREO is unknown because the upper detection limit was exceeded
- Numerous mapped pegmatites have not been tested for REE potential and will be the focus of upcoming exploration
- The ground is highly prospective for NYF (Niobium, Yttrium and REE, Fluorine) pegmatites.

<sup>1</sup>See ASX Announcement 21<sup>st</sup> August, 2023



Holmtjarn exploration application displaying basement geology, rock chip sample locations and prospects

# EXPLORATION TEAM

## GEOLOGICAL TECHNICAL ADVISOR (SWEDEN)

- Mr Hans Isaksson Geological Technical Advisor<sup>5</sup>
- Sweden-based with more than 40 years' experience in minerals exploration and engineering geology programs in the Fennoscandian region
- Specialty in integration and evaluation of large datasets for Mineral Exploration and Engineering Geology.
- Member of Society for Geology Applied to Mineral Deposits (SGA), Swedish Society for Mining and Metallurgical Engineers (SBF) and Geological Society of Sweden (GFF)

<sup>5</sup>See ASX Announcement 28<sup>th</sup> August 2023



# EXPLORATION TEAM

## GEOLOGICAL CONSULTANTS (SWEDEN)

- Sweden's most reputable and highly experienced geological consultants, Geovista AB appointed to provide in-country geological consulting, exploration management and Technical reporting<sup>5</sup>
- Independent consultancy with strong mineral exploration, mine development and engineering geology capabilities.
- Will oversee upcoming exploration program across three high-grade REE and Graphite projects:
  - Holmtjärn nr 100 REE Project
  - Loberget nr 100 Graphite Project
  - Rullbo nr 100 Graphite Project

<sup>5</sup>See ASX Announcement 28<sup>th</sup> August 2023



# NEXT STEPS

## EXPLORATION PLANNING

- Systematic geochemical sampling of known mineral occurrences within the tenement in conjunction with reconnaissance geological mapping
- Purchasing geophysical surveys and reprocessing to help define prospective regions
- Relogging and assaying of historical core from Rullbo to determine graphite content
- Metallurgical consultants engaged to determine metallurgical test work and front-end engineering program



**“WE FORECAST BATTERY SECTOR DEMAND FOR RAW MATERIAL GRAPHITE TO RISE BY MORE THAN 1,400% BETWEEN 2020 AND 2050. BY THE END OF THE FORECAST PERIOD, TOTAL GRAPHITE DEMAND COULD BE THREE TIMES THE 2021 SUPPLY LEVEL.”**

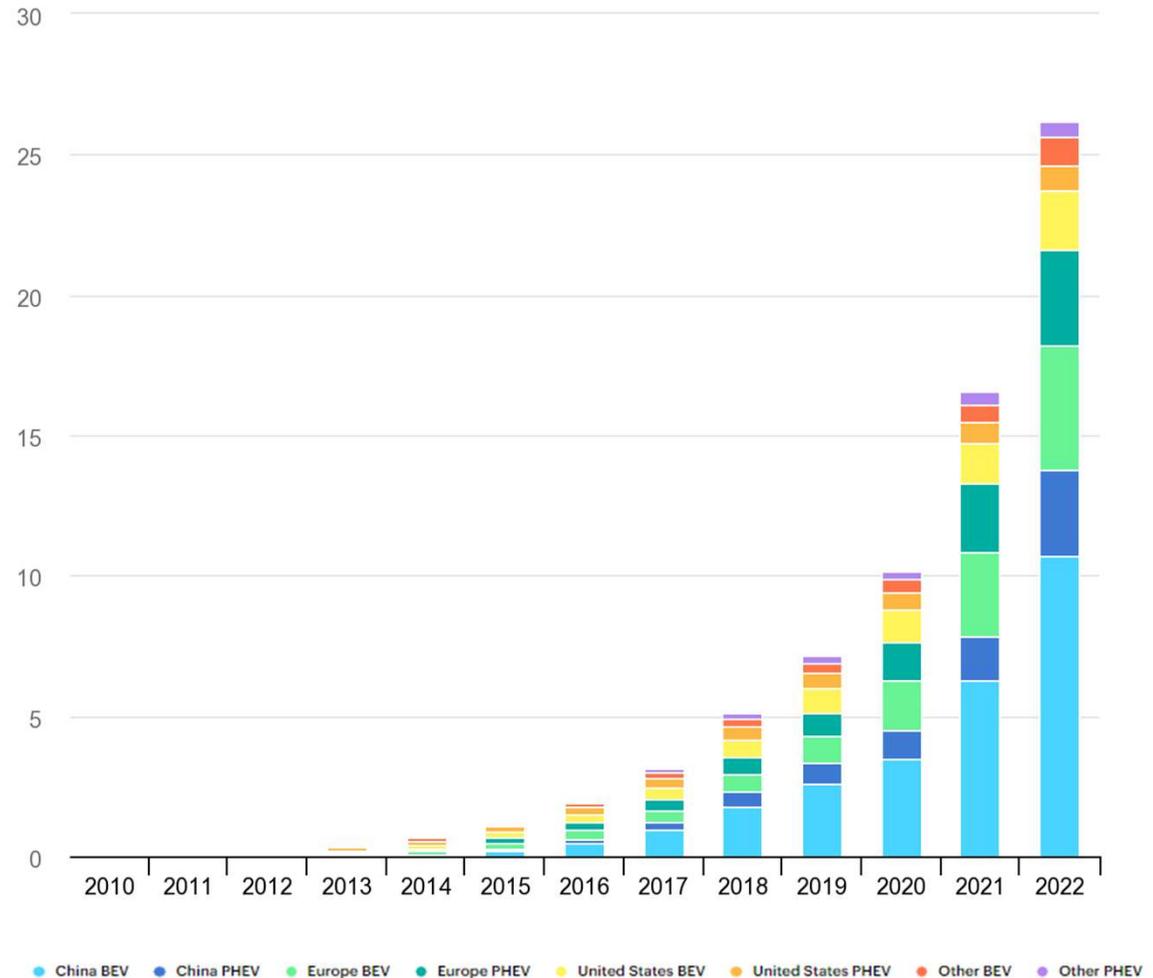
***WOOD MACKENZIE GRAPHITE MARKET 2021 OUTLOOK TO 2050***

# EVs TRANSFORMING MARKET DEMAND

## APPETITE CONTINUES TO GROW

### THE FACTS

- Electric car sales – including battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) – exceeded 10 million last year, up 55% relative to 2021<sup>1</sup>
- From 2017 to 2022, global EV sales jumped from around 1 million to more than 10 million
- Over 26 million electric cars were on the road in 2022, up 60% relative to 2021 and more than 5 times the stock in 2018
- EVs expected to be 35% of all vehicle sales in 10 years, marking a 13-fold increase



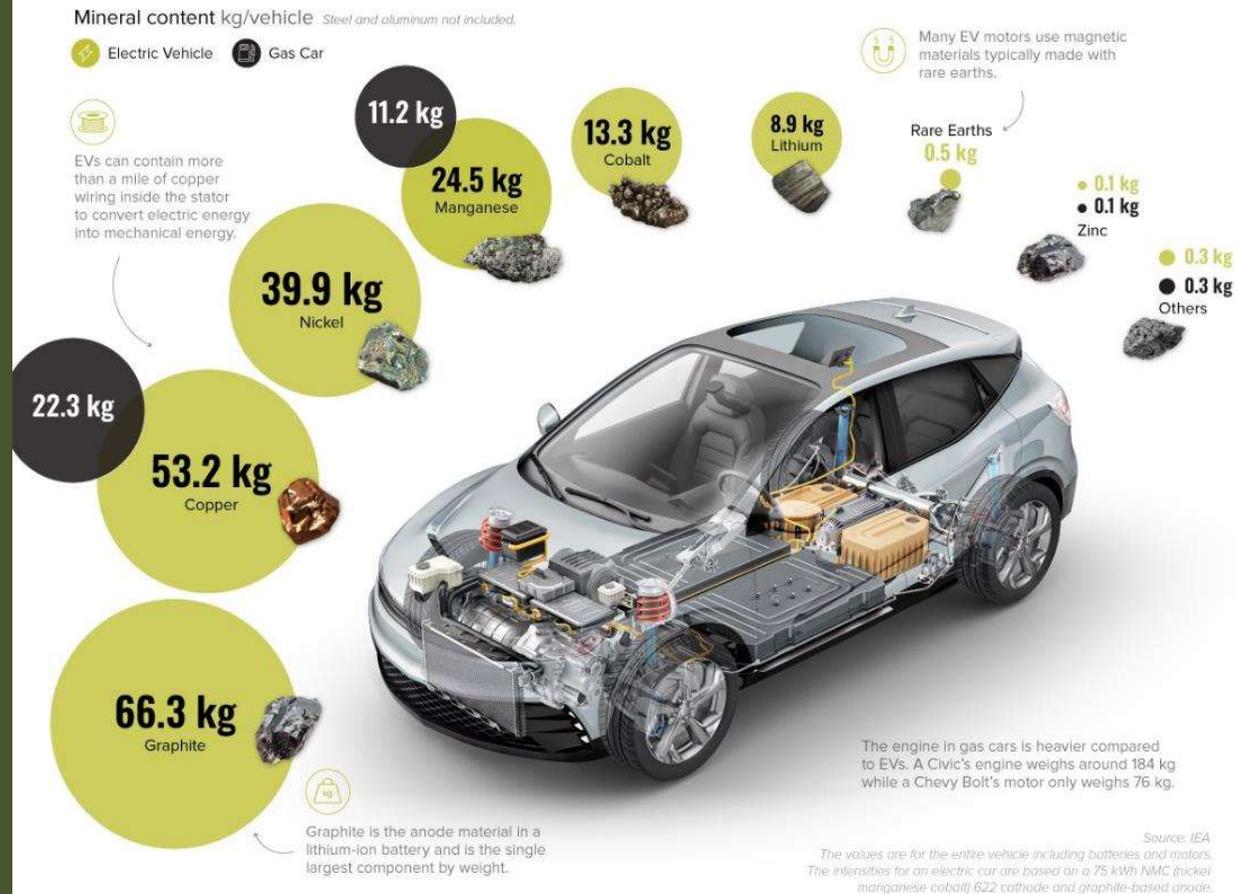
<sup>1</sup>International Energy Agency – Global EV Outlook 2023

# GRAPHITE DOMINATES THE LITHIUM-ION BATTERY ANODE

## AN ESSENTIAL INGREDIENT

### NO GRAPHITE = NO BATTERIES

- Graphite makes up 95% of the anode in a lithium-ion battery
- 10 x more graphite than lithium contained in Li-ion batteries
- 90% of the world's anode production coming from China<sup>1</sup>



<sup>1</sup>International Energy Agency – Global EV Outlook 2023

# A CRITICAL MINERAL SUPPLY SHORTAGE

## DEMAND DOUBLING

### SUPPLY NEEDED

- Graphite shortages are expected to rise in coming years, creating a global supply deficit of 777,000 tonnes by 2030
- US\$12 billion of investment is needed by 2030 in graphite and 97 new mines required by 2035 to meet demand (Do )
- Agreements between car and battery producers with graphite producers common.
- Developing a resilient graphite supply chain is crucial to the EU and US, both of which have declared graphite a critical mineral

## ANNUAL SUPPLY VS DEMAND



**“RARE EARTH ELEMENTS MAY SEE THREE TO SEVEN  
TIMES HIGHER DEMAND IN 2040 THAN TODAY.”**

***IEA (2021), THE ROLE OF CRITICAL MINERALS IN CLEAN  
ENERGY TRANSITIONS, IEA, PARIS***

# REE DEMAND AND SUPPORT



## SIGNIFICANT GOVERNMENT SUPPORT FOR RARE EARTHS



**INFLATION REDUCTION ACT**  
US\$400bn directed to funding clean energy, including securing rare earth supply chains



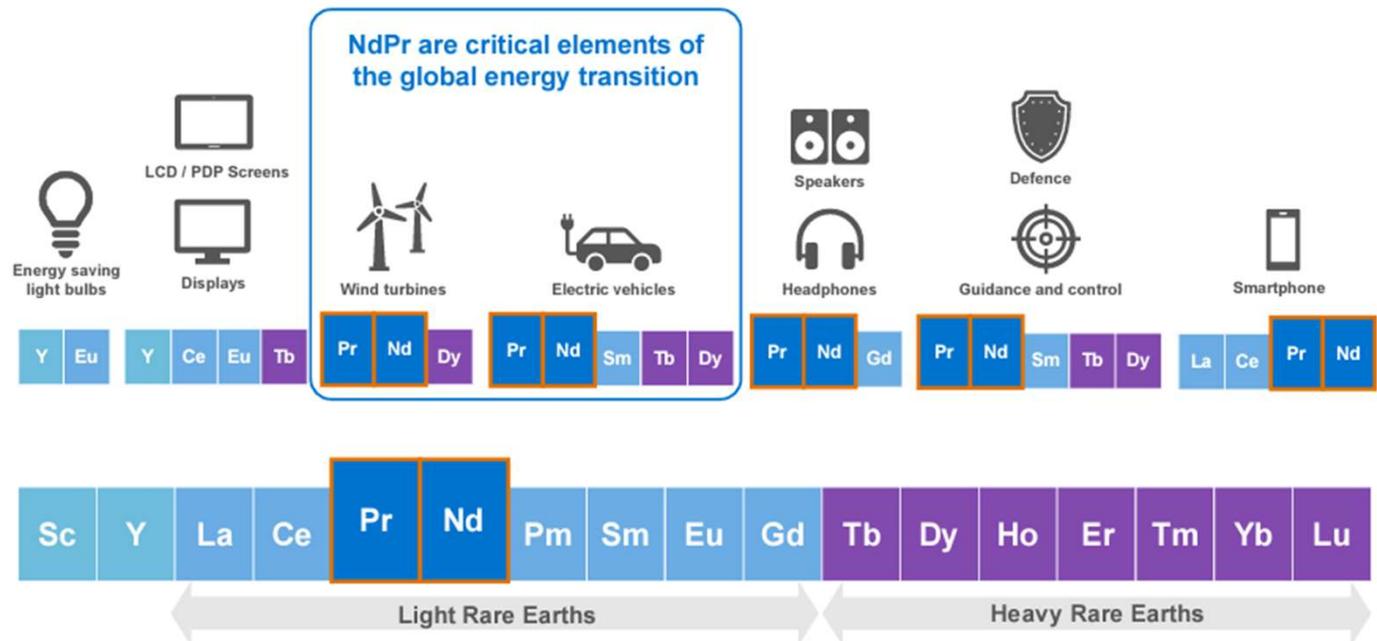
**CRITICAL RAW MATERIALS ACT**  
Building resilience of supply chains for critical minerals, including rare earths, to enable EU to meet 2030 objectives



**CRITICAL MINERALS STRATEGY**  
A national framework to grow Australia's critical minerals sector and the ability to process minerals domestically



**NATIONAL SECURITY STRATEGY**  
Rare earths included in strategy to reduce Japan's dependence on countries to secure stable supply for critical goods



<sup>1</sup>Outlook for Selected Critical Minerals Australia 2021, Department of Industry, Science, Energy and Resources

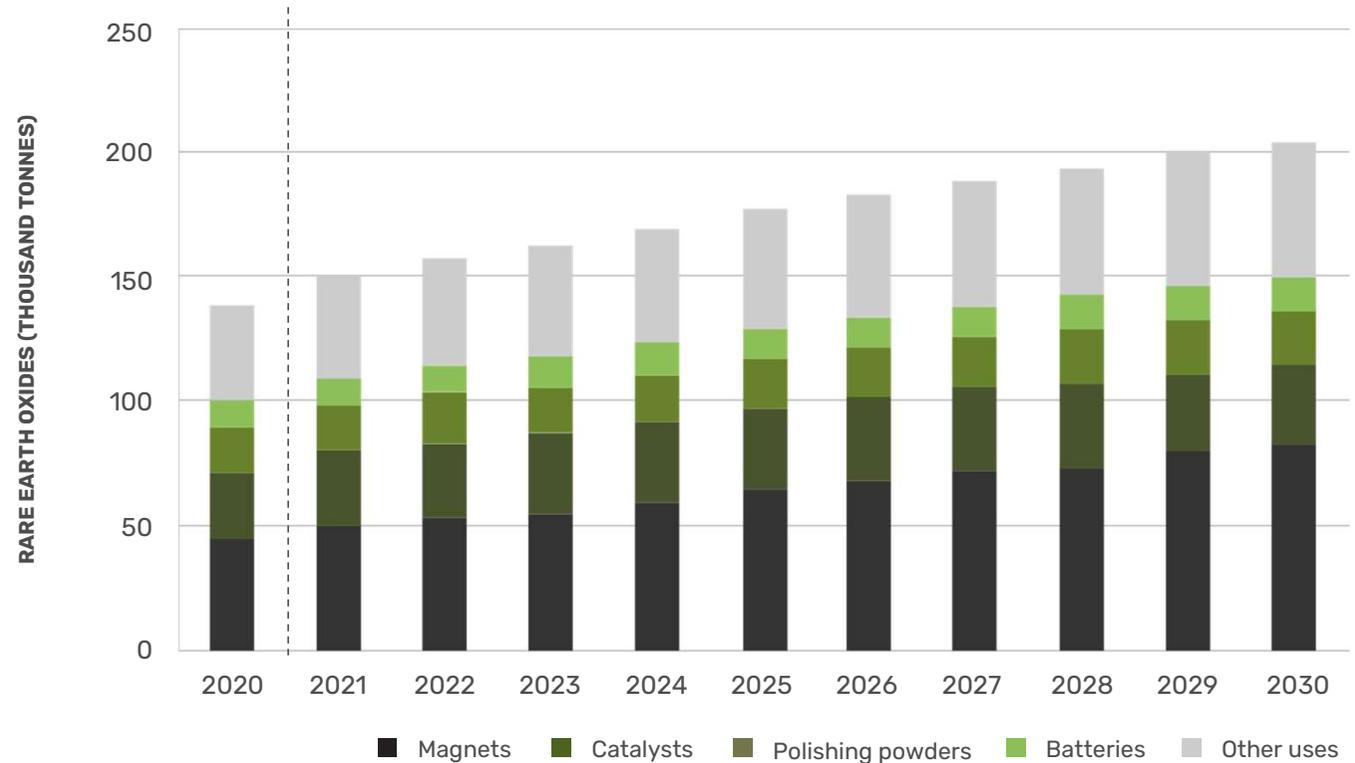
Roskill (2021), Department of Industry, Science, Energy and Resources (2021)

# REE DEMAND AND SUPPORT



## A MAGNETIC ATTRACTION

- Rare earth permanent magnets are the largest use of rare earths by value<sup>1</sup>
- Permanent magnets are made up of Neodymium (Nd) and Praseodymium (Pr), Dysprosium (Dy) and Terbium (Tb)
- Global demand for rare earth permanent magnets will increase at a compound annual growth rate of 8.6% from 2022 to 2035
- EVs expected to make up more than 60% of vehicles globally by 2030 and will drive market demand for permanent magnets



<sup>1</sup>Outlook for Selected Critical Minerals Australia 2021, Department of Industry, Science, Energy and Resources

Roskill (2021), Department of Industry, Science, Energy and Resources (2021)



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# GENERAL ENQUIRIES

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