



NEWS RELEASE

December 8, 2024

## **MINING LEASE APPLICATION SUBMITTED FOR NORRA KÄRR**

**Vancouver, December 8, 2024 – Leading Edge Materials Corp.** (“**Leading Edge Materials**” or the “**Company**”) (TSXV: LEM) (Nasdaq First North: LEMSE) (OTCQB: LEMIF) announces that an application for an Exploitation Concession (“Bearbetningskoncession”) 25-year mining lease has been submitted to the Mining Inspectorate of Sweden (“Bergsstaten”) for the Norra Kärr Heavy Rare Earths (HREE) Project.

Norra Kärr had previously been granted a Bearbetningskoncession, in 2013, when the Company proposed that mining and all processing activities be located at the Norra Kärr site.

The Norra Kärr project was fundamentally redesigned in the 2021, following feedback from stakeholders, completely decoupling mining and chemical processing activities, with the latter relocated away from the mine site. The redesign was the basis for the Preliminary Economic Assessment completed in 2021 (“PEA 2021”). A reminder of the financial highlights from the PEA2021 are included later in this news release.

The Bearbetningskoncession application is accordingly for the quarrying operation that is proposed at the Norra Kärr site, producing a HREE concentrate and the industrial mineral nepheline syenite. Downstream chemical processing of the HREE concentrate will take place at an industrial park alongside similar industries, with Luleå being a preferred location.

When compared to the Pre-feasibility Study in 2015 (“PFS 2015”), the PEA 2021 reduced the area for operations at Norra Kärr by 65%, reduced water usage by up to 30%, and increased the conversion of excavated materials to products from ~ 1% to at least 60%. The Company plans to conduct testwork in Q1 2025 to further investigate the market potential of both nepheline syenite and aegirine. Aegirine is classified as waste in the current design but could be a saleable product.

Kurt Budge, Chief Executive Officer, states:

*“Climate change, war and geopolitics are making critical raw materials headline news, with the Green Transition in Europe now sharing coverage with security and defense. The need for robust critical raw material supply chains is an imperative for the region.*

*In 2014, a report by The European Rare Earths Competency Network (ERECON) titled Strengthening The European Rare Earths Supply-Chain stated that ‘The development of new sources of heavy rare earths outside of China and greater recycling must [therefore] remain an urgent priority...’.*

*The Report, now a decade old, stated that ‘With adequate funding and permitting, mining could begin [at Norra Kärr] before 2020 and secure European REE supply for decades’.*

*The Norra Kärr journey started long before this, with its discovery by the Geological Survey of Sweden (SGU) in the early 1900s. In more recent times, SGU designated Norra Kärr a mineral deposit of national interest in July 2011, linked to its potential for providing a supply of rare earth elements to Sweden and Europe. At the time, the SGU stated “REEs are of great importance in modern society and access to these*

*elements is very limited within Europe. Norra Kärr is a very important project from a material supply point of view, both for Sweden as well as for Europe. The mineral resource at Norra Kärr is the only NI 43-101 compliant REE resource in mainland Europe".*

*The new Bearbetningskoncession application is for a project with significantly reduced environmental impact and significantly increased sustainability. Proposed activities at the Norra Kärr site will be similar in nature to any other quarrying operation and downstream chemical processes will be removed from the mining site.*

*In August, the Company submitted an application to the European Commission (EC) for Strategic Project designation for Norra Kärr. Norra Kärr can make a significant contribution to Sweden and the EU's preparedness, greater self-reliance and resilience when it comes to HREE requirements and the strategically important industries that depend on them.*

*Looking ahead, 2025 is shaping up to be a transformational year for Norra Kärr, with decisions to be taken on Strategic Project status and thereafter the Bearbetningskoncession. The Company is also planning for the start of Pre-feasibility."*

### **Recap – Preliminary Economic Assessment 2021 (PEA)**

The PEA was prepared by SRK (UK) Ltd. ("SRK") and all figures in the PEA are in US dollars unless otherwise specified. SRK re-evaluated the Project with the objective to improve resource utilization, project sustainability and substantially minimize its environmental footprint compared to the design in the PFS 2015.

#### 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
- Pre-tax Payback Period from first production of 5.1 years
- Life of mine (LOM) average gross basket price per kg of separated mixed REO product at \$53
- Operating cost per kg of separated mixed REO product at \$33 including toll separation charges
- By-product revenue per kg of separated mixed REO product \$19

#### Operational Highlights:

- LOM is 26 years
- LOM average annual:
  - Mining rate of 1,150,000 tonnes
  - Strip ratio of 0.32
  - TREO 5,341 tonnes

- Main magnet rare earth oxides (MagREO) (Nd, Pr, Dy, Tb) 1,005 tonnes
- Nepheline Syenite co-product 732,885 tonnes
- Zirconium dioxide co-product 10,200 tonnes
- Niobium oxide product 525 tonnes

PEA 2021 news release: <https://leadingedgematerials.com/leading-edge-materials-announces-positive-preliminary-economic-assessment-results-for-its-norra-karr-ree-project-with-us1026m-pre-tax-npv10-and-30-8-pre-tax-irr/>

### **Norra Kärr's Relevance to the EU:**

Norra Kärr is an upstream asset that could be the EU's first step in HREE primary production and the establishment of a secure, resilient, and sustainable value chain for REEs; helping to strengthen the EU's self-reliance and to reduce strategic dependency on China.

There is a railway within 30 kilometers of the Norra Kärr site. The location provides uninterrupted road and rail access to Baltic ports and onto European markets where both REE refining capacity and REE enabled technology consumers are located.

EU demand for rare earth metals is expected to increase six-fold by 2030. The EU is almost 100% dependent on China for HREEs<sup>1</sup>.

A report by The European Rare Earths Competency Network (ERECON) in 2014 titled Strengthening The European Rare Earths Supply-Chain stated that 'The development of new sources of heavy rare earths outside of China and greater recycling must therefore remain an urgent priority for Europe.'<sup>2</sup>

The report, now a decade old, stated that 'With adequate funding and permitting, mining could begin [at Norra Kärr] before 2020 and secure European REE supply for decades.' Norra Kärr is one of two 'best known' advanced stage REE projects in Europe, which given size and grade could potentially contribute to Europe's security of supply of REE for decades to come.

In May 2023, the European Raw Materials Alliance (ERMA), in the report titled Materials for Energy Storage and Conversion - A European Call for Action<sup>3</sup>, identified over 50 investment cases targeting materials for energy storage and conversion across Europe and beyond, and a total investment need exceeding EUR 15 billion. Norra Kärr was one of the projects identified, that combined with the others, if realized, would make a significant contribution to the EU's needs by 2030. The report acknowledged that there is limited primary production within the EU and for some materials related to energy storage, the EU relies almost entirely on imports.

### **Critical Raw Materials Act:**

On 18 March 2024, the European Council adopted the regulation to establish a framework to ensure a secure and sustainable supply of critical raw materials, known as the Critical Raw Materials Act (CRMA).

The CRMA introduces clear deadlines for permit procedures for EU extracting projects, allows the Commission and member states to recognize a project as strategic, requires supply-chain risk assessments, requires member states to have national exploration plans and ensures the EU's access to critical and strategic raw materials through ambitious benchmarks on extraction, processing, recycling and diversification of import sources.

On 23 May 2024, a call for Strategic Projects as defined by the CRMA was opened. The CRMA designates strategic projects to increase EU capacity to extract, process and recycle strategic raw materials and diversify EU supplies from third countries. Strategic raw materials are crucial for the success of the green and digital transitions as well as the resilience of the defense and aerospace sectors.

Sources:

<sup>1</sup><https://www.consilium.europa.eu/en/infographics/critical-raw-materials/>

<sup>2</sup><https://ec.europa.eu/docsroom/documents/10882>

<sup>3</sup><https://erma.eu/new-roadmap-for-a-value-chain-on-raw-materials/>

**On behalf of the Board of Directors,  
Leading Edge Materials Corp.**

Kurt Budge, CEO

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### **About Leading Edge Materials**

Leading Edge Materials is a Canadian public company focused on 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 lithium-ion batteries and permanent magnets for electric motors and wind power that underpin the sustainability transition of society. The portfolio of projects includes the 100% owned Woxna Graphite mine (Sweden), Norra Kärr Heavy Rare Earth Element project (Sweden), Bergby lithium project (Sweden) and the 51% owned Bihor Sud Nickel Cobalt exploration alliance (Romania).

### **Additional Information**

The information was submitted for publication through the agency of the contact person set out above, on December 08, 2024, at 11:30 PM Vancouver time.

Leading Edge Materials is listed on the TSXV under the symbol "LEM", OTCQB under the symbol "LEMIF" and Nasdaq First North Stockholm under the symbol "LEMSE". Mangold Fondkommission AB is the Company's Certified Adviser on Nasdaq First North and may be contacted via email [CA@mangold.se](mailto:CA@mangold.se) or by phone +46 (0) 8 5030 1550.

### **Reader Advisory**

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