



**Lithium South Announces PEA Estimate
US\$934 Million Dollar NPV with an IRR of 31.6% and a
2.5 year Payback for HMN Lithium Project**

PEA HIGHLIGHTS

- **After tax NPV of US\$934 million with an IRR of 31.6%**
- **PEA based on a mine life of 25 years with a 2.5 year payback**
- **PEA based on a production rate of 15,600 tonnes of lithium carbonate technical grade per year**
- **Processing based on simple and proven solar evaporation technology**

March 04, 2024 / Vancouver, BC / Lithium South Development Corporation (the "Company" or "Lithium South") (TSX-V: LIS) (OTCQB: LISMF) (Frankfurt: OGPQ) is pleased to announce positive results from an independent Preliminary Economic Assessment ("PEA") for its Hombre Muerto North Lithium Project ("HMN Lithium Project") near Salta, Argentina. The PEA was prepared by Knight Piésold Consulting ("KP") and JDS Energy and Mining ("JDS"), both of Vancouver, in accordance with the standards set out in National Instrument 43-101 Standards of disclosure for Mineral Projects ("NI 43-101"), and CIM's Best Practice Guidelines for Mineral Processing ("BPGMP").

Company President and CEO, Adrian F. C. Hobkirk is quoted, "We are very pleased that Lithium South has advanced the HMN Lithium Project to a PEA based on 15,600 tonnes per year lithium carbonate technical grade production. The PEA results highlight attractive economics associated with the project, including a short payback and exceptional Internal Rate of Return. We look forward to taking the HMN Lithium Project to the next stage of development as quickly as possible."

Summary of Economic Results

Table 1: Lithium South PEA Summary of Economic Results

Summary of Economic Results		
Pre-Tax		
NPV @ 0%	US\$M	4,999
NPV @ 8%	US\$M	1,451
IRR	%	37.2%
Payback	Years	2.4
After-Tax		
NPV @ 0%	US\$M	3,294
NPV @ 8%	US\$M	934
IRR	%	31.6%
Payback	Years	2.5

Project Overview

Table 2: Lithium South PEA Project Overview

Project Overview		
Production		
Li2CO3 Produced	tonnes	3,81,686
Income		
Total Payable Metal	US\$M	7,634
	\$/t product	20,000
Total Off-Site Expenses	US\$M	427
	\$/t product	1,118
Total Operating Expenses	US\$M	1,725
	\$/t product	4,520
Pre-Tax Operating Income	US\$M	5,482
	USD/t product	14,362

Resource Estimate

The resource estimate for this PEA was prepared in accordance with NI 43-101 and CIM Standards, and uses best practice methods specific to brine resources, including a reliance on core drilling and sampling methods that yield depth-specific chemistry and effective (drainable) porosity measurements. The technical report filed on November 6, 2023, is titled, *Updated Mineral Resource Estimate – Hombre Muerto North Project, NI 43-101 Technical Report Catamarca and Salta, Argentina, Mark King, Ph.D., P.Geo., Peter Ehren, M.Sc., MAusIMM, September 5th, 2023*. The report was prepared in accordance with National Instrument 43-101 – Standards of Disclosure for Mineral Projects, on behalf of the Company by independent consultants Groundwater Insight of Halifax, Nova Scotia, Canada.

Operating Costs

Table 3: Lithium South PEA Operating Cost Details

Operating Cost Details		
	Total US\$M	Unit Cost US\$/t
Reagents	807.2	2,115
Energy	187.6	492
Manpower	166.4	436
Equipment	31.5	83
Maintenance	236.2	619
Product Transport to Port	85.8	225
General & Administrative	210.3	551
Subtotal On-Site OPEX	1,725.1	4,520
Selling Costs (Transaction Tax)	73.3	192
Royalties - Provincial	183.9	482
Royalties - JM	169.5	444
Subtotal Off-Site OPEX	426.7	1,118
All-in OPEX	2,151.8	5,638
Sustaining CAPEX	116.9	306
All-in Sustaining Cost	2,268.7	5,944

Capital Costs

Table 4: Lithium South Capital Costs Details

Capital Cost Details			
	Pre-Prod US\$M	Sustaining US\$M	Total US\$M
Lithium Carbonate Plant	127.4	-	127.4
Brine Production Wells	22.1	-	22.1
Evaporation and Concentration Pond	101.0	-	101.0
Infrastructure	22.5	-	22.5
Mobile Equipment	4.9	-	4.9
Owner Costs	4.5	-	4.5
Sustaining/Replacements	-	113.9	113.9
Closure	-	3.0	3.0
Subtotal	282.4	116.9	399.3
Contingency	83.7	-	83.7
Total	366.1	116.9	483.0

Capital costs (CAPEX) have been updated with quotations from current suppliers working in project construction and development in the Puna region of Argentina. CAPEX estimates include an Indirect Cost of 16.6% of Direct Costs, and a contingency of 30% of Total Costs.

Project Location and Environmental Permitting

The HMN Lithium Project is located at the northern portion of the Salar del Hombre Muerto, at the boundary zone of the Catamarca and Salta provinces, 170 km southeast of the city of Salta. The project area comprises a collection of properties or concessions acquired under purchase options from the existing owner. The properties are held as “minas” (full mining licenses not subject to further area reduction requirements) by a wholly owned Argentine subsidiary of the Company. The HMN Lithium Project comprises six properties distributed over the Salar for a total of 3,237 hectares. All properties are subject to a mining license for borates. The area of the property is not subject to any known environmental liabilities.

Lithium Pricing

A lithium price of \$US20,000/tonne (t) was assumed for the study, assuming a 2029 production start-up. The price of lithium has been volatile in recent months, declining from a peak of approximately US\$85,000/t in November 2022 and stabilizing to US\$13,000/t in 2024. The selected price was based on current published market analysis and by

benchmarking the price assumptions found in multiple technical reports from similar brine lithium projects. The benchmarking exercise provided a long-term price range of between US\$20,000 and US\$25,000/t, with an average of US\$22,400/t over seven projects.

The assumption of US\$20,000/t is deemed to be reasonable by the Qualified Person (“QP”).

Processing

The PEA models process eco-system covers the following units:

The brine chemistry is similar to other brines in the region, which allows the brine to be processed using similar processing technology as existing producers. The nominal extraction rate of the design is 179 liters per second. After an initial preconcentration, lime is added to the brine, which removes a large part of magnesium as magnesium hydroxide and the sulfate as gypsum. When the low magnesium and calcium brine is concentrated to about 0.75% it is fed to the lithium carbonate plant. Most of the noxious impurities that are still left in the brine are removed by selective precipitation through the addition of a solution of soda ash and slaked lime and a final ion exchange polishing. The impurity free brine is then sent to specially designed carbonation precipitators. To produce technical-grade lithium carbonate, a soda ash solution is added at high temperatures, leading to the precipitation of solid lithium carbonate. This solid is then subjected to a series of processes: it is filtered in a centrifuge, washed, repulped, centrifuged once more, and finally washed again. The lithium carbonate is dried and packaged in maxi bags, to be finally transported to the client. The main consumption of reagents in the process is shown in a table below.

Table 5: shows the consumption of reagents required to produce technical-grade lithium carbonate.

	Ton/ton LC
Lime	2.60
Soda Ash	2.45
Water	29.0

Increased Lithium Recovery

The report has an updated lithium recovery process for the HMN Lithium Project brine, which uses industry proven evaporation. An adjustment in the processing sequence will reduce lithium loss as brine entrainments in harvested salts, in the magnesium hydroxide, and in calcium sulfate solids, obtaining a lithium recovery of approximately 70%, an improvement from the previous recovery of 50%. Peter Ehren, M.Sc., MAusIMM, is the QP responsible for Mineral Processing.

About Lithium South

Lithium South owns 100% of the HMN Lithium Project located in Salta and Catamarca Provinces, Argentina, in the heart of the lithium triangle. The Salar del Hombre Muerto has a history of lithium production, with Livent Corporation in operation for over twenty-five years, in an area just south of the HMN Lithium Project. The HMN Lithium Project is surrounded by a US\$4 billion lithium development under construction by POSCO (Korea) and the Sal de Vida Project under development by Allkem. Exploration work to date has delineated a National Instrument 43-101 compliant 1,583,200 tonne Lithium Carbonate Equivalent (“LCE”) Resource on the Alba Sabrina, Natalia Maria, and Tramo claim blocks, three of five non-contiguous blocks that make up the HMN Lithium Project. With process work underway, Lithium South is transitioning from being a lithium explorer to becoming a lithium developer.

Qualified Person Statements

Peter Ehren is an independent Lithium Consultant. He has more than two decades of experience in the industry. He started his interest in the lithium business during his master's thesis at Technical University of the Delft where he investigated for BHP Minerals the recovery of lithium from geothermal brine (Salton Sea), applying a Direct Lithium Extraction (“DLE”) technology. After his thesis he worked for SQM as a process engineer and R&D manager till 2007. Since 2007 he started to work as independent consultant in the lithium, boron and potassium industry. He is a world expert in solar evaporation systems, phase chemistry and process developments. Additionally, his experience covers product applications, OPEX and CAPEX estimation, process simulations, engineering, R&D and product development. He has worked in lithium basins and production facilities worldwide. He is a Chartered Professional (AusIMM) and QP for NI 43-101 and JORC.

Dr. Mark King, Ph.D., F.G.C., P.Geo., of Groundwater Insight, Inc., is the QP for resource estimation components of the PEA., as such term is defined by NI 43-101. Dr. King has extensive experience in salar environments and has been a QP on numerous lithium brine projects, ranging from early exploration to production. Dr. King is independent from the Company and has reviewed and approved the technical information mentioned in this press release.

Richard Goodwin, P.Eng., Project Manager for JDS Energy and Mining, Inc., is independent of Lithium South and a QP as defined under Canadian National Instrument 43-101. Mr. Goodwin is a mining engineer and study manager with over 30 years of experience managing mining operation and projects in various commodities such as base metals, precious metals,

PGMs, and diamonds in various domestic and international locations. Mr. Goodwin is responsible for the PEA results, participated directly in the production of this press release, and directly related information in this press release, and approves of the technical and scientific disclosure contained herein.

On behalf of the Board of Directors of Lithium South Development Corp.

Adrian F. C. Hobkirk

President and Chief Executive Officer

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