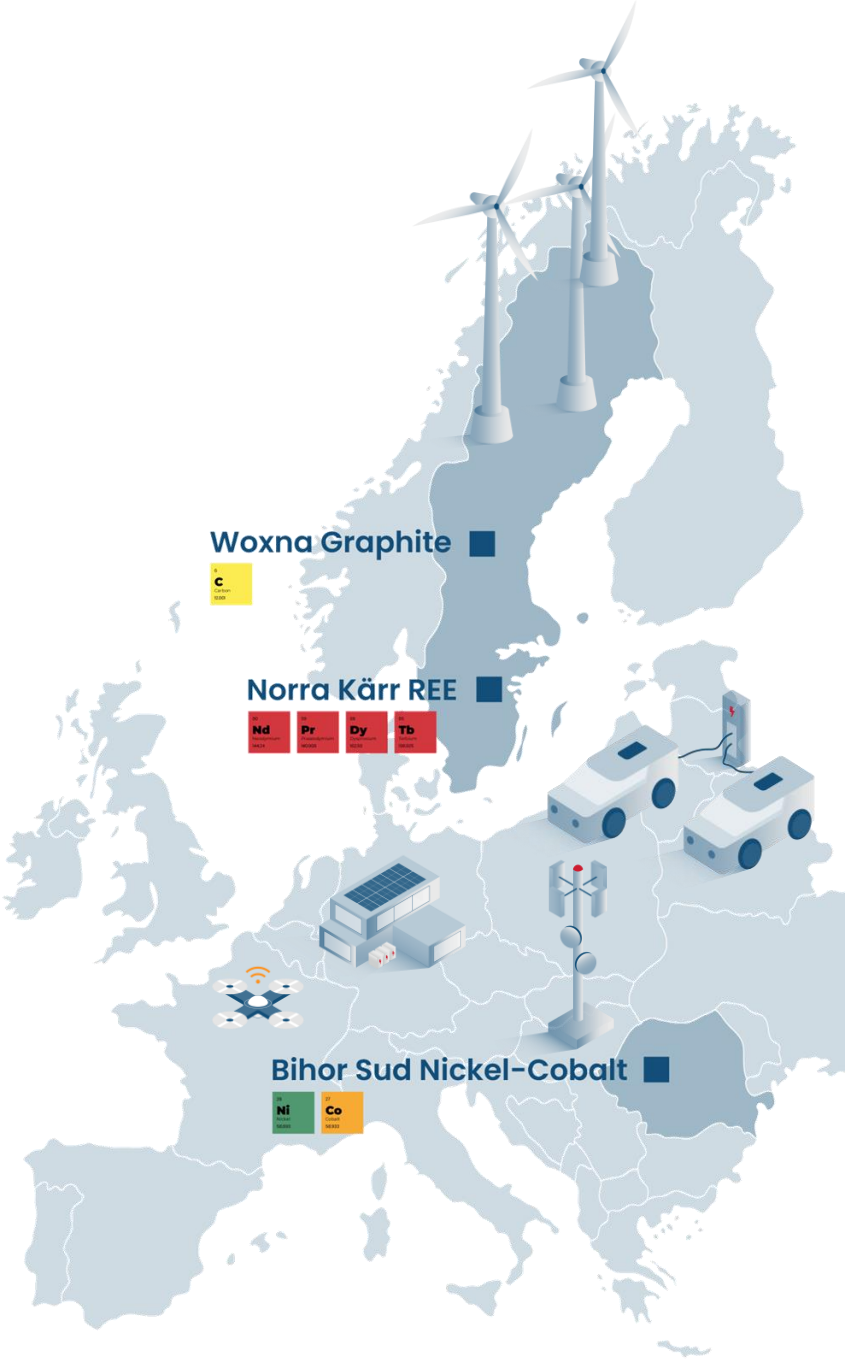
LEADING EDGE MATERIALS

# Critical Raw Materials in Europe

## September 2023

**TSX.V: LEM**
**Nasdaq First North: LEMSE**
**OTCQB: LEMIF**
**FRA: 7FL**



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The Woxna project has never defined a mineral reserve. On June 9, 2021, Leading Edge announced the results of an independent preliminary economic assessment for the development of Woxna (the "2021 Woxna PEA"), the full details of which are included in a technical report entitled "NI 43-101 Technical Report – Woxna Graphite" prepared for Woxna Graphite AB with effective date June 9, 2021 and issue date July 23, 2021, available on Leading Edge's website www.leadingedgematerials.com and under its SEDAR profile www.sedar.ca. The 2021 Woxna PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

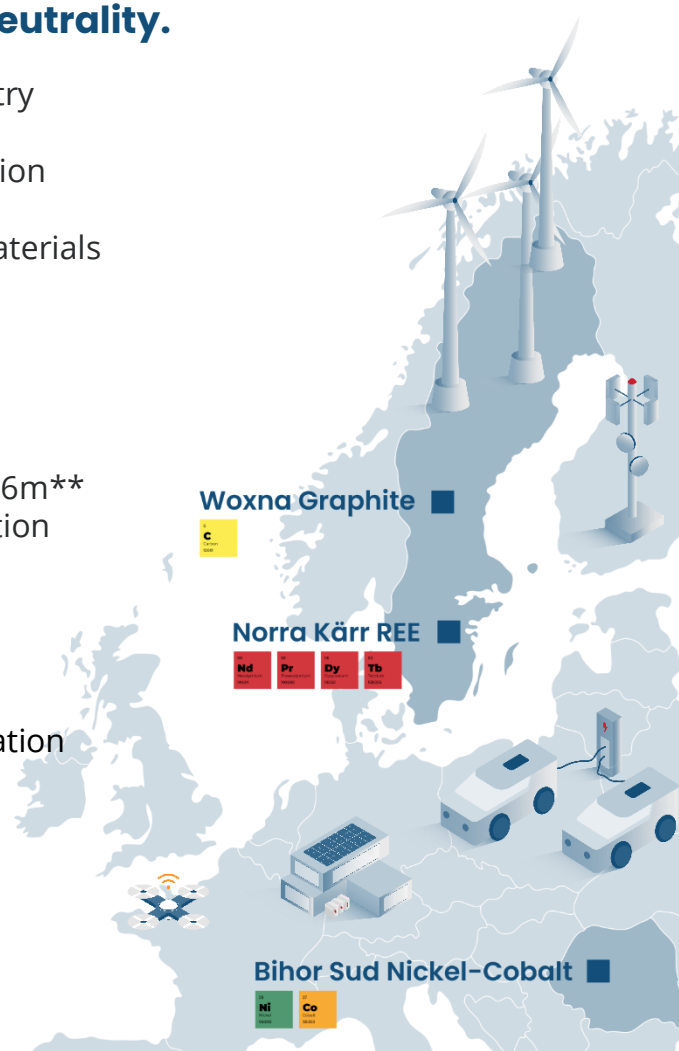
On July 22, 2021, Leading Edge announced the results of an independent preliminary economic assessment for the development of Norra Kärr (the "2021 Norra Kärr PEA"), the full details of which are included in a technical report titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KÄRR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" prepared for Leading Edge Materials Corp. with effective date August 18, 2021 and issue date August 19, 2021, available on Leading Edge's website www.leadingedgematerials.com and under its SEDAR profile www.sedar.ca. The 2021 Norra Kärr PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary economic assessment will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability.

This presentation has been prepared by Leading Edge Materials Corp. The scientific, technical and economic information related to the Norra Kärr project has been reviewed and approved by Dr. Rob Bowell of SRK Consulting (UK) Ltd, a chartered chemist of the Royal Society of Chemistry, a chartered geologist of the Geological Society of London, and a Fellow of the Institute of Mining, Metallurgy and Materials, who is an independent Qualified Person under the terms of NI 43-101 for REE deposits. The scientific, technical and economic information related to the Woxna Graphite project has been reviewed and verified by Christopher Stinton of Zenito Limited, BSc (Hons), CEng MIMMM, an independent Qualified Person as defined by NI 43-101.

# Strategy and Project Portfolio

**Developing a portfolio of critical raw material projects located in the European Union. Critical raw materials are determined as such by the European Union based on their economic importance and supply risk. They are directly linked to high growth technologies such as batteries for electromobility and energy storage, and permanent magnets for electric motors and wind power that underpin the clean energy transition towards climate neutrality.**

| | |
|---|---|
| **Woxna Graphite (100%)** | ▪ One of few fully-built graphite mines in the western world, ideally located to supply European industry<br>▪ Four deposits under mining leases, fully-built processing plant and infrastructure<br>▪ Targeting a vertically integrated natural graphite mine to lithium-ion battery anode material production<br>▪ 2021 PEA with post-tax Net Present Value(8%) of US$248m, IRR of 37.4% and EBITDA of US$49m*<br>▪ Proposed 50/50 JV with Sicona Battery Technologies Pty Ltd for silicon-graphite composite anode materials<br>▪ Investigating planned restart of flake graphite production |
| **Norra Kärr REE (100%)** | ▪ Significant heavy rare earth deposit with an unusually high enrichment of dysprosium and terbium<br>▪ Ideally located to offer a secure and sustainable supply of rare earth oxides to European industry<br>▪ Proposed production of nepheline syenite at site and off-site production of rare earth oxides<br>▪ 2021 PEA presents post-tax Net Present Value(10%) of US$762m, IRR of 26.3% and EBITDA of US$206m**<br>▪ Incorporating newly proposed project design towards Natura 2000 permit and mining lease application |
| **Bihor Sud Ni-Co (51%)** | ▪ Exploration alliance with local JV partner with the potential to move to 90% ownership<br>▪ Project located in part of the Tethyan Belt in an area with historic mining activities<br>▪ Exclusive exploration license granted in 2022<br>▪ Opening of underground galleries in January 2023 have revealed over 100 m visible Ni-Co mineralization<br>▪ Continued opening of historic galleries, channel sampling to implement drill program later this year |




* See National Instrument 43-101 report entitled "NI 43-101 Technical Report – Woxna Graphite" prepared for Woxna Graphite AB with effective date June 9, 2021 and issue date July 23, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

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# Board and Management

## Canadian public company with experienced EU leadership

### Lars-Eric Johansson
Chairman

**Past**
President & CEO Ivanhoe Mines (2006-19)
CFO Kinross Gold Corporation
CFO Noranda Inc
CFO Falconbridge
Vice President & CFO Boliden Mineral

### Daniel Major
Director

CEO GoviEx Uranium Inc. (TSXV)

**Past**
Chief Executive and later Non-Executive Chairman of Basic Element Mining and Resource Division in Russia
Mining analyst HSBC Plc and JPM
Rio Tinto Rossing Uranium Mine

### Eric Krafft
Director & Interim CEO

Private investor and largest shareholder. Serves on the boards of numerous private financial holding and ship-owning companies.
Director GoviEx Uranium Inc. (TSXV)

**Past**
Trafalgar Shipping/Dragon Maritime
Corporate Finance at DVB Bank AG

### Manuela Balaj-Coroiu
Corporate Secretary

Vancouver based chartered governance professional and corporate secretary

Manuela obtained her Law Degree at the University of West Timisoara in Romania, and continued her studies to obtain her Masters in European Law at the University of Oradea, prior to relocating to Canada.

### Stefan Derksen
General Counsel

Dutch qualified lawyer
Founder STAUNCH BV

**Past**
Senior lawyer in the Dutch law firm De Brauw Blackstone Westbroek

### Sanjay Swarup
CFO

CEO and founder SKS Business Services Ltd.

**Past**
CFO Mandalay Resources (TSX)

### Peter Young
Ops

**Past**
ORSU Resources
Oriel Resources
MINOPEX
Johannesburg Consolidated Industries

### Magnus Leijd
Geo

**Past**
Tasman Metals Ltd.
Lundin Mining
North Atlantic Natural Resources

## Board & Management Ownership

41% (48%)

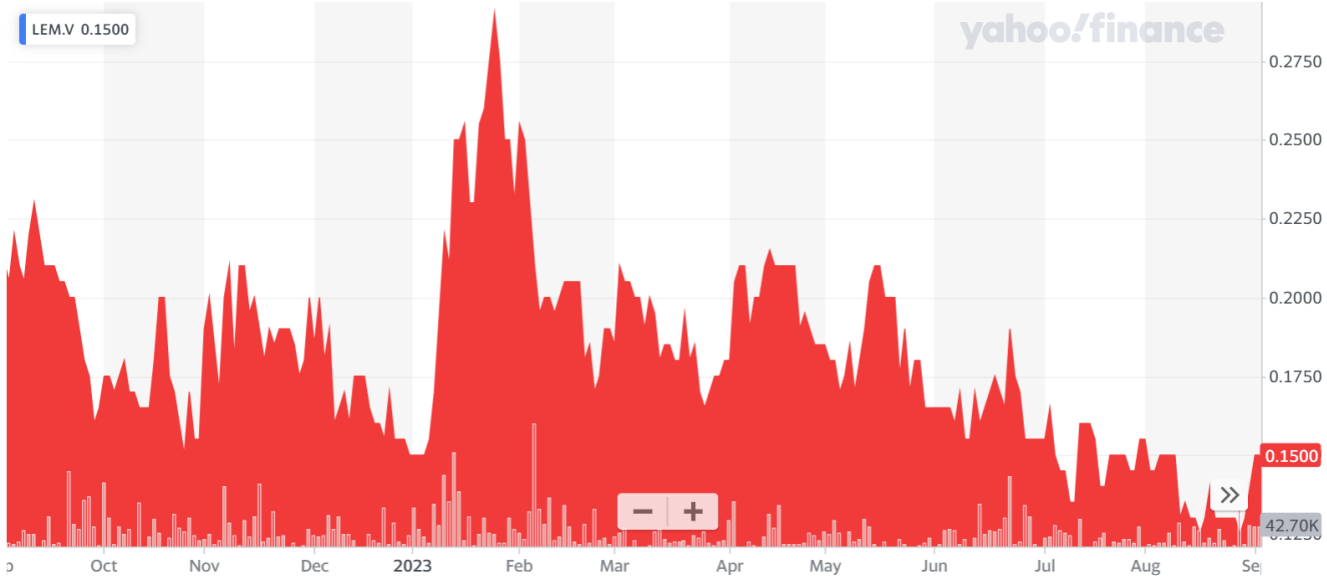
# The Share

- **Tickers:** LEM.V (TSXV), LEMIF (OTCQB), LEMSE (NFN), 7FL (Fra)
- **Quote:** CAD $0.15 / SEK 1.146 (per 5 September 2023)
- **Mkt Cap:** CAD $28m / SEK 215m (non-diluted)

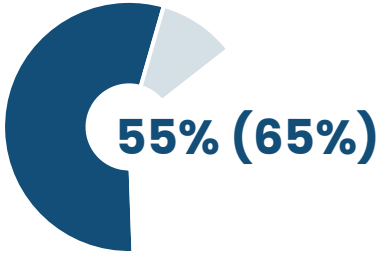
## Capital Structure

| As of August 23, 2023 | | | | Total |
|---|---|---|---|---|
| Issued and Outstanding Common Shares | | | | 187,262,663 |
| Stock Options | Expiration | Exercise price | Quantity | |
| | Jan 27/25 | 0.62 | 3,200,000 | |
| | Apr 26/26 | 0.195 | 500,000 | |
| | Nov 3/27 | 0.20 | 700,000 | |
| | Apr 26/28 | 0.195 | 4,200,000 | |
| | | | | 8,600,000 |
| Warrants | Expiration | Exercise Price | Quantity | |
| | Dec 30/23 | 0.10 | 4,200,000 | |
| | Aug 7/24 | 0.20 | 32,000,000 | |
| | Aug 23/25 | 0.225 | 7,000 | |
| | Aug 23/27 | 0.225 | 21,739,000 | |
| | | | | 57,825,416 |
| Fully Diluted: | | | | 253,688,079 |

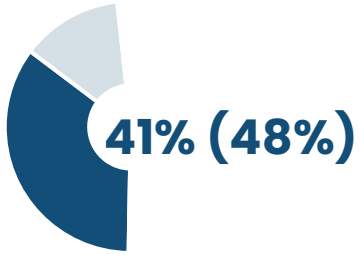
## Share price LTM (LEM.V; CAD)




### Swedish Ownership




### Insider Ownership



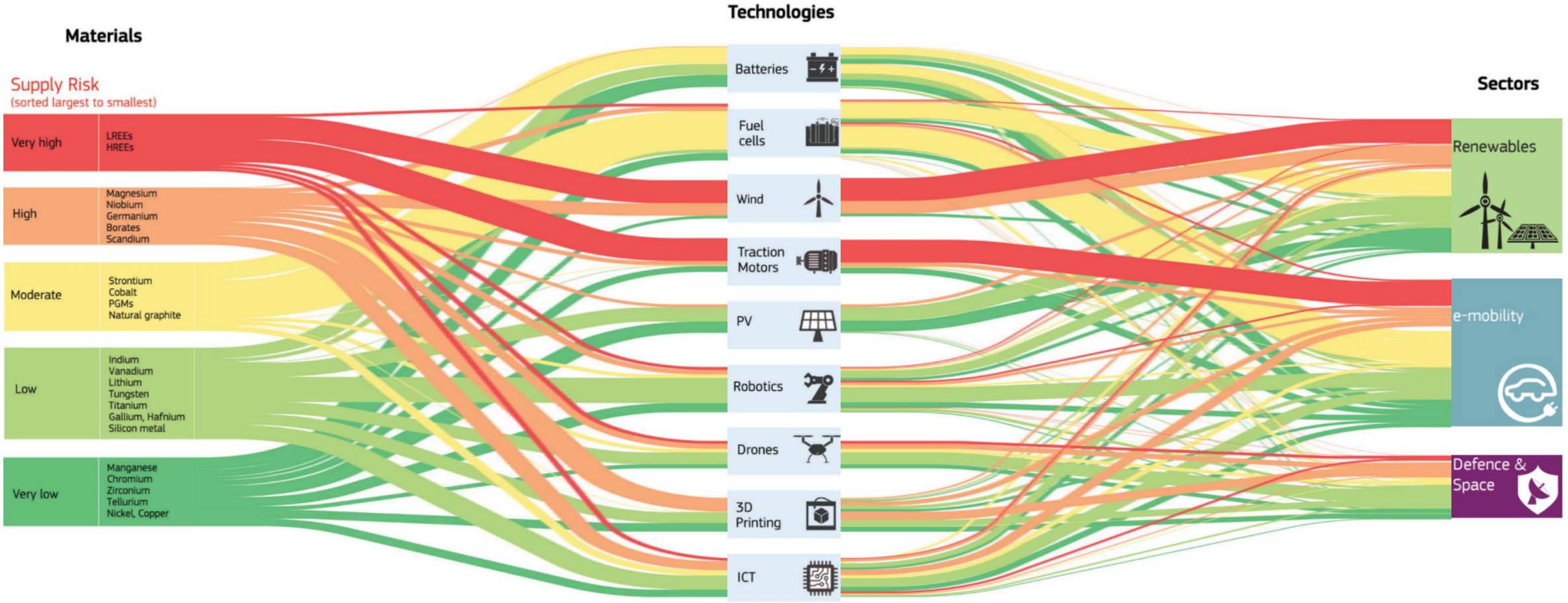
# Critical Raw Materials

## Supply Risk

- EU is dependent on imports of CRMs
- A few single countries dominate the export of CRMs which leave the EU vulnerable for supply disruptions

## Economic Importance

- CRMs are directly linked to technologies such as batteries and permanent magnets that are critical for growth industries like renewables, energy storage and electromobility
- CRMs enable the transition to a green, digital and autonomous EU

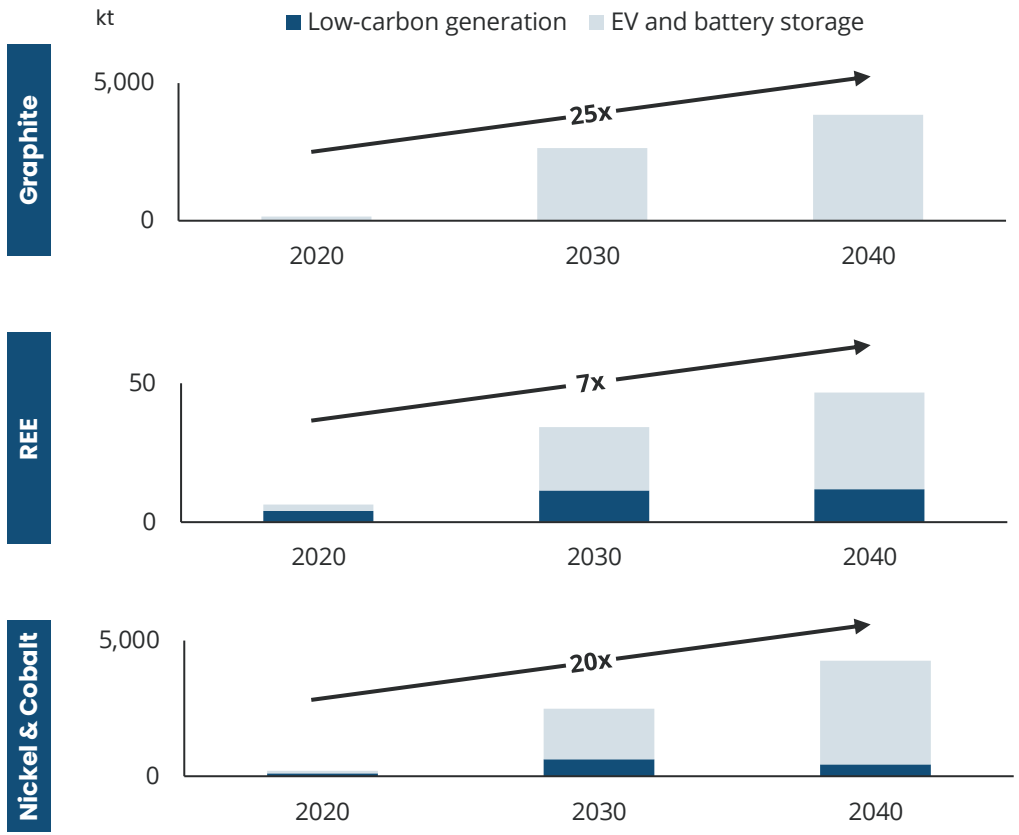


# CRMs are key enablers of a green, digital and autonomous EU…

## E-mobility and renewables are mineral intensive and built out rapidly…

| | Mineral intensity | Growth outlook |
|---|---|---|
| Electric cars | **6x more** mineral inputs than a conventional car[1)] | **24x increase** in annual sales to 2040 in the SDS[2)] |
| On- & offshore wind power | **9x & 13x** more mineral inputs than natural gas[1)] | **3x & 9x increase** in electricity generation to 2030 in the SDS[3,4)] |
| Energy storage | Intensive end-use of graphite, nickel, and cobalt | **26x increase** in annual storage capacity additions to 2040 in SDS[5)] |

## …and demand for graphite, REE, cobolt and nickel-cobalt grow in tandem[6)]



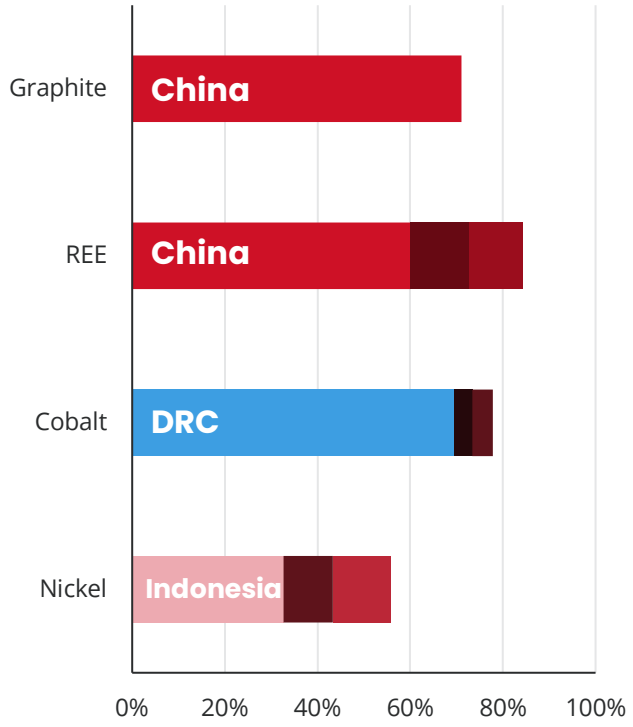

1) IEA (2021), *The Role of Critical Minerals in Clean Energy Transitions*, IEA, Paris https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions
2) IEA, Annual electric car sales in the Sustainable Development Scenario, 2020-2040, IEA, Paris https://www.iea.org/data-and-statistics/charts/annual-electric-car-sales-in-the-sustainable-development-scenario-2020-2040; "SDS" is the Sustainable Development Scenario
3) IEA, Offshore wind power generation in the Sustainable Development Scenario, 2000-2030, IEA, Paris https://www.iea.org/data-and-statistics/charts/offshore-wind-power-generation-in-the-sustainable-development-scenario-2000-2030
4) IEA, Onshore wind power generation in the Sustainable Development Scenario, 2000-2030, IEA, Paris https://www.iea.org/data-and-statistics/charts/onshore-wind-power-generation-in-the-sustainable-development-scenario-2000-2030
5) IEA, Annual battery storage capacity additions in the Sustainable Development Scenario, 2020-2040, IEA, Paris https://www.iea.org/data-and-statistics/charts/annual-battery-storage-capacity-additions-in-the-sustainable-development-scenario-2020-2040
6) IEA, *Total mineral demand from new EV sales by scenario, 2020-2040*, IEA, Paris https://www.iea.org/data-and-statistics/charts/total-mineral-demand-from-new-ev-sales-by-scenario-2020-2040

# …and the EU is exposed to significant value chain risk

**Global extraction of Critical Raw Materials is concentrated to a few countries, and processing even more so – exposing the EU to significant value chain risk, and in term, risk of not making the transition to a green, digital, and autonomous economy**

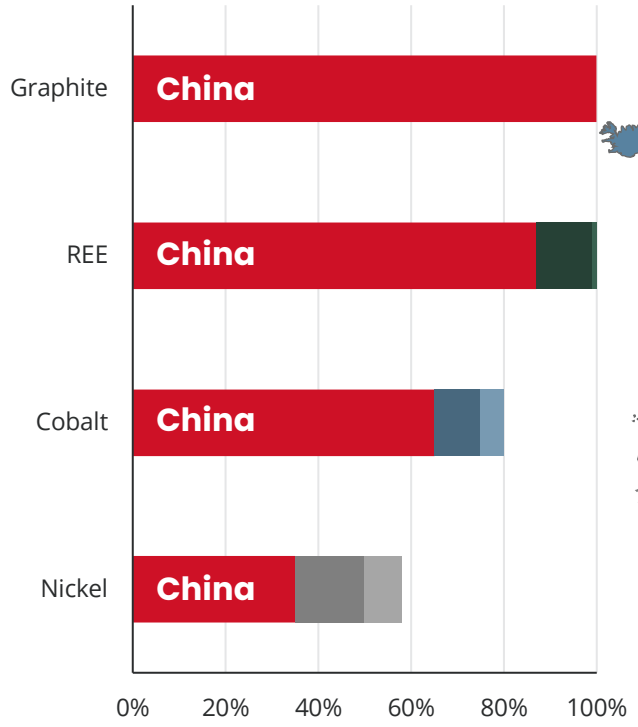
## Extraction

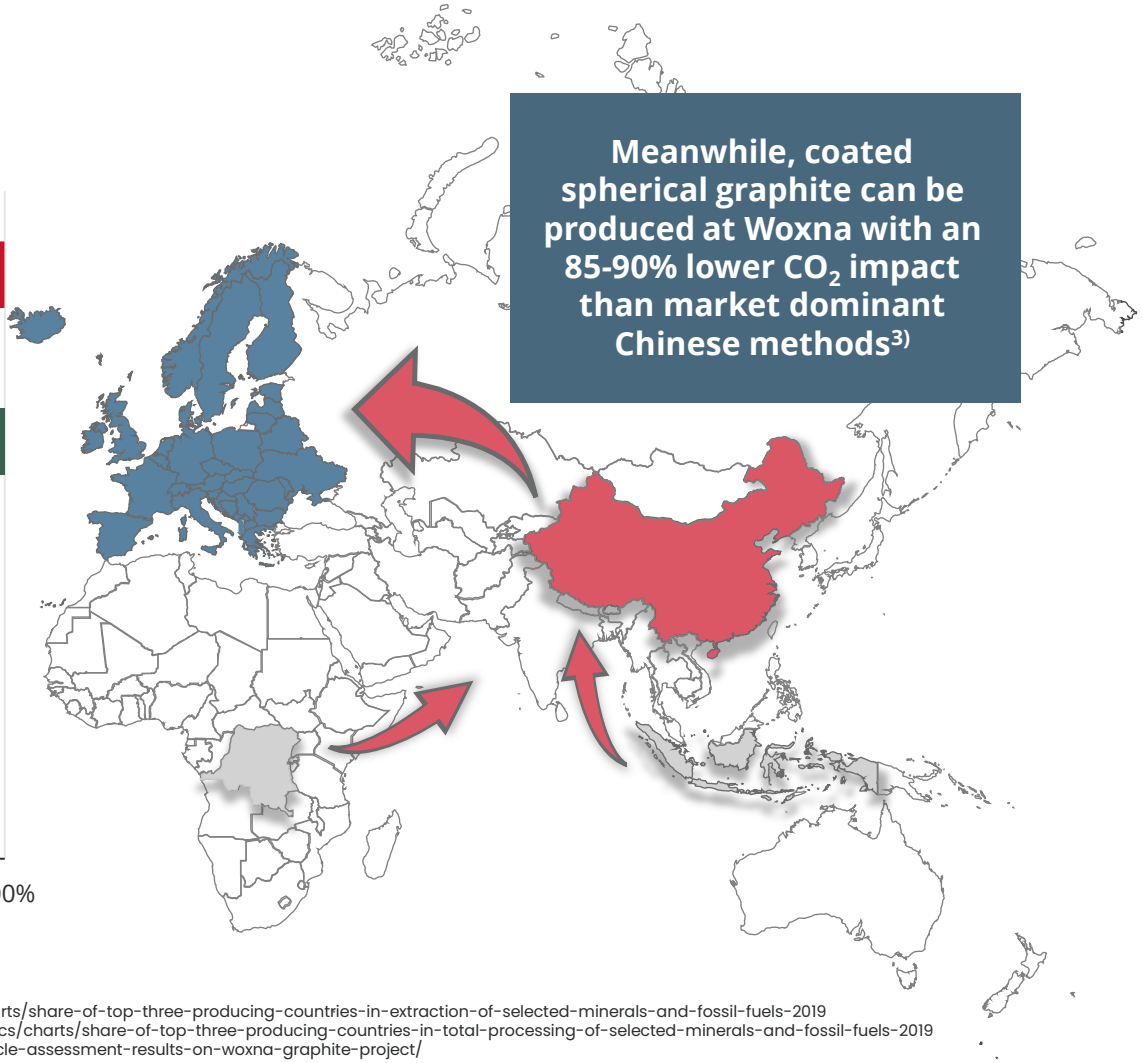
**Share of global[1)]**




## Processing

**Share of global[2)]**



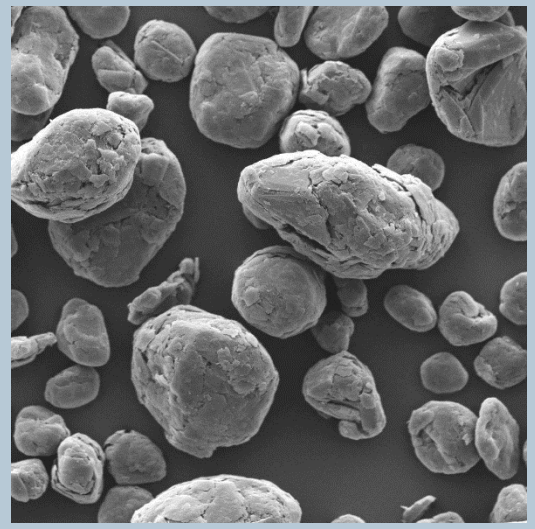




1) IEA, Share of top three producing countries in extraction of selected minerals and fossil fuels, 2019, IEA, Paris https://www.iea.org/data-and-statistics/charts/share-of-top-three-producing-countries-in-extraction-of-selected-minerals-and-fossil-fuels-2019
2) IEA, Share of top three producing countries in total processing of selected minerals and fossil fuels, 2019, IEA, Paris https://www.iea.org/data-and-statistics/charts/share-of-top-three-producing-countries-in-total-processing-of-selected-minerals-and-fossil-fuels-2019
3) Woxna Graphite LCA, see news release dated June 21, 2021: https://leadingedgematerials.com/leading-edge-materials-announces-preliminary-life-cycle-assessment-results-on-woxna-graphite-project/

# The Challenge for Europe

"Green and digital technologies currently depend on a number of scarce raw materials. We import lithium for electric cars, platinum to produce clean hydrogen, silicon metal for solar panels. 98% of the rare earth elements we need come from a single supplier: China. This is not sustainable. So we must diversify our supply chains."

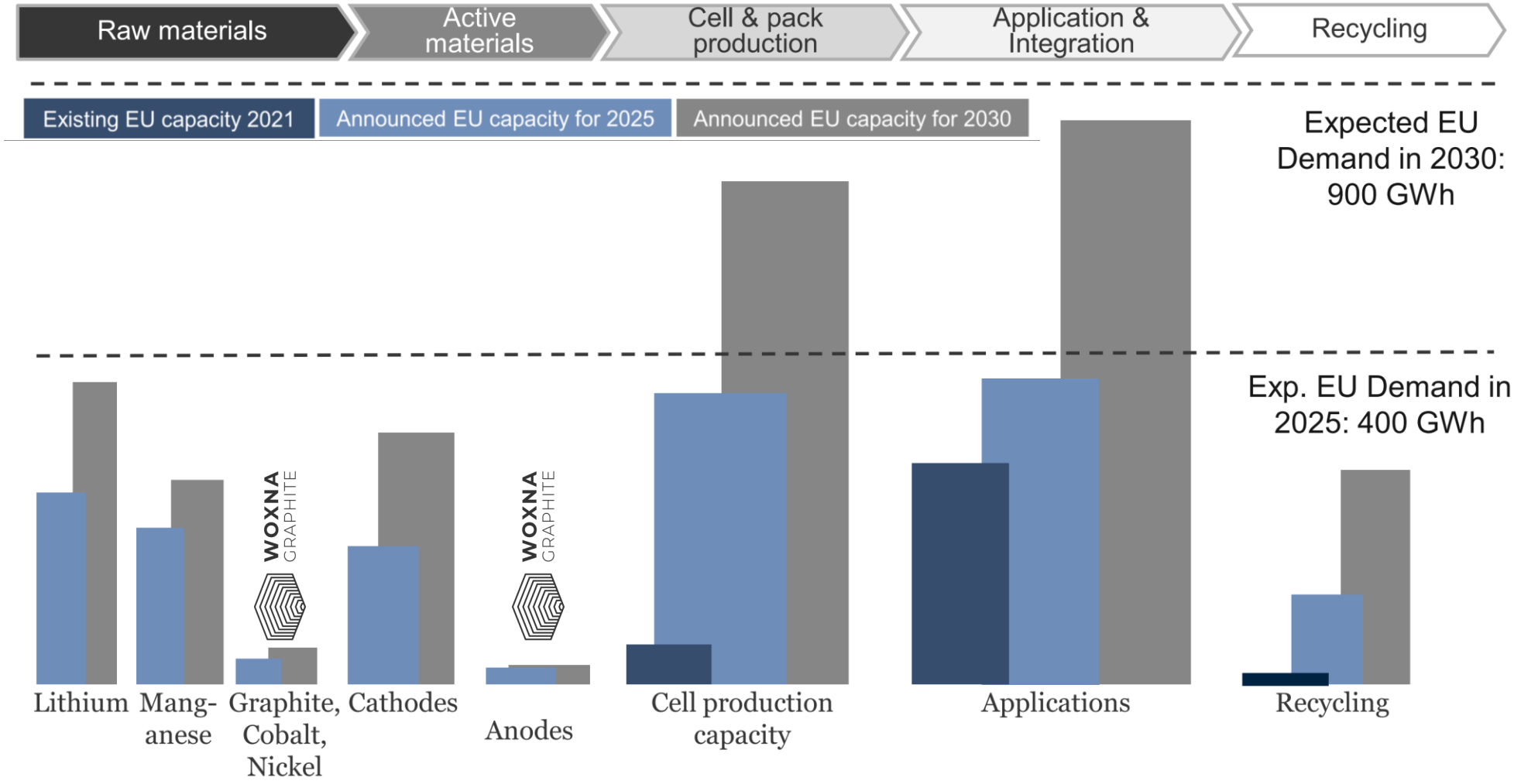
**- Opening speech by European Commission President von der Leyen at the EU Industry Days 2021**



# Woxna Graphite Anode project

# Battery Value Chain Gap

## Predicted share of EU supply vs. expected EU demand until 2030 per value chain step

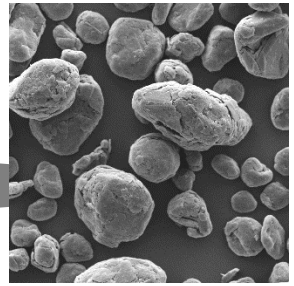



Source: Business Sweden, The Nordic Battery Value Chain Step 2, August 2021

# Woxna Graphite Overview




Mine | Concentrator | Sizing | Shaping | Purification | Coating



**Coated Spherical Purified Graphite**

**Graphite Concentrate**

**Spherical Graphite**

**Spherical Purified Graphite**

**Existing**

**Planned**

WOXNA GRAPHITE

WOXNA GRAPHITE

SICONA Battery Technologies

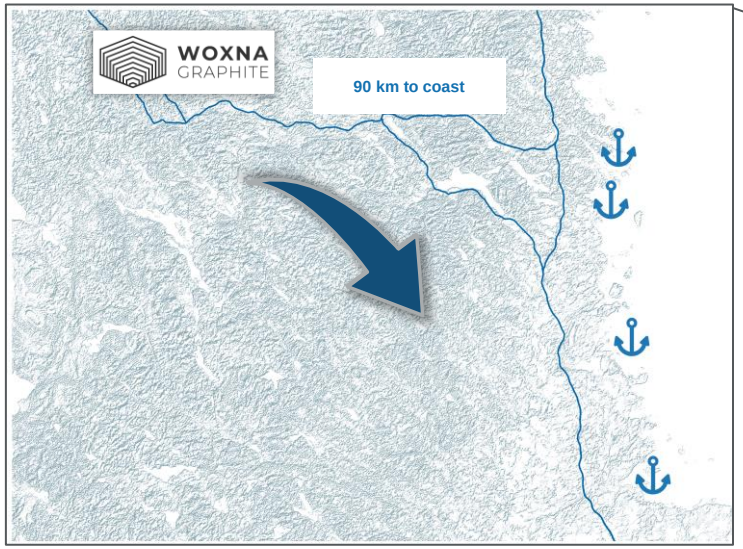
# European Battery Industry

**Woxna Graphite is ideally positioned to become a Swedish supplier to the European battery industry**

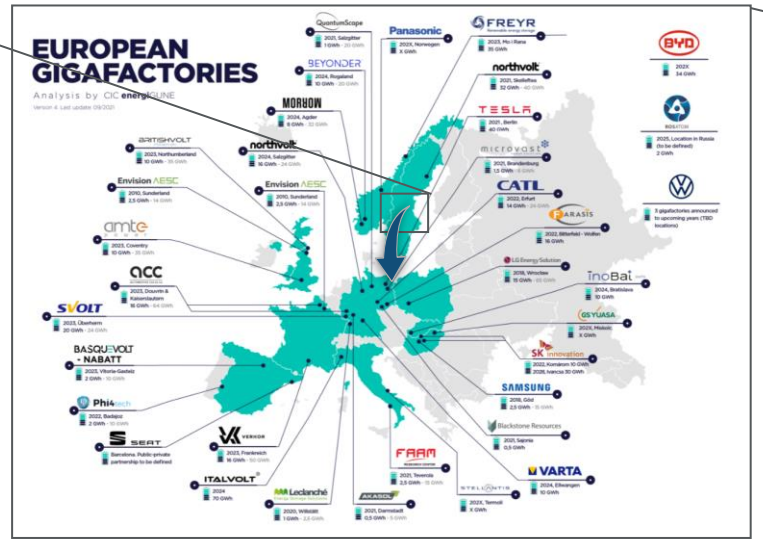
**1,000,000 tpa**
of anode demand by 2030 based on 1,000 GWh battery production planned in Europe

**25x**
Expected increase in demand for graphite by 2040 (IEA, *SDS*)

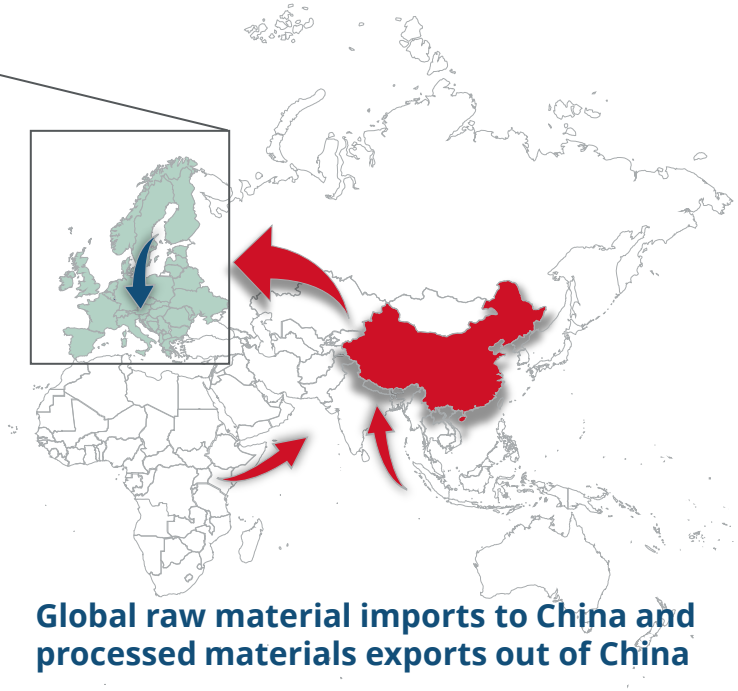
**71% – 100%**
China's global supply dominance of graphite raw material and spherical graphite (Benchmark Mineral Intelligence)




Transport routes on sealed roads from mine site to various port options




Announced gigafactory plans in Europe



Global raw material imports to China and processed materials exports out of China

# Woxna Graphite Anode PEA*

## Financial Highlights

- Post-tax Net Present Value (NPV 8%) of $248m
- Post-tax IRR of 37.4%
- Accumulated project revenues of $1,425m
- Average annual EBITDA of $49m
- Initial Capital Expenditures (CAPEX) of $121m

## Operational Highlights

- Life of Mine (LOM) is 15 years
- LOM average annual plant feed of 159,967 tonnes
- LOM average annual CSPG product 7,435 tonnes

## Mineral Resource Estimate – Measured and Indicated

| Property | Classification of Mineral Resource | Tonnes (Mt) | Grade C (%) |
|---|---|---|---|
| Kringel | Measured | 0.96 | 9.21 |
| | Indicated | 1.65 | 9.09 |
| | **Sub-total Measured + Indicated** | **2.61** | **9.13** |
| Gropabo | Indicated | 2.33 | 7.72 |
| Mattsmyra | | 5.83 | 7.14 |
| **Total** | **Measured + Indicated** | **10.77** | **7.75** |

## Mineral Resource Estimate – Inferred

| Property | Classification of Mineral Resource | Tonnes (Mt) | Grade C (%) |
|---|---|---|---|
| Kringel | Inferred | 0.39 | 8.72 |
| Gropabo | | 0.61 | 8.07 |
| Mattsmyra | | 1.51 | 8.06 |
| **Total** | **Inferred** | **2.51** | **8.16** |

**Source: ReedLeyton 2021**

**Notes:** Inconsistencies in totals are due to rounding; 4% Cg mill cut-off grade applied for reporting purposes constrained within the MPlan 2021 pitshell; Reported according to CIM Definition Standards 2011; Reported according to CIM Mineral Exploration Best Practice Guidelines (Nov 2018); No geological losses applied; Default Density of 2.7 t/m$^3$ applied to in situ, then Density of 2.82 t/m$^3$ applied to Type A Graphite and Density of 2.86 t/m$^3$ applied to Type B Graphite for Gropabo and Mattsmyra; and Default Density for Kringel remained at 2.7 t/m3; The previous Mineral Resource Estimates for the Project were developed without the constraint of an applied mine plan and open-pit shell. In the light of more rigorous compliance requirements, the Mineral Resources were reported by ReedLeyton within the constraints of the PEA mine plan as a means of demonstrating "reasonable prospects for economic extraction" as required by numerous international reporting codes. No new exploration data was included in the reporting process; Effective date of Mineral Resource Estimate is June 9, 2021; and Mineral resources are not mineral reserves and do not have demonstrated economic viability;

* See National Instrument 43-101 report entitled "NI 43-101 Technical Report – Woxna Graphite" prepared for Woxna Graphite AB with effective date June 9, 2021 and issue date July 23, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

# Woxna Graphite Anode PEA*

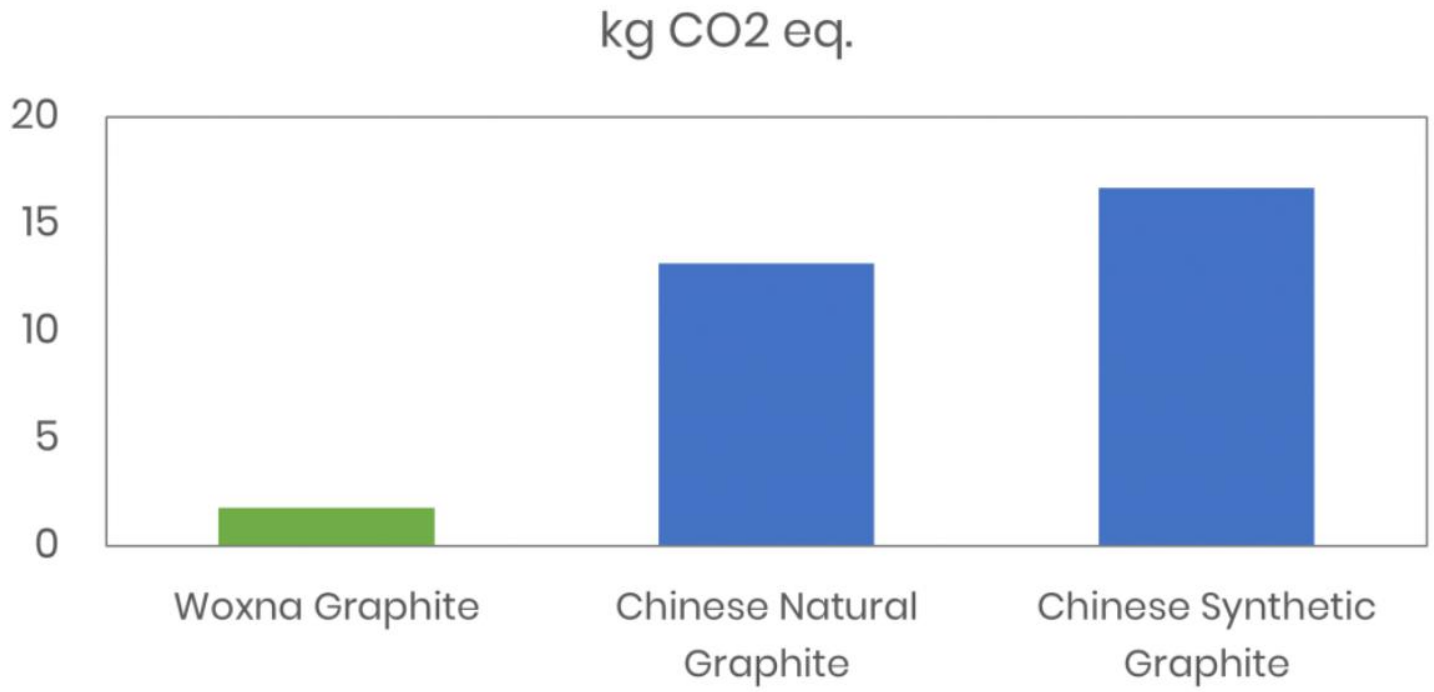
**The PEA indicates the potential viability of a Swedish operation producing battery grade graphite anode material utilizing an existing graphite mine and concentrator with the addition of a value-add processing facility offsite**

- Thermal purification process which, combined with access to low cost hydropower offers a low carbon footprint for the Project demonstrated through a recently announced life cycle assessment (LCA) report
- Improved waste management process for tailings further improving the sustainability ambitions of the Project
- The PEA utilizes one out of four deposits currently owned by Woxna under granted exploitation concessions, where two of the other deposits also have indicated and inferred mineral resource estimates offering potential upside for further expansion in future development or studies

* See National Instrument 43-101 report entitled "NI 43-101 Technical Report – Woxna Graphite" prepared for Woxna Graphite AB with effective date June 9, 2021 and issue date July 23, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

# Woxna Graphite LCA Results*

- 1 tonne of natural graphite anode material (coated spherical purified graphite ("CSPG")) from natural graphite extracted at the Woxna Graphite mine is forecast to have an impact of 1.8 tonnes CO2 eq
- 85% to 90% lower impact than the current market dominant Chinese alternatives
- Significant factor influencing the dramatically reduced carbon footprint for Woxna Graphite is the access to hydropower as the main electricity source
- 62.5% of the 1.8 tonnes CO2 eq. for Woxna contributed by argon and nitrogen. Local suppliers can offer climate neutral alternatives which would lead to further improvements in Woxna's footprint
- The LCA study was conducted according to the requirements of the ISO-104040:2006 and ISO-14044:2006 standards and used a cradle-to-gate approach




* See news release dated June 21, 2021: https://leadingedgematerials.com/leading-edge-materials-announces-preliminary-life-cycle-assessment-results-on-woxna-graphite-project/

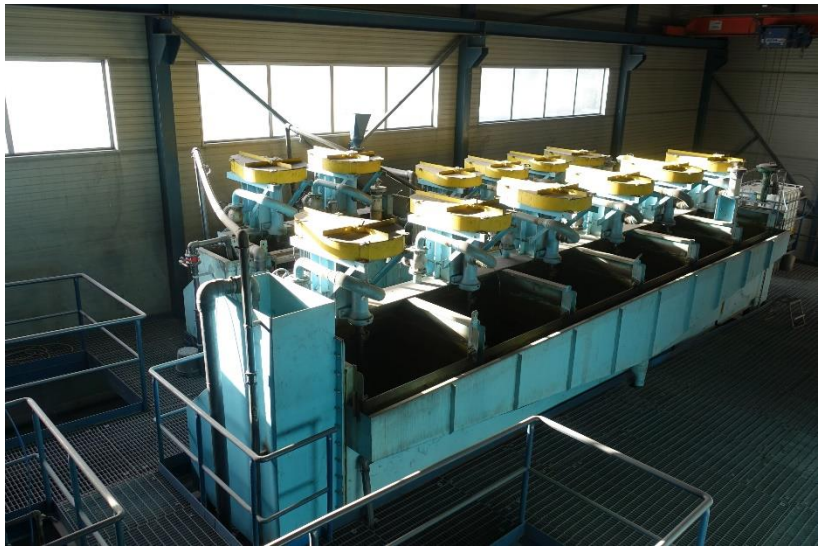
# Proposed 50/50 JV with Sicona*

## Targeting the production of advanced natural graphite and silicon-graphite-carbon composite active anode materials

- Sicona is commercialising innovative silicon-graphite-carbon composite anode and binder technology and materials that have been developed over the last ten years at the Australian Institute for Innovative Materials at the University of Wollongong and now owned by Sicona
- Due to its improved storage capacity, silicon graphite composite anode materials attract higher selling prices. However, due to the higher capacity the cost per capacity unit becomes lower for battery cell manufacturers, driving an increased interest to transition into these materials over the future
- Proposed Sweden-based advanced anode materials production facility targeting an annual production of up to 20,000 tonnes per year of multiple active anode materials products using Woxna graphite and other complementary suitable feedstocks such as externally sourced silicon and other carbon or graphite materials utilizing Sicona's significant proprietary IP and know-how


* For further details, see news release dated October 6, 2021

# Woxna Graphite Mine

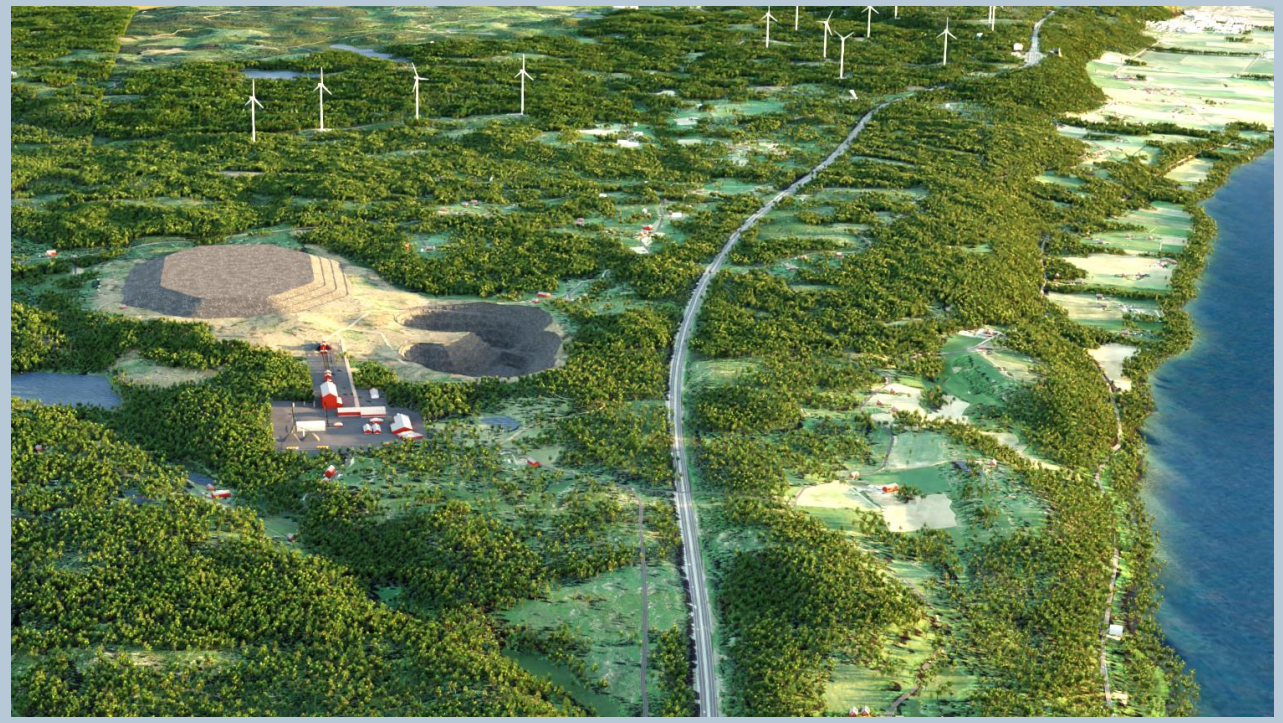


## Annual potential anode output from Woxna Graphite* could support the production of lithium-ion batteries needed for a significant amount of electric cars

6
C
Carbon
12.001

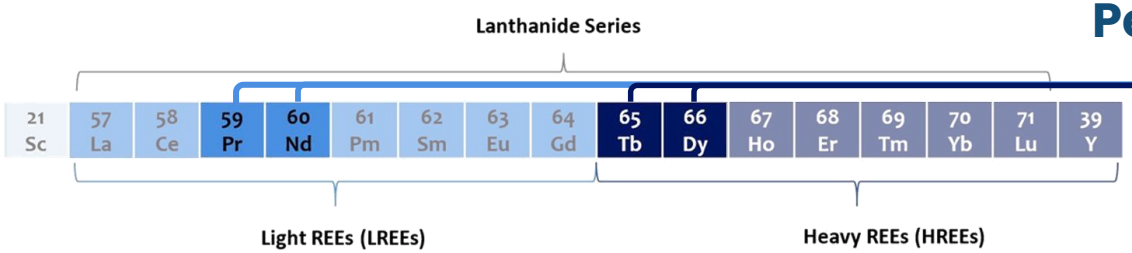
# 100 000

* Management estimate calculations based on publicly available data and product output numbers from National Instrument 43-101 report entitled "NI 43-101 Technical Report – Woxna Graphite" prepared for Woxna Graphite AB with effective date June 9, 2021 and issue date July 23, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized. Image source: Polestar

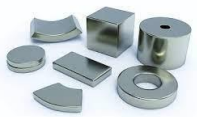


# Norra Kärr HREE Project

# Rare Earth Elements and permanent magnets




**Permanent Magnets**



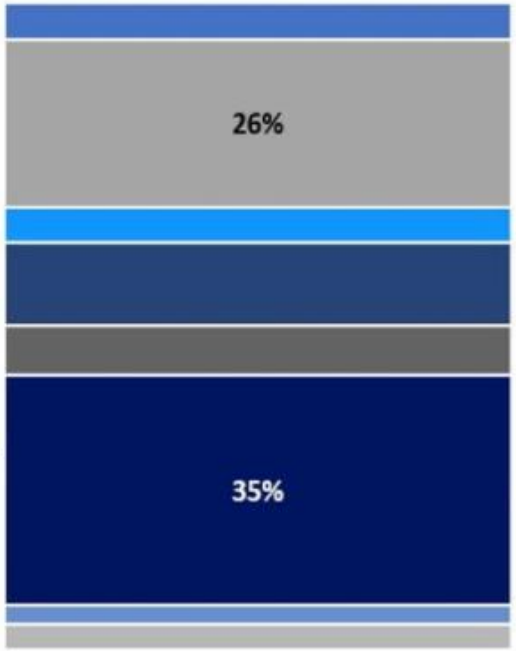
**Electric Vehicles**

**Wind Power**

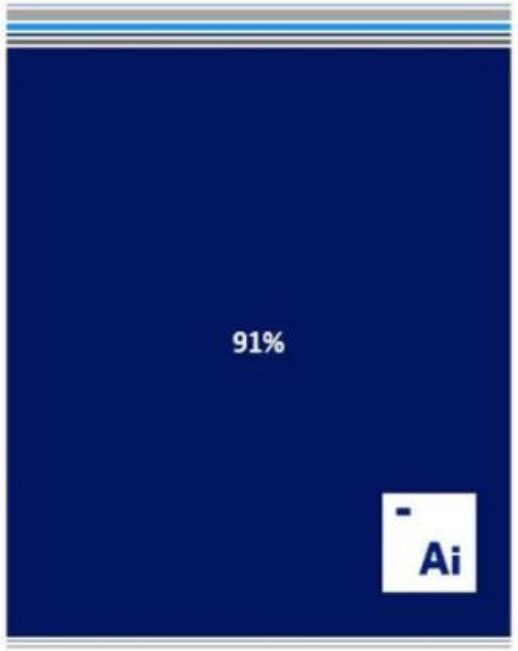
**Categories**

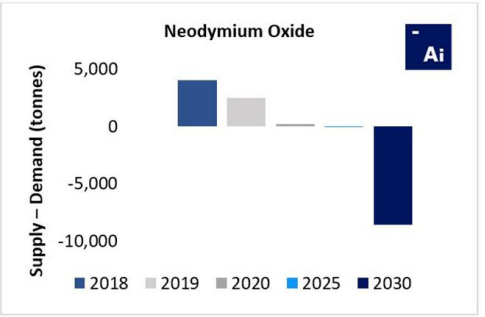
- Battery Alloys
- Catalysts
- Ceramics, Pigments & Glazes
- Glass Polishing Powders & Additives
- Metallurgy and Alloys
- Permanent Magnets
- Phosphors
- Other

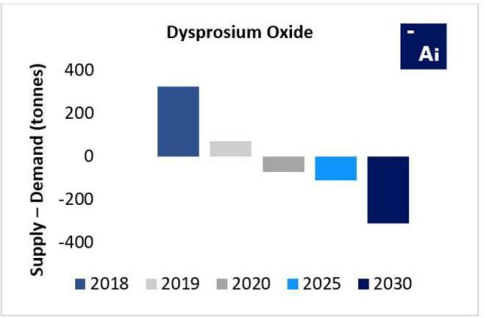
**By Volume**




**By Value**

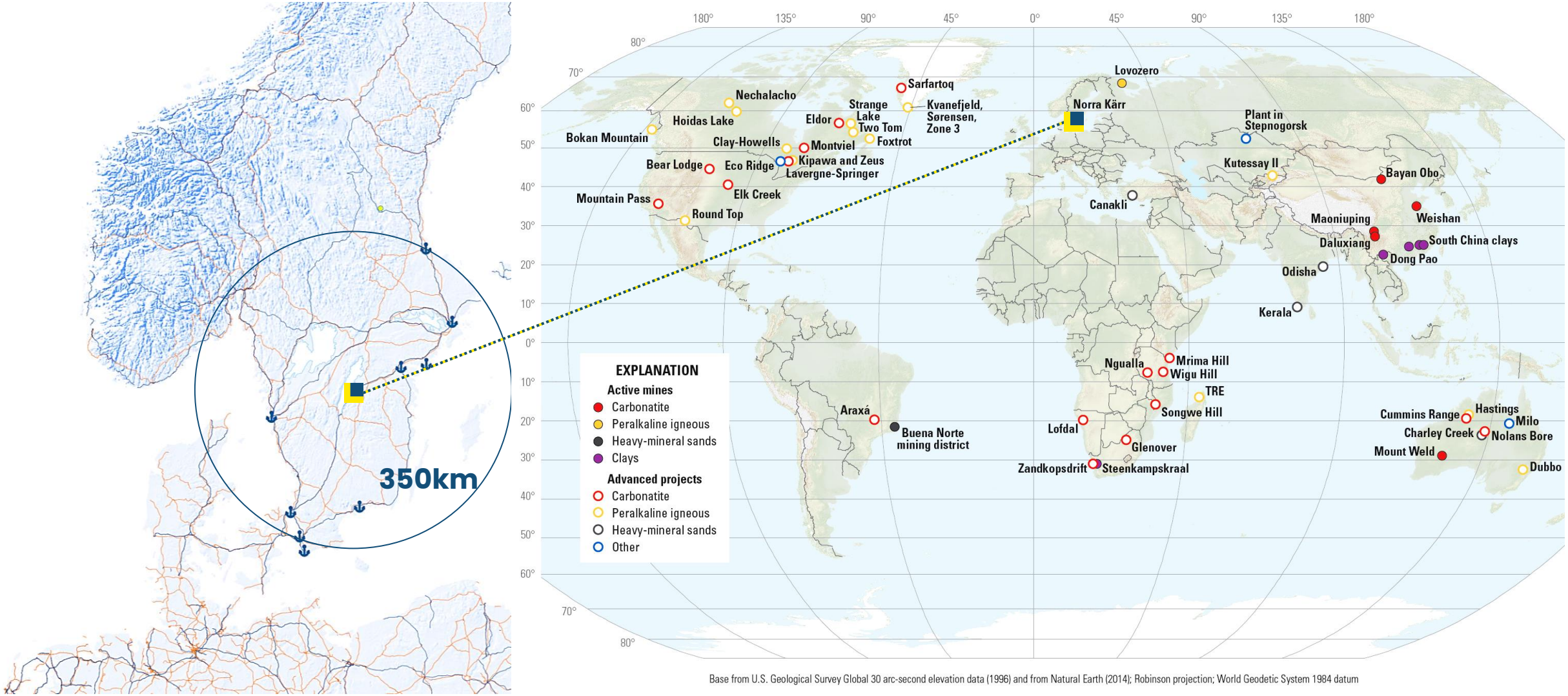


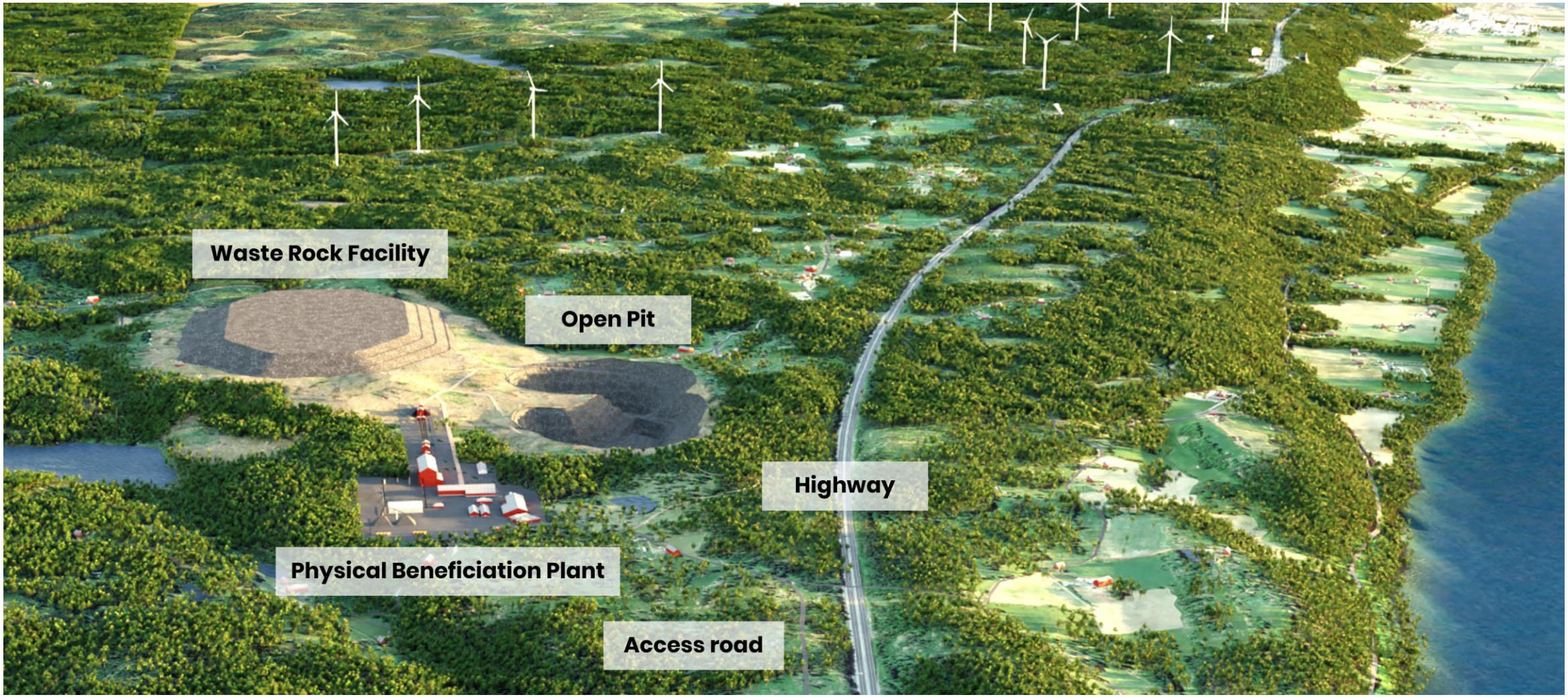

**Source:** Adamas Intelligence

# Location of Norra Kärr




Base from U.S. Geological Survey Global 30 arc-second elevation data (1996) and from Natural Earth (2014); Robinson projection; World Geodetic System 1984 datum

# Norra Kärr Site Plan Overview



# Norra Kärr Mineral Resource Statement

### Norra Karr Mineral Resource Statement (SRK, 18 August 2021)*

| Mineral Resource Classification | Tonnes (Mt) | TREO (%) | $ZrO_2$ (%) | $Nb_2O_5$ (%) | Nepheline Syenite (%) |
|---|---|---|---|---|---|
| Inferred | 110 | 0.5 | 1.7 | 0.05 | 65 |

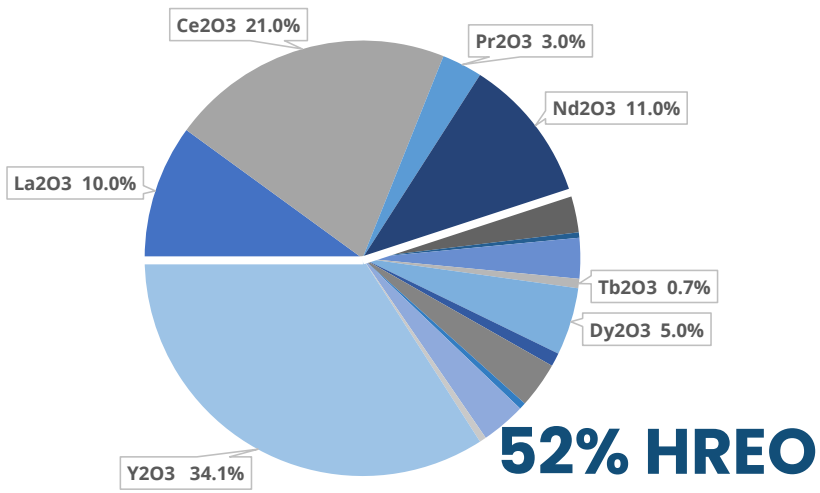
*Notes:*

1. *Effective date 18 August 2021.*
2. *Qualified Person Mr Martin Pittuck MSc C.Eng*
3. *Mineral Resources are not Mineral Reserves until they have Indicated, or Measured confidence and they have modifying factors applied and they have demonstrated economic viability based on a Feasibility Study or Prefeasibility Study.*
4. *There is no guarantee that Inferred Mineral Resources will convert to a higher confidence category after future work is conducted.*
5. *The Mineral Resources reported have been constrained using an open pit shell assuming the deposit will be mined using open pit bulk mining methods and above a cut-off grade of USD150/t., including a 30% premium on projected commodity prices and unconstrained by commodity production rates and the 260m highway buffer zone.*
6. *The Mineral Resources reported represent estimated contained metal in the ground and has not been adjusted for metallurgical recovery.*
7. *Total Rare Earth Oxides (TREO) includes: $La_2O_3$, $Ce_2O_3$, $Pr_2O_3$, $Nd_2O_3$, $Sm_2O_3$, $Eu_2O_3$, $Gd_2O_3$, $Tb_2O_3$, $Dy_2O_3$, $Ho_2O_3$, $Er_2O_3$, $Tm_2O_3$, $Yb_2O_3$, $Lu_2O_3$, $Y_2O_3$.*
8. *Heavy Rare Earth Oxides (HREO) include: Eu2O3, Gd2O3, Tb2O3, Dy2O3, Ho2O3, Er2O3, Tm2O3, Yb2O3, Lu2O3, Y2O3*
9. *HREO is 52% of TREO*

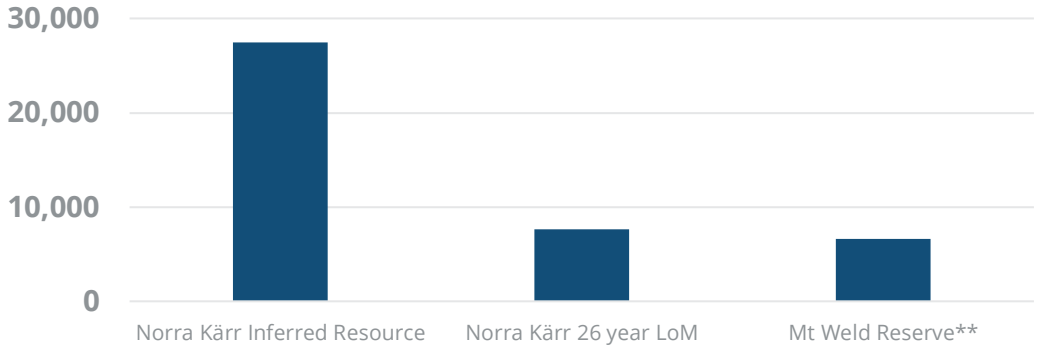
### Norra Karr Rare Earth Element Distribution

| Light REO proportion of Total REO | | | | | Heavy REO proportion of Total REO | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| $La_2O_3$ | $Ce_2O_3$ | $Pr_2O_3$ | $Nd_2O_3$ | $Sm_2O_3$ | $Eu_2O_3$ | $Gd_2O_3$ | $Tb_2O_3$ | $Dy_2O_3$ | $Ho_2O_3$ | $Er_2O_3$ | $Tm_2O_3$ | $Yb_2O_3$ | $Lu_2O_3$ | $Y_2O_3$ |
| 0.100 | 0.210 | 0.030 | 0.110 | 0.030 | 0.004 | 0.030 | 0.007 | 0.050 | 0.010 | 0.034 | 0.005 | 0.033 | 0.005 | 0.340 |
| 0.48 | | | | | 0.52 | | | | | | | | | |

### Resource REO Distribution



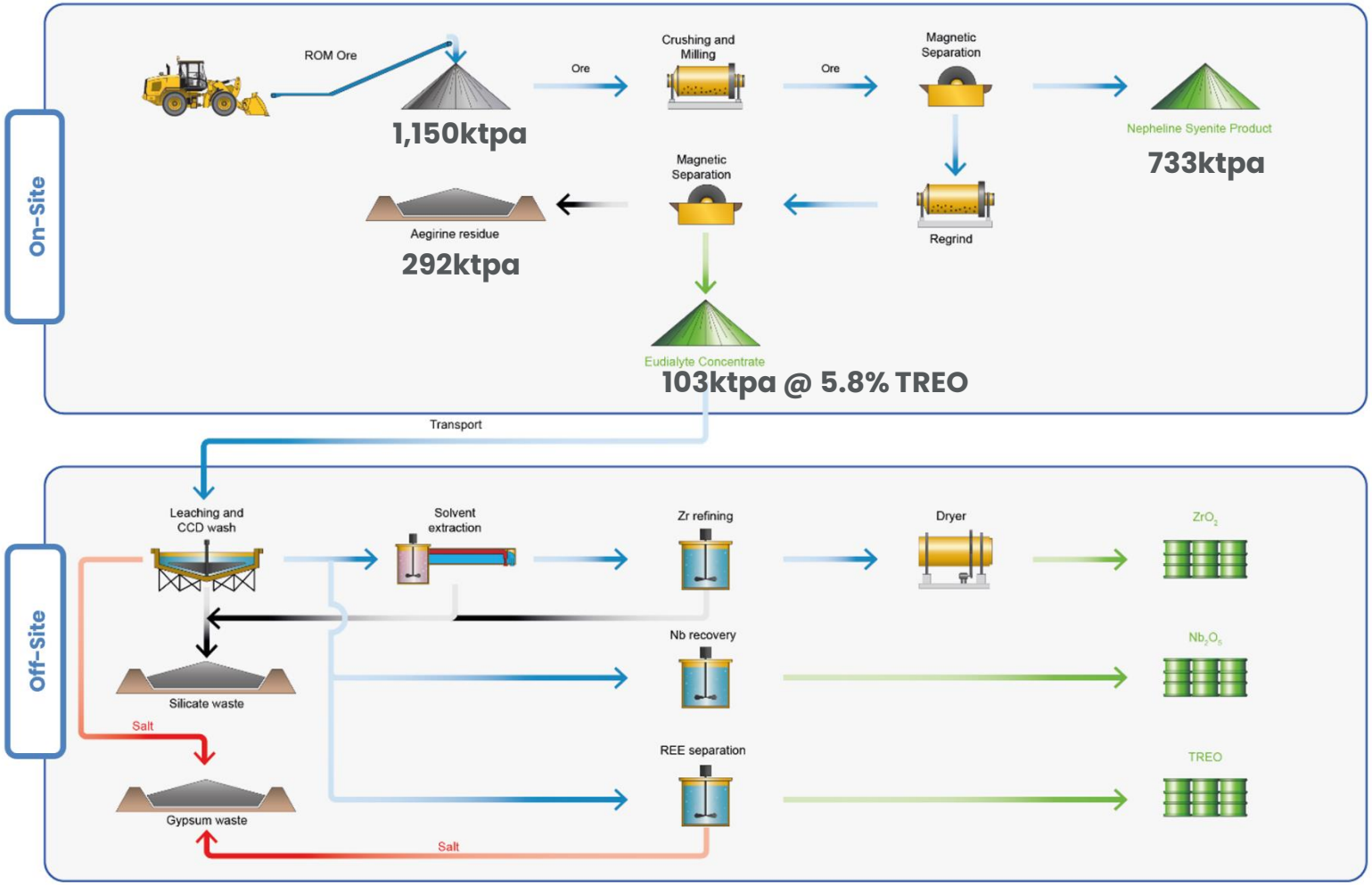

### Contained dysprosium




* See National Instrument 43-101 report titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KÄRR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" prepared for Leading Edge Materials Corp. with effective date August 18, 2021 and issue date August 19, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculatively geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

** August, 6, 2018 – Lynas Corporation Ltd, Reserve update

# Norra Kärr 2021 PEA*




## Operational Highlights

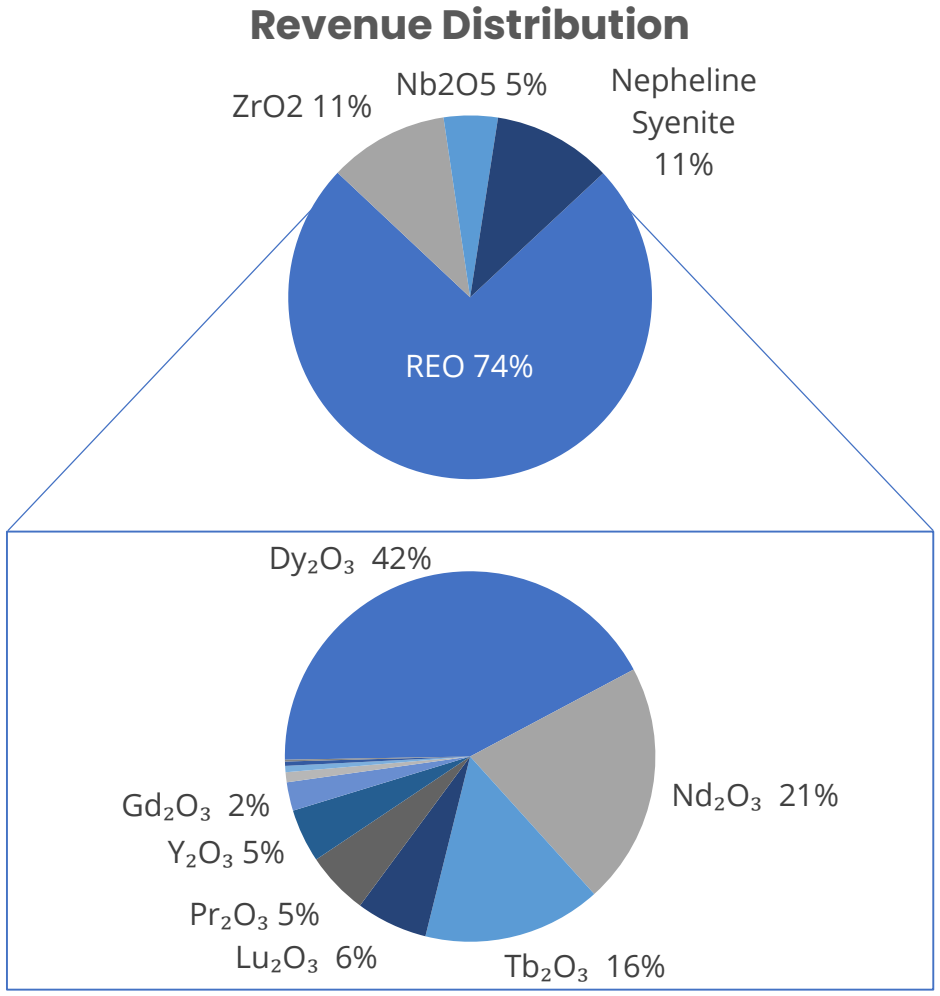
- Life of Mine (LOM) is 26 years
- LOM average annual
  - Mining rate of 1,150,000 tonnes
  - strip ratio of 0.32
  - TREO 5,341 tonnes
  - Magnet REOs (Nd, Pr, Dy, Tb) 1,005 tonnes
    - $Dy_2O_3$: 248 tonnes
    - $Tb_2O_3$: 36 tonnes
    - $Nd_2O_3$: 578 tonnes
    - $Pr_2O_3$: 143 tonnes
  - Nepheline Syenite co-product 732,885 tonnes
  - Zirconium dioxide co-product 10,200 tonnes
  - Niobium oxide product 525 tonnes

* See National Instrument 43-101 report titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KÄRR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" prepared for Leading Edge Materials Corp. with effective date August 18, 2021 and issue date August 19, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

# Norra Kärr 2021 PEA*

## Financial Highlights

- Post-tax Net Present Value (NPV 10%) of $762M
- Post-tax Internal Rate of Return (IRR) of 26.3%
- Accumulated LoM project revenues of $9,962M
- Average annual EBITDA of $206M
- Initial Capital Expenditures (CAPEX) of $487M
  - Split across $165m on-site and $323m off-site
- Pre-tax Payback Period from first production of 5.1 years
- Life of mine average gross basket price per kg of separated mixed REO product at $53

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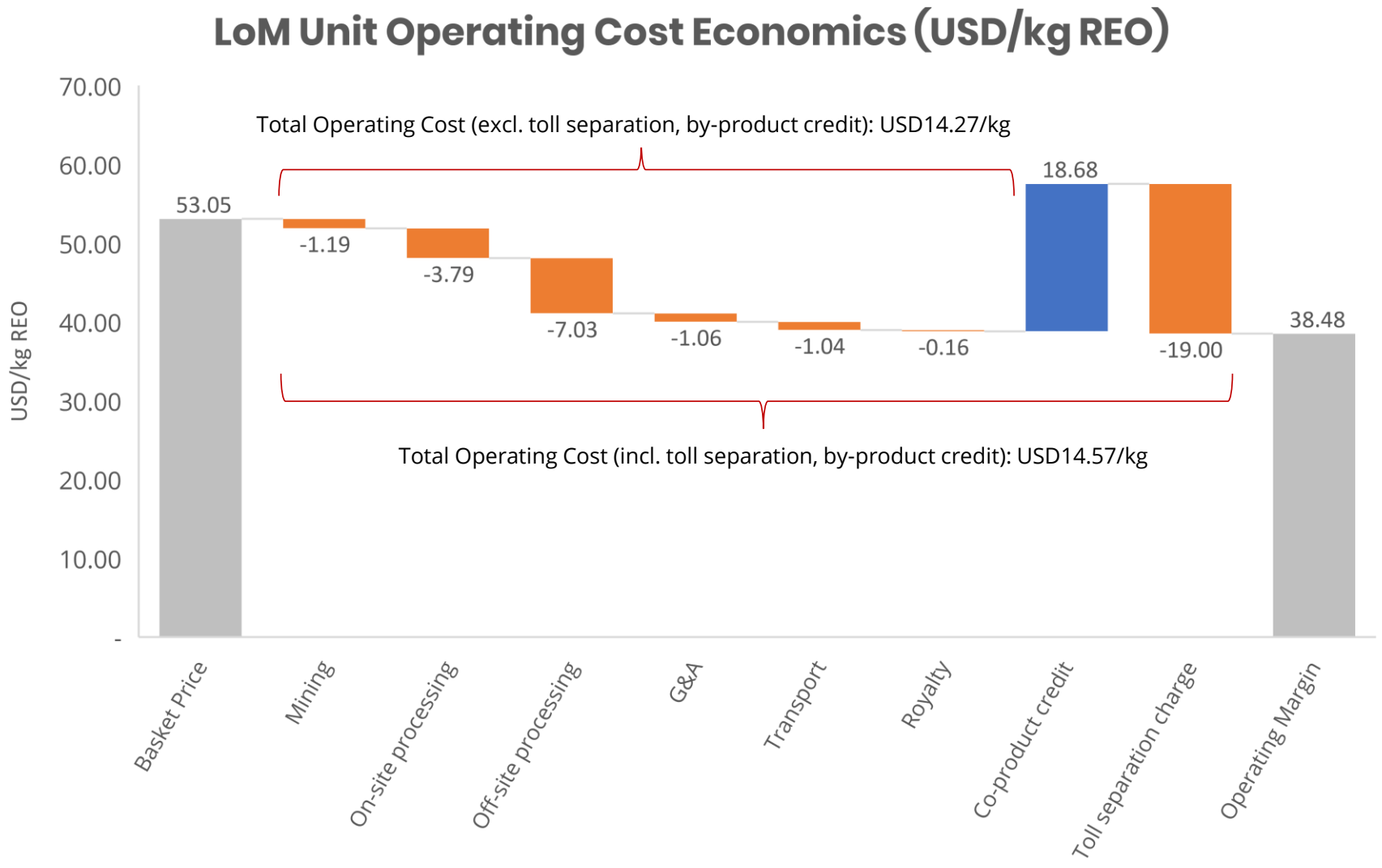
# Norra Kärr 2021 PEA*

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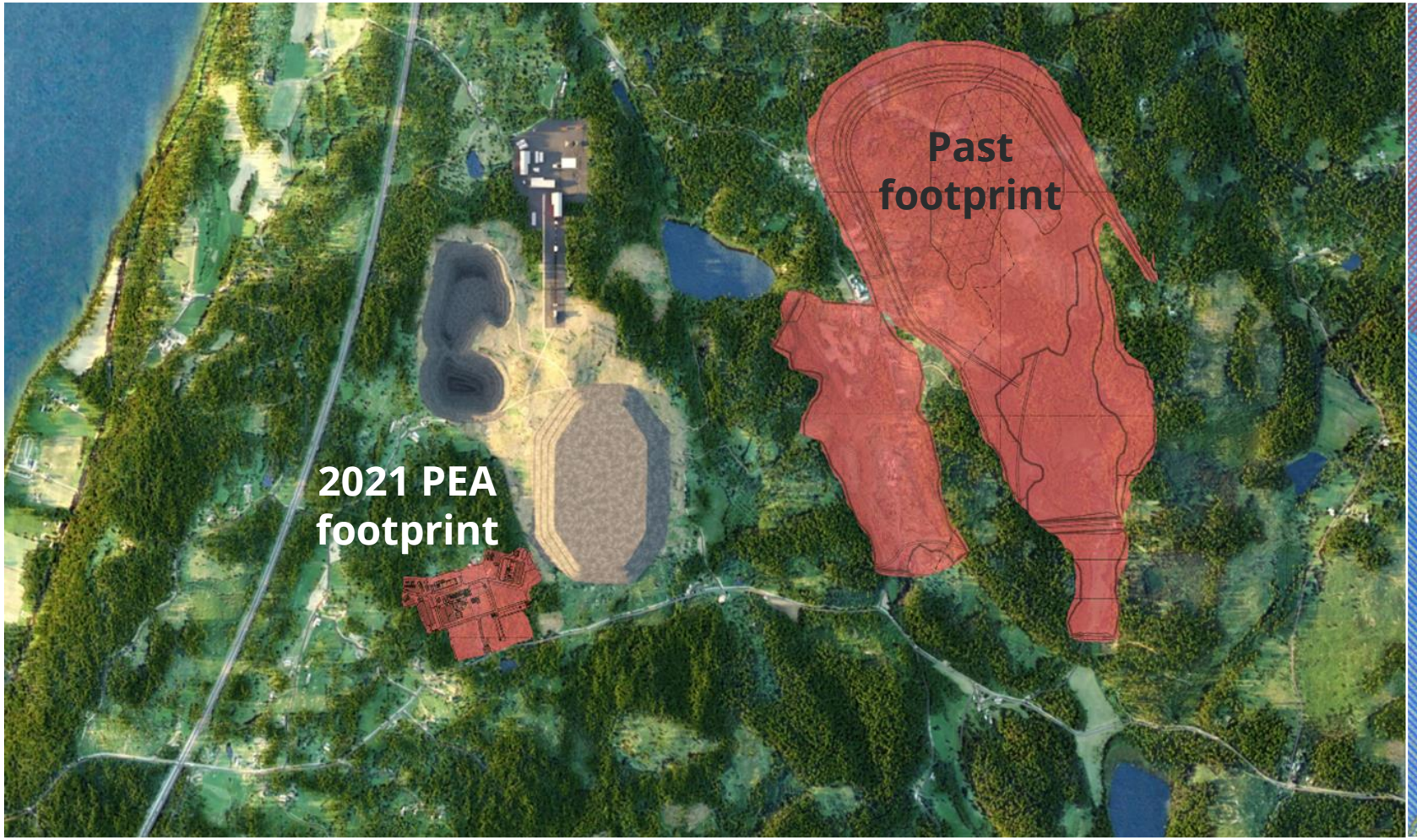
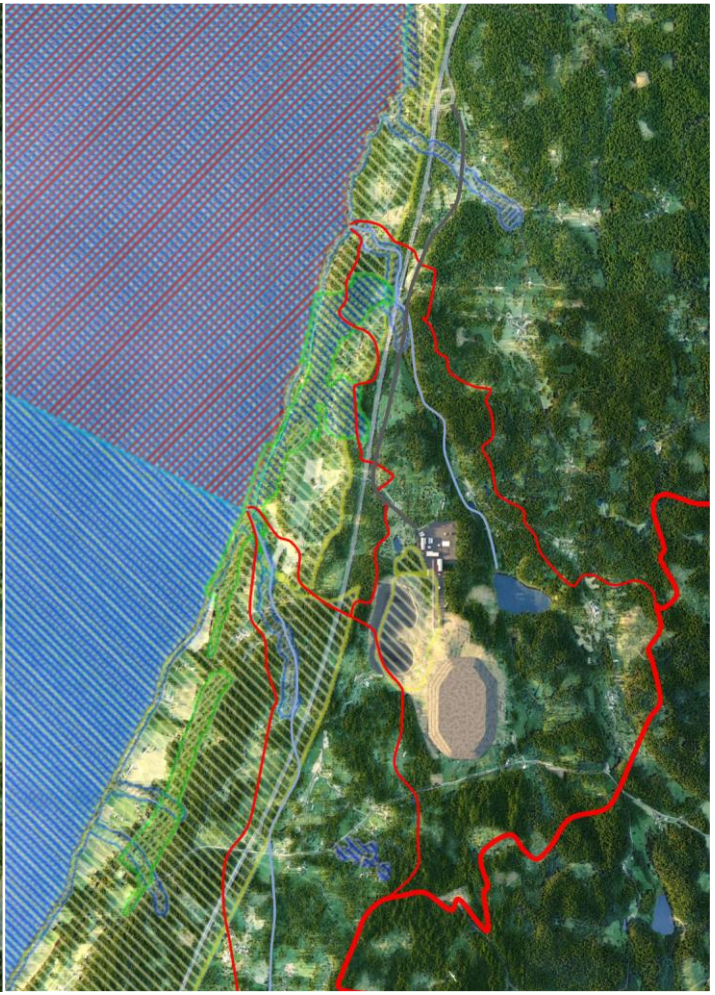
# Norra Kärr 2021 PEA* vs 2015 PFS

- More than 50% of total mined material is planned to be sold as products compared with less than 1% in the previously project submitted for permitting
  - Opportunity for further improvement with waste rock for construction material and aegirine for paint pigment or block colouring
- Only mining, crushing, milling and magnetic separation at site.
- Chemical processing moves to a more suitable off-site location
- Waste at site is aegirine, dry stacked in a lined impoundment together with waste rock
- No wet tailings at site
- 80% reduction in land area usage
- 50% reduction in water requirements, and no processing water discharge planned

* See National Instrument 43-101 report titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KÄRR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" prepared for Leading Edge Materials Corp. with effective date August 18, 2021 and issue date August 19, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculatively geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.

# Norra Kärr 2021 PEA Environmental Context



# Off-site Chemical Plant Localization

- Luleå chosen conceptually due to vicinity of sulphuric acid production, brownfield industrial areas and logistics
- Access to low cost low carbon footprint hydropower
- 900 kilometers by train
- Other locations in Sweden, or neighbouring countries will be evaluated

# Sustainability Opportunity of Norra Kärr

## Comparison of dysprosium production from different resources by life cycle assessment

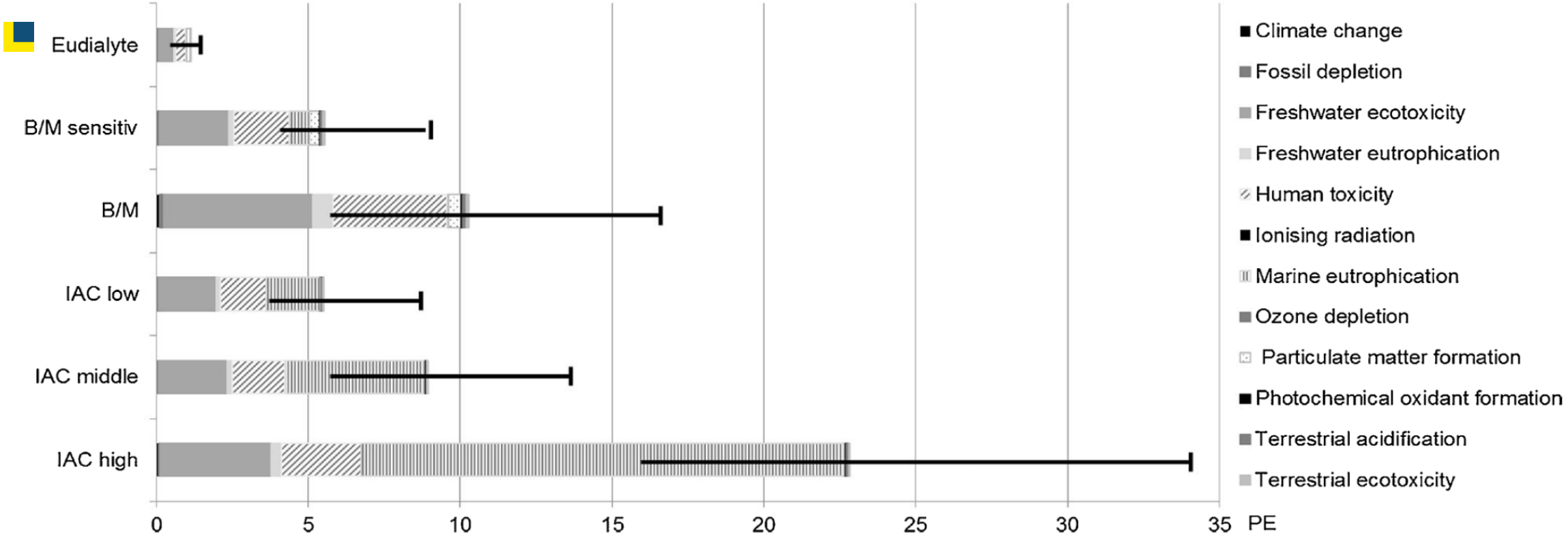
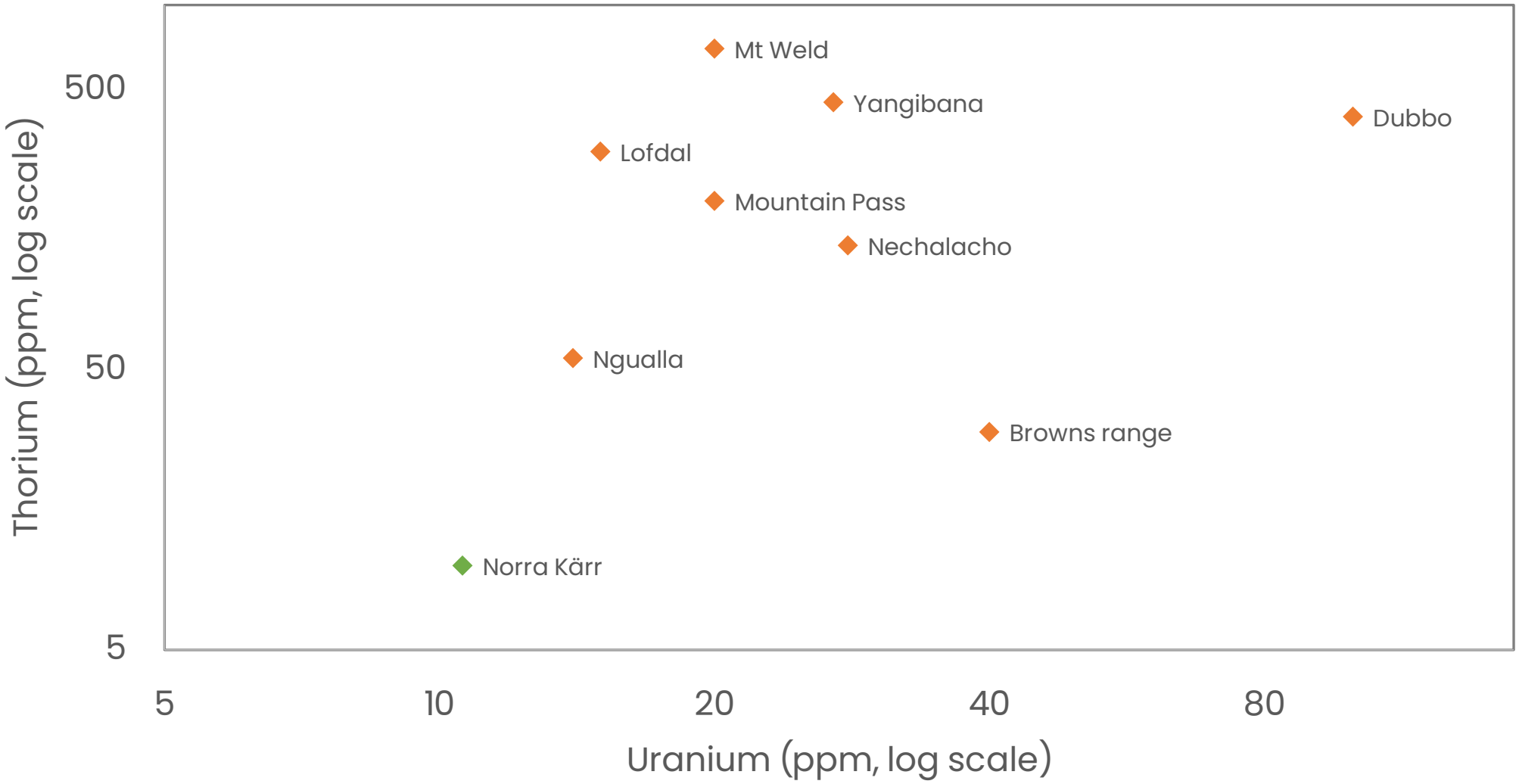



**Fig. 3.** Normalised impacts of process chains in person equivalents per kg Dy with deviation.

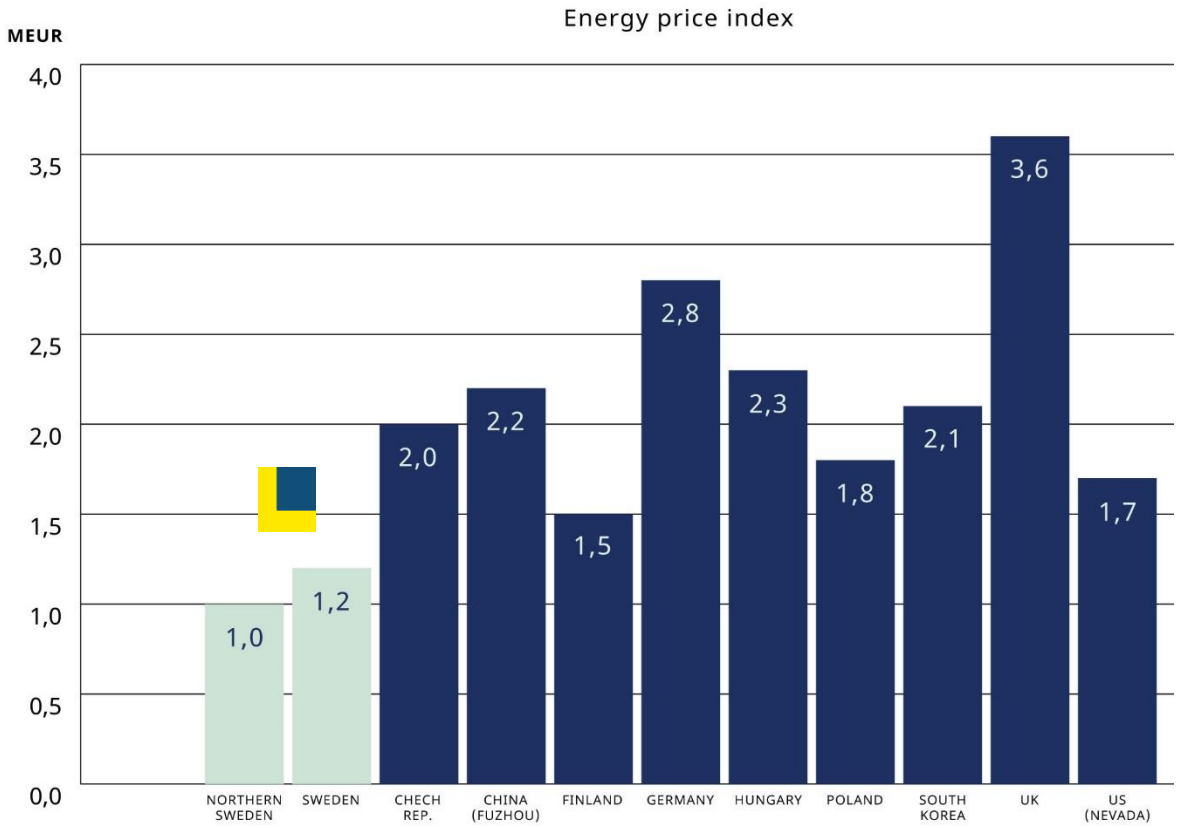
Source: Zapp, 2018

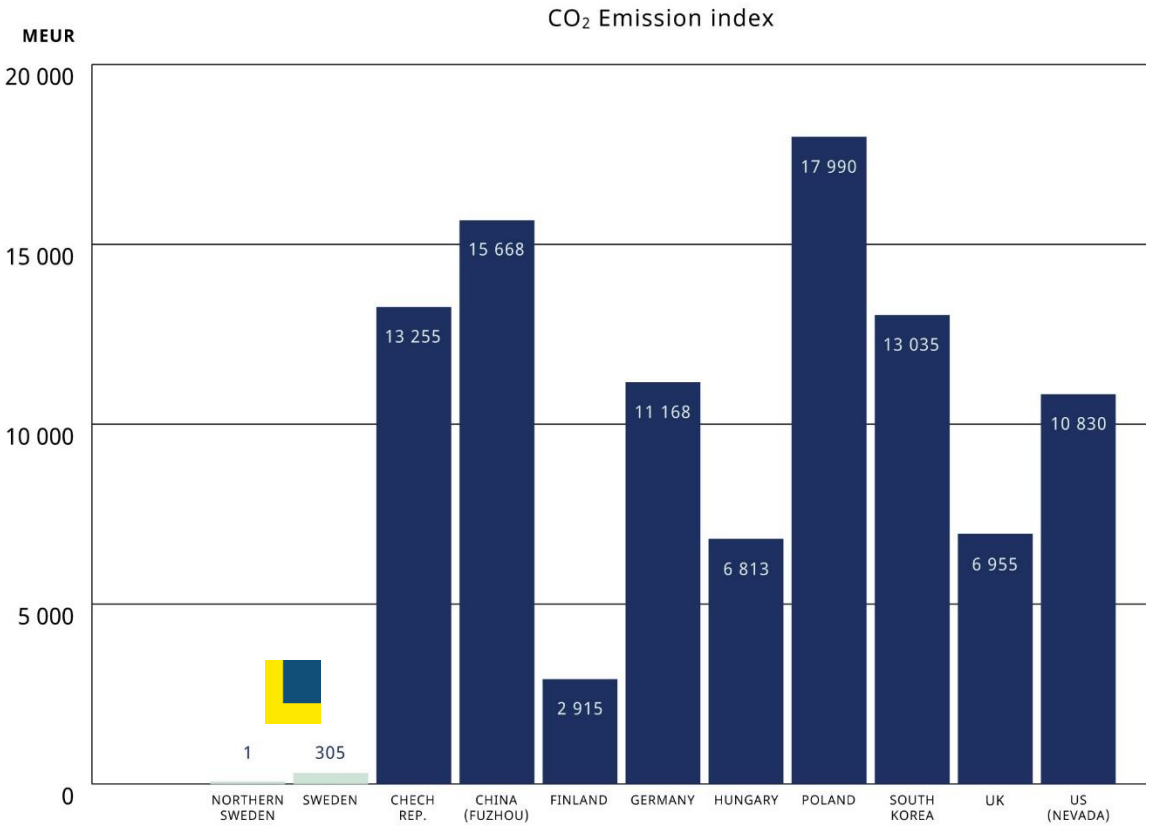
# Radionuclide Content




Data for peer projects is managements estimates based on publicly available data. Leading Edge Materials Corp. does not guarantee the exact accuracy of these estimates.

# Sweden’s Power Advantage




Source: NodePole

# Social License of Norra Kärr

**2009**
- Exploration license granted

**2012**
- Scoping study released

**2013**
- Mining lease granted with support by Mining Inspectorate and County Administrative board

**2014**
- Mining Lease upheld by Government

**2015**
- Pre-Feasibility study released

**2016**
- Mining Lease reverted to application by Supreme Administrative Court

**2019**
- County Administrative Board demands N2000 permit prior to mining lease granting

**2020**
- Exploration license extended to 2025

**2021**
- Mining Inspectorate rejects mining lease application due to no N2000 permit

**2021**
- Parliament majority votes for government to propose legislation that N2000 permit should be a pre-requisite for mining lease

**2021**
- Appealed to Government

**2021**
New Scoping Study released focussed on maximizing resource efficiency and minimizing local footprint of project which will drive permitting forward.

**2022**
- Exploration license extended until 2026

**2023**
- Natura 2000 permit application

## Annual potential output from Norra Kärr* could support the production of NdFeB permanent magnets needed for a significant amount of electric cars

| | |
|---|---|
| 60 **Nd** Neodymium 144.24 | 59 **Pr** Praseodymium 140.908 |
| 66 **Dy** Dysprosium 162.50 | 65 **Tb** Terbium 158.925 |

# 1 200 000
# 1 900 000


* Management estimate calculations based on publicly available data and product output numbers from National Instrument 43-101 report titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KÄRR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" prepared for Leading Edge Materials Corp. with effective date August 18, 2021 and issue date August 19, 2021. See Leading Edge Materials Corp.'s SEDAR profile on www.sedar.ca or www.leadingedgematerials.com for report and more information. The PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized. Image source: Polestar

# Bihor Sud Exploration Project

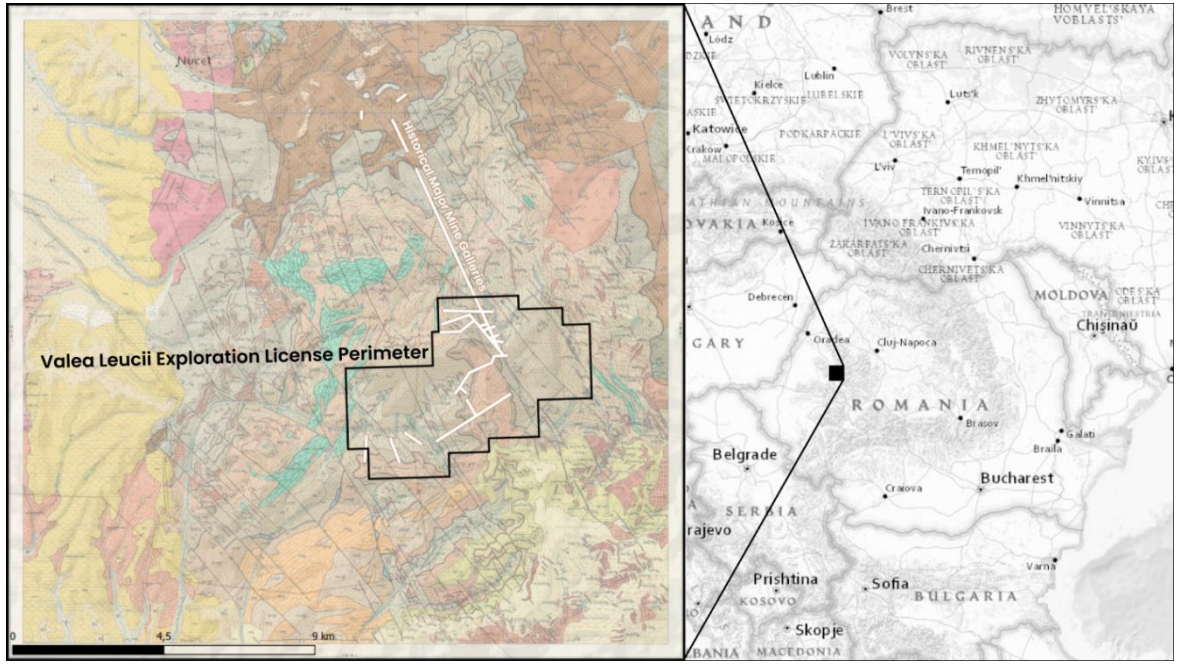
# Romania Bihor Sud Nickel-Cobalt Project

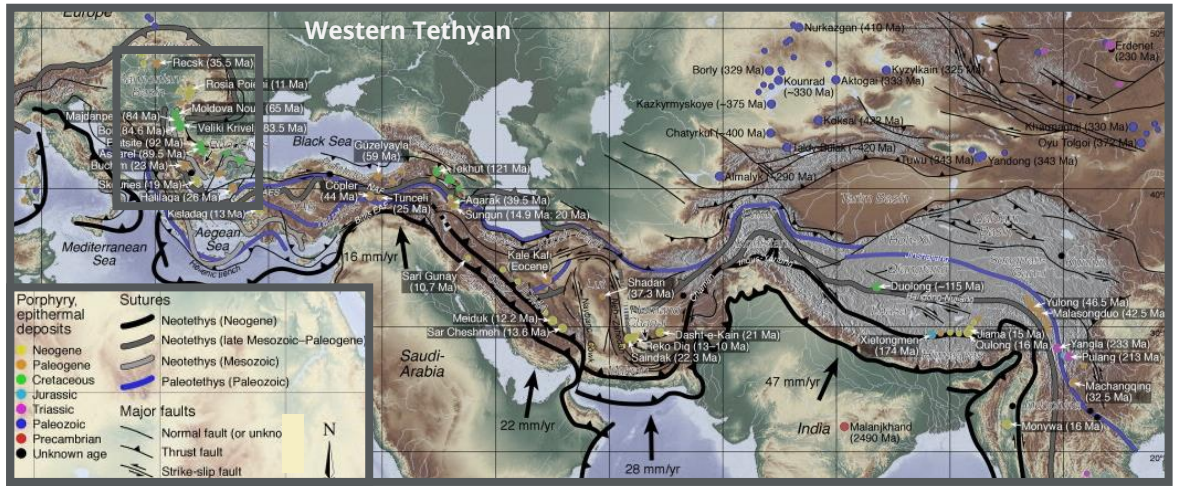
## Overview

- JV from 2018 with 51% ownership with potential to move to 90%. Local JV partner operates a Dolomite mine in the area offering shared resources and local knowledge
- Located in the upper Cretaceous metallogenic belt, part of the Tethyan Belt in a historic mining area with a number of historic mines, one being a significant uranium mine
- Initial prospecting campaign and sampling from past mine workings indicates potential for high grade nickel-cobalt mineralization

## Opportunity

- Bihor Sud is a relatively isolated site whilst the road and power network is well developed due to prior mining and forestry. No permanent residences lie within 5km of the Exploration License boundary.
- Exclusive five year exploration license was granted on 12 May 2022 moving the project towards pre-submitted exploration program. A two year-extension is possible.
- Romania is a historic mining country but nowadays one of Europe's economically weaker nations which should attract interest from strategic investors.

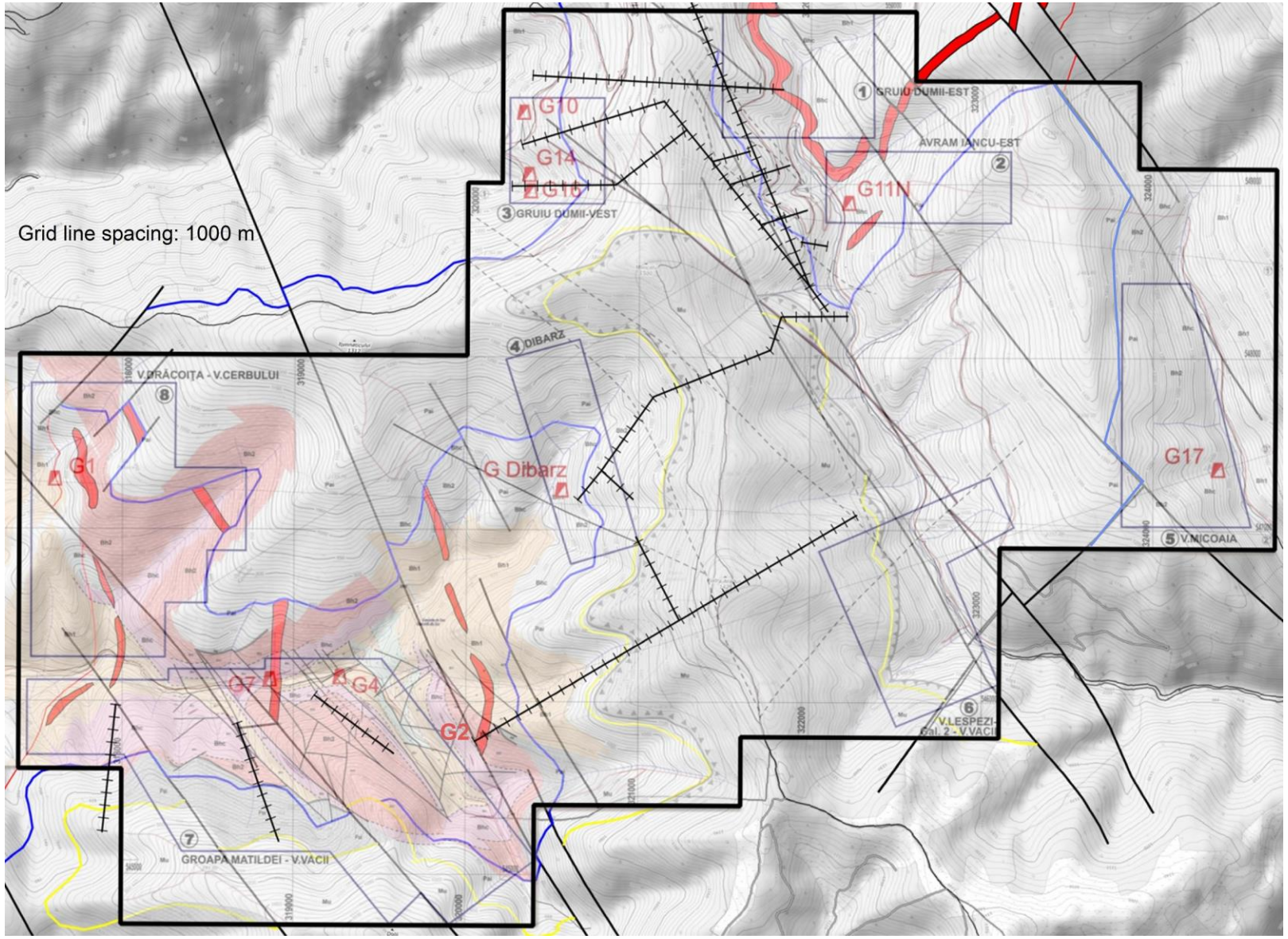


# Bihor Sud Exploration License

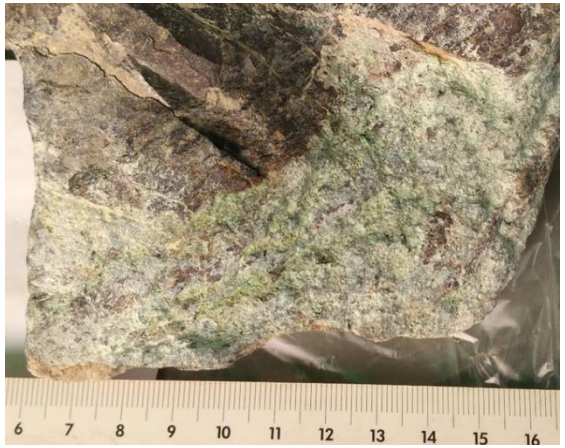
## Historic mining camp

- Tens of kilometers of galleries are developed in the license area, previously targeting and mining uranium in replacement orebodies on carbonate.
- A separate, close-by mineralization phase yielded Co-Ni-bodies, which was ignored because the responsible division of 1960-90s Romanian state mining only targeted what was then called “strategic metals“, which did not include Co and Ni.
- Abundant and extensive Co-Ni-mineralization has been reported from the galleries, especially in the north (area with G10-G16 on the map).
- For administrative reasons, LEM achieved first the opening of galleries G4 and G7 in the southwestern periphery.
- Waste dump samples suggest the presence of Co-Ni chiefly in G7, but also Zn-Pb-Cu-Ag mineralization in G4. Zn-Pb-Cu-Ag has reportedly been mined from G. Dibarz.



# Bihor Sud Samples

Stringers of Co-Ni mineralization in low grade metamorphic sediments

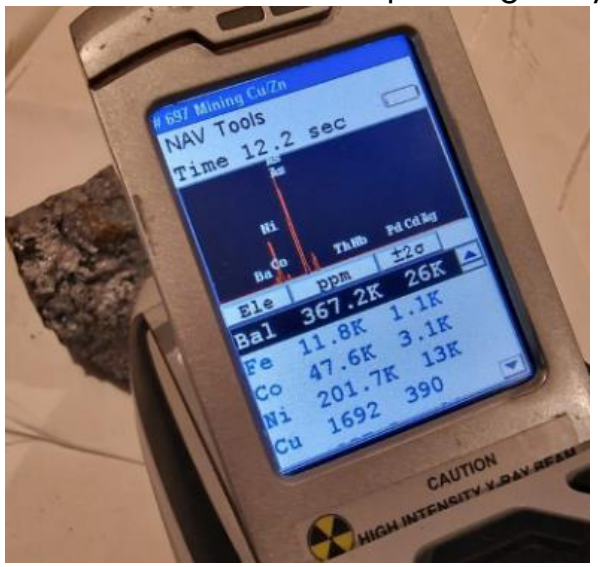



Oxidized Co-Ni mineralization yielding greenish colours in low grade metamorphic dark sediments

Sampled rock from previously mined polymetallic deposit showing massive sulphides including bornite, malachite and chalcopyrite

# Bihor Sud – In situ Co-Ni mineralization

- On 23 January 2023, the Company reported having entered two of the targeted historic galleries
- The Company is ahead of schedule because of stringently following all applicable procedures
- Initial visual inspection highlights continuous Ni-Co mineralization over 100 m in the first re-opened gallery




**Above: Piece of a Co-Ni-vein discovered 525 m from the branching point in the cross-cut from G7 towards G4. Hand-held XRF reading on this sample: 4.76 % Co, 20.17 % Ni.**

**Below: Powdery, greenish nickel oxide minerals on the gallery wall and rocks on the gallery floor. Yellow magnetic pen for scale.**

**Left: Powdery, pinkish cobalt oxide mineral on foliation in graphitic schist. Individual Co-oxide mineral grains are about 1 mm across.**

**Below: Pinkish cobalt oxide mineral weathering from schists. Hammer for scale.**

The reader is cautioned that such measurements cover only the surface of a rock with an area on the order of 1 cm2 and are neither representative, nor do they indicate reliable mineralization grades. In the context of the work performed here, this XRF-reading has the sole purpose of demonstrating the presence of cobalt and nickel in the encountered mineralization.

# Romania Bihor – Project Update

## Gallery safety

- The two re-opened historic galleries G4 and G7 are technically in a very good condition
- Measurements of the air quality detected radon, which needed to be reduced for a safe work environment.
- The Company and Romanian contractors installed ventilation systems in G4 and G7 - successful removal of radon creating a safe work environment for LEM's geologists and partners.
- Mapping and channel sampling currently in process. Surface and underground drilling programs being planned for later this year.

## Co-Ni assays (by ALS)

- Grab samples of various styles of in-situ Co-Ni mineralization in G7 confirms earlier results from the waste dump:

| Sample ID | Co [%] | Ni [%] | Fe [%] | As [%] | S [%] | Au [ppm] |
|---|---|---|---|---|---|---|
| G7236A7M10 | 0.53 | >30.0 | 0.23 | >10.0 | 1.08 | 0.70 |
| G7325 | 0.31 | 0.11 | 1.98 | 0.59 | 0.23 | 0.19 |
| G7525 | 4.71 | 13.6 | 2.08 | >10.0 | 1.60 | 0.12 |

# Current and Future Focus

# Current and Future Focus

## Woxna Anode project

- Working with equipment suppliers for bulk samples of anode precursor material
- Natural graphite and graphite-composite anode material qualifications together with Sicona for binding JV discussions
- Localization studies for anode material plant in Sweden
- Investigating restart of flake graphite production

## Norra Kärr HREE project

- Natura 2000 permit application, followed by mining lease application based on new project
- New PFS
- Magnetic separation beneficiation testwork to produce representative material bulk samples
- Product development for nepheline syenite, aegirine and waste rock

## Bihor Sud project

- Continuing exploration work programme: Channel sampling galleries – leading towards designing drill programme

## Corporate and Financial

- Internally funded through options and warrants that are in the money for planned development initiatives over next 12 months
- Increasing investor awareness
- Maintaining engagement with EU industrial alliances to support the establishment of secure and sustainable EU value chains, and enabling access to future public funding instruments

## Future

- **Woxna Anode project**
  - Incorporate JV with Sicona
  - 500 tpa anode material demonstration plant and customer qualification trials
- **Norra Kärr HREE project**
  - Commercialization of industrial mineral products
  - Hydrometallurgical pilot plant
  - Separation capability development
- **Bihor Sud project**
  - Resource statement

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