

# Lithium Ionic Announces Feasibility Study Results for the Bandeira Lithium Project, Minas Gerais, Brazil

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- 178,000tpa of spodumene concentrate production (5.5% Li<sub>2</sub>O)
- 14-year mine life
- After-tax NPV<sub>8</sub> of US\$1.3B; IRR of 40%
- All-in operating costs of \$444/t SC5.5

\*All amounts expressed in U.S. dollars unless otherwise noted

TORONTO, May 29, 2024 -- [Lithium Ionic Corp.](#) (TSXV: LTH; OTCQX: LTHCF; FSE: H3N) ("[Lithium Ionic](#)" or the "Company") is pleased to announce the results of a Feasibility Study ("FS" or "Study") for its 100%-owned Bandeira Lithium Project ("Bandeira" or the "Project") located in Minas Gerais, Brazil. The Bandeira claims span 157 hectares, which represents only about 1% of [Lithium Ionic's](#) extensive 14,182-hectare land package in Brazil's 'Lithium Valley', a region of global significance for hard-rock lithium production.

Highlights of the Feasibility Study for the Bandeira Project:

- **Mine Life & Production:** 14-year underground mining operation producing an average of 178,000t of high-quality spodumene concentrate grading 5.5% Li<sub>2</sub>O ("SC5.5").
- **Strong Project Economics:** After-tax net present value ("NPV8%") of US\$1.3 billion and after-tax internal rate of return ("IRR") of 40% at average SC5.5 price of \$2,277/t.
- **Industry-leading Operating Costs:** All-in LOM OPEX of \$444/t of SC5.5
- **Low Capital Intensity:** Total capital expenditure ("CAPEX") of US\$266 million (including a 15% contingency) with after-tax payback of 3.4 years. LOM sustaining costs of US\$ 81 million.
- **Minimal Land-use Footprint:** The development plan contemplates an underground mining operation with a simple processing circuit to optimize recoveries while minimizing the impact on the environment and local communities.
- **Responsible Tailings Management:** For safety and environmental reasons, the mine will utilize dry stacking waste disposal, which among other benefits will reduce water usage and facilitating site rehabilitation.
- **Local Social & Economic Contributions:** Total estimated taxes payable of \$915 million, a peak local workforce of ~870 direct employees, and an estimated \$677 million procuring goods and services within Brazil over the life of mine.
- **Construction Permits on Track for mid-2024:** The LAC license application submitted in November is currently under review by the state agency. Approval is expected in early Q3 2024.

Blake Hylands, P.Geo., Chief Executive Officer of [Lithium Ionic](#), commented, "*This study marks an important developmental milestone, confirming the strong results from our PEA in late 2023 and solidifying our path to becoming a near-term lithium producer. Furthermore, it outlines the significant positive impacts Bandeira will have through employment, tax contributions, and local procurement. While we are very pleased with the results of the study, the Company intends to move project engineering forward to the basic engineering phase where a value-add process will take place to further optimize and streamline capital and operating costs. Several opportunities identified in the feasibility stage will be subjected to trade-off studies, prior to entering the detailed engineering phase to ensure the project value and operational efficiencies are maximized. We look forward to continuing to rapidly advance Bandeira towards production, recognizing that this will deliver the most value to our shareholder, however we are very excited by the growth opportunities and development potential at our other regional properties which could present significant future scale opportunities for the Company.*"

Bandeira Definitive Feasibility Study Results

The Feasibility Study for the Bandeira Project, completed by Atkins Réalis (formerly SNC Lavalin), is the culmination of over 12 months of comprehensive work involving the expertise of all engineering disciplines as well as market studies. This includes detailed planning for the mine, process design, plant layout, infrastructure, and product logistics. The study supports a robust project with strong economic viability, featuring a minimal footprint underground mine, an efficient and straightforward processing circuit, and a safe, sustainable dry stack tailings facility. The FS builds on and confirms the strong results from the Preliminary Economic Assessment ("PEA") completed in October 2023.

Table 1. Bandeira FS - Summary of Key Results and Assumptions

Project Economics	
Post - Tax NPV <sub>8</sub>	\$1.31 B
Post - Tax IRR	40%
Pre - Tax NPV <sub>8</sub>	\$1.57 B
Pre - Tax IRR	44%
Annual Revenue - LOM Average	\$417 M
Average Annual After-Tax Free Cash Flow (after repayment of initial capital, years 4-14)	\$286 M
Payback	41 months
Production Profile	
Total Project Life (LOM)	14 years
Total LOM production (ore mined)	17.2 Mt
Total SC5.5 production (LOM)	2,493 kt (338.3 kt LCE)
Nominal Plant Capacity	1.30 Mtpa
Average plant throughput	1.23 Mtpa
Run-of-Mine grade, Li <sub>2</sub> O (mine diluted)	1.16%
Average Annual Production of Spodumene Concentrate @ 5.5% Li <sub>2</sub> O	178 ktpa (24.2 ktpa LCE)
Metallurgical Recovery (SC5.5% Li <sub>2</sub> O)	68.9%
CAPEX & OPEX	
Initial Capital Costs	\$266M
Sustaining CAPEX	\$81M
Operating costs (FOB / t SC5.5)	\$444/t
Economic Assumptions & Parameters	
Spodumene Concentrate Price (5.5% Li <sub>2</sub> O; LOM Avg)	\$2,277/t
Exchange rate (USD:BRL)	\$1.00: \$5.07
Discount Rate	8%

#### Project Location and Infrastructure

The Bandeira property covers 157 hectares, representing only approximately 1% of the Company's large 14,182-hectare land package in the northern region of Minas Gerais State, Brazil, within the renowned "Lithium Valley" (see Figure 1). This area is recognized for its significant concentration of lithium-bearing pegmatites, making it one of the most promising lithium-producing regions globally. The Project benefits from excellent local infrastructure, which is critical for the efficient development and operation of the future mining activities.

The Bandeira site is well-connected via major highways, facilitating the transport of materials and personnel. The project site is approximately 570 kilometers from the port of Ilhéus in Bahia, which serves as a key logistical point for exporting lithium concentrate to international markets, including Shanghai, China. The proximity to Araçuaí provides access to essential services and amenities, enhancing operational efficiency.

A key infrastructure component for the Bandeira Project was secured in October 2023 through an agreement with Cemig Distribuição S.A. ("Cemig"). This agreement facilitates the construction and electrification of

essential power infrastructure, including three kilometers of new transmission lines and a new substation adjacent to the future Bandeira mine and will ensure that the Project will be powered by low-cost, renewable hydroelectric power, aligning with the Company's commitment to operating sustainably.

#### Figure 1. Bandeira Project Location

View Figure 1 here:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/292fd9e3-464e-4594-9846-0b8d3bc160f1>

#### Mining Operations

The Bandeira project is designed to incorporate dual underground mining operations, ensuring efficient extraction of its deposits. The primary orebodies, representing approximately 83% of the total deposit, will be mined using a bottom-up sublevel stoping method (Bandeira Sublevel Mine, or "BSL Mine"). Concurrently, the secondary southeast orebody, which comprises approximately 0.98 million tonnes, will be mined using the room-and-pillar technique (Bandeira Room and Pillar Mine, or "BRP Mine"). Figures 2 and 3 present the annual mine production plan and the annual plant feed along with the Li<sub>2</sub>O grade, highlighting the project's robust production capabilities.

#### Figure 2. ROM to Plant Feed and Li<sub>2</sub>O grade, %

View Figure 2 here:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/c62c719b-e95c-43cb-a87a-d81498287171>

#### Figure 3. Annual Production of Spodumene Concentrate grading 5.5% Li<sub>2</sub>O

View Figure 3 here:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/6e174968-c2e0-43ba-8bc2-0bebba4af38b>

#### Mineral Processing

The mineral processing flowsheet for the Bandeira project is designed to maximize lithium recovery and quality. It features a two-stage crushing circuit, which includes a Jaw crusher and a Gyratory Cone crusher, followed by dry screening classification. The coarse and mid fractions undergo ore sorting and Dense Media Separation (DMS) to produce a final SC5.5 Li<sub>2</sub>O concentrate. See Figure 4 for a visual representation of the process flowsheet.

The underground mine is expected to produce ore with an average Li<sub>2</sub>O grade of 1.16% over the Life of Mine (LOM), considering a mined dilution rate of 17.0%. The ore sorting process will enhance the ore quality by removing undesirable dilution materials, mainly schist, and non-lithium-bearing minerals such as feldspar and muscovite. This process improves the lithium oxide grade to approximately 1.50%, providing a higher-quality feed for the DMS while rejecting barren uneconomical waste. Based on Heavy Liquid Separation (HLS) bench scale test work completed by the Company, ore sorting and DMS pilot plant operations, the overall Li<sub>2</sub>O recovery is projected to reach 68.9%.

This efficient mineral processing approach ensures that we can maximize lithium recovery while maintaining the highest product quality. A higher quality chemical grade spodumene results in lower conversion costs

therefore could potentially be sold at premium prices.

Figure 4: Bandeira process flow diagram

View Figure 4 here:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/599b88e7-4263-4690-bb7f-b549c16fe9c9>

#### Capital Costs

Initial capital costs for the Bandeira Project are estimated at \$266 million, which includes a 15% contingency of \$33.7 million. The sustaining capital over the 14-year mine life is projected at \$81.4 million. A breakdown of the capital costs is presented in Table 2.

Table 2. Project Capital Costs (CAPEX) Breakdown

Initial CAPEX	\$266.1M
Mine	\$50.5M
Plant	\$102.7M
Engineering Service	\$26.6M
General Infrastructure & Others	\$41.9M
Pre-operation	\$10.8M
Contingency (15%)	\$33.7M
LOM Sustaining CAPEX	\$81.4M
SUDENE Federal Tax Incentive (% reduction in Corporate Income Tax)	75%

*\*Discrepancies in the totals are due to rounding effects.*

#### Operating Costs

The operating costs of the Bandeira Project are estimated to be US\$64.30 per tonne of ore processed. Total operating costs are estimated at US\$444 per tonne of 5.5% Li<sub>2</sub>O spodumene concentrate produced, placing it in the first quartile of the global lithium industry. A breakdown of the operating costs is presented in Table 3.

Table 3. Project Operating Costs (OPEX)

Operating costs (per tonne of ore processed)	\$64.3/t
Mining	\$36.7/t
Processing	\$24.6/t
SG&A	\$3.0/t
Operating costs (per tonne of 5.5% Li <sub>2</sub> O spodumene concentrate produced)	\$444/t
Mining	\$253/t
Processing + Tailings handling	\$170/t
SG&A	\$21/t
Transportation costs to customer destination (Project Mine Site to Shanghai Port, China)	\$112.50/t

*\*Discrepancies in the totals are due to rounding effects.*

#### Project Economics and Sensitivities

The after-tax NPV<sub>8</sub> for the Bandeira Project is \$1.3 billion and IRR is 40%, assuming a 5.5% spodumene concentrate ("SC5.5") price of \$2,277/t. At an elevated price of \$3,416/t, the NPV increases to \$2.4 billion with an IRR of 62%, underscoring the project's strong potential to benefit from rising lithium prices (see sensitivity analysis in Table 4).

Sensitivity analyses completed as part of the FS demonstrate that the Project's value is strongly influenced by the selling price of spodumene concentrate. As demonstrated in Figure 5, while capital (CAPEX) and operational (OPEX) costs impact the Net Present Value (NPV), their effects are relatively minor compared to concentrate price fluctuations. Given the expected increase in lithium demand, Bandeira is well-positioned to capitalize on favourable market conditions and benefit from rising spodumene prices.

Figure 5: Sensitivity Analysis for Spodumene 5.5% Li<sub>2</sub>O price, CAPEX and OPEX estimation

View Figure 5 here:

<https://www.globenewswire.com/NewsRoom/AttachmentNg/50bdb0c1-09eb-47b8-b540-684fbe5dba21>

Table 4. After-Tax NPV and IRR Sensitivity to Spodumene Price

	Low Case	Base Case	High Case
LOM Avg Spodumene Price (SC5.5)	\$1,822/t	\$2,277/t	\$3,416/t
NPV	\$864 M	\$1.31B	\$2.41B
IRR	32.5%	40.3%	62.2%
Payback	4.3 years	3.4 years	2.2 years

#### Lithium Market Outlook & Spodumene Concentrate Price Forecast

A long-term spodumene concentrate price of US\$2,277/tonne (5.5% Li<sub>2</sub>O grade) was used in the Feasibility Study. This long-term price forecast was obtained by Fastmarkets, one of the leading providers of global commodity pricing and market intelligence, in a report issued in April 2024.

The conservative spodumene concentrate selling price forecasts in the early years of the Bandeira mine life of \$1,000-\$1,600/t for the years 2026 to 2028 resulted in an increased payback period of the project compared to the PEA results from October 2023 (41 months compared to 14 months). Fastmarkets forecasts a higher long-term price based on strong demand and supply fundamentals, which is expected to benefit the Project's overall economics in the future.

Lithium has emerged as a critical component in the global energy transition, with an annual consumption growth rate exceeding 25% over the past four years. Despite the supply of lithium compounds surpassing demand in 2023, the demand remains robust due to the increasing market penetration of electric vehicles (EVs). According to industry expert reports from Fastmarkets, Benchmark Mineral Intelligence and the International Energy Agency (IEA), this trend is expected to continue as EV adoption accelerates globally.

#### Bandeira Mineral Resource Estimate

On April 12, 2024, the Company reported an updated NI 43-101 mineral resource estimate ("MRE") for Bandeira of 23.68 million tonnes ("Mt") grading 1.34% Li<sub>2</sub>O (783kt lithium carbonate equivalent, "LCE") in the Measured and Indicated ("M&I") category, with an additional 18.25Mt grading 1.37% Li<sub>2</sub>O (617kt LCE) in the Inferred category. This estimate was based on 233 drill holes, or 50,760 metres, drilled between April 2022 and March 2024.

The Bandeira FS proven and probable reserves, however, utilizes an NI 43-101 mineral resource estimate with an earlier data cut-off of November 13, 2023, which includes 186 drill holes (41,831 metres). This study

mine plan is therefore based on a smaller estimate of 20.95Mt grading 1.35% Li<sub>2</sub>O (697kt LCE) M&I, in addition to 16.91Mt grading 1.40% Li<sub>2</sub>O (584kt LCE) Inferred (see Table 5).

The inclusion of the larger April 2024 MRE, as well as the additional drilling completed after the March 2024 data cut-off represents important future upside to the Project. The mine plan will be updated to incorporate the expanded mineral resource estimate in the next phase of project development.

The MRE was completed by independent Brazilian consultancy, GE21 Consultoria Mineral Ltda ("GE21").

Table 5: Bandeira Mineral Resource Estimate (*base case cut-off grade of 0.5 % Li<sub>2</sub>O*)

Category	Resource (Mt)	Grade (% Li <sub>2</sub> O)	Contained LCE (kt)
Measured	3.42	1.39	117.61
Indicated	17.52	1.34	578.92
Measured + Indicated	20.95	1.35	696.52
Inferred	16.91	1.40	583.53

Notes related to the Mineral Resource Estimate:

1. The spodumene pegmatite domains were modelled using composites with Li<sub>2</sub>O grades greater than 0.3%.
2. The mineral resource estimates were prepared by the CIM Standards and the CIM Guidelines, using geostatistical and classical methods, plus economic and mining parameters appropriate to the deposit.
3. Mineral Resources are not ore reserves or demonstrably economically recoverable.
4. Grades reported using dry density.
5. The effective date of the MRE is November 13, 2023.
6. Geologist Carlos José Evangelista da Silva (MAIG #7868) is the QP responsible for the Mineral Resources.
7. The MRE numbers provided have been rounded to estimate relative precision. Values cannot be added due to rounding.
8. The MRE is delimited by MGLIT Bandeira Target Claims (ANM).
9. The MRE was estimated using ordinary kriging in 12m x 12m x 4m blocks.
10. The MRE report table was produced using Leapfrog Geo software.
11. The reported MRE only contains fresh rock domains.
12. The MRE was restricted by RPE3 with grade shell using 0.5% Li<sub>2</sub>O cut-off.
13. To convert percentage lithium (Li) to percentage lithium oxide (Li<sub>2</sub>O), multiply by 2.153; to convert Li to lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>), multiply by 5.323. To convert a percentage of lithium oxide (Li<sub>2</sub>O) to lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>), multiply by 2.472.

## Project Advancement & Optimization Opportunities

[Lithium Ionic](#) is committed to progressing the Bandeira Project towards production, aiming to become a leading lithium producer in Brazil's Lithium Valley. This goal is supported by the following ongoing activities:

**Permitting Process and Government Engagement:** The Company continues to advance the permitting process and actively engage with governmental agencies. The next major permitting milestone, the approval of the Licença Ambiental Concomitante (LAC), is expected by early Q3 2024.

**Next Phase of Engineering:** The Bandeira Project will proceed to the next phase of engineering, focusing on implementing the optimization opportunities identified during the feasibility stage. This phase will include an expanded mineral deposit, which among other positive impacts could potentially extend the mine life. Significant opportunities have also been identified to streamline capital and operating costs, enhancing overall efficiency and optimization of the Project.

## Feasibility Study Contributors and Methodology

[Lithium Ionic](#) engaged AtkinsRéalis (formerly SNC Lavalin) to coordinate the Feasibility Study, which covers

engineering, process design, mine layout, risk assessment, and logistics for transporting the concentrate from Araçuaí, Minas Gerais, to the port of Ilhéus, Bahia, and then to Shanghai, China. The certification of mineral resources was conducted by GE21, with geologist Carlos José Evangelista Silva serving as the qualified professional for the estimation.

Underground mine studies were led by mining engineer Rubens Mendonça from Planminas, who signed off as the qualified professional for this discipline. The mineral processing studies were consolidated and defined by Tony Lipiec, Process Engineer and Vice President Global, Minerals & Metals Processing at AtkinsRéalis. Environmental studies were reviewed by Branca Horta from GE21, who signed off as the qualified professional for this area. The economic and financial model was validated by L&M Advisory, with João Augusto Hilario de Souza as the qualified professional.

The Feasibility Study considers Mineral Resources categorized as Measured and Indicated, converting 71% into Mineral Reserves. Mineral processing methodologies were developed based on extensive test work, including ore sorting and dense media separation using core drill samples in bench scale (HLS - Heavy Liquid Separation), ore sorting and DMS pilot plant tests at Steinert and SGS Geosol, respectively. Cost estimates for mine and plant equipment were based on vendor quotations, while power and FeSi prices were obtained through commercial consultations with Centrais Elétricas de Minas Gerais (CEMIG) and Washington Mills in the USA. The owners' team costs were projected for 21 employees during the engineering and construction phases.

This comprehensive and collaborative approach ensures that the Feasibility Study encompasses all critical aspects, providing a robust foundation for the successful development and operation of the Project.

#### Report Filing

The complete NI 43-101 technical report associated with the FS will be available on SEDAR+ at [www.sedarplus.ca](http://www.sedarplus.ca) under the Company's issuer profile, as well as the Company's website at [www.lithiumionic.com](http://www.lithiumionic.com) within 45 calendar days.

#### Qualified Persons

The FS is prepared by independent representatives of AtkinsRéalis, GE21, Planminas and L&M each of whom are Qualified Person as defined by NI 43-101 Standards of Disclosure for Mineral Projects. Each of the QPs are independent of [Lithium Ionic](#) and have reviewed and confirmed that this news release fairly and accurately reflects, in the form and context in which it appears, the information contained in the respective sections of the Bandeira FS for which they are responsible. The affiliation and areas of responsibility for each QP involved in preparing the Bandeira FS are provided below.

Mineral Resource Estimate: Carlos José Evangelista, Geologist from GE21

Underground mine studies: Engineer, Rubens Mendonça from Planminas

The mineral processing studies were consolidated and defined by Tony Lipiec, Process Engineer and Vice President Global, Minerals & Metals Processing at AtkinsRéalis

Environmental studies: Branca Horta from GE21

Tailings Disposal systems: Porfírio Cabaleiro from GE21

The economic and financial model was certified and validated by João Augusto Hilario de Souza from L&M Advisory, as the qualified professional.

On behalf of the Board of Directors of [Lithium Ionic Corp.](#)

Blake Hylands  
Chief Executive Officer, Director

About [Lithium Ionic Corp.](#)

[Lithium Ionic](#) is a Canadian mining company exploring and developing its lithium properties in Brazil. Its Itinga and Salinas group of properties cover 14,182 hectares in the northeastern part of Minas Gerais state, a mining-friendly jurisdiction that is quickly emerging as a world-class hard-rock lithium district. Its Feasibility-stage Bandeira Project is situated in the same region as CBL's Cachoeira lithium mine, which has produced lithium for +30 years, as well as Sigma [Lithium Corp.](#)'s Grota do Cirilo project, which hosts the largest hard-rock lithium deposit in the Americas.

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