LEADING EDGE MATERIALS CORP.
1305 – 1090 West Georgia Street, Vancouver, BC, V6E 3V7
info@leadingedgematerials.com | www.leadingedgematerials.com
TSX.V: LEM | Nasdaq First North: LEMSE | OTCQB: LEMIF

NEWS RELEASE August 19, 2021

LEADING EDGE MATERIALS ANNOUNCES FILING OF PRELIMINARY ECONOMIC ASSESSMENT REPORT FOR ITS NORRA KARR REE PROJECT

Vancouver, August 19, 2021 – Leading Edge Materials Corp. ("**Leading Edge Materials**" or the "**Company**") (**TSXV: LEM**) (**Nasdaq First North: LEMSE**) (**OTCQB: LEMIF**) is pleased to announce the technical report for its Norra Karr rare earth element project (the "Project") titled "PRELIMINARY ECONOMIC ASSESSMENT OF NORRA KARR RARE EARTH DEPOSIT AND POTENTIAL BY-PRODUCTS, SWEDEN" dated August 19, 2021 (the "Report" or "PEA"), has been filed under the Company's profile on SEDAR today. The Report supports the disclosure in the Company's news release dated July 22, 2021. All figures in the PEA are US dollars unless otherwise specified.

The news release on July 22, 2021, presented these highlights from the Report:

Main PEA Highlights (In comparison to the 2015 PFS)

- Significant increase in resource utilization by proposing recovery of nepheline syenite (NS) industrial mineral, zirconium oxide (Zr) and niobium oxide (Nb) products in addition to the rare earth oxide ("REO") products. In the PEA more than 50% of total mined material is planned to be sold as products compared with previously less than 1% in the 2015 PFS. The PEA also identifies future opportunities to valorize the residual mined material which could potentially result in all mineralized material mined to be treated as potential commercial products.
- Introducing a revised Project flowsheet to minimize the environmental footprint at the Norra Karr site:
    - The Norra Karr site will only include mining and comminution methods consisting of crushing, milling and magnetic separation, eliminating all chemical processing from Norra Karr and associated waste vs the 2015 PFS study. In the PEA following physical separation resulting material streams either are shipped as products or as concentrates for further processing at other locations and a single waste stream to be stored at the Norra Karr site.
    - The rare earth, zirconium and niobium bearing concentrate will be transported to a dedicated off-site location for chemical processing and further recovery.
- The combination of the above, results in a single waste stream at the Norra Karr site consisting of the mineral aegirine which can be dry stacked in a lined impoundment together with waste rock from mining, eliminating the need for a wet tailings storage

facility. This new design substantially reduces land area usage of the Project by approximately 80% (see Figure 1) and results in no chemical process tailing dams being required at Norra Karr. These changes considerably reduce the environment risk profile of the Project at Norra Karr.

- In addition, the removal of chemical processing and wet tailings at Norra Karr delivers an overall predicted 51% reduction in water requirements over the life of mine vs the 2015 PFS study. Use of mine dewatering for processing can reduce additional water requirements by almost 100% and the elimination of discharge requirements to local water bodies compared with the 2015 PFS design.
- The PEA introduces the design of an off-site chemical recovery plant located close to reagent supplies within an existing brownfield development area where mixed REO (MREO), Zr and Nb products are planned to be recovered. Residual process waste at the off-site facility consists of neutralized leach residue and gypsum disposed of in geomembrane lined dry stack impoundments. The Report identifies the future potential to further process the gypsum waste into a gypsum product for construction material markets.

Project 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 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
- Operating cost per kg of separated mixed REO product including toll separation charges and after by-product credit at $14.57.

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
    - Main magnet rare earth oxides (“MagREO”) (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 by-product 732,885 tonnes
    - Zirconium dioxide by-product 10,200 tonnes
    - Niobium oxide by-product 525 tonnes

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	$Er2O_3$	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									

The Norra Karr Mineral Resource Statement (SRK, 18 August 2021)* replaces the one published on July 22, 2021, due to a rounding error in that calculation of the HREO % of the TREO. Originally, HREO was calculated as 54% of TREO. After adjusting for the rounding error, this has been updated to 52% of TREO (see Note 9 and above table).

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. The rationale for re-evaluation of the Project at the PEA level is justified for the following reasons; Recognition of potentially economic commodities in the mineralization not evaluated in the 2015 PFS, namely nepheline syenite, niobium and zircon, recognition of the need to reduce the project footprint and assess alternatives to a large tailing's facility at the mine site, and the need to minimize waste on the project and have greater utilization of the extracted materials. The Company does not expect the mineral resource estimates contained in the PEA to be materially affected by metallurgical, environmental, permitting, legal, taxation, socio-economic, political, and marketing or other relevant issues.

The PEA was prepared by SRK Consulting (UK) Limited in accordance with Canadian *National Instrument 43-101 Standards of Disclosure for Mineral Projects* and is now available on the Company's website (www.leadingedgematerials.com) and profile on SEDAR (www.sedar.com).

Qualified Persons for the PEA

This release has been reviewed and is approved for the scientific, technical and economic information contained in this news release 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. Dr. Bowell is responsible for the preparation of the PEA, in particular Sections 1 to 12, 16,18, 22, and 24 through 25. A site visit for purpose of QP sign off and examination of the mineralization, core and field area was undertaken from June 28 to July 3, 2021 by Dr Bowell.

Martin Pittuck MSc of SRK Consulting (UK) Ltd is a chartered engineer and member of the Institute of Mining, Metallurgy and Materials, who is an independent Qualified Person under the terms of NI 43-101 for REE deposits. He is co-author of the PEA and responsible for the Mineral Resource Estimation method and classification described in Executive Summary section 4 and Section 13 of the Report.

Colleen MacDougall PEng of SRK Consulting (Canada) Inc. a Professional Engineer registered with the Professional Engineers Ontario (PEO#100530936) is co-author of the PEA and responsible for Sections 16 and 21.

Colin M Chapman MIMMM, CEng, MSc, of SRK Consulting (UK) Ltd, a Chartered Professional Engineer registered with the IOM3, Institute of Mining & Metallurgy, UK (#460270) is responsible for the preparation of the PEA, in particular Sections 17 and 20.

Richard Martindale, BSc MSc CEng, of SRK Consulting (UK) Ltd, a Chartered Engineer of the Engineering Council, with registration made through the Institute of Mining Minerals and Materials (IMMM), is co-author of the PEA, and responsible for Sections 23.1 and 23.2.

SRK Qualified Persons are all independent as defined by NI 43-101 and have contributed to their corresponding sections of the PEA, and have reviewed and approved the scientific, technical and economic information contained in this news release.

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

Filip Kozlowski, CEO

For further information, please contact the Company at:
info@leadingedgematerials.com
www.leadingedgematerials.com

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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 batteries for electromobility and energy storage and permanent magnets for electric motors and wind power that underpin the clean energy transition towards climate neutrality. The portfolio of projects includes the 100% owned Woxna Graphite mine (Sweden), Norra Karr HREE 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 August 19, 2021, at 8:00 am 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 or by phone +46 (0) 8 5030 1550.

Reader Advisory

This news release may contain statements which constitute “forward-looking information” under applicable Canadian securities laws, including predictions, projections and forecasts. Forward-looking information includes, but are not limited to, statements that address activities, events or developments that the Company expects or anticipates will or may occur in the future, including such things as the results of the PEA, mineral resource estimates, the timing and amount of estimated future production, costs of production, capital expenditures, costs and timing of the development of new deposits, permitting time lines, currency exchange rate fluctuations, requirements for additional capital, government regulation of mining operations, environmental risks, unanticipated reclamation expenses, timing and possible outcome of pending litigation, title disputes or claims and limitations on insurance coverage and with respect to the results of the PEA, including future Project opportunities, future operating and capital costs, closure costs, the projected NPV, IRR, timelines, and the ability to obtain the requisite permits, economics and associated returns of the Project, the technical viability of the Project, the market and future price of and demand for graphite, the environmental impact of the Project, and the ongoing ability to work cooperatively with stakeholders, including the local levels of government. as well as plans, intentions, beliefs and current expectations of the Company, its directors, or its officers with respect to the future business activities of the Company.

The words “may”, “would”, “could”, “will”, “intend”, “plan”, “anticipate”, “believe”, “estimate”, “expect” and similar expressions, as they relate to the Company, or its management, are intended to identify such forward-looking information. Investors are cautioned that any such forward-looking information is not a guarantee of future business activities and involves risks and uncertainties, and that the Company’s future business activities may differ materially from those in the forward-looking information as a result of various factors, including, but not limited to, success of the appeals process; fluctuations in market prices; successes of the operations of the Company; continued availability of capital and financing; changes in planned

work resulting from weather, logistical, technical or other factors; the possibility that results of work will not fulfil expectations and realize the perceived potential of the Project; changes in project parameters as plans continue to be refined; risk of accidents, equipment breakdowns and labour disputes or other unanticipated difficulties or interruptions; the possibility of cost overruns or unanticipated expenses; the risk of environmental contamination or damage resulting from the Company's operations and other risks and uncertainties; the failure of contracted parties to perform; other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of exploration and general economic, market or business conditions, as well as those factors disclosed in the Company's publicly filed documents. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking information, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurances that such information will prove accurate and, therefore, readers are advised to rely on their own evaluation of such uncertainties. The Company does not assume any obligation to publicly update or revise any forward-looking information except as required under the applicable securities laws.

Neither the TSX Venture Exchange nor its Regulation Services Provider (as that term is defined in the policies of the TSX Venture Exchange) accept responsibility for the adequacy or accuracy of this news release.