

NextSource Materials Announces Preliminary Economic Assessment for a Mine Expansion of 150,000 Tonnes per Annum of SuperFlake(R) Graphite Concentrate

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TORONTO, February 28, 2022 - [Nextsource Materials Inc.](#) (TSX:NEXT) (OTCQB:NSRCF) ("NextSource" or "the Company") is pleased to announce the results of a Preliminary Economic Assessment ("PEA") for an enhanced Phase 2 expansion of its 100%-owned Molo Graphite Mine Project in southern Madagascar.

The PEA considered an enhanced Phase 2 expansion consisting of a stand-alone processing plant with a production capacity of 150,000 tonnes per annum ("tpa") of flake graphite concentrate over a 26-year life of mine ("LOM"). The PEA projects that the capital costs to construct 150,000 tpa of processing capacity would be US\$155.8 million with a pre-tax NPV utilizing an 8% discount rate of US\$929.6 million and a pre-tax IRR of 41.1%.

The PEA assumed the Phase 2 processing plant will be built adjacent to the 17,000 tpa Phase 1 processing plant, currently under construction.

Craig Scherba, P.Geo., President and CEO of NextSource commented,

"We are very pleased the PEA defines the strong financial returns of a larger scale operation and significant scalability of our project as market demand for flake graphite for use in electric vehicle batteries is rising. A Phase 2 expansion of this magnitude will position NextSource as a major global supplier and will underpin our vertical integration strategy to construct our own battery anode facility in due course, enabling direct supply to the electric vehicle battery market."

The PEA was prepared by Erudite Strategies Ltd. ("Erudite") of South Africa, an independent engineering and consulting firm specializing in the mining and processing of commodities and battery materials.

The Company cautions that the PEA is preliminary in nature and includes inferred mineral resources that are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves. Mineral resources are not mineral reserves and do not have demonstrated economic viability and there is no certainty that the PEA will be realized.

PEA RESULTS SUMMARY

The following summary highlights the financial metrics provided in the PEA:

Description	Preliminary Economic Assessment
	(150k tpa)
Economic Highlights	
Pre-tax Net Present Value ("NPV") (8% discount rate) (1)(2)	US\$929.6 million
Post-tax and royalty NPV (8% discount rate) (1)(2)(3)	US\$612.6 million
Pre-tax Internal Rate of Return ("IRR") (1)(2)(3)(4)	41.1%
Post-tax and royalty IRR (1)(2)(3)(4)	32.0%

Description	Preliminary Economic Assessment
	(150k tpa)
Life of Mine ("LOM")	26 years
Annual average production of SuperFlake® graphite concentrate ⁽⁵⁾⁽⁶⁾	150,000 tonnes
Payback (Pre-tax) ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾	3.1 years
Payback (Post-tax and royalty) ⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾	3.7 years
Capital cost ("Capex") (including a contingency of \$31.96 million)	US\$155.8 million
Operating Costs FOB ("Opex") (per tonne of concentrate following ramp-up) ⁽⁷⁾	US\$479.03
Average sale price of SuperFlake® concentrate (US\$/tonne) ⁽⁸⁾	US\$1,231
Operational Highlights	
Average material mined per annum over LOM	2,532,345
Average Head Grade	6.16%
Concentrate purity (Cg) of finished product	97%
Average Stripping ratio over LOM	0.8:1
Average carbon recovery	88.30%

(1) Assumes Project is financed with 100% equity. Unless otherwise noted, all monetary figures presented throughout this press release are expressed in US dollars (USD).

(2) CAPEX includes process equipment, civil & infrastructure, mining, buildings, electrical infrastructure, project & construction services. Values shown are based on real graphite sales pricing.

(3) Assumes 5% revenue and 1.5% NSR royalty payments.

(4) Assumes no inflationary adjustments in sales price or operating costs.

(5) Assumes all mineralized material from the Company's 2019 Feasibility Study, including ore from the Measured, Indicated and Inferred Mineral Resource categories, are sent to the treatment plant.

(6) Assumes a cut-off grade of 4.5% carbon has been applied, with all material below this cut-off grade treated as waste.

(7) Assumes all concentrate will be sold on a FOB basis at the Port of Ehoala, Madagascar.

(8) Assumes a 2% increase in the sales price reported in the Company's 2019 Feasibility Study (i.e. \$1208/tonne), based on current market prices provided by UK-based commodity price reporting agencies Benchmark Minerals Intelligence and Fastmarkets.

CAPEX SUMMARY

Estimate Summary	Cost	%
Mechanical equipment	US\$24.0 million	15%
Structural steel	US\$2.6 million	2%
Piping and valves	US\$2.1 million	1%
Freight and transport	US\$6.6 million	4%
Electrical and instrumentation	US\$7.9 million	5%
Sub-total supply items	US\$43.2 million	28%
Engineering and management	US\$14.4 million	9%
Civil construction	US\$24.5 million	16%
Infrastructure	US\$36.2 million	23%
Mechanical erection	US\$0.1 million	0%

Estimate Summary	Cost	%
Preliminary and general	US\$4.7 million	3%
Electrical erection	US\$0.8 million	0%
Sub-total non-supply items	US\$80.7 million	52%
Contingency	US\$32.0 million	21%
Total Estimated CAPEX	US\$155.8 million	100%

OPEX SUMMARY

Based on discussions with off takers, their preference is to purchase Molo graphite concentrate at the local Madagascar port at freight on board (FOB) China prices. As such, Operating costs ("OPEX") include the all-in FOB cost to ship the graphite concentrate to the local port of Ehoala.

Estimate Summary	Cost
Mining (US\$/tonne)	\$145.88
Processing (US\$/tonne)	\$190.15
Transport to Port of Fort Dauphin (US\$/tonne)	\$133.00
General and admin (US\$/tonne)	\$10.00
Total OPEX	\$479.03

MINERAL RESOURCES

The Molo project hosts the following mineral resources and remains open along strike and to depth:

- Measured mineral resource of 23.62 MT grading 6.32% C.
- Indicated mineral resource of 76.75 MT grading 6.25% C.
- Inferred mineral resource of 40.91 MT at 5.78% C.

Classification	Material Type	Tonnes	%C (Carbon)	Graphite (Tonnes)
Measured	"Low Grade"	13 048 373	4.64	605 082
Measured	"High Grade"	10 573 137	8.4	887 835
Total Measured		23 621 510	6.32	1 492 916
Indicated	"Low Grade"	39 539 403	4.73	1 871 075
Indicated	"High Grade"	37 206 550	7.86	2 925 266
Total Indicated		76 745 953	6.25	4 796 341
Measured + Indicated	"Low Grade"	52 587 776	4.71	2 476 157
Measured + Indicated	"High Grade"	47 779 687		

3 813 101

Classification	Material Type	Tonnes	%C (Carbon)	Graphite
				(Tonnes)
Total Measured + Indicated		100 367 464	6.27	6 289 257
Inferred	"Low Grade"	24 233 267	4.46	1 080 677
Inferred	"High Grade"	16 681 453	7.70	1 285 039
Total Inferred		40 914 721	5.78	2 365 716

C% = carbon percentage ; Graphite Tonnes = tonnes of graphite concentrate

- (1) Mineral Resources are classified according to the Canadian Institute of Mining definitions.
- (2) Mineral Resources are reported Inclusive of Mineral Reserves.
- (3) "Low Grade" Resources are stated at a cut-off grade of 2% C.
- (4) "High grade" Resources are stated at a cut-off grade of 4% C.
- (5) Eastern and Western high-grade assays are capped at 15% C.
- (6) A relative density of 2.36 tonnes per cubic metre (t/m³) was assigned to the mineralized zones for the mineral resource tonnage estimation.
- (7) The effective date of the Mineral Resource tabulation above is August 14, 2014.
- (8) Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

METALLURGY & PRICING

The PEA is based on a full suite of metallurgical test work performed by SGS Canada Metallurgical Services Inc. in Lakefield, Ontario, Canada. These tests included lab and bench scale process development work, a bulk sample/pilot plant program, and metallurgical variability testing. The overall graphitic carbon recovery into the final concentrate is 88.3%.

Metallurgical Data - Flake Size Distribution and Product Grade

Product Size	% Distribution Product Grade (% Carbon)	
+48 mesh (jumbo flake)	23.6	96.9
+65 mesh (coarse flake)	14.6	97.1
+80 mesh (large flake)	8.2	97.0
+100 mesh (medium flake)	6.9	97.2
+150 mesh (medium flake)	15.5	97.3
+200 mesh (small flake)	10.1	98.1
-200 mesh (fine flake)	21.1	97.5

Pricing Matrix - Flake Size Distribution Grouping and Product Grade

Product Size	% Distribution Product Grade (% Carbon)	
>50 mesh	23.6	96.9
-50 to +80 mesh	22.7	97.1
-80 to +100 mesh	6.9	97.2
-100 mesh	46.8	97.6

The selling price used in the PEA is the volume weighted average sales price for the various flake sizes and grades of SuperFlake® graphite concentrate that are expected to be produced from the Molo deposit. Prices used are based on current market prices provided by UK-based, commodity price reporting agencies Benchmark Minerals Intelligence and Fastmarkets, who are recognized as leaders in providing independent and unbiased market research, pricing trends and demand and supply analyses for the natural flake graphite market.

No price escalation for graphite sales prices into the future was applied to the PEA model. Current market prices were used and flatlined over the life of mine. No pricing premium for valued-added applications was applied on any sales. Furthermore, no financial or operational calculations and/or scenarios in the PEA financial model with regards to downstream value-added processing of SuperFlake® graphite concentrate were included. This includes purification, spherodization coating for battery-grade graphite and thermal expansion for specialty graphite applications, such as foils.

Battery Anode Facility

The PEA's enhanced Phase 2 capacity was determined based on discussions with automotive manufacturers ("OEMs") and our battery anode offtake partners. The Company and the battery anode offtake partners are evaluating construction of a battery anode facility ("BAF"), capable of converting flake graphite concentrate from any qualified mine into spheronized and purified graphite ("SPG") and into coated SPG ("CSPG"). CSPG is the final form of natural graphite required to manufacture lithium-ion batteries required by OEMs. As announced on November 15th, 2021, the Company initiated a technical study to determine the capital and operating costs for our first BAF and is considering several proposed locations.

Based on recent discussions with OEMs and our battery anode offtake partners, the Company expects demand for CSPG to experience significant growth. For example, a single mid-sized OEM's 7-year demand forecast would require NextSource to construct a BAF with a CSPG production capacity of 58,000 tpa. Since it takes 2.2 tonnes of flake graphite to produce 1 tonne of CSPG, the majority of Phase 2 production capacity would be dedicated to supply the BAF for such a single mid-sized OEM.

Molo PHASE 1 Construction and Commissioning Update

On January 11, 2022, the Company announced the Molo Phase 1 processing plant (the "Processing Plant"), which was fully fabricated and constructed at an offshore facility, had successfully passed Factory Acceptance Testing and final verification. The Processing Plant has since been dismantled, packaged and is now ready to be shipped to the mine site.

Due to Madagascar's ongoing COVID-19 travel restrictions, and recent cyclone activity impacting the eastern seaboard of the country, the commencement of earthworks and civil work at the mine site has been delayed and commissioning of the Molo Phase 1 process plant is now targeted for Q3, 2022.

Phase 1 of the Molo Graphite Mine is fully funded and when commissioned, Molo will become one of the few operating graphite mines outside of China.

The Company has not yet made a production decision in respect of Phase 2. The Company expects that it will assess the results of a definitive feasibility study before making a production decision in respect of Phase 2.

TECHNICAL REPORT FILING

This PEA technical report will be filed under the Company's profile on SEDAR at www.sedar.com and will be posted on NextSource's website at www.nextsourcematerials.com within 45 days of this new release.

Data verification programs have included review of QA/QC data, re-sampling and sample analysis programs, and database verification. Validation checks were performed on data, and comprise checks on surveys, collar co-ordinates and assay data. Sufficient verification checks were undertaken on the database to provide confidence that the database is appropriate to support the technical information contained herein.

QUALIFIED PERSONS

The PEA was prepared in accordance with National Instrument 43-101 standards by Mr. Johann de Bruin,

Pr. Eng, of Erudite Strategies. Mr. de Bruin is the Qualified Person who verified the technical data using industry acceptable standards and signed off on the relevant sections in the report to be filed on SEDAR.

Mr. Craig Scherba, P.Geo., President and CEO of NextSource, is the qualified person who reviewed and approved the technical information provided in this press release.

ABOUT NEXTSOURCE MATERIALS INC.

[Nextsource Materials Inc.](#) is a strategic materials development company based in Toronto, Canada that is intent on becoming a fully integrated, global supplier of critical battery and technology materials needed to power the sustainable energy revolution.

The Company's Molo graphite project in Madagascar is one of the largest known and highest-quality graphite deposits globally, and the only one with SuperFlake® graphite. Construction of Phase 1 of the Molo Project is underway, with commissioning expected in Q3, 2022.

NextSource Materials is listed on the Toronto Stock Exchange (TSX) under the symbol "NEXT" and on the OTCQB under the symbol "NSRCF".

To learn more, please visit the Company's website at www.nextsourcematerials.com or email investor relations at info@nextsourcematerials.com

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