

**LEADING EDGE
MATERIALS**

Critical Raw Materials in Europe

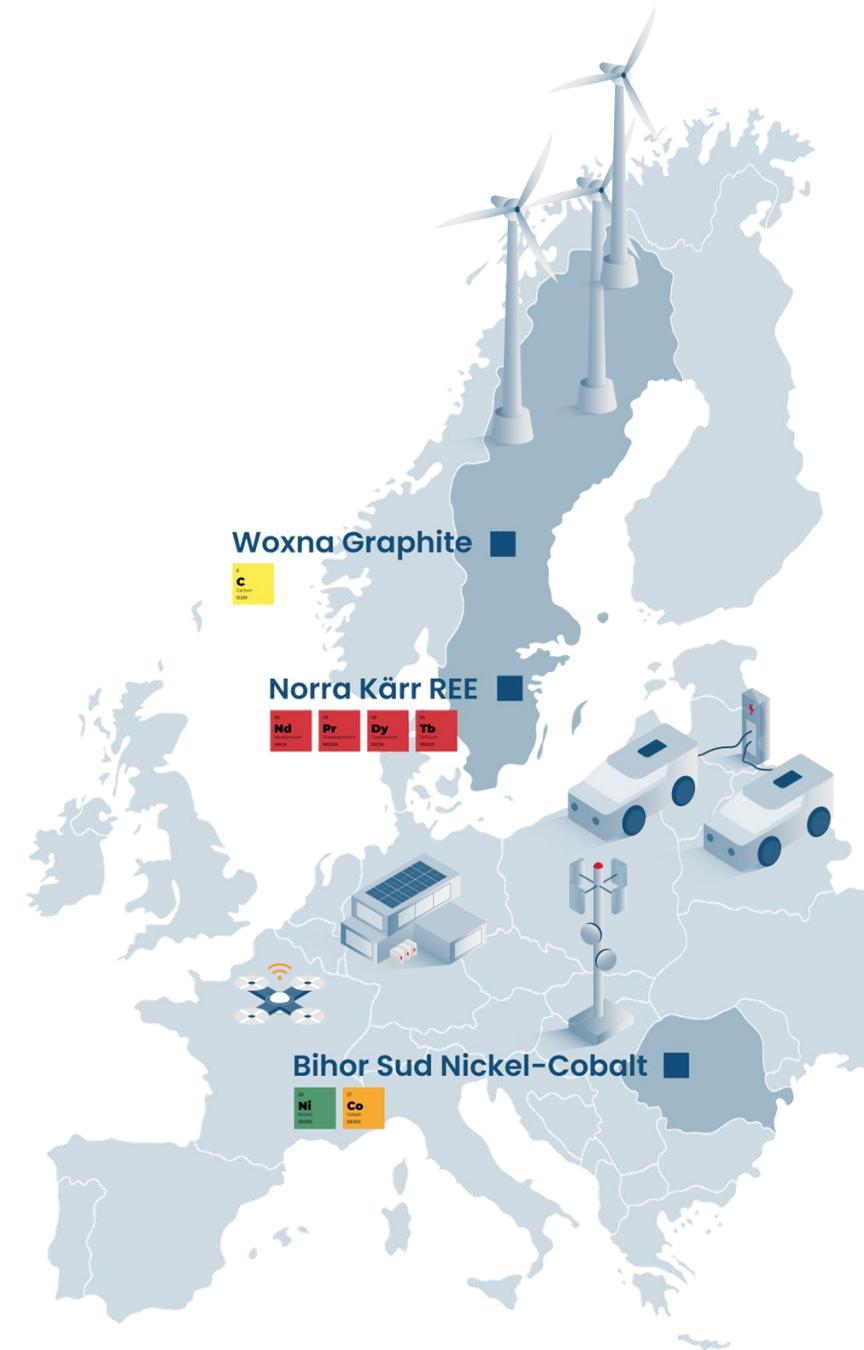
November 2021

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
- Four deposits under mining leases, fully-built processing plant and infrastructure
- Targeting a vertically integrated natural graphite mine to lithium-ion battery anode material production
- Recent PEA presents post-tax Net Present Value(8%) of US\$248m, IRR of 37.4% and EBITDA of US\$49m*
- Proposed 50/50 JV with Sicona Battery Technologies Pty Ltd for silicon-graphite composite anode materials

Norra Kärr REE (100%)

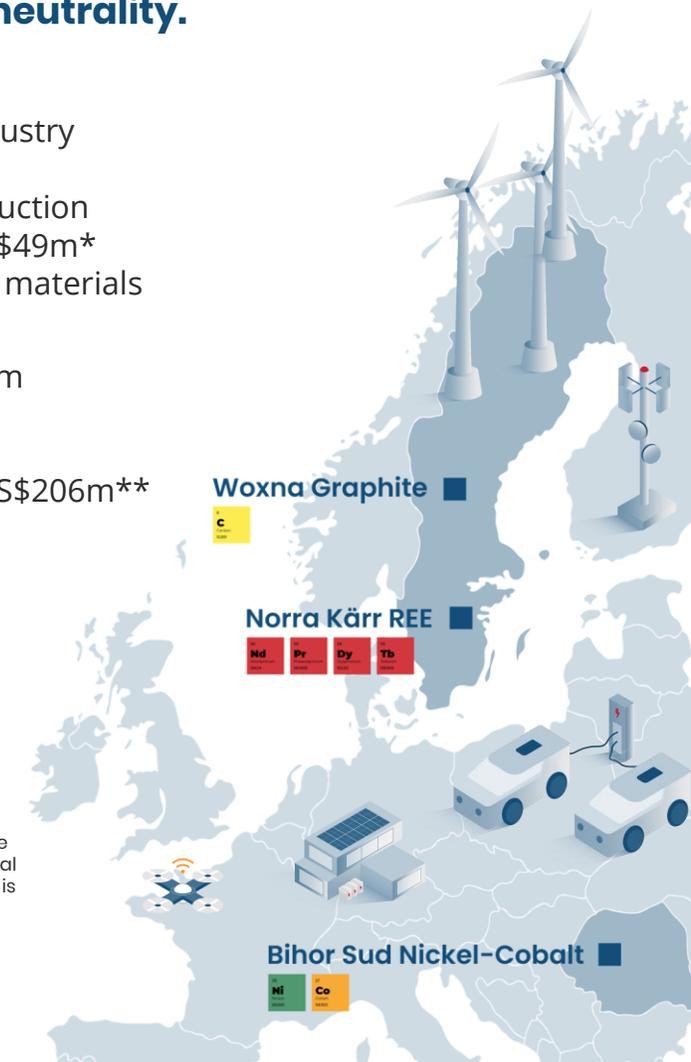
- Significant heavy rare earth deposit with an unusually high enrichment of dysprosium and terbium
- Ideally located to offer a secure and sustainable supply of rare earth oxides to European industry
- Proposed production of nepheline syenite at site and off-site production of rare earth oxides
- Recent PEA presents post-tax Net Present Value(10%) of US\$762m, IRR of 26.3% and EBITDA of US\$206m**
- Incorporating newly proposed project design towards mining lease application

Bihor Sud Ni-Co (51%)

- Exploration alliance with local JV partner with the potential to move to 90% ownership
- Project located in part of the Tethyan Belt in an area with historic mining activities
- Initial prospecting and sampling indicates potential for high-grade nickel-cobalt mineralisations
- Awaiting final decision on exclusive exploration license tender application

* 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.

** 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.



Board and Management



Canadian public company with experienced EU leadership

 **Chairman**

Lars-Eric Johansson

Past
President & CEO Ivanhoe Mines
CFO Kinross Gold Corporation
CFO Noranda Inc
CFO Falconbridge
Vice President & CFO Boliden Mineral

 **Director**

Daniel Major

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

 **Director**

Eric Krafft

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 DVB Bank AG

 **CEO**

Filip Kozlowski

Past
Director Leading Edge Materials
Portfolio Manager Macro HF
Investment Manager Family Office
Portfolio Trader Deutsche Bank Ldn

 **CFO**

Sanjay Swarup

CEO and founder SKS Business Services Ltd.

Past
CFO Mandalay Resources (TSX)

 **Ops**

Peter Young

Past
ORSU Resources
Oriol Resources
MINOPEX
Johannesburg Consolidated Industries

 **Geo**

Magnus Leijd

Past
Tasman Metals Ltd.
Lundin Mining
North Atlantic Natural Resources

 **Geo**

Rikard Taljaard

Past
Country Manager Walkabout Resources (ASX)
General Manager Amani Alluvial Gold

 **Adv**

Mark Saxon

Past
CEO Leading Edge Materials Corp.
Founder Tasman Metals Ltd.

Share

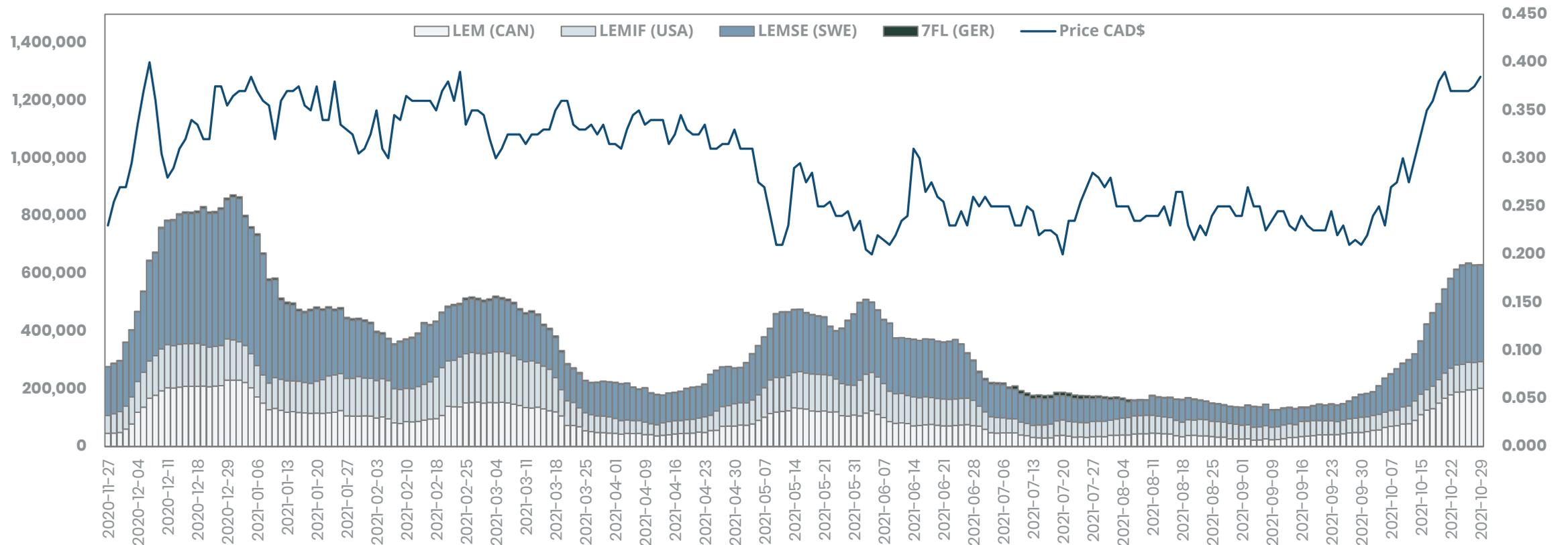


- **Tickers:** LEM.V (TSXV), LEMIF (OTCQB), LEMSE (NFN), 7FL (Fra)
- **Quote:** CAD \$0.385 / SEK 2.69 (per 29.10.2021)
- **Mkt Cap:** CAD \$57m / SEK 395M (non-diluted)
- **Shareholder base:** ~50% North American vs European

Insider Ownership



Share price and rolling 20-day volume across listings

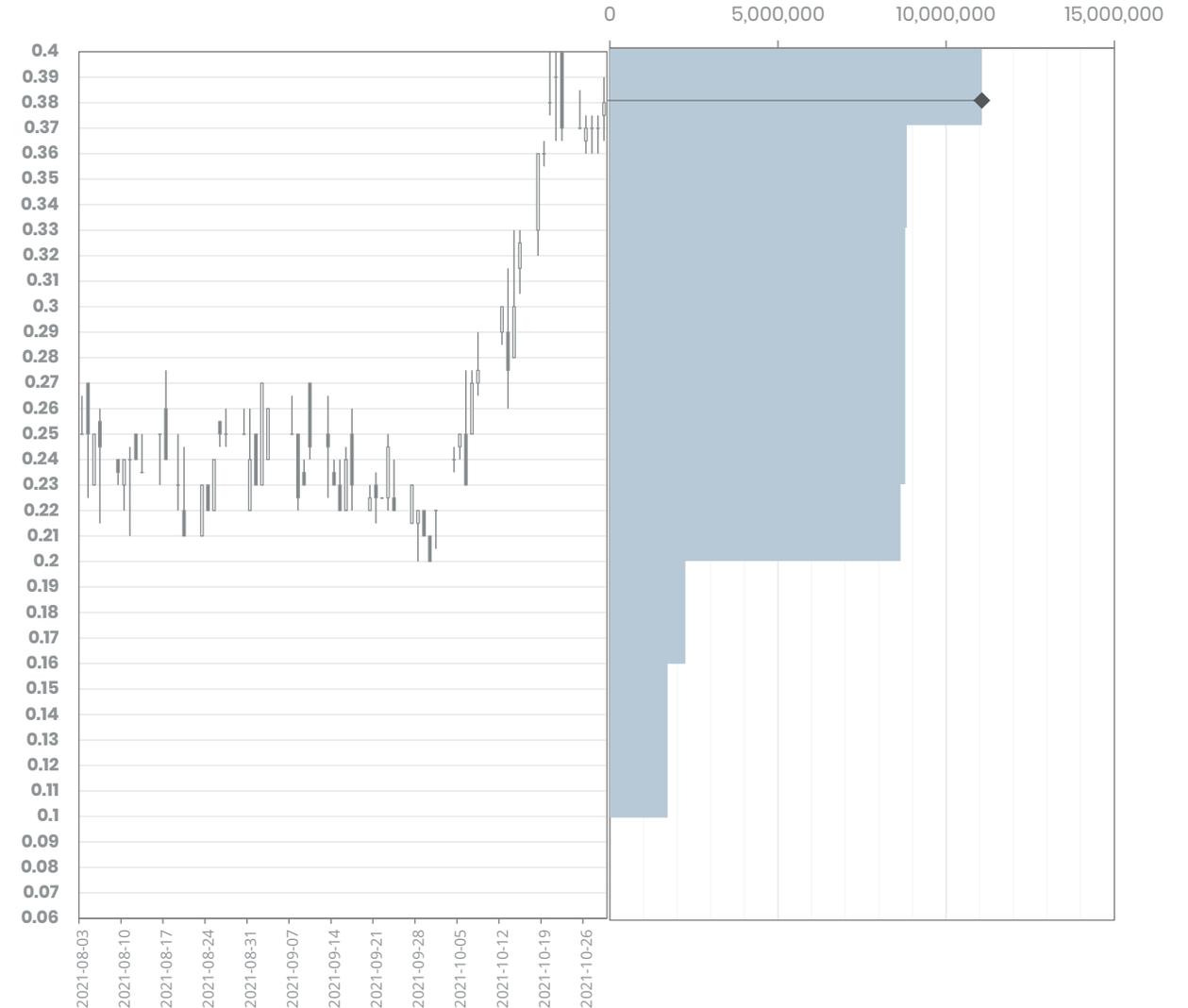


Shares, Warrants and Options



Potential proceeds from exercise (CAD)

| | | | |
|---|---------|------------|--------------------|
| Issued and Outstanding as of October 18, 2021: | | | 146,960,500 |
| Stock Options | | | 6,050,000 |
| Expiring May 30/22 | @ 0.225 | 600,000 | |
| Expiring Nov 02/22 | @ 0.64 | 1,900,000 | |
| Expiring Aug 11/23 | @ 0.155 | 3,400,000 | |
| Expiring Aug 14/23 | @ 0.33 | 150,000 | |
| Warrants | | | 55,227,855 |
| Expiring Nov 21/2021 | @ 0.37 | 6,027,855 | |
| Expiring Dec 30/2023 | @ 0.10 | 17,200,000 | |
| Expiring Aug 7/2024 | @ 0.20 | 32,000,000 | |
| Fully Diluted: | | | 208,238,355 |



Critical Raw Materials

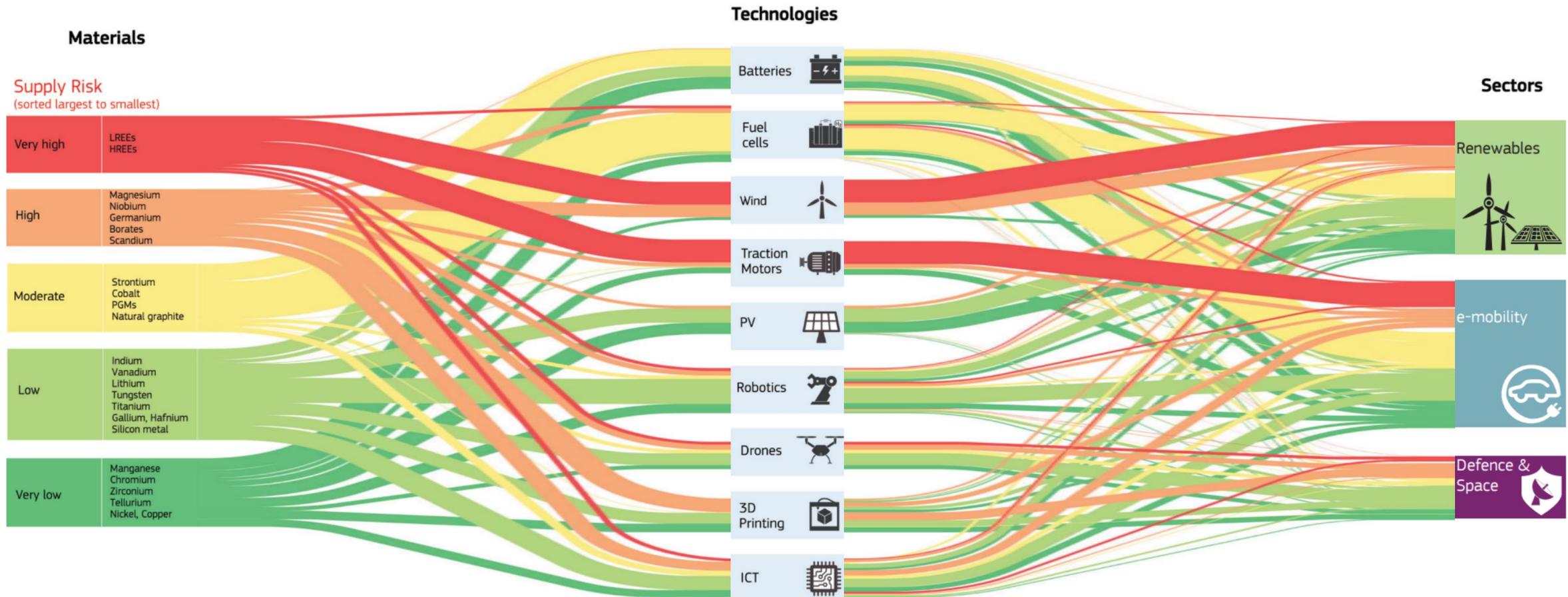


Supply Risk

- 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



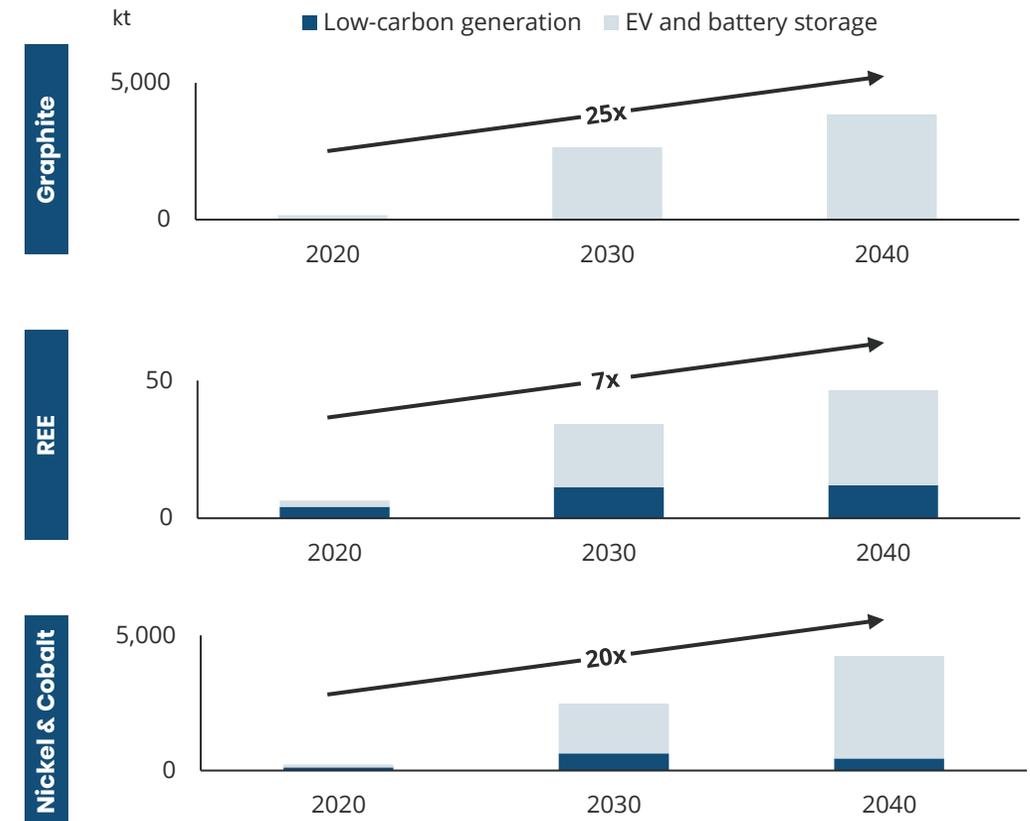
CRMs are key enablers of a green, digital and autonomous EU...



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, cobalt and nickel-cobalt grow in tandem⁶⁾



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>

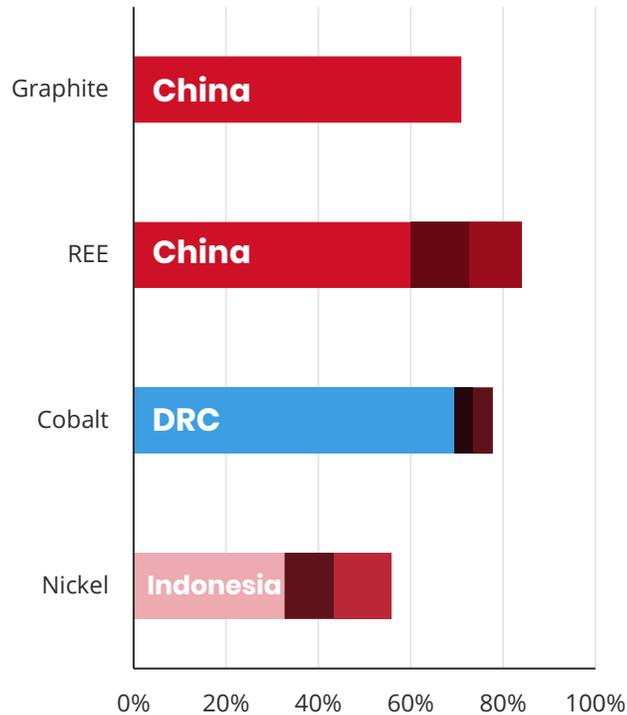
...and the EU is exposed to significant value chain risk



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

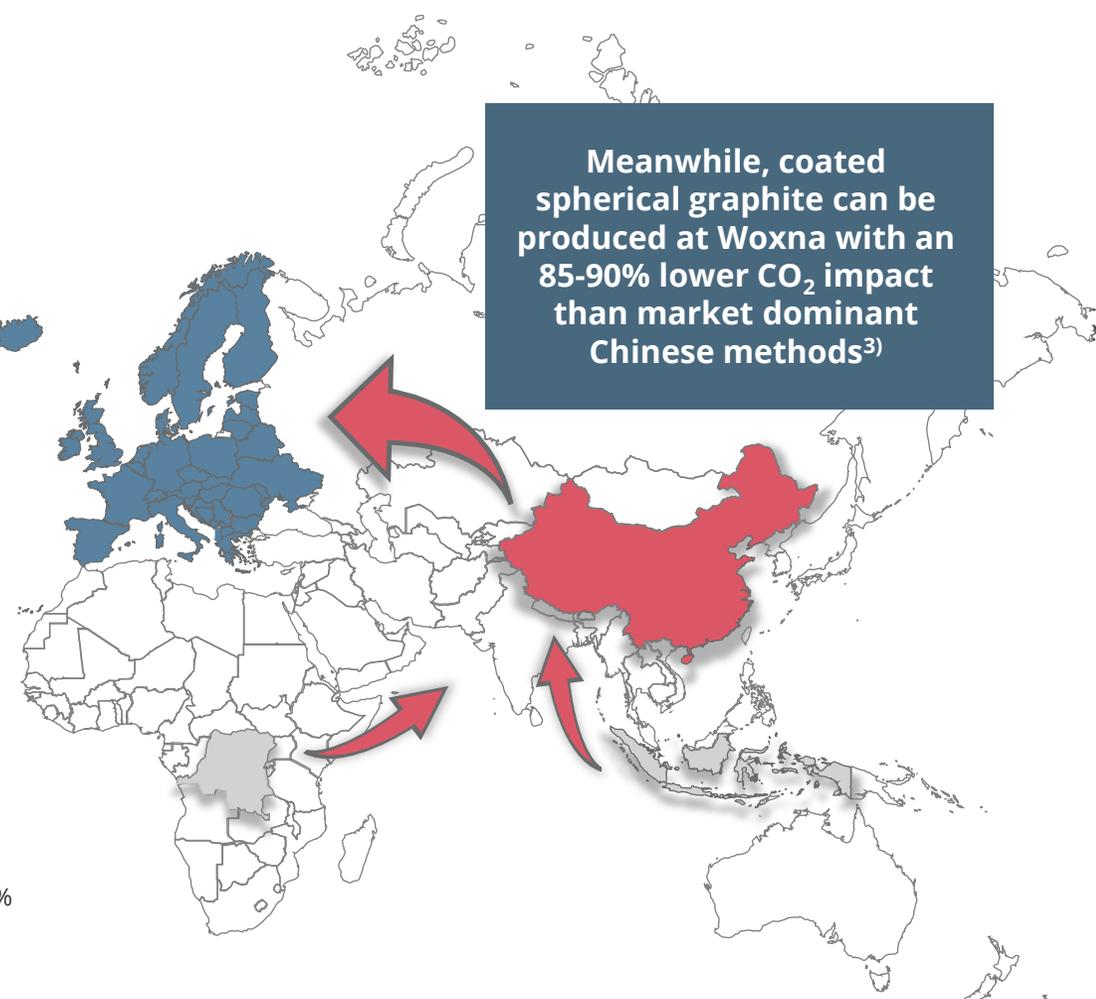
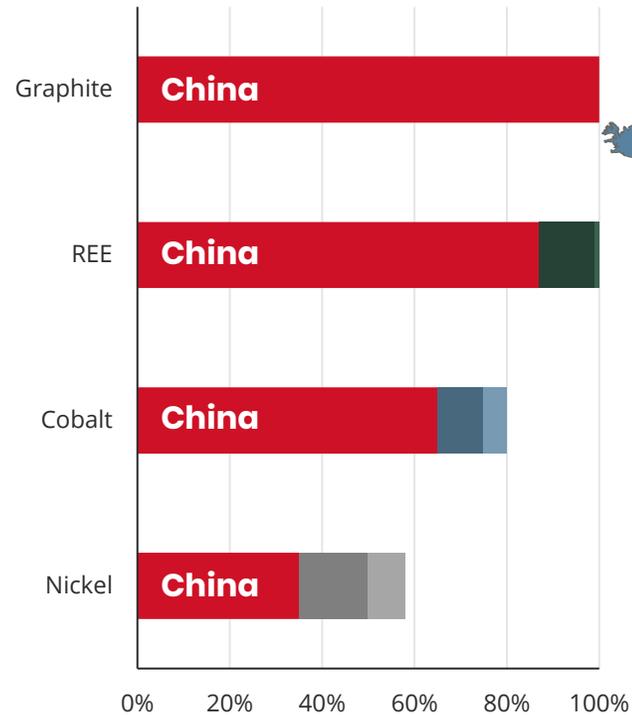
Extraction

Share of global¹⁾



Processing

Share of global²⁾



Meanwhile, coated spherical graphite can be produced at Woxna with an 85-90% lower CO₂ impact than market dominant Chinese methods³⁾

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/>

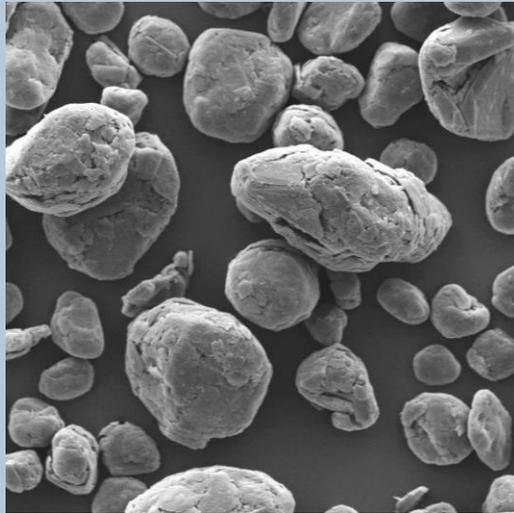
The Challenge for Europe



“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

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

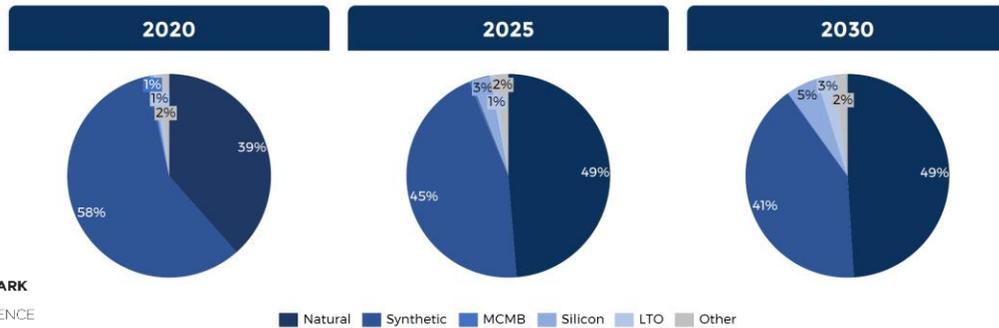
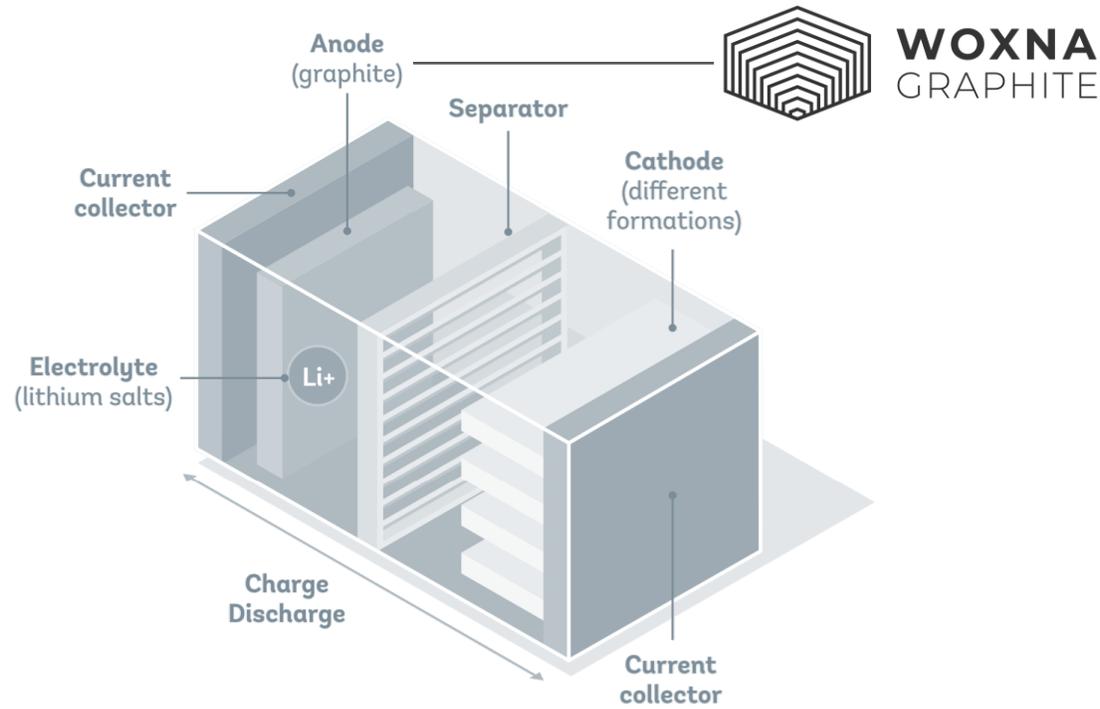


100 000



* 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

European Battery Industry



Flake Graphite Demand for LIB (tonnes)

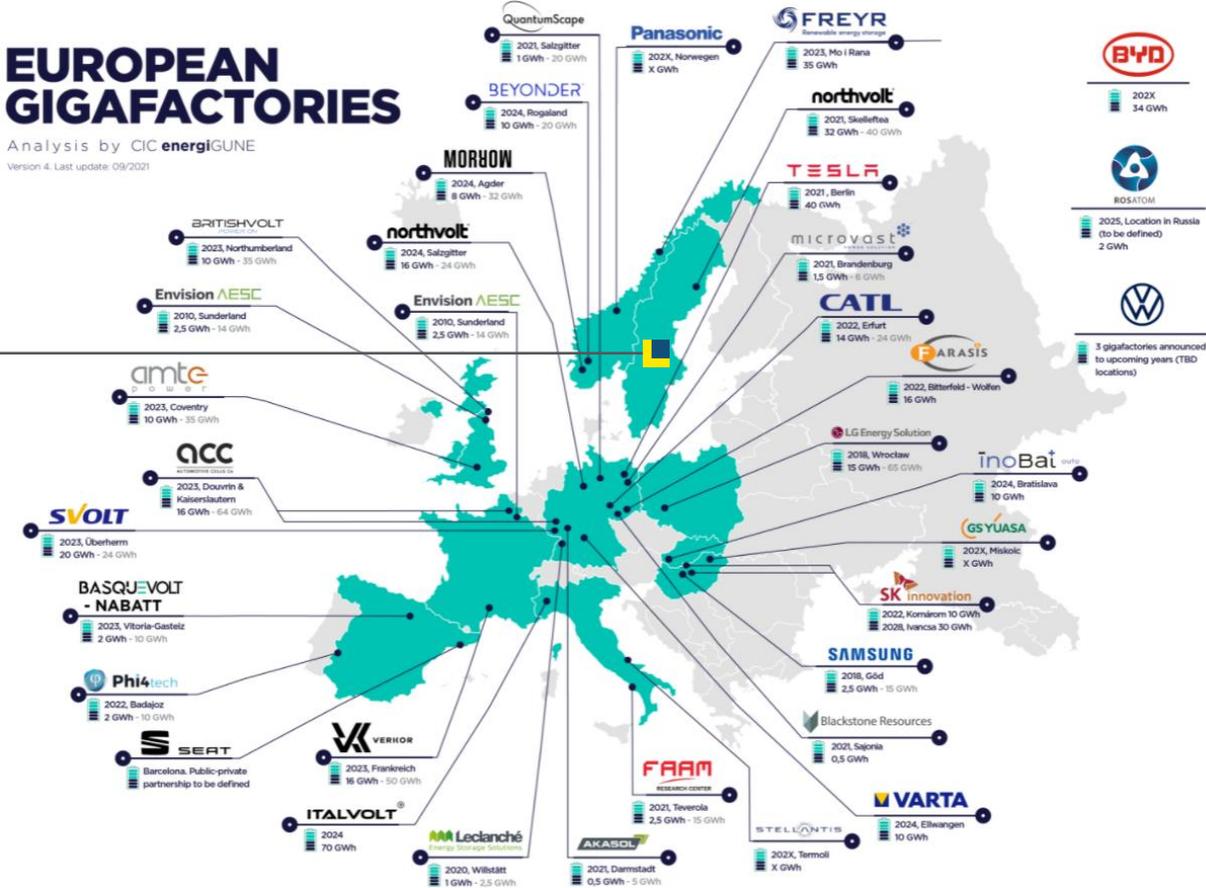
202,617

1,108,448

2,896,225

EUROPEAN GIGAFACTORIES

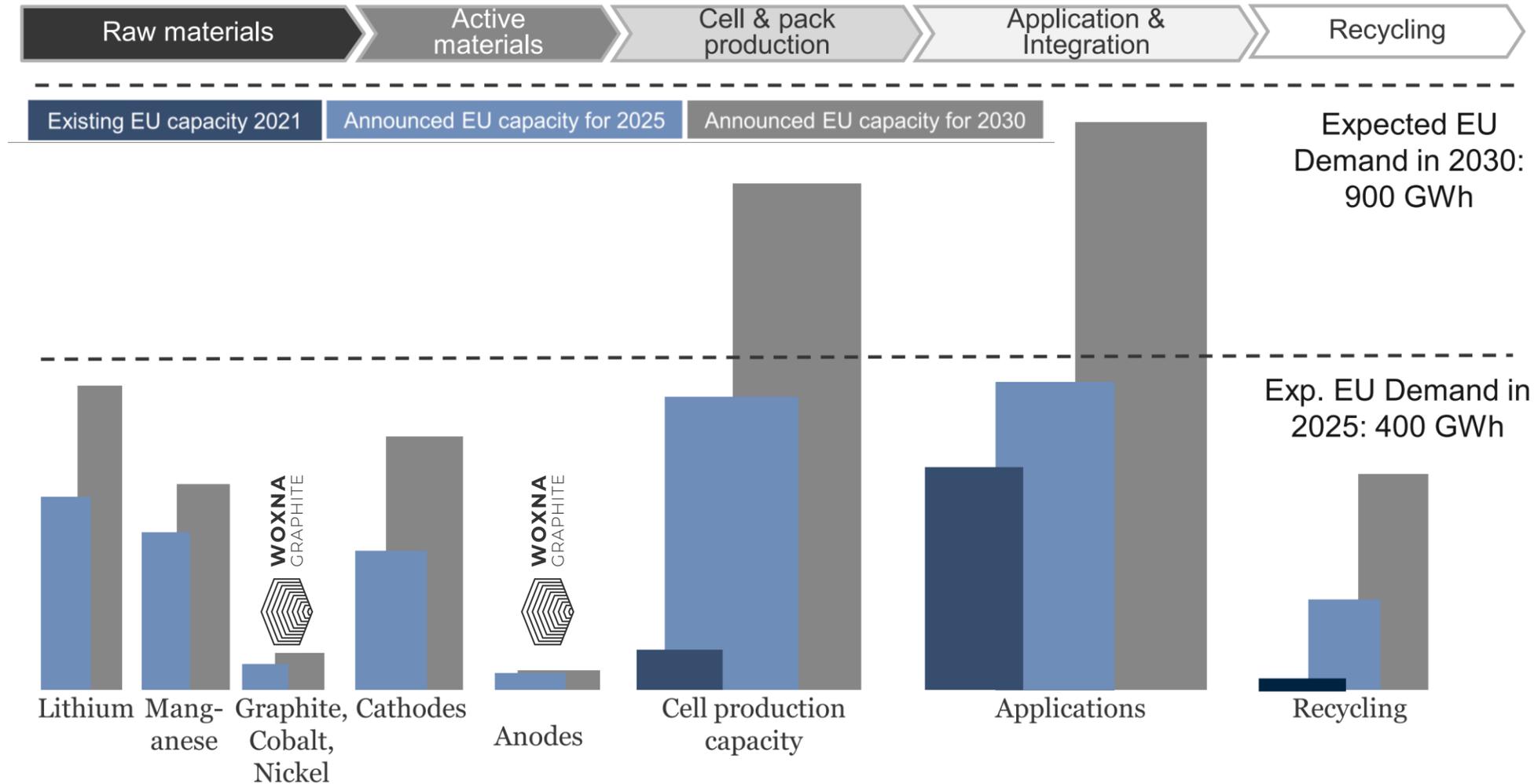
Analysis by CIC energigUNE
Version 4. Last update: 09/2021



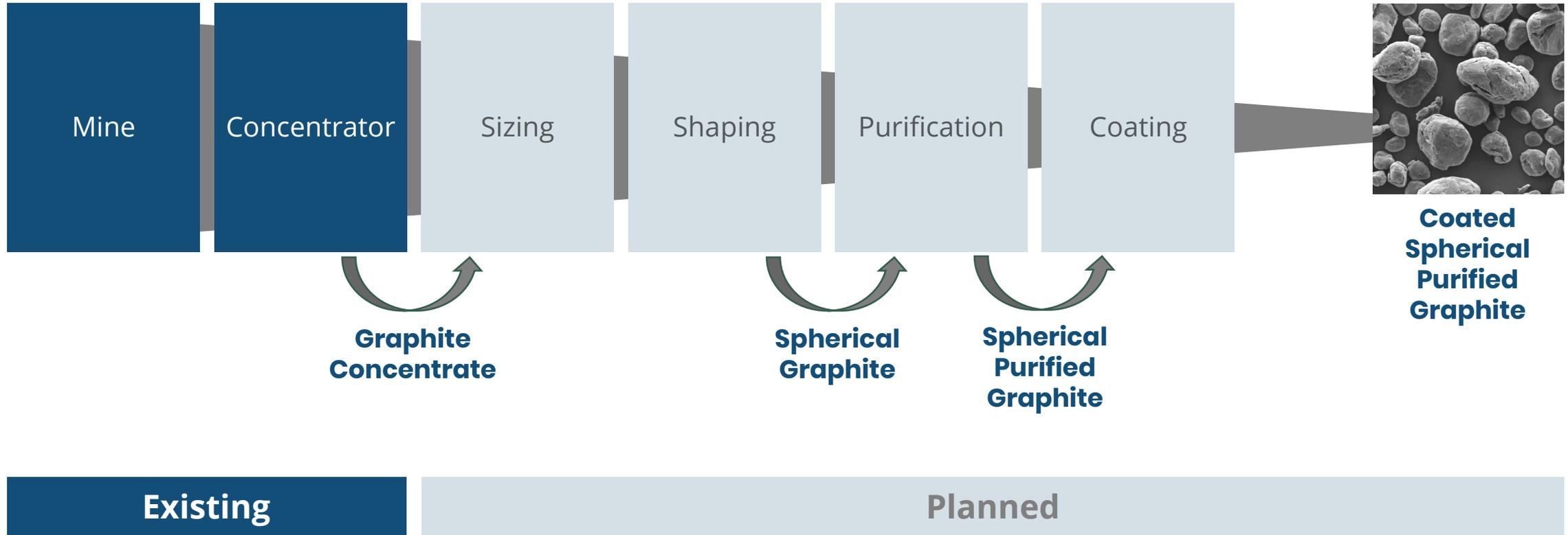
Battery Value Chain Gap



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



Woxna Graphite Overview



Woxna Graphite Resources*



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 |
| Matt Smyra | | 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 |
| Matt Smyra | | 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/m³ applied to in situ, then Density of 2.82 t/m³ applied to Type A Graphite and Density of 2.86 t/m³ applied to Type B Graphite for Gropabo and Matt Smyra; 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*



Financial Highlights

- Pre- and post-tax Net Present Value (NPV) of \$317m and \$248m using an 8% discount rate
- Pre- and post-tax IRR of 42.9% and 37.4%
- Accumulated project revenues of \$1,425m
- Average annual EBITDA of \$49m
- Initial Capital Expenditures (CAPEX) of \$121m
- Pre-tax Payback Period from first production of 2.24 years
- Operating cost per tonne of coated spherical purified graphite (CSPG) of \$2,519 after revenue credit from micronized graphite product vs forecasted selling price of \$10,000 per tonne

Operational Highlights

- Life of Project (LOP) is 19 years
- Life of Mine (LOM) is 15 years
- LOM average annual plant feed of 159,967 tonnes
- LOM average annual CSPG product 7,435 tonnes
- LOM average annual micronized graphite product 8,421 tonnes
- LOM average strip ratio of 3.7:1

* 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

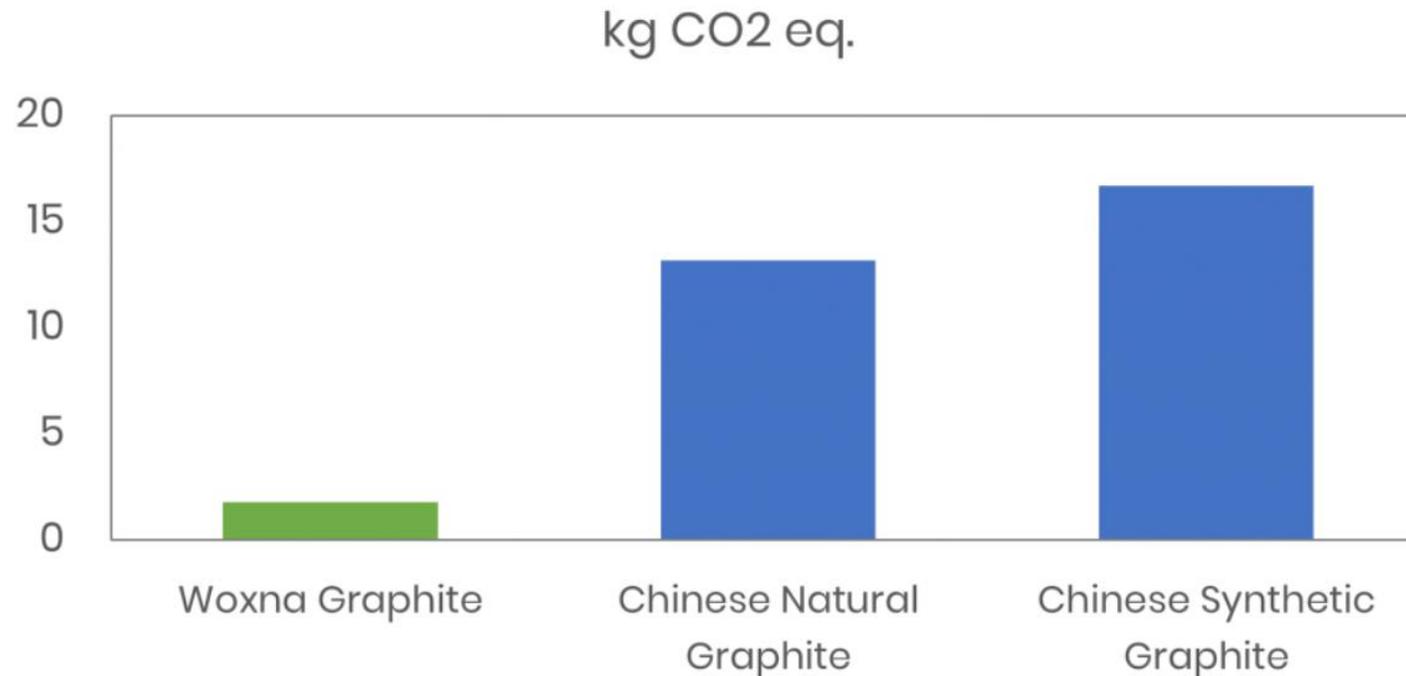


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Woxna Graphite LCA Results*



- 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

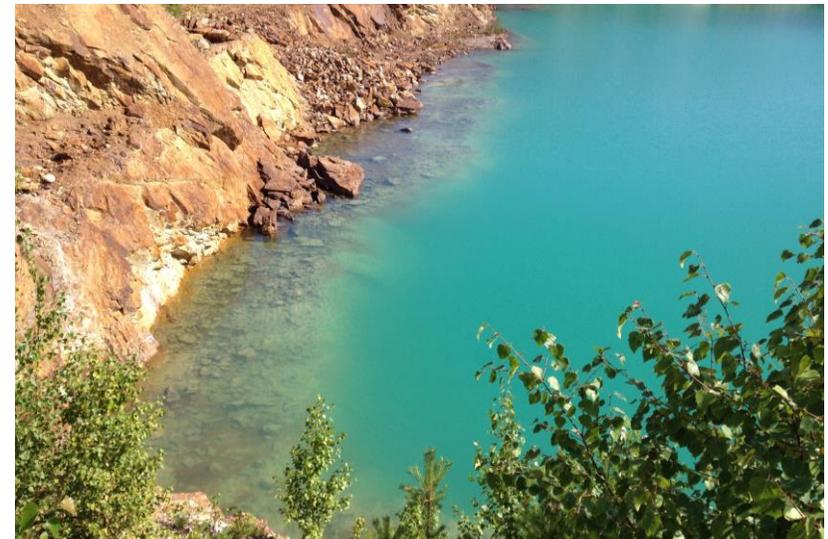
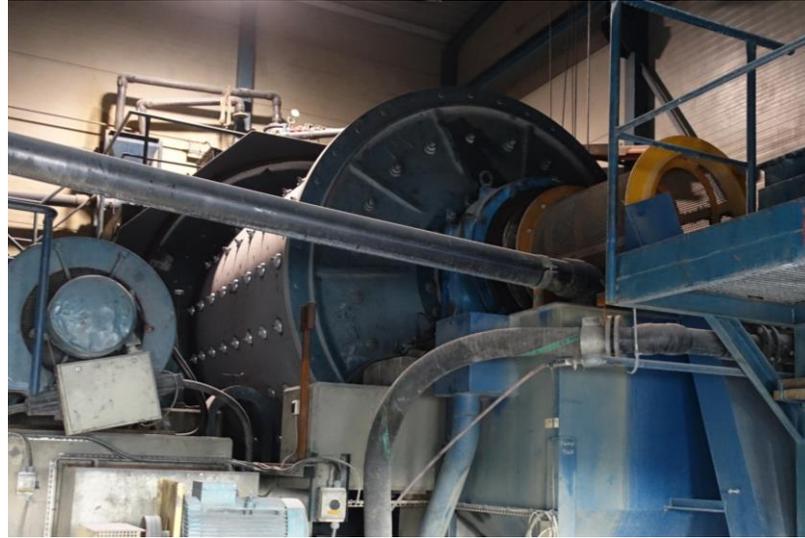
SICONA
Battery Technologies

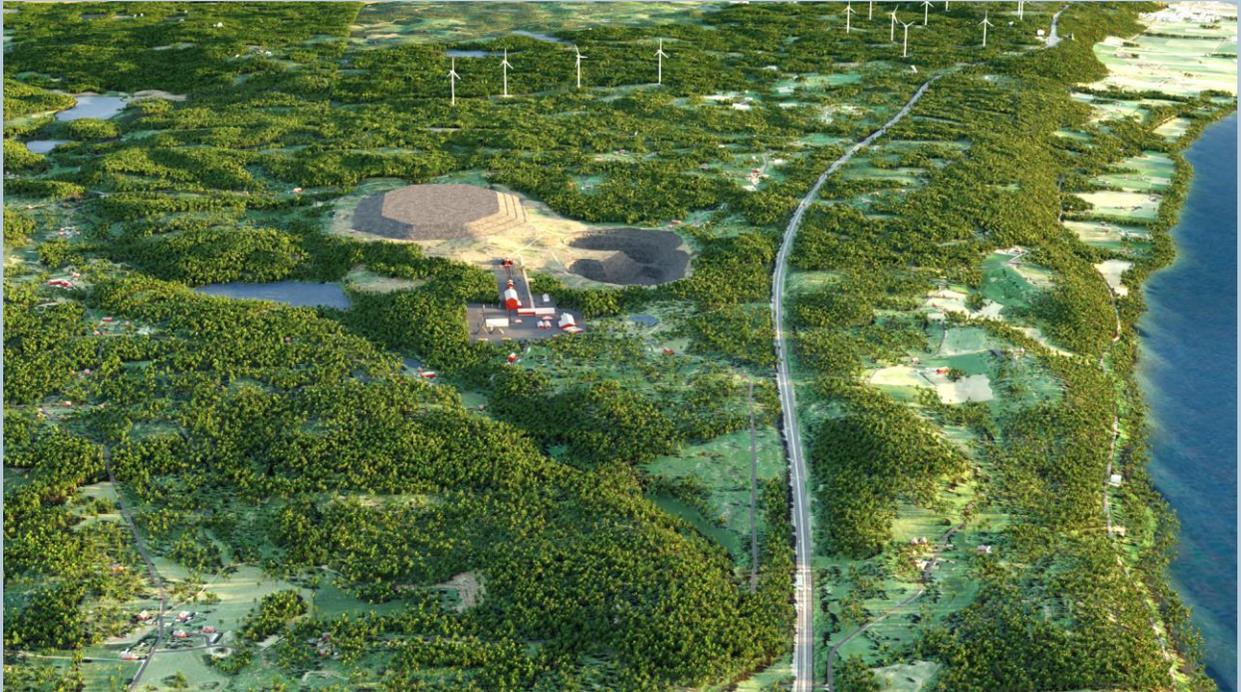
“Sicona has pioneered a simple & robust production process for high-performance silicon-graphite composite anode and polymer binder materials”

-Christiaan Jordaan CEO

* For further details, see [news release dated October 6, 2021](#)

Woxna Graphite Mine





Norra Kärr HREE Project

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

1 200 000

66
Dy
Dysprosium
162.50

65
Tb
Terbium
158.925

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

Annual potential output from Norra Kärr* could support the production of NdFeB permanent magnets needed for a significant amount of 10MW wind turbines

60
Nd
Neodymium
144.24

59
Pr
Praseodymium
140.908

370

66
Dy
Dysprosium
162.50

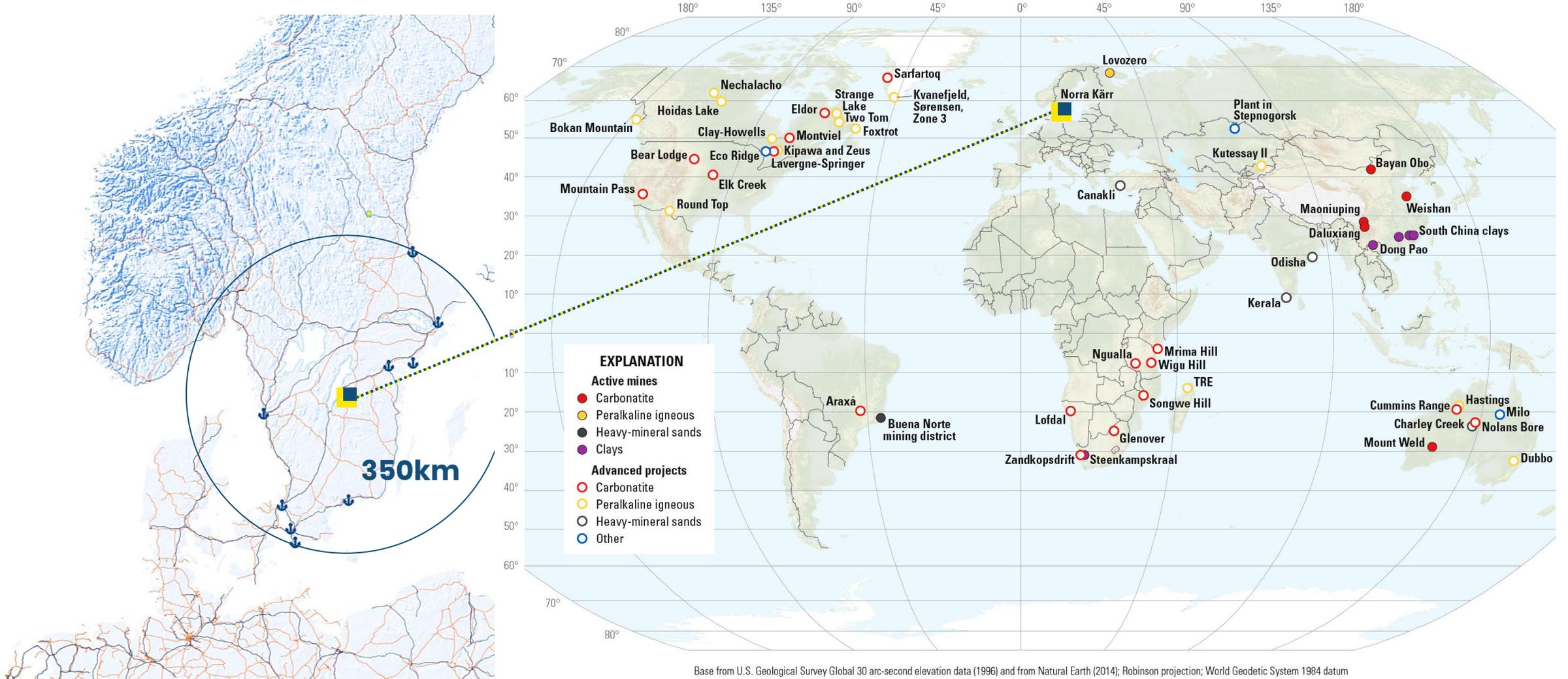
65
Tb
Terbium
158.925

2 185



* 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: Unsplash

Location of Norra Kärr



Norra Kärr Mineral Resource Statement



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

| Mineral Resource Classification | Tonnes (Mt) | TREO (%) | ZrO ₂ (%) | Nb ₂ O ₅ (%) | Nepheline Syenite (%) |
|---------------------------------|-------------|----------|----------------------|------------------------------------|-----------------------|
| Inferred | 110 | 0.5 | 1.7 | 0.05 | 65 |

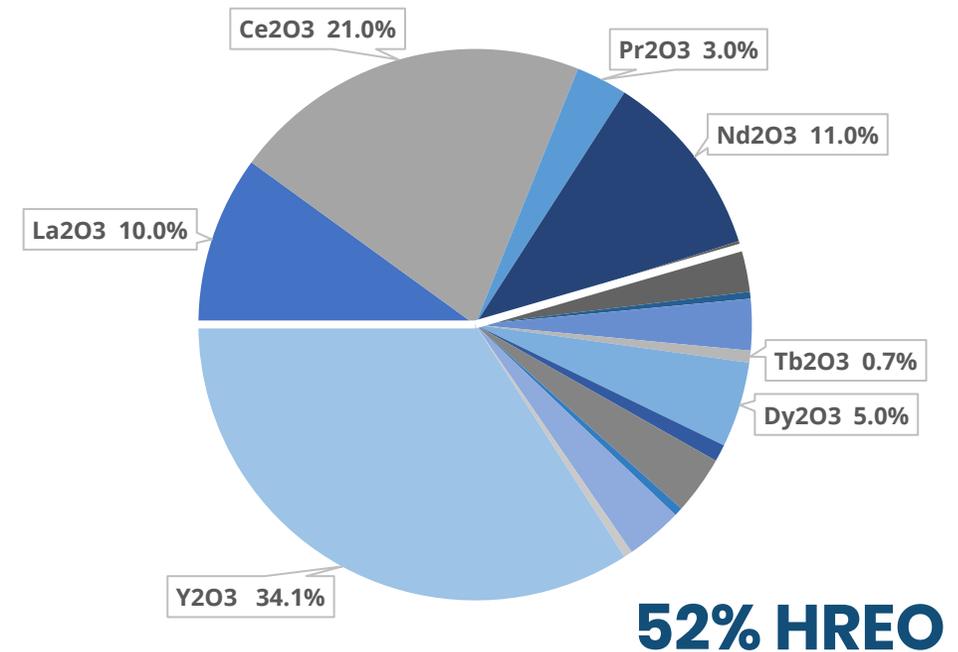
**Notes:*

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: La₂O₃, Ce₂O₃, Pr₂O₃, Nd₂O₃, Sm₂O₃, Eu₂O₃, Gd₂O₃, Tb₂O₃, Dy₂O₃, Ho₂O₃, Er₂O₃, Tm₂O₃, Yb₂O₃, Lu₂O₃, Y₂O₃.
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 ₂ O ₃ | Ce ₂ O ₃ | Pr ₂ O ₃ | Nd ₂ O ₃ | Sm ₂ O ₃ | Eu ₂ O ₃ | Gd ₂ O ₃ | Tb ₂ O ₃ | Dy ₂ O ₃ | Ho ₂ O ₃ | Er ₂ O ₃ | Tm ₂ O ₃ | Yb ₂ O ₃ | Lu ₂ O ₃ | Y ₂ O 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

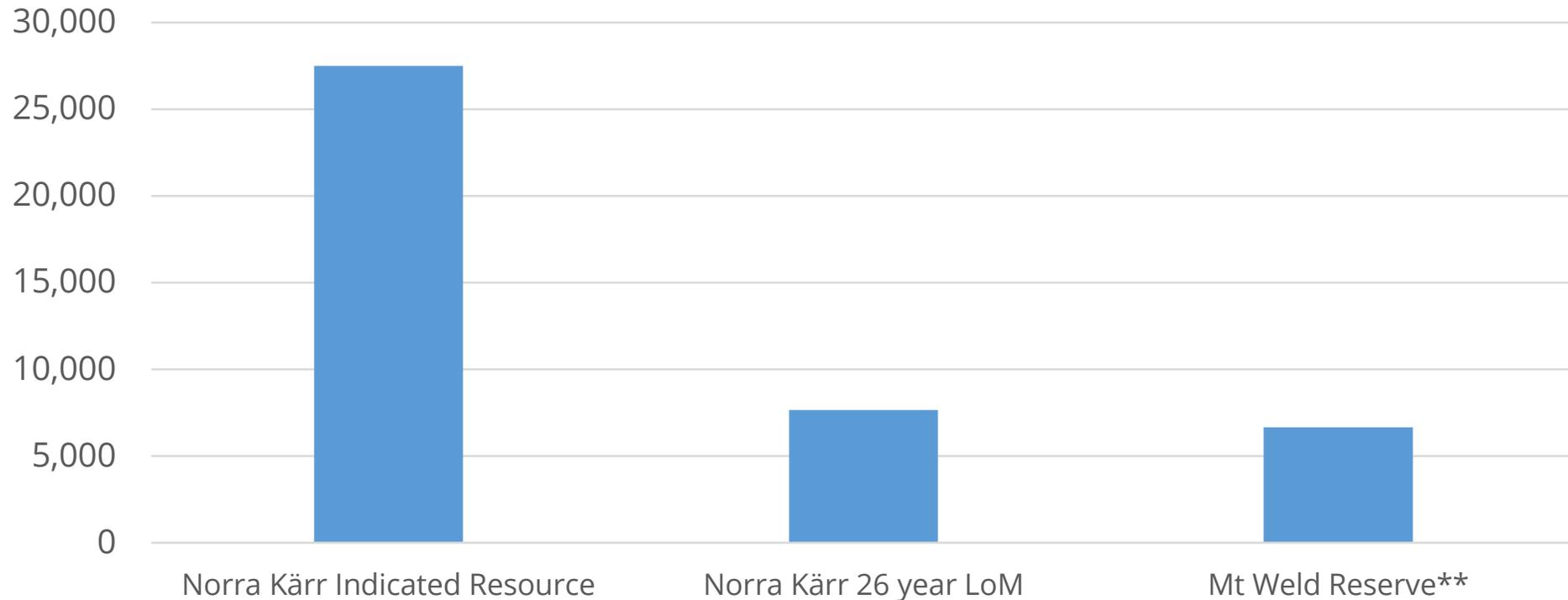


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Significant Dysprosium Resource*



Contained dysprosium



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

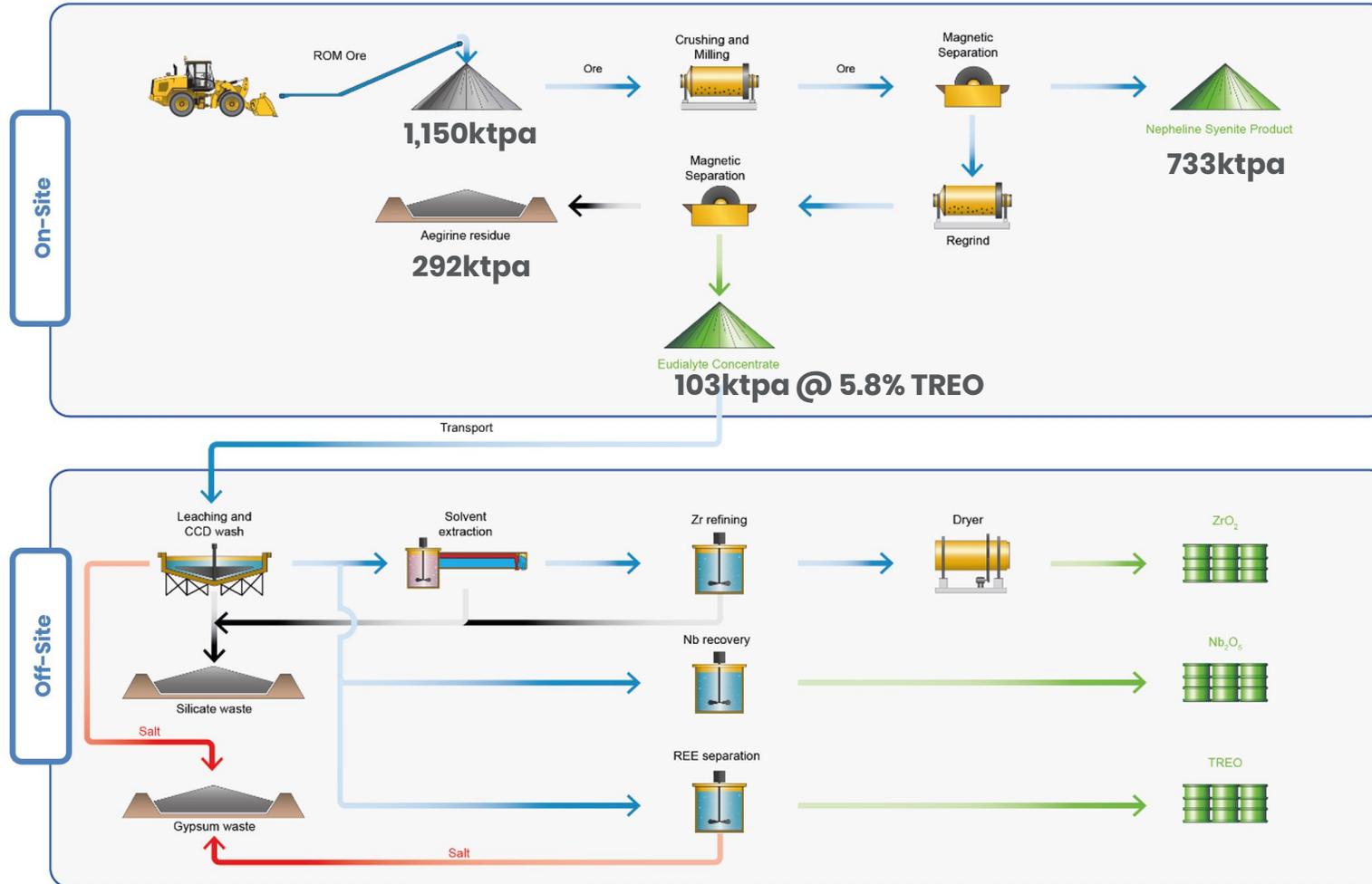
Norra Kärr 2021 PEA* vs 2015 PFS



- 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 and associated waste (reduced amount) moves to a more suitable off-site location
- Waste at site is aegirine, dry stacked in a lined impoundment together with mining waste rock
- No wet tailings at site
- 80% reduction in land area usage
- 50% reduction in water requirements, and no processing water discharge planned

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Norra Kärr 2021 PEA*



Operational Highlights

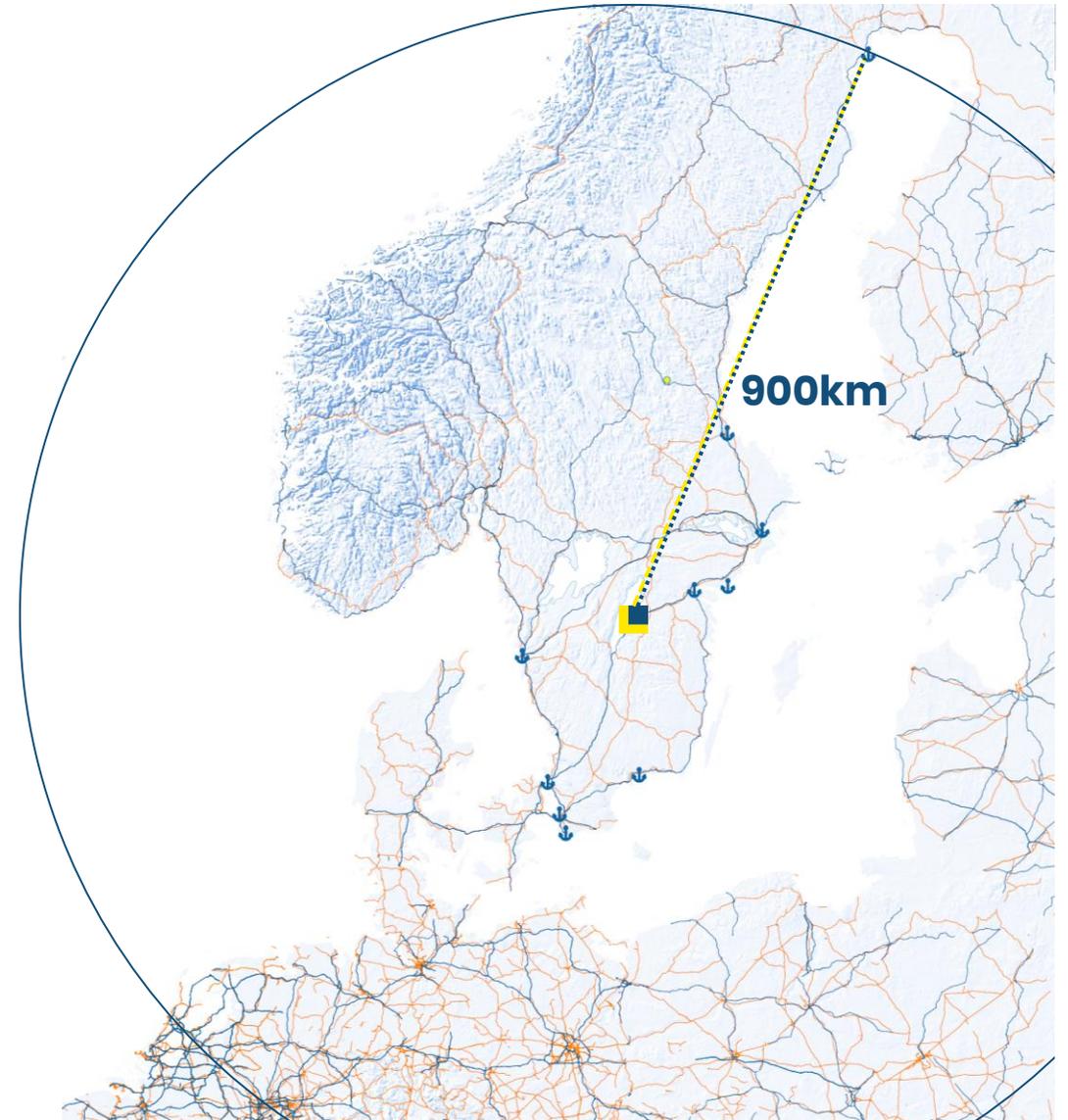
- Life of Mine (LOM) is 26 years
- LOM average annual
 - Mining rate of 1,150,000 tonnes
 - strip ratio of 0.32
 - TREO 5,341 tonnes
 - Magnet REOs (Nd, Pr, Dy, Tb) 1,005 tonnes
 - Dy_2O_3 : 248 tonnes
 - Tb_2O_3 : 36 tonnes
 - Nd_2O_3 : 578 tonnes
 - Pr_2O_3 : 143 tonnes
 - Nepheline Syenite co-product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

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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

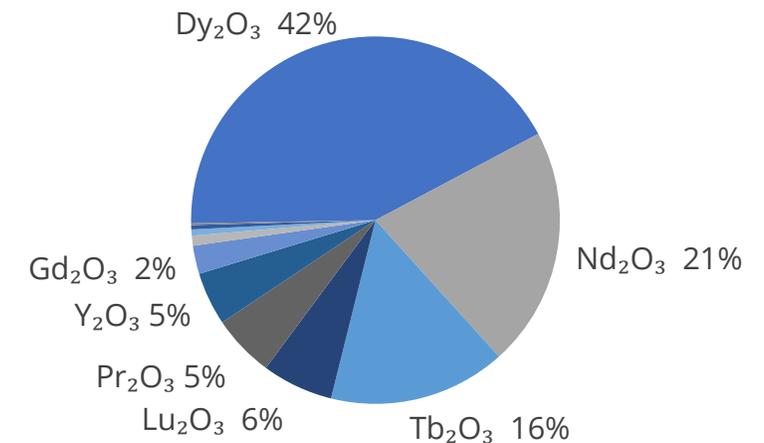
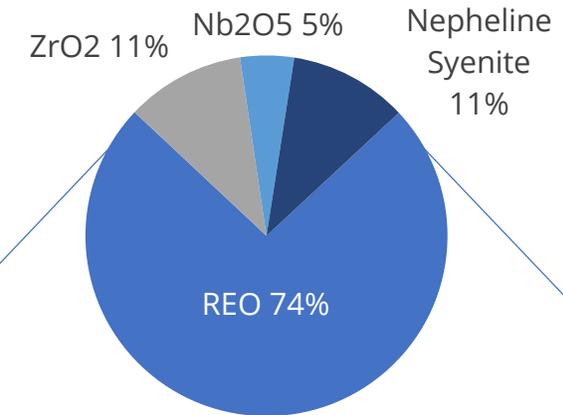




Financial Highlights

- Pre- and post-tax Net Present Value (NPV) of \$1,026M and \$762M using a 10% discount rate
- Pre- and Post-tax Internal Rate of Return (IRR) of 30.8% and 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

Revenue Distribution

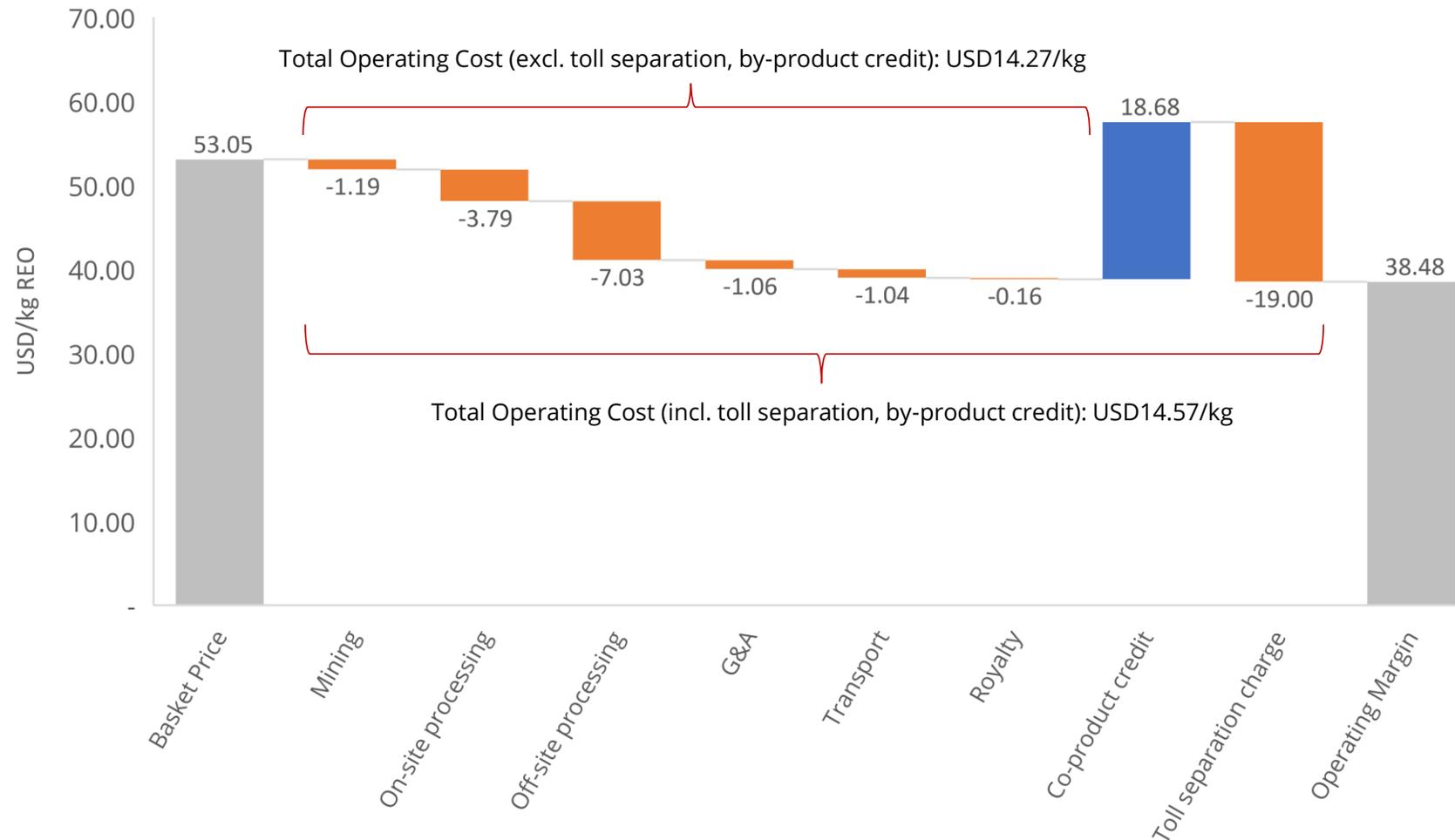


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Norra Kärr 2021 PEA*

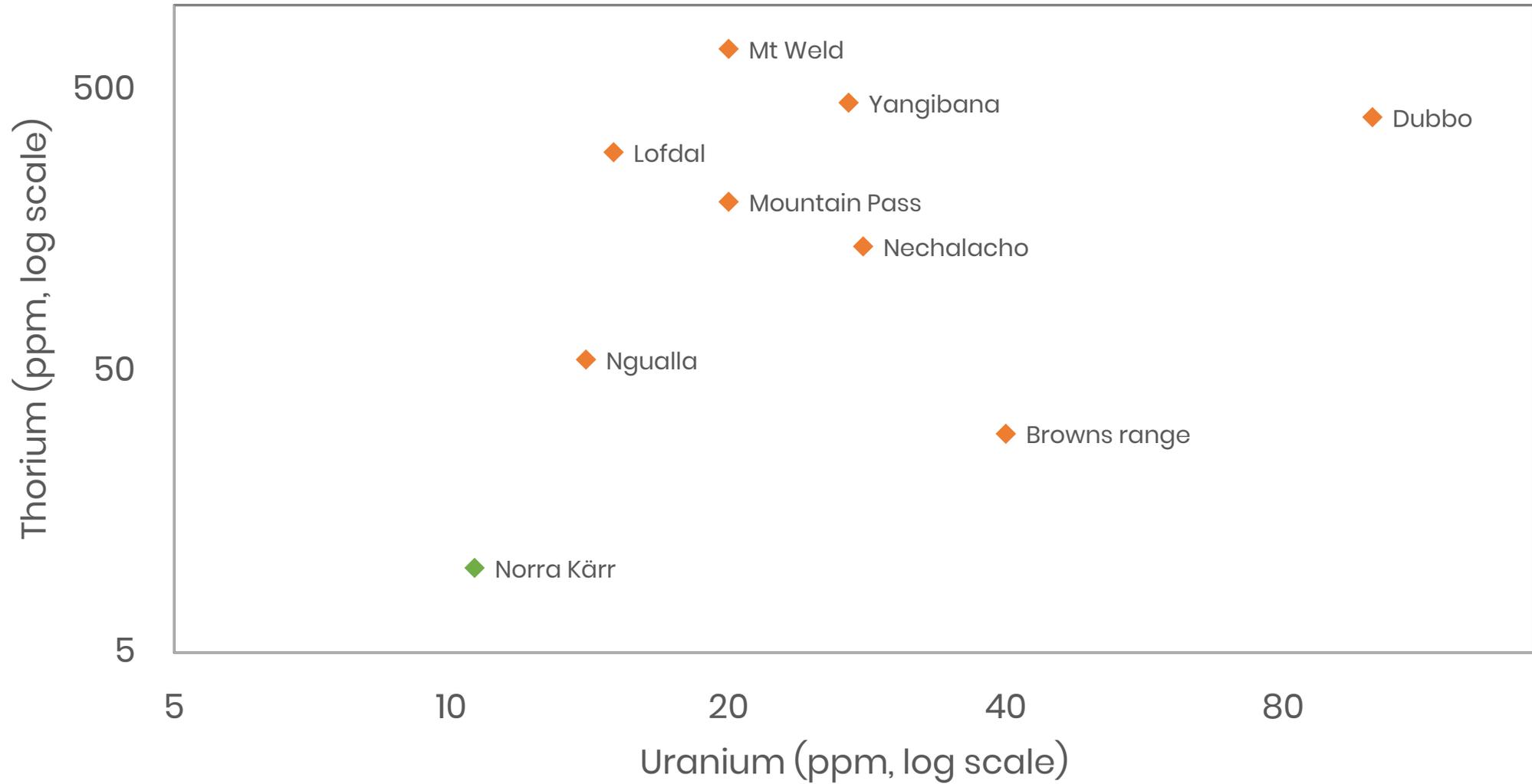


LoM Unit Operating Cost Economics (USD/kg REO)



* 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.

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.

Sustainability Opportunity of Norra Kärr



Comparison of dysprosium production from different resources by life cycle assessment

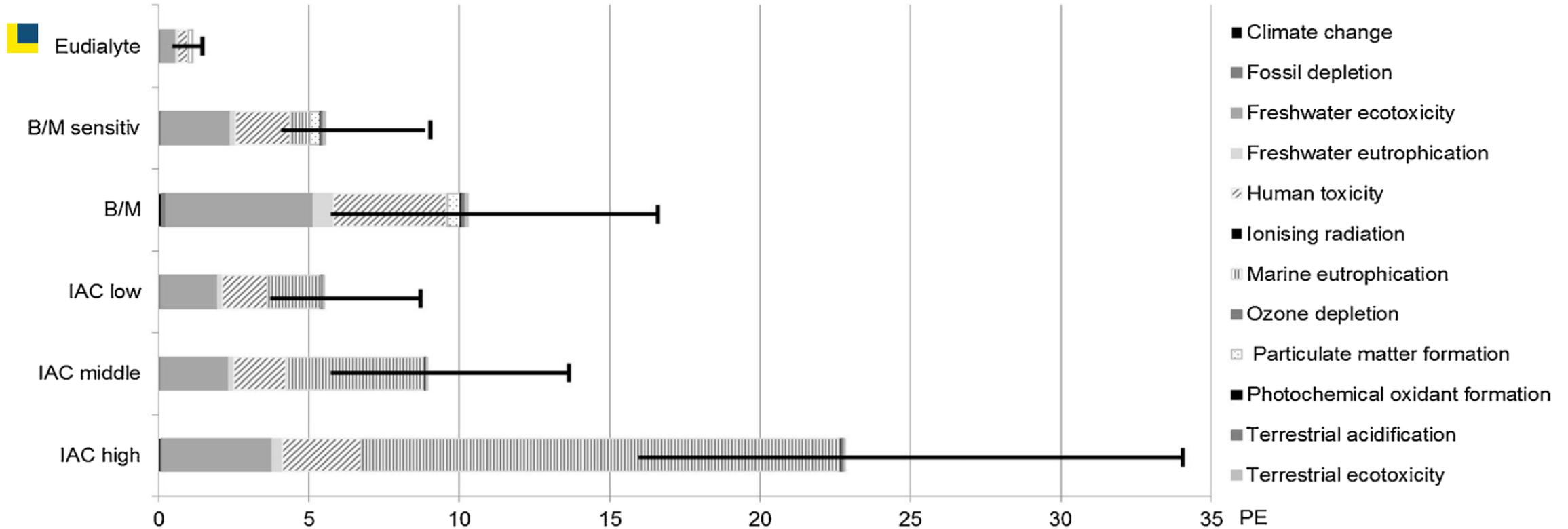
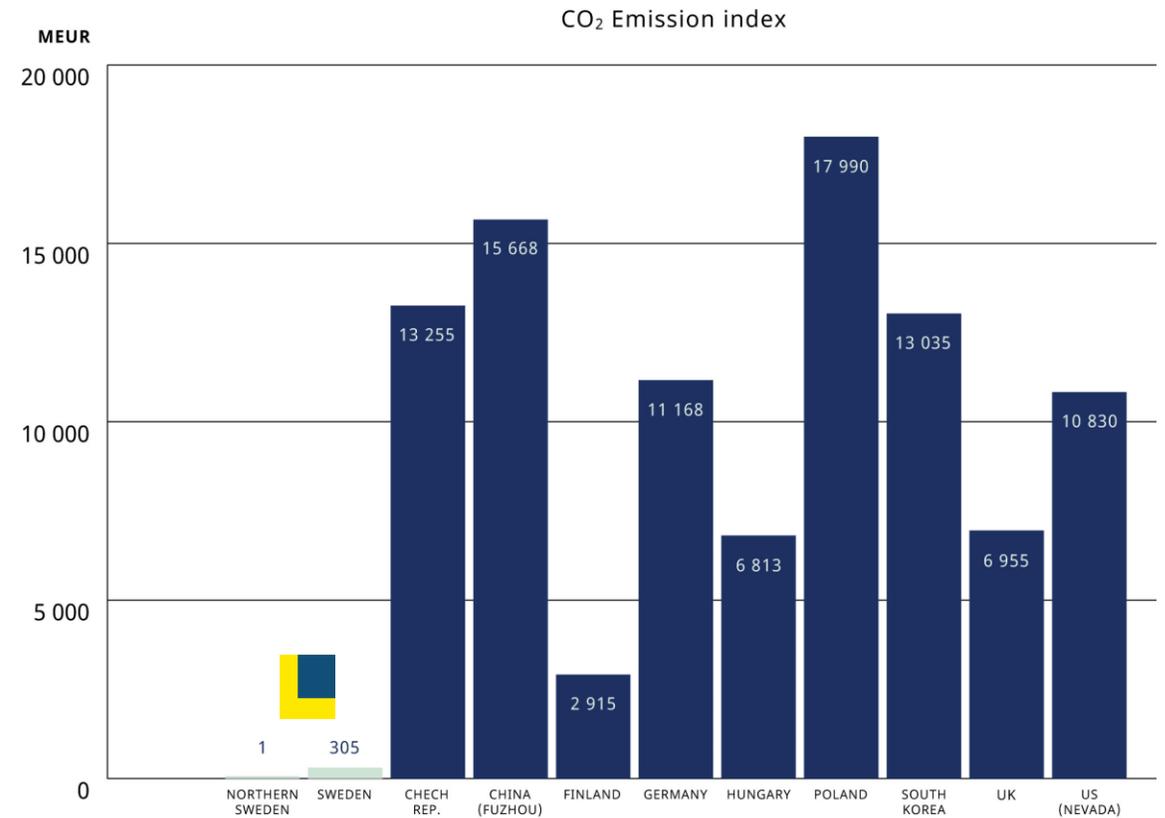
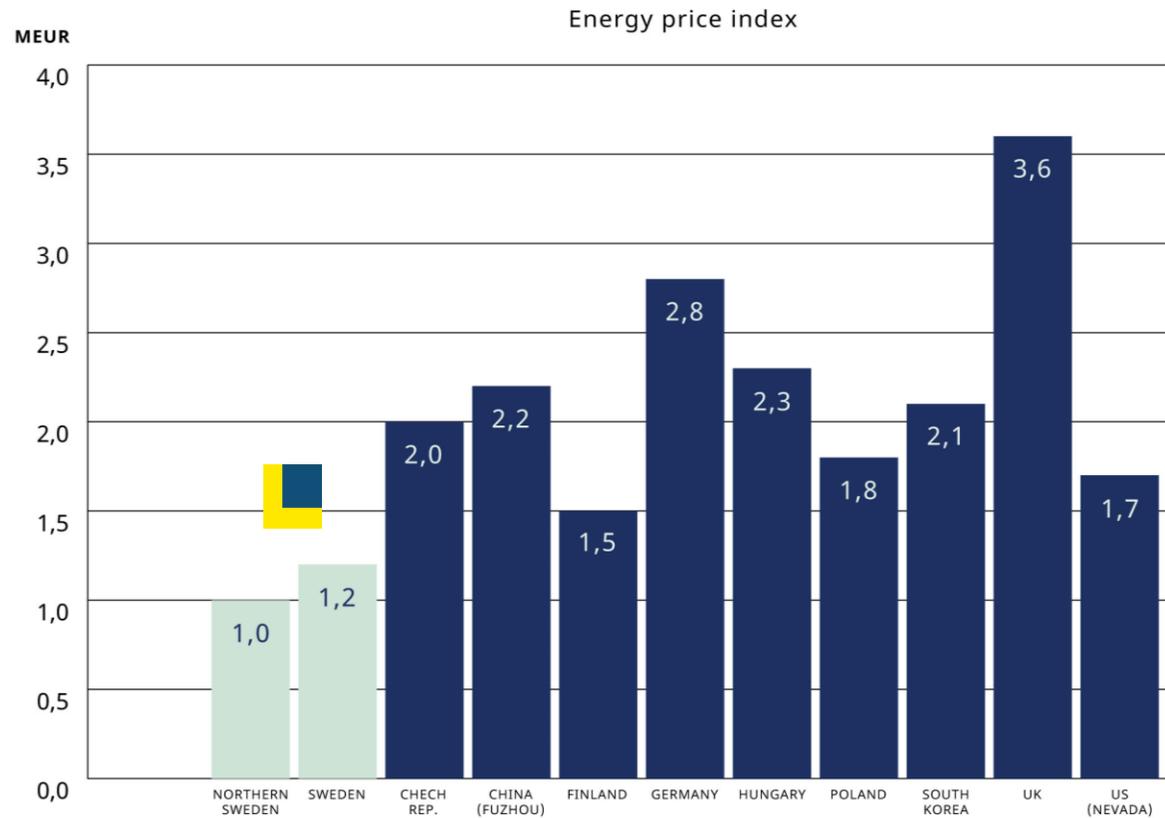


Fig. 3. Normalised impacts of process chains in person equivalents per kg Dy with deviation.

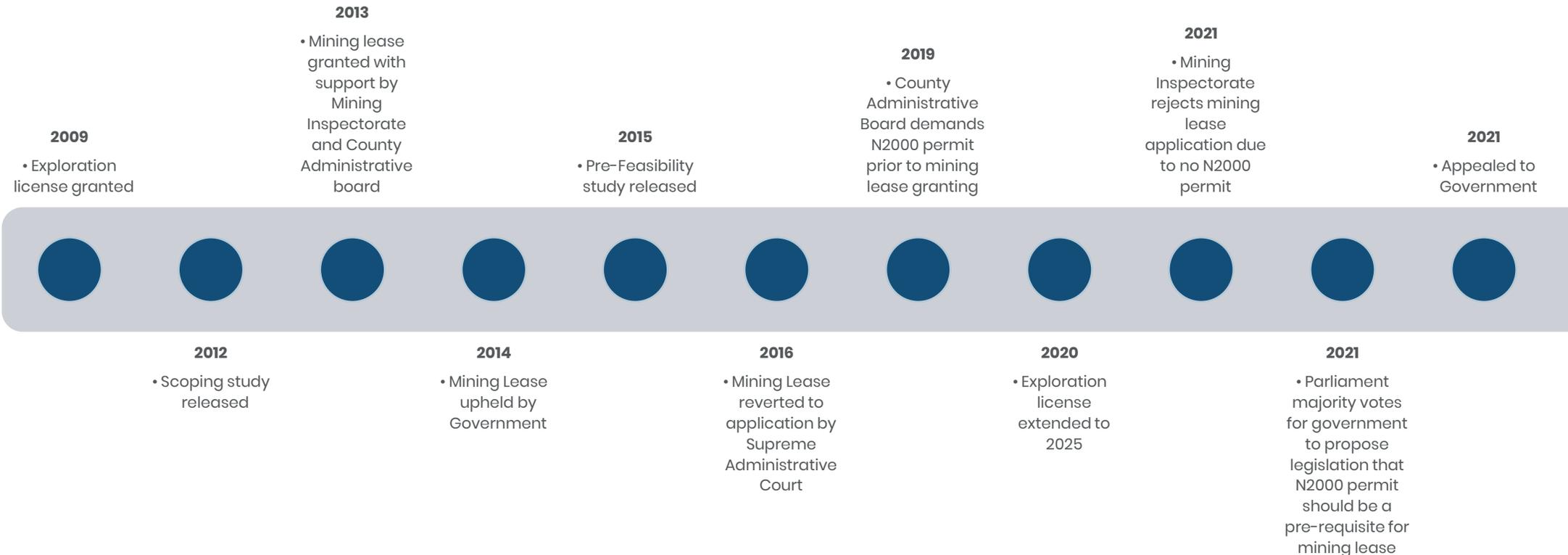
Source: Zapp, 2018

Sweden's Power Advantage



Source: NodePole

Social License of Norra Kärr



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



Bihor Sud Exploration Project

Bihor Sud Nickel-Cobalt Project

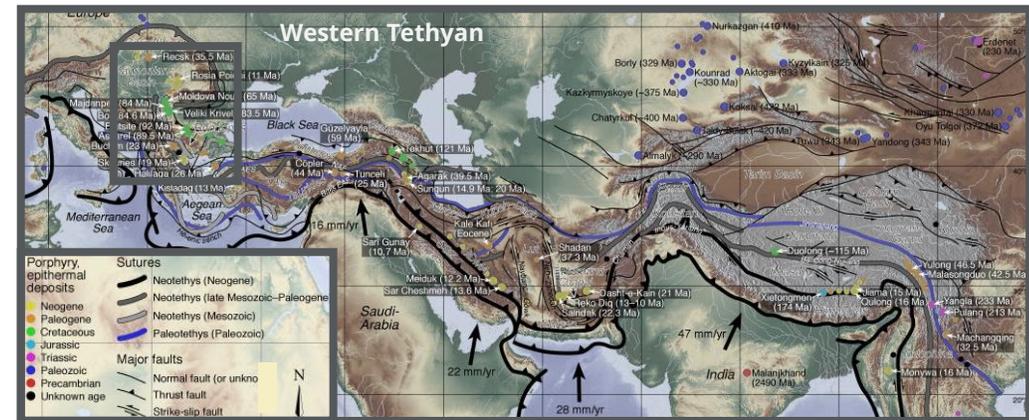
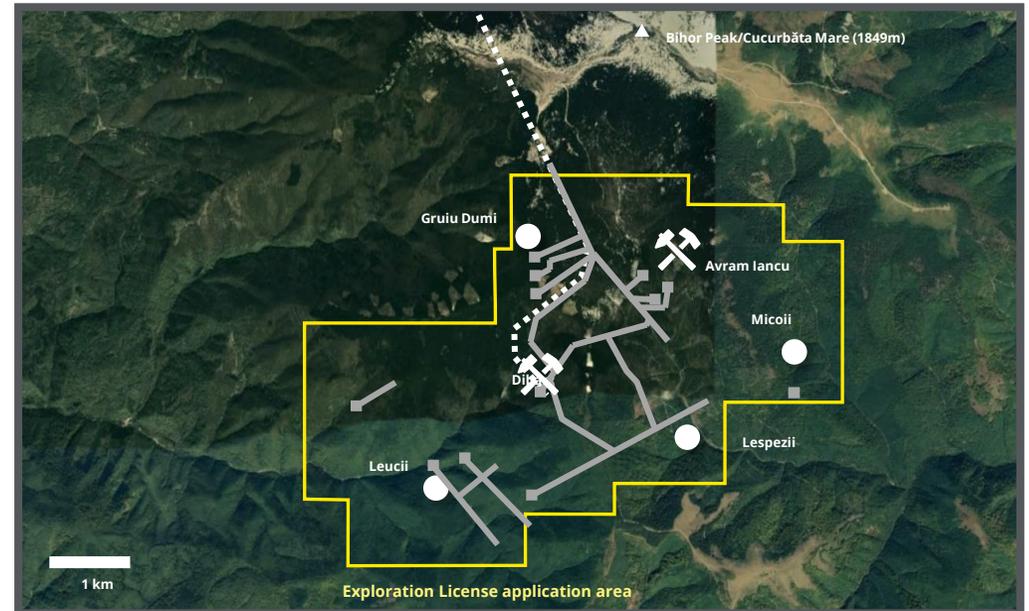


Overview

- 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 megacollisional 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 mineralizations

Opportunity

- Bihor Sud is 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.
- Awaiting final ruling from court on tender process for exclusive exploration license for the Bihor Sud perimeter which would launch prepared exploration program
- Romania is a historic mining country but nowadays one of Europe's poorest countries which should attract interest from strategic investors





**LEADING EDGE
MATERIALS**

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FRA: 7FL

