BEOWULF MINING plc

European Critical Raw Materials for the Green Transition

June 2024

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Developing a portfolio of critical minerals

Delivering European minerals for a sustainable future

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Portfolio of European critical minerals

- Listed on AIM (UK) and Spotlight (Sweden)
- Focused on delivering shareholder returns

Jokkmokk Iron

26 Fe Iron 55.8

Iron ore for Green Steel

- High-grade, low-impurity concentrate
- Growing demand in Europe (and globally)

GRAFINTEC

6 C Carbon 12.0

Graphite anode material for Li-ion batteries

- Developing Graphite Anode Materials Plant
- One of Europe's largest flake graphite resources

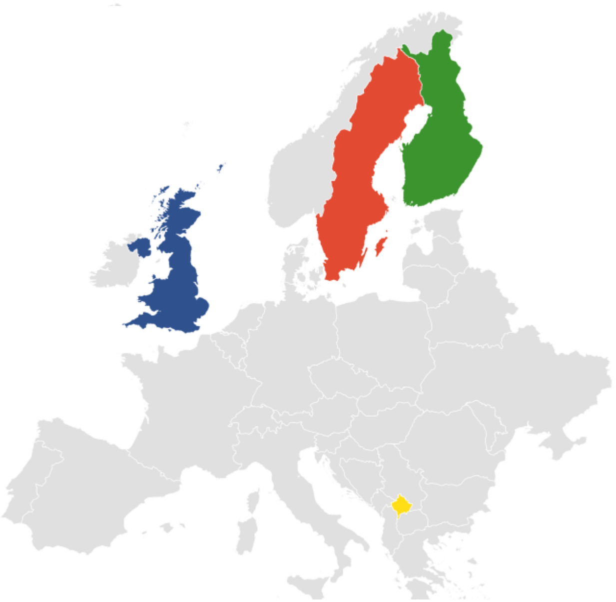
VARDAR MINERALS

29 Cu Copper 63.5 | 30 Zn Zinc 65.4 | 3 Li Lithium 6.9 | 47 Ag Silver 107.9

27 Co Cobalt 58.9 | 28 Ni Nickel 58.7 | 79 Au Gold 197.0

Portfolio of European exploration assets

- Focus on base and precious metals
- Targeting discovery of critical minerals



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Supply chain security

Political initiatives

EU Critical Raw Materials Act to secure EU supply:

- >10% extracted from EU
- >40% processed within EU
- >25% from recycling
- <65% from a single country

US Inflation Reduction Act (IRA) to support clean-energy industries and supply chains:

~US$370 billion in spending and tax credits

UK Critical Minerals Strategy

Canada's Critical Minerals Strategy

Australia–India Critical Minerals Cooperation Agreement

US–Japan Critical Minerals Agreement on battery minerals (lithium, nickel, cobalt, graphite and manganese):

- to help Japanese automakers and critical minerals processors access the benefits of the 2022 US Inflation Reduction Act.

The Indian Ministry of Mines JV company, Khanij Bidesh India Ltd. (KABIL) to ensure the supply of critical minerals:

- actively seeking offtake agreements and has already signed with Argentina and Australia

Minerals Security Partnership (MSP)

- led by the US Department of State, to stimulate government and private-sector investment
- Partner governments include Australia, Canada, Finland, France, Germany, Japan, South Korea, Sweden, the UK, the US and the EU.

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Supply chain security

Driving investment in critical minerals

Porsche
Supply agreement from 2026
H2 green steel
October 2023

Volvo
Supply agreement from 2026
H2 green steel
September 2023

Stellantis
€9.2m investment for 11.5% and 40% offtake for 5 years
Alliance Nickel Ltd
April 2023

Mercedes-Benz
10ktpa of lithium hydroxide for 5 years' worth ~€1.5b
RockTech Lithium
October 2022

Tesla
75kt nickel concentrate over 6 years
Talon Metals Corp
January 2022

Volkswagen
US$2.9b battery JV
umicore
October 2023

Mercedes-Benz
JV on battery recycling plant
Neometals
August 2023

general motors
US$650m investment
Lithium Americas
January 2023

Stellantis
€50m investment for 8%
Vulcan Energy Zero Carbon Lithium™
June 2022

Renault Group
6-17ktpa of lithium offtake
Vulcan Energy Zero Carbon Lithium™
August 2021

Stellantis
US$155m investment for 14.2%
McEwen Copper
October 2023

Scania
Supply agreement from 2027
H2 green steel
June 2023

Stellantis
US$30m and 45ktpa manganese sulphate offtake for 5 years
Element 25
January 2023

Renault Group
5ktpa of cobalt sulphate for 7 years
Managem
June 2022

Renault Group
Nickel sulphate supply for 200,000EVs or 15GWh pa
Terrafame
October 2021

Scandinavia benefits from cheap, clean energy

Driving both Green Steel and Gigafactory investment

Steel industry

- 7% of global CO2 emissions (5% in EU)
- €130b annual revenues in Europe
- Employs 306,000 people in Europe

Green Steel – reduces emissions by ~95%

H2 green steel	€1.5b equity in Sept 2023 €3.5b of conditional debt commitments Located in Boden, 170km from Kallak
BLASTR Green Steel	Targeting €4b plant in Finland Plan to build pellet plant in Norway
HYBRIT FOSSIL-FREE STEEL	JV between LKAB, SSAB and Vattenfall Targeting production by 2030

Giga factories

- 40 plants for €30b planned in Europe
- 69GWh in 2022
  - 238-286GWh in 2025
    - 413-616GWh in 2027
      - 773-1,395GWh in 2030

northvolt	€17.3b capital raised €27b in contracts secured (€14b Volkswagen)
FREYR	Initial plant at Mo i Rana, Norway Further plant considered in US and Vaasa, Finland
MORROW	Initial plant at Arendal, Norway in 2024 Targeting 43GWh by 2028
VOLVO	Planned site with Northvolt in Gothenburg

Building blocks for a sustainable future

ESG embedded throughout the company

Sustainability approach driven by:

- Transparency and Accountability
- Stakeholder Engagement
- Environmental Stewardship
- Corporate Governance
- Innovation and Technology

Beowulf plans to:

- Build a sustainable minerals business
- Adopt innovation and technology
- Target carbon neutrality
- Support the green transition
- Generate value for all stakeholders

Note: The Company is contributing towards the above UN Sustainable Development Goals. Further information on the UN SDGs can be found here: https://sdgs.un.org/goals

The Company has also adopted the following Disclosure Topics listed by the Sustainability Accounting Standards Board for the Metals and Mining sector (https://www.sasb.org/standards/) as material to the Company's stakeholders: Energy Management; Water Management; Biodiversity Impacts; Security, Human Rights & Rights of Indigenous Peoples; Community Relations; and Business Ethics & Transparency

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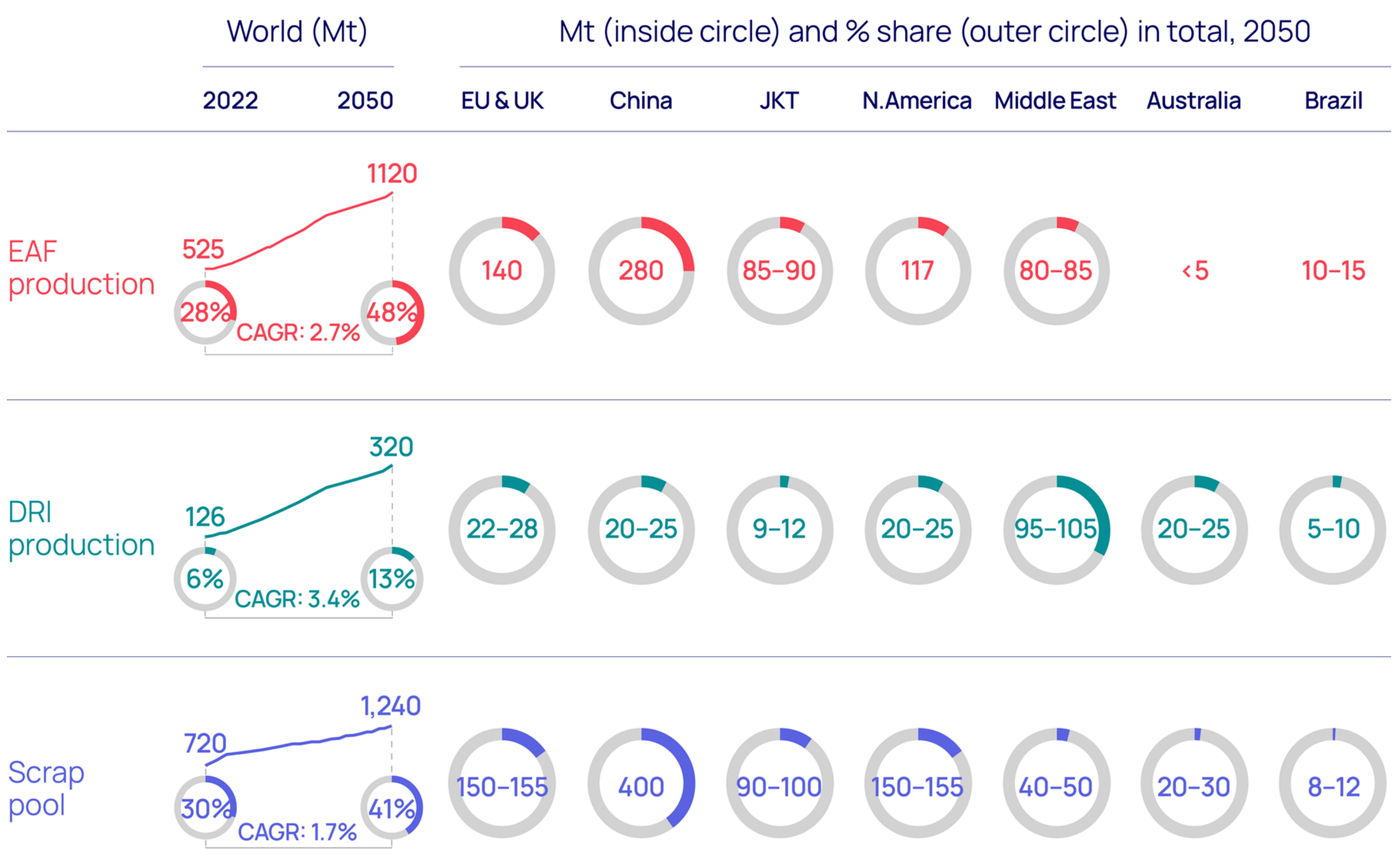
Jokkmokk Iron
114.30
5. 115.50

High-grade iron ore: demand forecast to grow

Decarbonisation of steel to drive demand of low carbon feedstocks, primarily DRI

- Decarbonisation is transforming the supply and trade of iron and steel
- Electric Arc Furnaces (EAFs) are replacing highly polluting Blast Furnaces (BFs)
- Low-carbon feedstocks, primarily DRI, will be essential to support EAF capacity.
- DRI produced with green hydrogen offers a real route to delivering low-carbon steel
- New hubs will develop in countries with abundant low-cost renewables energy and competitive green hydrogen capacity

Share of DRI and scrap in total metallics demand (2022 and 2050)

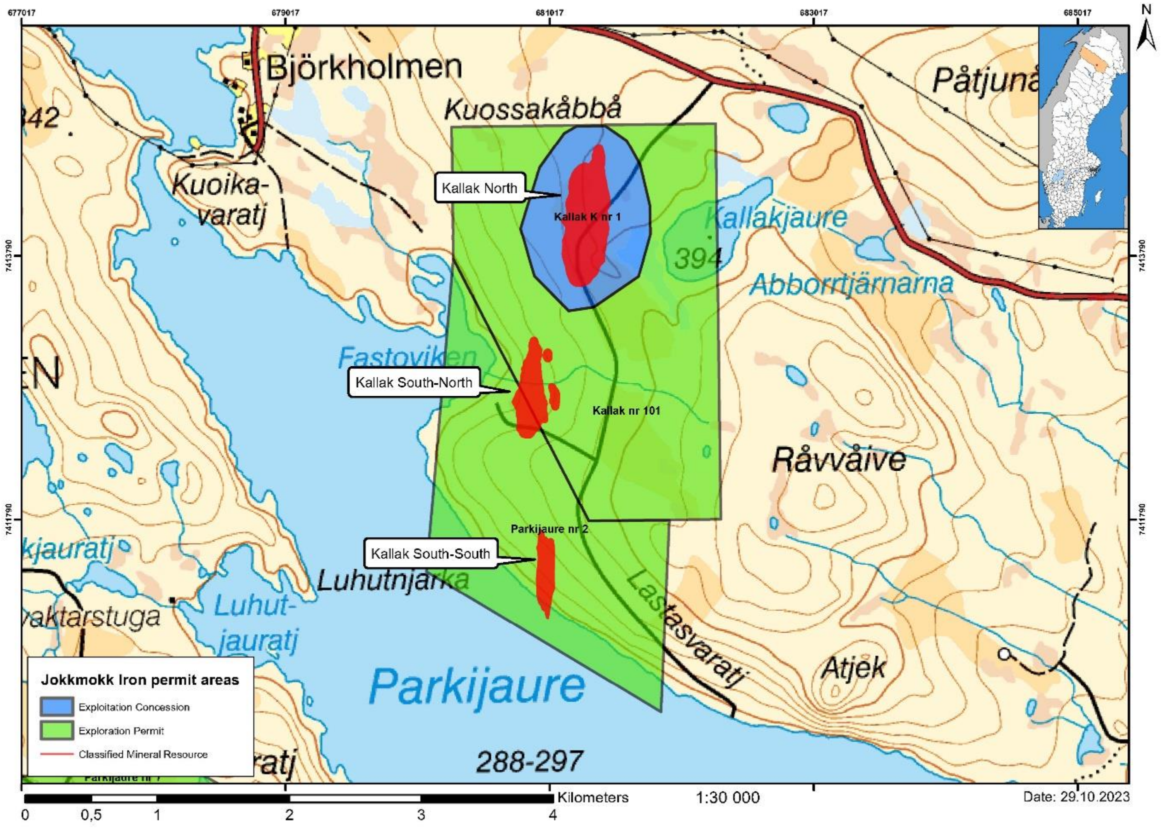


Source: Wood Mackenzie

Kallak: high-grade, low-impurity iron ore

Critical product to decarbonise the steel industry

- Potential to produce unique high-grade concentrate
- Strong demand from domestic and international markets
- Well located for infrastructure: rail ~40km; range of port options
- Access to low-cost, clean energy
- Exploitation concession received and scoping study completed
- Further exploration upside



Kallak North Mineral Resource Estimate:

Classification Category	Tonnes (Mt)	Fe_{total} %	FeO %	SiO_2 %	Al_2O_3 %	P %	S%
Measured	16	33.6	10.5	43.4	2.9	0.04	0.002
Indicated	95	27	7.1	49.8	4.5	0.03	0.002
Meas+Ind	**111**	**28.0**	**7.6**	**48.9**	**4.3**	**0.03**	**0.002**
Inferred	25	28.3	7.8	48.1	4.2	0.04	0.002

**Accompanying notes:*

(1) Mineral Resources which are not Mineral Reserves have no demonstrated economic viability
(2) The effective date of the Mineral Resource is 09 May 2021 (reported under PERC 2017).
(3) The Open Pit Mineral Resource statement was constrained within lithological and grade-based solids and within an optimised pit shell defined by the following assumptions; base case metal price of USD130 / tonne for a 65% Fe concentrate; Fe recovery of 71% at Kallak North; Fe concentrate grades of 68% at Kallak North; Processing costs of USD6.8 / t wet; Selling cost of USD21.0 / t wet concentrate; Mining cost of mineralised material of USD3.3 / t, mining cost of waste of USD3.0 / t and an incremental mining cost per 10 m bench of USD0.05 / t; Wall angles of 30° within the overburden and 47.5° in the fresh rock.
(4) Mineral Resources have been classified according to the PERC Standards 2017, by Howard Baker (FAusIMM(CP)), an independent Competent Person as defined in the PERC Standard 2017.

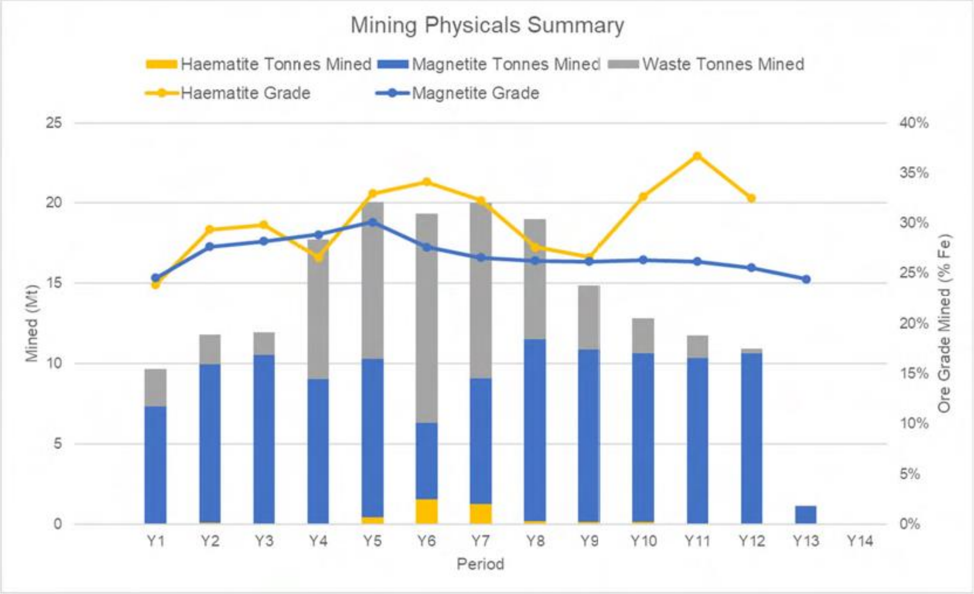
Jokkmokk Iron

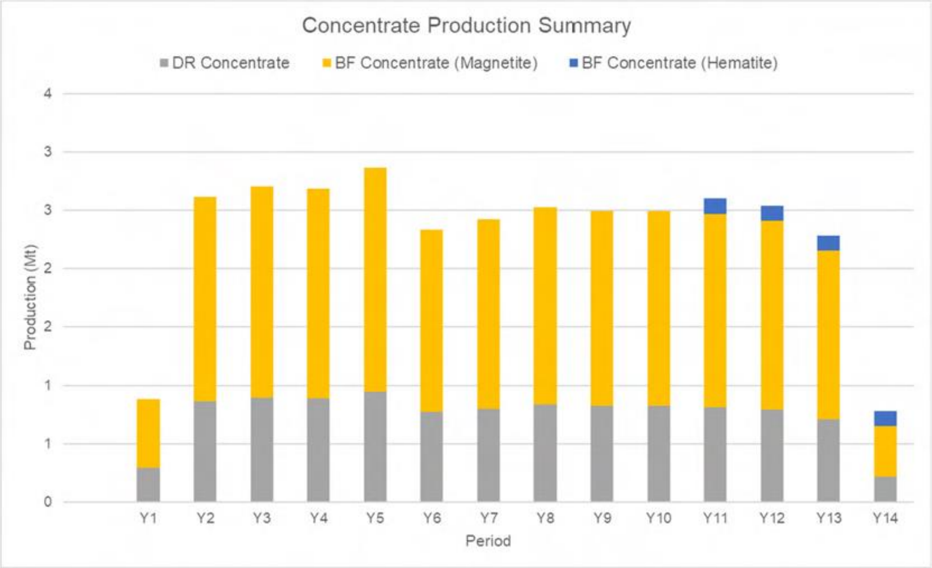
Kallak North Iron Ore Project

Project parameters

Scoping Study completed on Kallak North Deposit:

- Open pit mine
- Mining ~9Mtpa of ore
- Producing ~2.5Mtpa of high-grade, low-impurity concentrate
- Initial 14 year mine-life





Physical Parameters	
Mining rate (Mtpa)	14
Total Ore Mined (Mt)	114
Strip Ratio (waste/ore)	0.5
Processing throughput (Mtpa)	9
Total concentrate produced (Mt)	32
Concentrate production (Mtpa)	2.5
Average concentrate grade (Fe %)	69%

Economic parameters	
Initial Capital (US$m)	386
Contingency - 20% (US$m)	77
Sustaining Capital (US$m)	138
Mining costs (US$/t mined)	2.85
Processing costs (US$/t processed)	6.30
Transport & Logistics (US$/t processed)	7.07
Other (US$/t processed)	1.03
Total Operating Costs (US$/t processed)	18.79

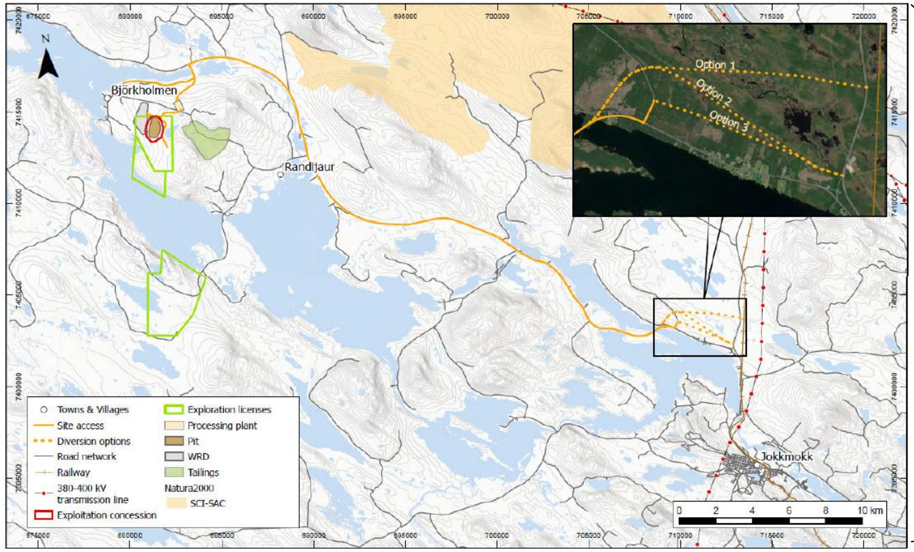
Source: Kallak North Scoping Study, January 2023

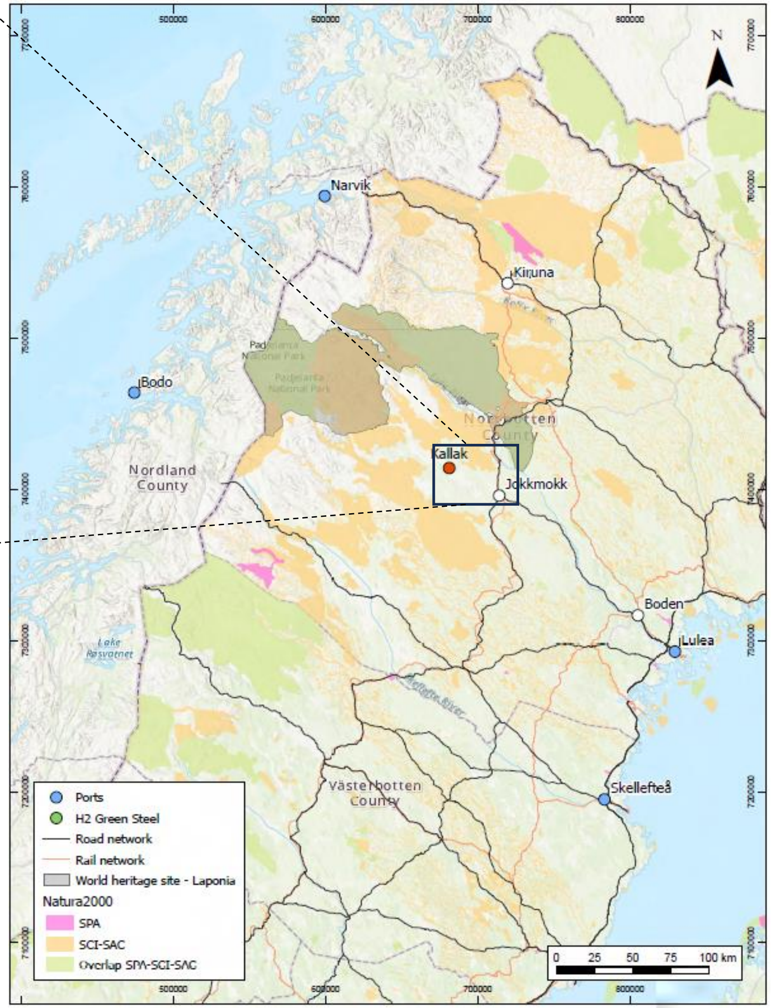
Infrastructure & Logistics

Well located for infrastructure

Well located to access:

- Low-cost, clean energy
- Road and rail
- Multiple port options
- Domestic consumers





Distances (km):

	Road	Road to Jokkmokk and then Rail
Inlandsbanan	46	
Lulea	205	349
Pitea	221	364
Skellefteå	298	458
Narvik	419	402
Boden	169	309

Jokkmokk Iron

Current workstreams

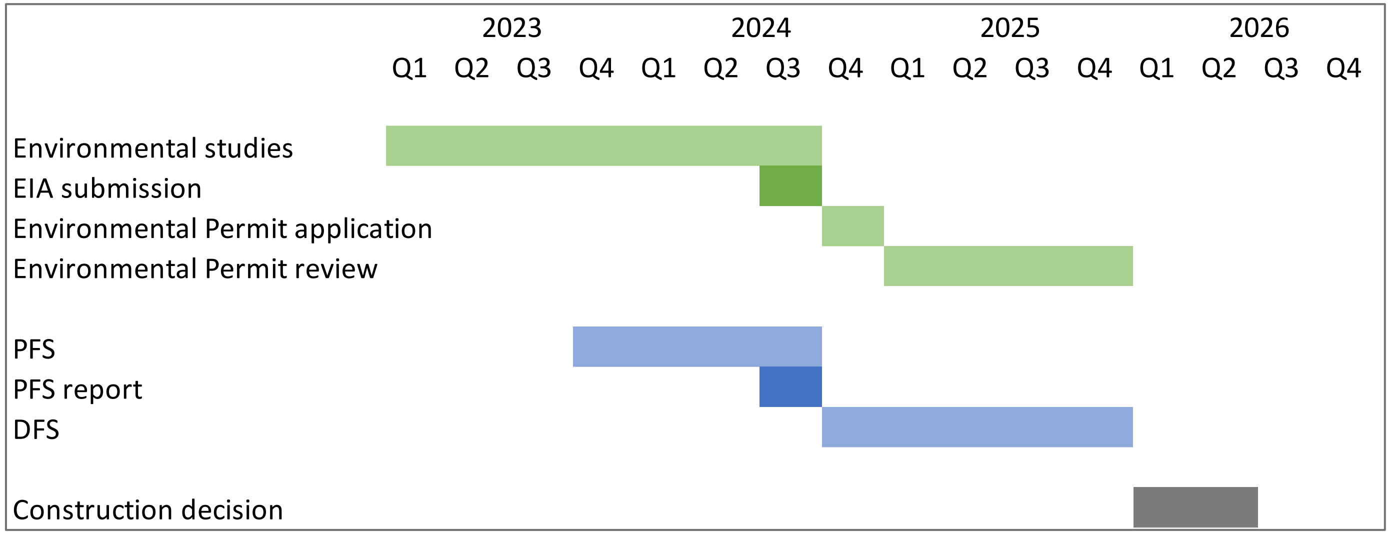
Focus on developing a world class mine

Environmental:

- Completing Environmental Impact Assessment (EIA)
- Nature values including biodiversity, flora and fauna
- Sound and vibration monitoring
- Hydrology studies
- Cultural heritage survey
- Ongoing stakeholder engagement

Technical:

- Initiated Pre-Feasibility Study (SLR Consulting Ltd)
- Metallurgical testwork underway



Jokkmokk Iron

Kallak advantage

Targeting a premium product

Premium product:

- Critical for decarbonising steel industry
- Highly sought after for domestic and international markets
- Enhanced economics
- Focus on developing a sustainable world class mine
- Further upside potential from Kallak South deposits

Scoping study base case parameters			Upside potential[3]
NPV at 8%:	US$177m	→	**US$895m**
IRR:	14.5%	→	**33.1%**
Payback period:	4.5 years	→	**2.8 Years**
Concentrate split:	67% BF[1], 33% DR[1]		67% BF, 33% DR
BF price:	US$109/dmt[2]		US$165/dmt
DR price:	US$125/dmt[2]		US$181/dmt

Notes:

1. *BF - Blast Furnace feed and DR - Direct Reduction feed*
2. *Scoping Study pricing assumptions assume premia archived over Platts 62% Fe benchmark price of US$80/dry metric tonne ("dmt")*
3. *Management Case assumes the same premia achieved as with Scoping Study but uses the 3-year average price to January 2024 of the NYMEX Iron Ore 62% Fe benchmark of US$135.59/t.*

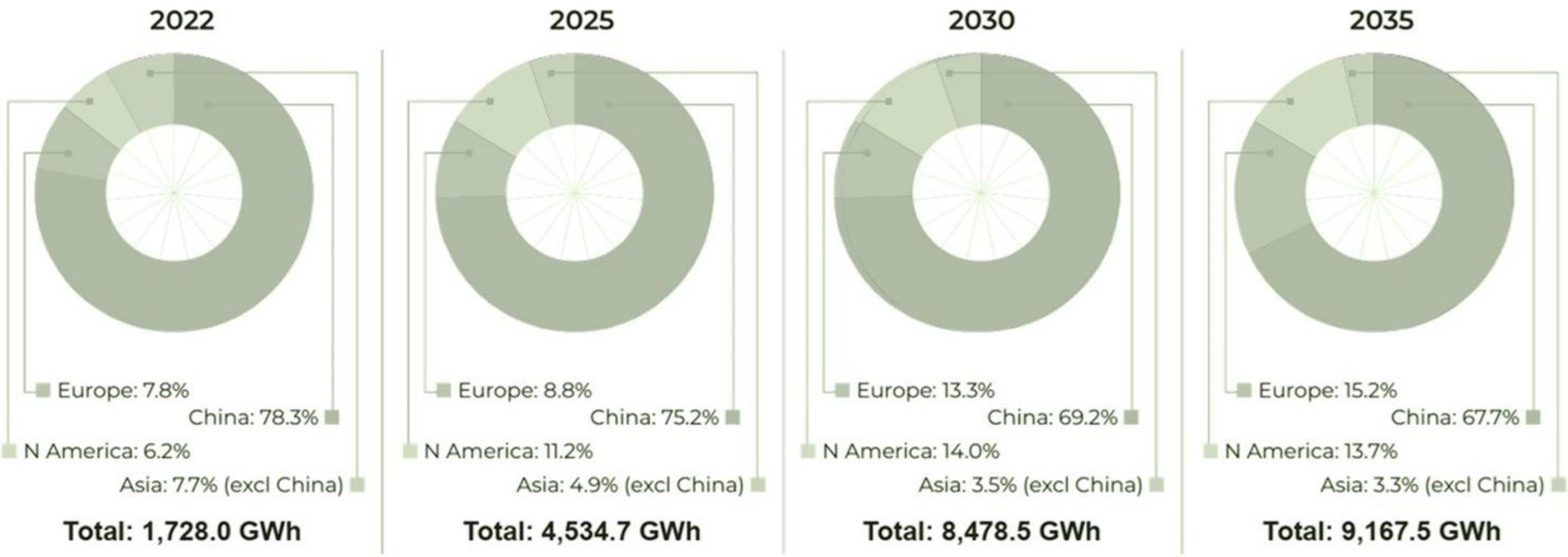
Jokkmokk Iron


GRAFINTEC

Strong growth in European batteries

Driving demand for Graphite Anodes

Lithium-ion Battery Cell Capacity by Region



For European Cell Manufacturing

7.8% of 1,728.0 GWh = **134.78 GWh**
1,200 tonnes of graphite anode per GWh
Demand = 161,736 tonnes

8.8% of 4,534.7 GWh = **399.05 GWh**
1,200 tonnes of graphite anode per GWh
Demand = 478,860 tonnes

13.3% of 8,478.5 GWh = **1,127.64 GWh**
1,200 tonnes of graphite anode per GWh
Demand = 1,353,168 tonnes

15.2% of 9,167.5 GWh = **1,393.46 GWh**
1,200 tonnes of graphite anode per GWh
Demand = 1,672,152 tonnes

Source: Benchmark Mineral Intelligence March 2023

GRAFINTEC

Grafintec

Aiming to be a European leader in the sustainable supply of anode material

1 Anode Materials Production

- Development of anode materials production facility in Finland
- Established partnerships to provide an integrated solution
- Advanced discussions with several mines to secure supplies of imported raw material in the short term

2 Primary Raw Material

- Aitolampi graphite project provides long-term security of supply
- Total Indicated and Inferred Mineral Resource of 26.7Mt at 4.8% for 1,275,000 t of contained graphite
- Exploration upside with other graphite prospects

3 Sustainability, Transparency and Security

- Sustainability focus
- Local/optimised/seamless/ESG certified supply chain
- Powered by renewable electricity
- Key role in the Finnish battery cluster

Source: Grafintec

GRAFINTEC

Graphite Anode Materials Production in Finland

Site reserved at GigaVaasa Energy Industrial Hub

KORSHOLM MUSTASAARI

ANZAPLAN dorfner group

AFRY

RPlant SINCE 1969

Graphite Anode Materials Plant

Initially targeting 20,000 tonnes production in 2027

Phase 2 expansion to 60,000 tonnes per annum

Import of Mined Graphite Concentrate → Spheronisation → Purification → Coating → CSPG to Anode Manufacturers

Updated PFS for full process route underway. Economics pending

Preliminary Economics of Coating Stage	
Production Capacity	20,000tpa
Post-tax NPV_8 (Pre-tax NPV_8)	US$242m (US$313m)
Post-tax IRR (Pre-tax IRR)	39% (45%)
Capex	US$117m

GRAFINTEC

Development Timeline

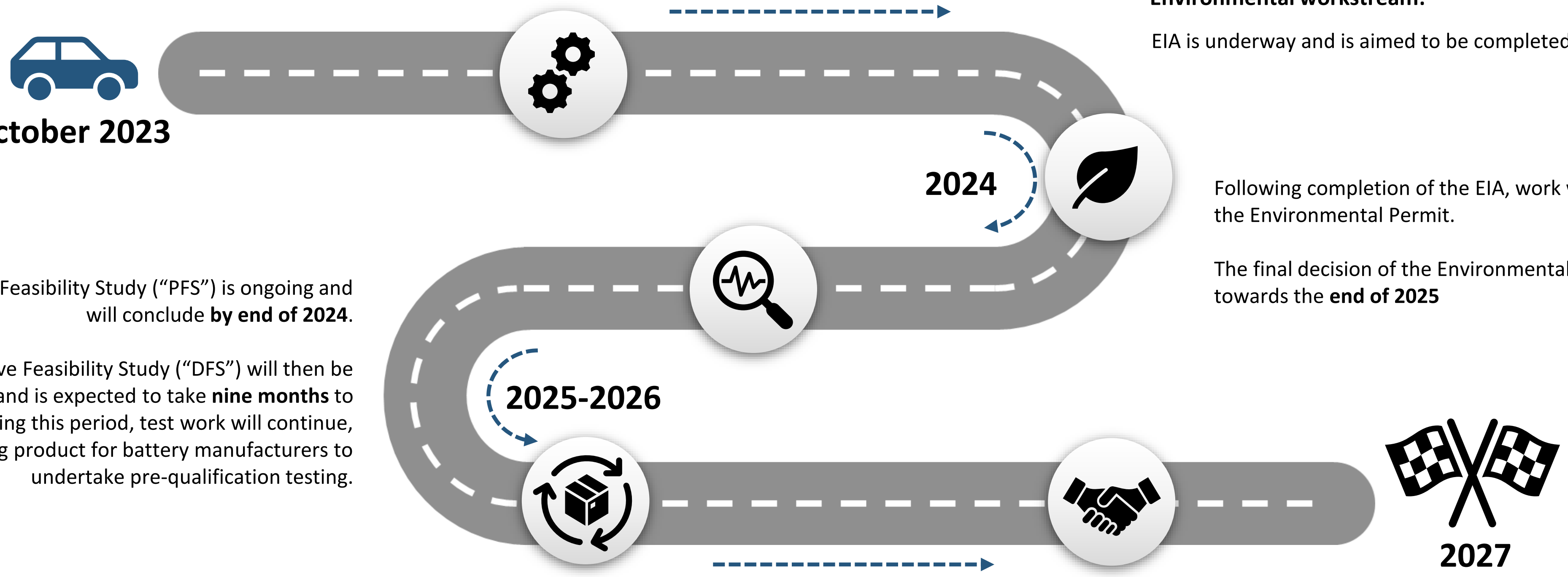
Environmental and Technical Workstreams

Technical workstream:

The project is advancing with bench-scale test work that commenced in October, which is to be followed by pilot-scale test work.

Environmental workstream:

EIA is underway and is aimed to be completed in **Q3 2024**.



Following completion of the EIA, work will commence towards the Environmental Permit.

The final decision of the Environmental Permit is expected towards the **end of 2025**

A Preliminary Feasibility Study ("PFS") is ongoing and will conclude **by end of 2024**.

The Definitive Feasibility Study ("DFS") will then be launched and is expected to take **nine months** to complete. During this period, test work will continue, generating product for battery manufacturers to undertake pre-qualification testing.

With the successful conclusion of the Environmental and Technical workstreams listed above, the GAMP project will enter Front-End Engineering Design (FEED), financing and ultimately construction phases with first production targeted for 2027.

GRAFINTEC

Strategic resources

One of Europe’s largest flake graphite deposits

Aitolampi

Mineral resource

- Indicated and Inferred 26.7Mt at 4.8% graphite for 1,275,000 tonnes of contained graphite (Indicated and Inferred)
- Several untested EM conductive areas

Metallurgical testwork

- 96.8% to 97.5% graphite concentrates produced suitable as a pre-cursor for graphite anode materials production
- Purification tests achieved >99.95% graphite
- Spheronisation and battery application tests completed

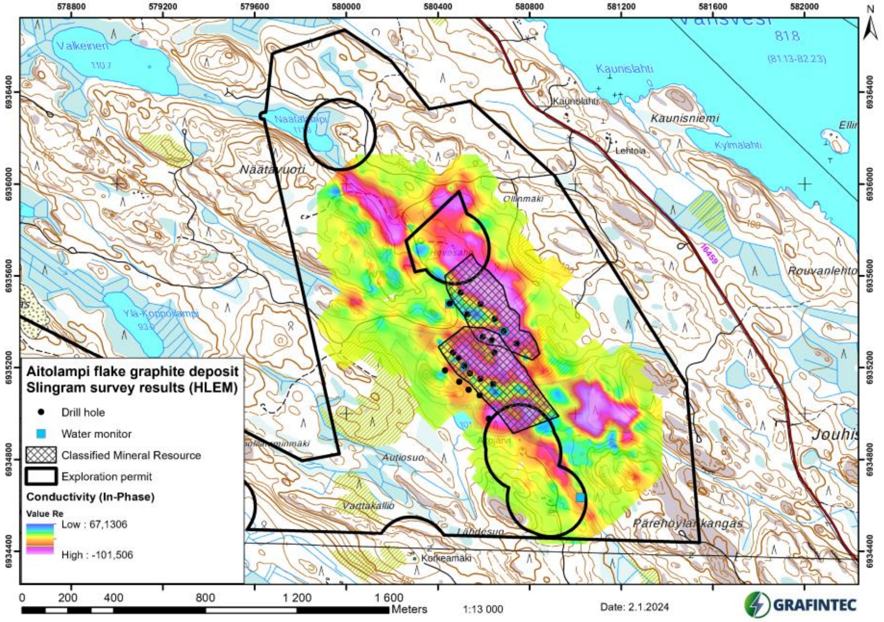
Rääpysjärvi

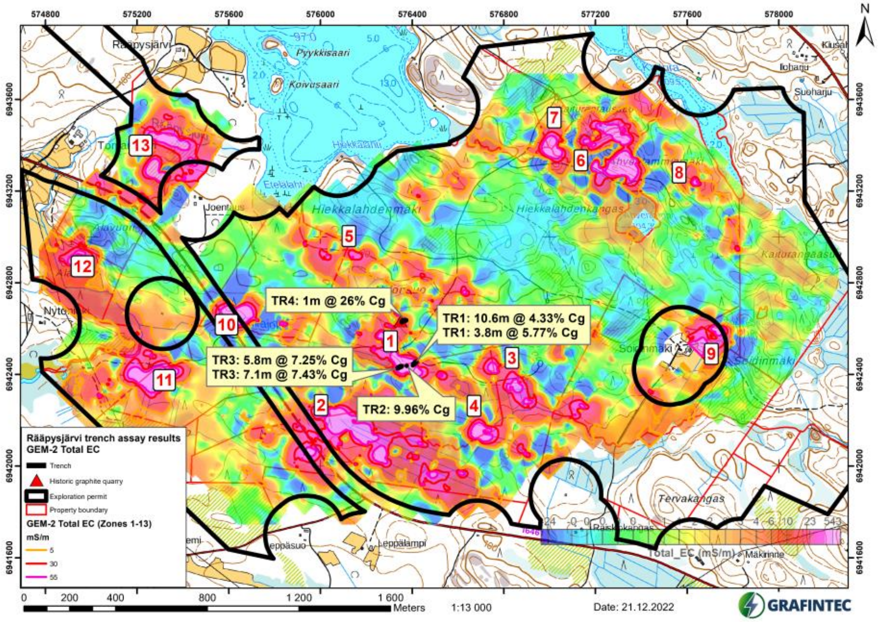
Exploration work

- Located 8km from Aitolampi
- EM conductive anomalies are more extensive - potential for a larger tonnage of graphite mineralisation in the area
- >50% graphite assayed *(limitation of the analysing methodology)* from grab sample at historic graphite quarry at Zone 1 - potential for localised very high-grade mineralisation
- Four trenches revealing significant flake graphite mineralization, including 1.0m at 26.00% graphite & 7.1 m at 7.43% graphite

Metallurgical testwork

- Composite surface grab sample with a head grade of 19.8% graphite
- 97.4% graphite concentrate produced with 18.8% in the large/jumbo flake fraction






VARDAR
MINERALS

Vardar – focused on discovery

Tethyan Belt – a major metallogenic province

Timok deposit (Zijin), Serbia:

- Zijin acquired Nevsun Resources Ltd. for US$1.4b in 2018, after Nevsun acquired Reservoir Minerals Inc. for US$365m in 2016
- Total resources of 1.8bt @ 0.9% Cu & 0.2g/t Au
- Forecast 2023 production of 3Mt for 181kt Cu & 156koz Au

Skouries deposit (Eldorado Gold), Greece:

- Total resource of 308Mt @ 0.6g/t Au & 0.5% Cu

Stan Terg mine (Trepca), Kosovo:

- Reported historic resource of 63Mt @ 3.5% Pb, 2.3% Zn & 80g/t Ag

Sasa deposit (Central Asia Metals), North Macedonia:

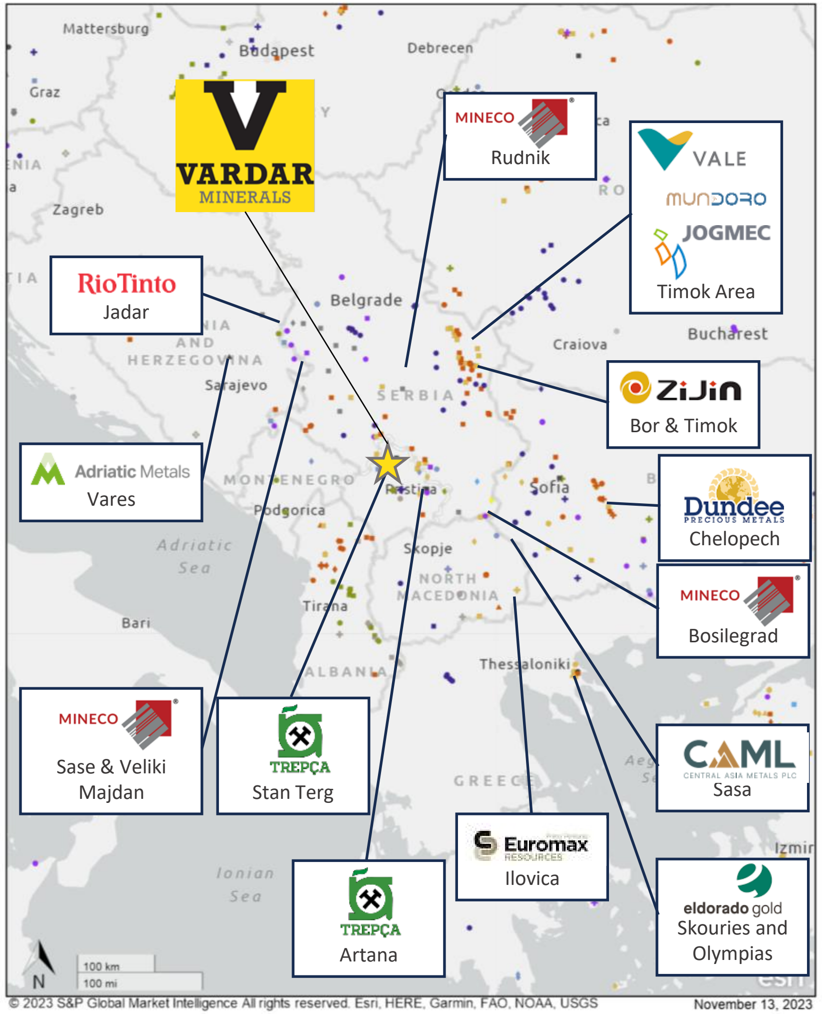
- Acquired for US$402.5m in 2017
- Total resources of 22.3Mt @ 4.2%Pb, 2.5% Zn & 20.5g/t Ag
- 2022 production of 807kt @ 3.6% Pb & 3.2% Zn

Vares deposit (Adriatic Metals), Bosnia & Herzegovina:

- Construction underway with US$244.5m finance raised
- Total resource of 21.1Mt @ 156g/t Ag, 4.3% Zn, 2.8% Pb, 1.2g/t Au, 0.4% Cu, 0.2% Sb & 27%$BaSO_4$
- Forecast production of 15Moz Ag equivalent pa for first 6 years

Jadar deposit (Rio Tinto), Serbia:

- Total mineral resource of 144Mt at 1.8% Li & 14.3% B_2O_3



November 13, 2023

Source: Company websites and reports

Vardar – systematic exploration

First-mover in highly prospective Kosovo

Kosovo:

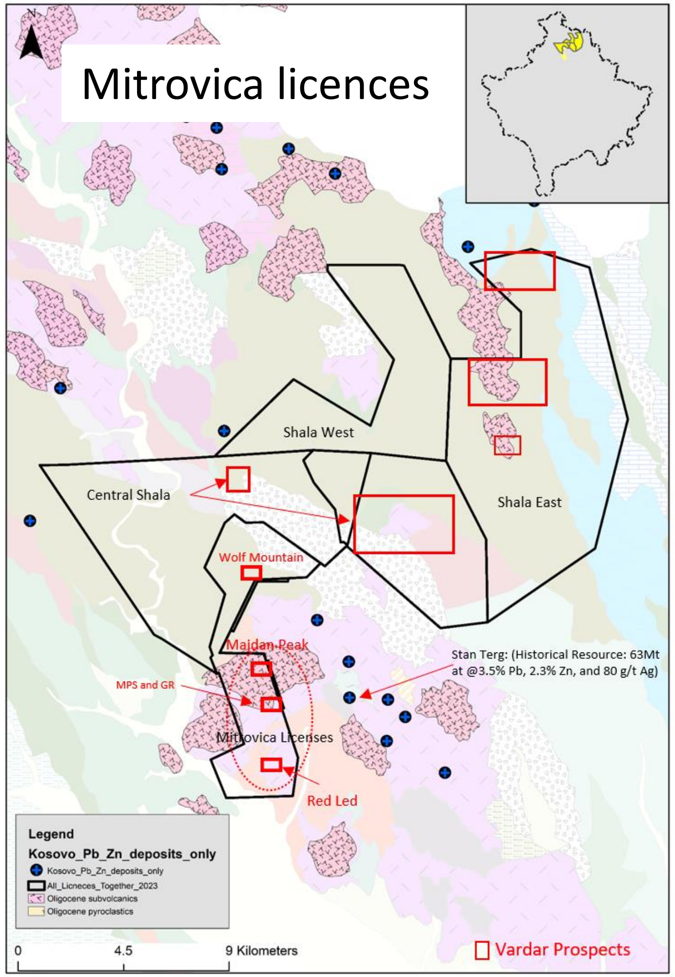
- highly prospective for base and precious metals
- limited to no exploration since the 1980s

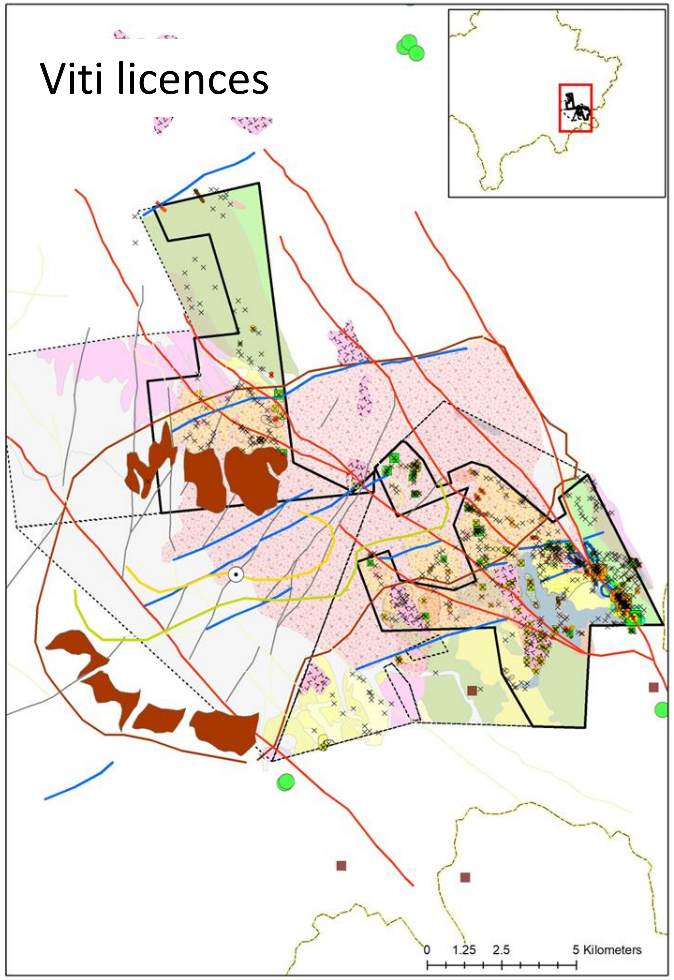
Mitrovica licence area:

- km-scale hydrothermal alteration systems identified - comparable in size to world-class base and precious metals deposits
- multiple high-quality targets defined by mapping, geochemistry, geophysics and drilling
- Red Lead priority Zn target yet to be drilled, similarities and proximal to Stan Terg
- significant drill results to date include:
  - MP6: 10.8m at 0.48 g/t Au, 0.1% Cu and 18 g/t Ag
  - MP6: 6.8m at 4.1% Pb, 0.6% Zn and 15 g/t Ag; and
  - MP15: 44.4m at 0.2 g/t Au

Viti licence area:

- anomalous copper and gold from surface sampling and drilling
- potential for Jadar-like lithium mineralisation





Note: The Mitrovica, Viti North and Viti East licences are currently under application

Other assets and opportunities

Active management of portfolio

Swedish assets:

- Kallak South-North deposit: 21Mt at 26.9% Fe Indicated & 6Mt at 23.4% Fe Inferred
- Kallak South-South deposit: 8Mt at 26.1% Fe Inferred
- Copper exploration target with up to 14.6% Cu in boulder sample

Finnish assets:

- Rääpysjärvi graphite project: trench results include 1.0m at 26.00% TGC & 7.1 m at 7.43% TGC
- Cobalt/ nickel exploration project

Review of other opportunities:

- European & Green Transition focus
- Green- and brownfield assets
- Multiple commodities including copper, iron ore, graphite

Summary and Outlook

Primed for a re-rate

Diverse portfolio of critical materials:

- Jokkmokk Iron has the potential to produce a market-leading, high-grade, low impurity concentrate
- Grafintec holds one of Europe's largest flake graphite resources and aims to supply of graphite anode material
- Vardar is focused on the discovery of base and precious metals

Prime location to establish a secure European supply chain:

- Beowulf's Nordic assets are located close to leading Green Steel and Gigafactory investments
- Access to low-cost, clean energy and established transport infrastructure for domestic and international markets
- Kosovo is located at the heart of the highly prospective Tethyan Belt

Market primed for re-rate:

- Chinese nationalism driving political intervention (China's graphite export controls vs. EU's Critical Raw Materials Act)
- Significant investment in downstream (Green Steel and Gigafactories) and growing upstream investment by OEMs and vehicle manufactures
- Junior resource equities trading at multi-year lows - supply-chain security to drive re-rating

Appendices

Corporate summary

Experienced Board & Management

Market Data (as at 21 June 2024)	
Listing	AIM/ Spotlight
Ticker	BEM/ BEO
Share price	39.5p/ SEK 4.38
Shares outstanding	38.8 million
Market Capitalisation	£15.3 million
Cash (31 March 2024)*	£3.9 million
Debt (31 March 2024)*	Nil
Shares held in Sweden	81%
Average daily volume (30-day)	126,000

* Includes net funds raised of £3m announced on 3 April 2024 and post repayment of Bridge Loan

Johan Röstin
Non-Executive Chairman
Former CEO of shipping and port companies with significant experience in infrastructure, logistics, capital investments and permitting processes

Ed Bowie
Chief Executive Officer
Over 20 years' experience in corporate, advisory and fund management roles and across a broad range of commodities and jurisdictions

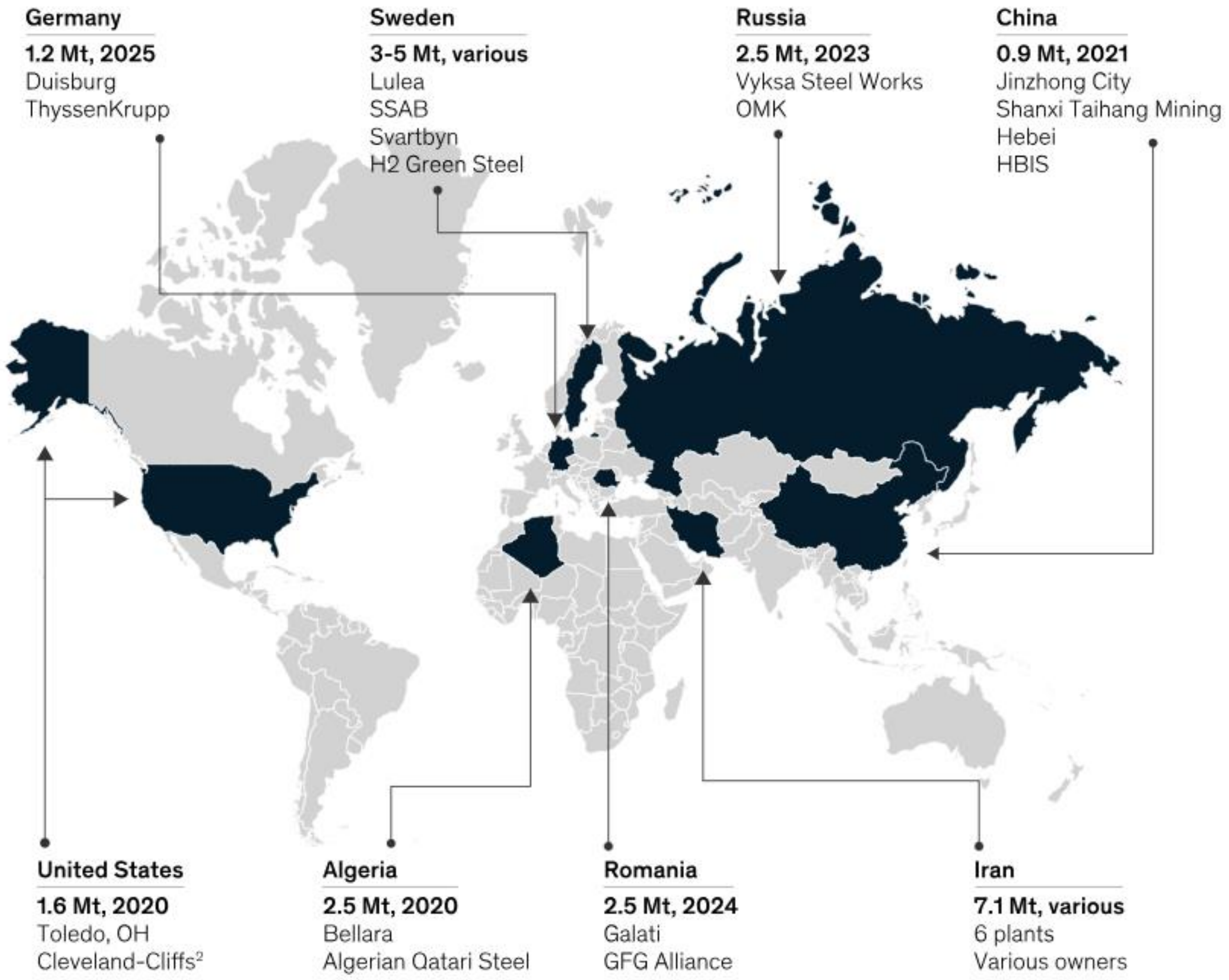
Mikael Schauman
Non-Executive Director
Former SVP Commercial for Lundin Mining responsible for worldwide sales, with more than 40 years' experience of base metals

Chris Davies
Non-Executive Director
Exploration geologist with over 40 years' experience across multiple commodities and jurisdictions

BEOWULF MINING plc

Forecast growth in steel from DRI

Planned and under-construction DRI plants and capacity[1]



1 Estimated metric tonnes of steel based on DRI capacity, expected utilization, and raw material yields
2 Began operations in 2020

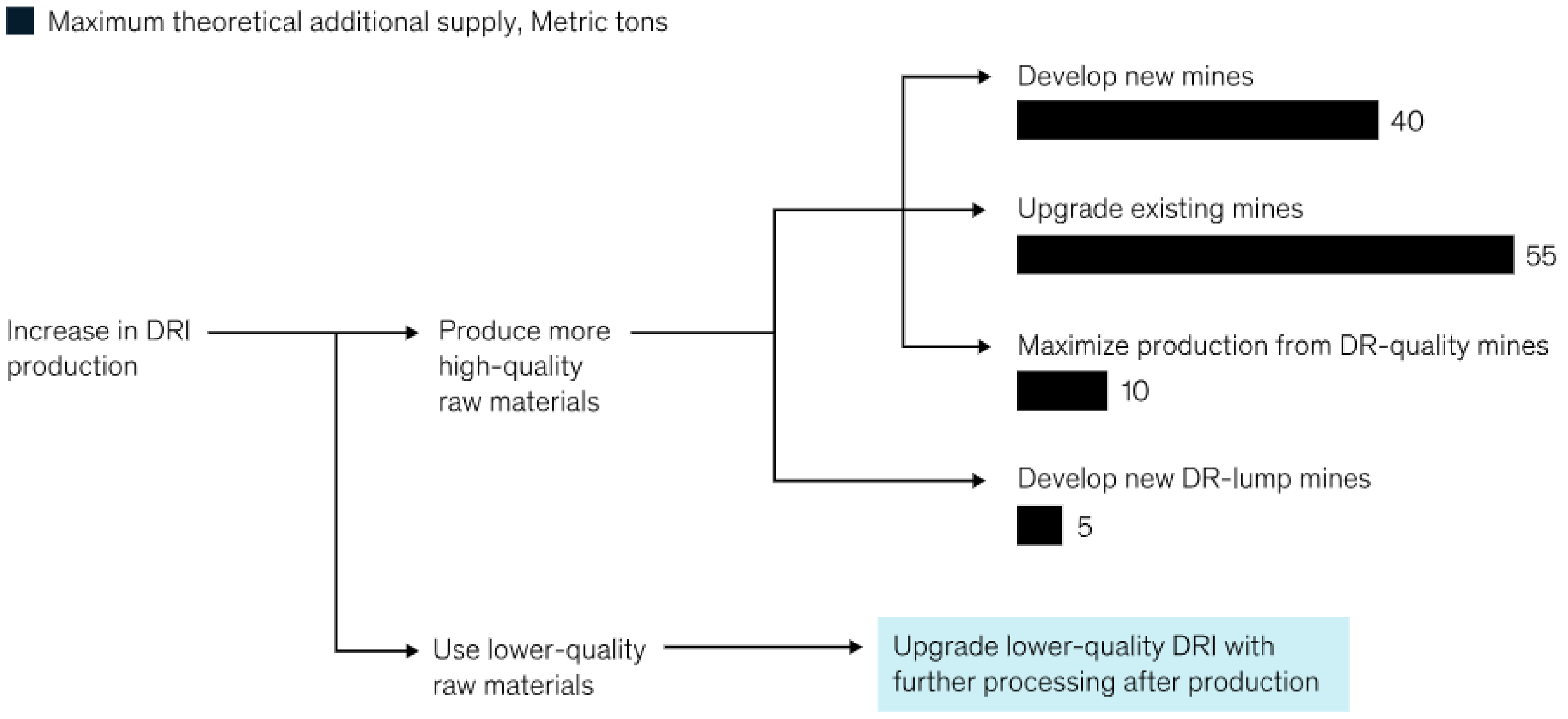
Source: McKinsey & Company

Jokkmokk Iron

Direct Reduction Iron supply-side constraints

Anticipated deficit of high-quality raw materials

- DRI currently accounts for ~5% of supply to steel industry
- Production will need to more than triple in next 30 years if steel industry to become carbon neutral
- Mines capable of supplying sufficiently high quality material for DRI will not meet demand
- DRI will also likely need to be produced from lower quality iron ore

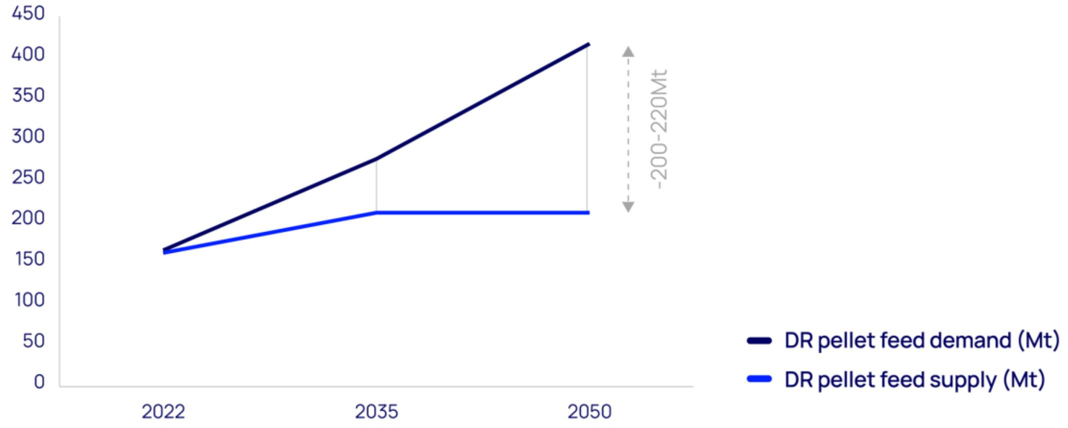


Source: McKinsey analysis

Jokkmokk Iron

Supply deficit forecast for DRI

Demand for high grade iron concentrate set to increase



	Rise in DRI cost	Commercial availability	Scalability
1 Benefication & processing	5–6% For beneficiating moderately rich grade 65–66% Fe to prime grade 67–68% Fe		Tailing management: 5–8% tailing loss per 1% Fe beneficiated
2 Smelting	20–25% For smelting low grade DRI through DRI melter		Though the DRI can be fed into both EAFs and blast furnaces, low scale (1.5–2.0 Mt) can pose a challenge

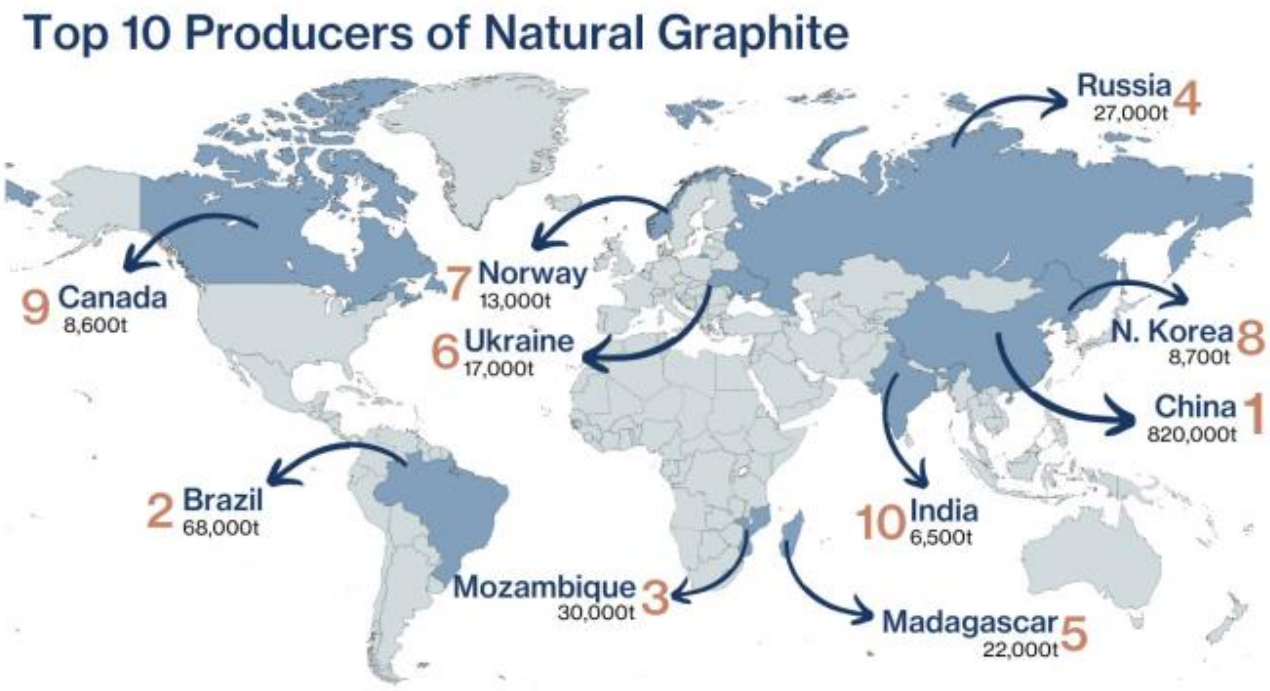
- 200-220Mt shortfall in high-grade ore anticipated by 2050
- Iron ore accounts for ~50% of the total production cost of DRI - access to the necessary grade of feedstock is becoming more critical
- Deficit driving search for new solutions to upgrade lower grade material to DRI but with additional cost
  - Beneficiation and processing of medium grade material (e.g. from Brazil and Africa) will add ~ 6%
  - Smelting of low grade material (e.g. from Australia) will add 20-25%

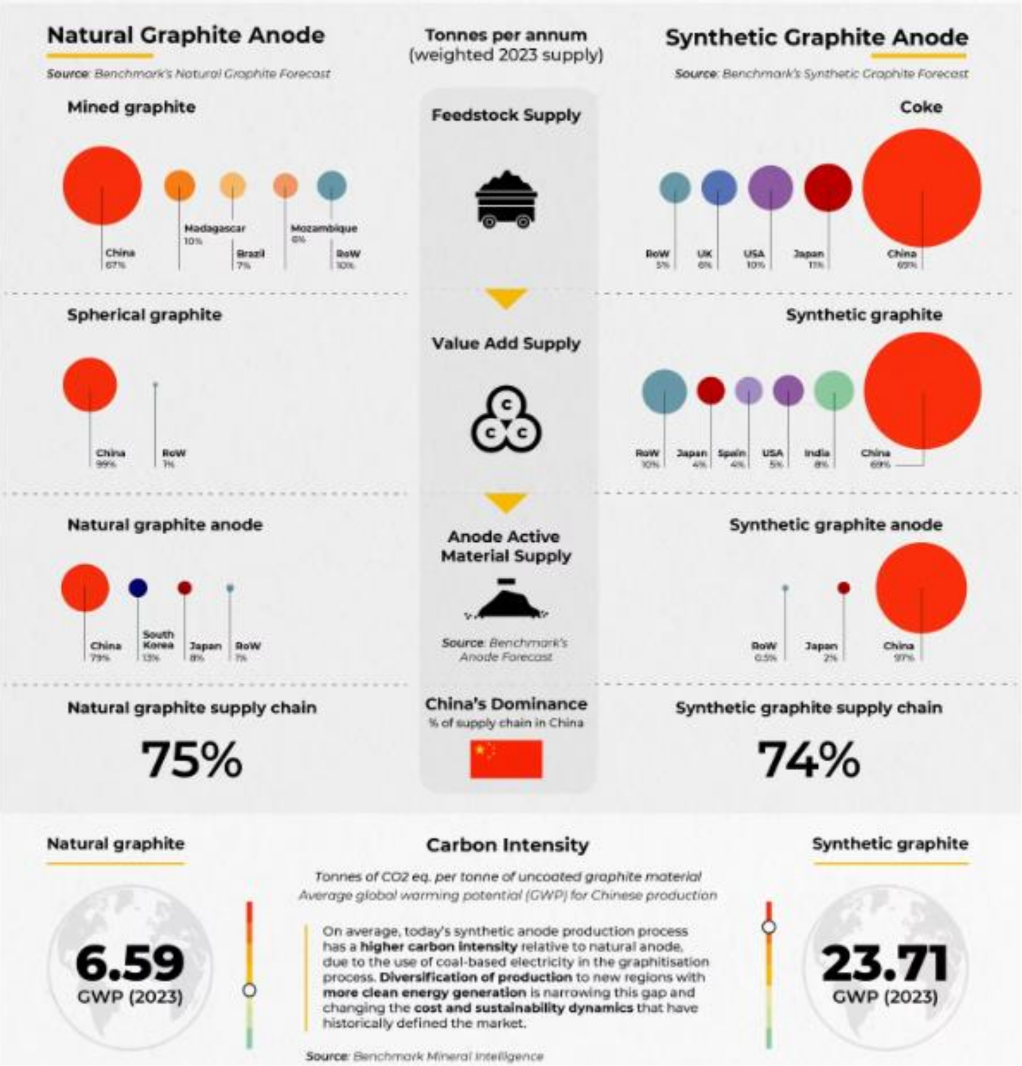
Source: Wood Mackenzie

Jokkmokk Iron

Global Graphite Supply

Dominated by China





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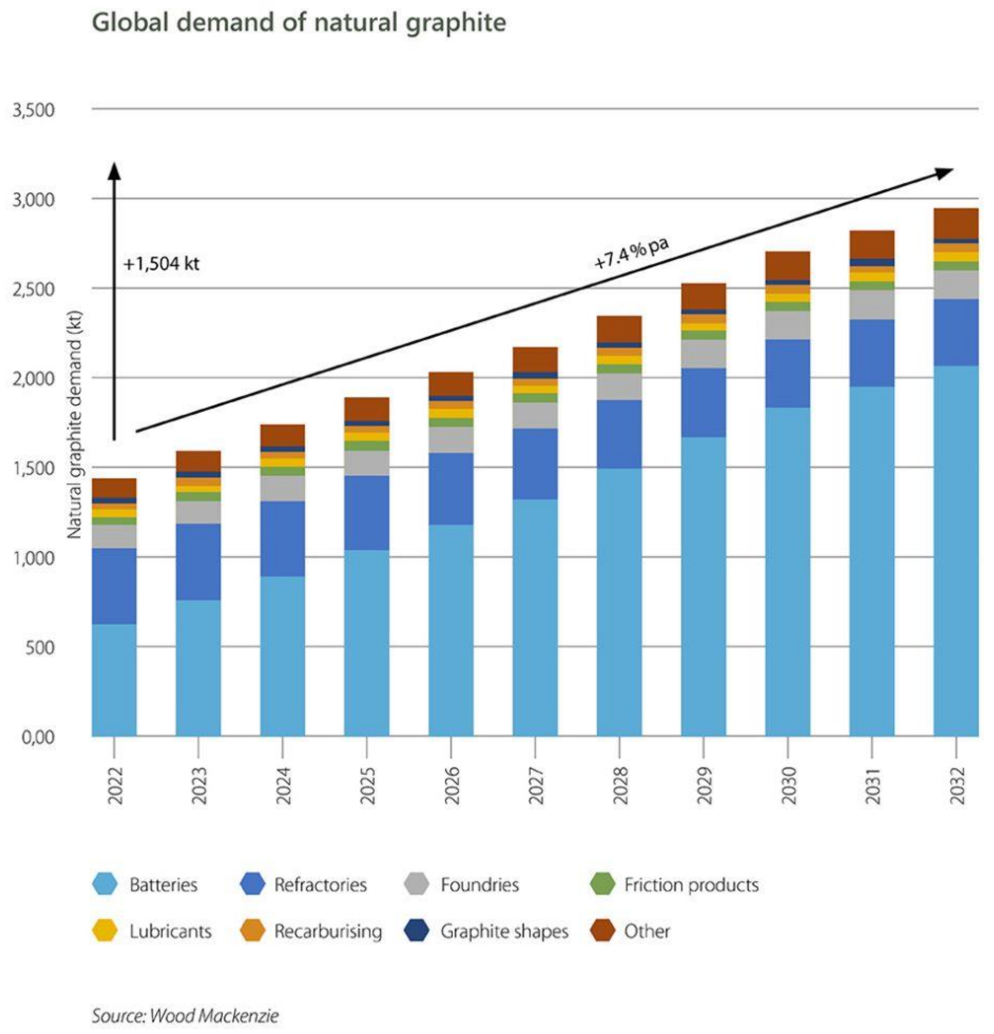
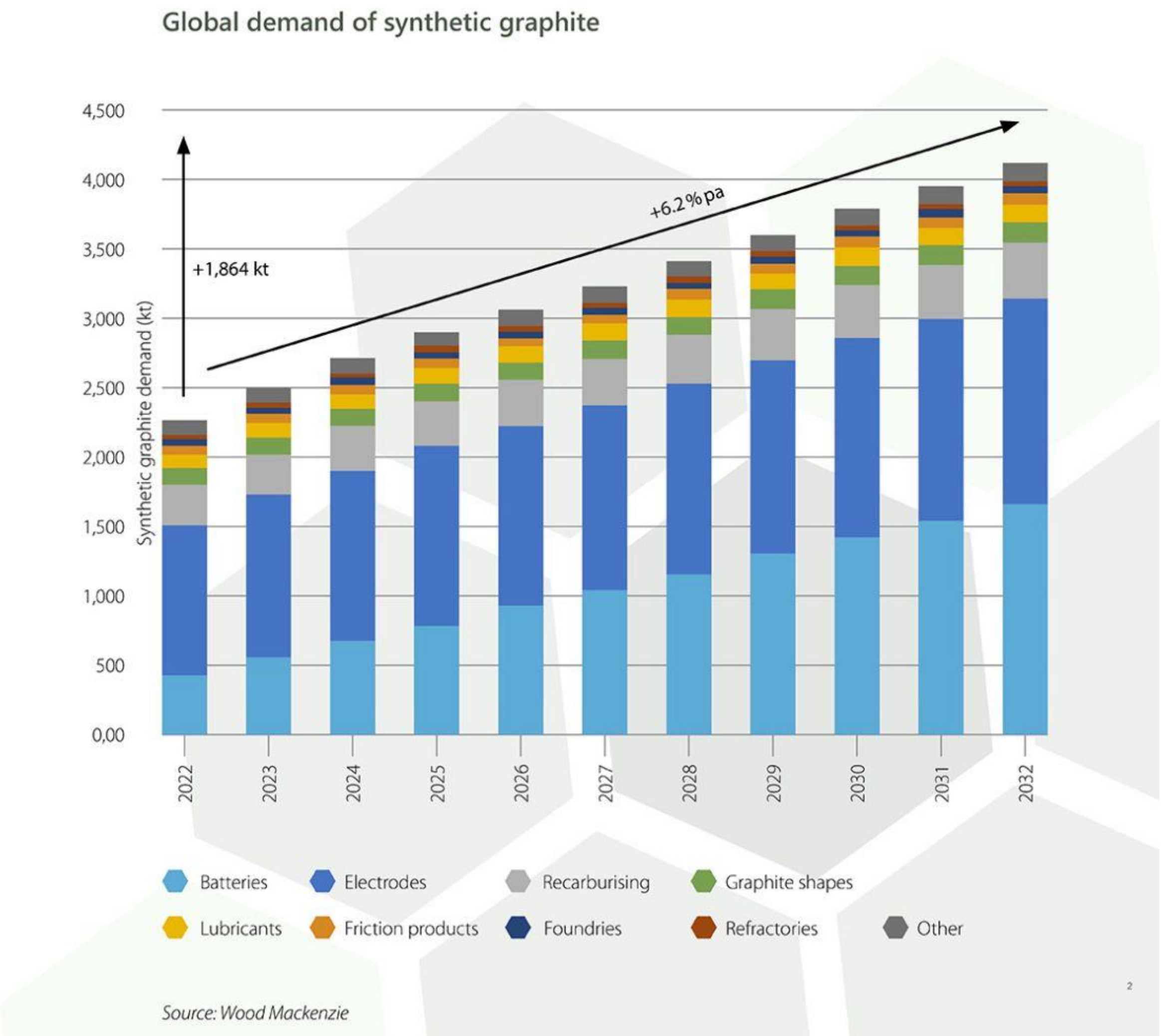
Global Graphite Demand

Dominated by China





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