

Allkem confirms material growth profile underpinned by 40 Mt Resource

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BRISBANE, Sept. 24, 2023 - [Allkem Ltd.](#) (ASX: AKE, "Allkem" or the "Company") has reviewed and updated technical studies for the Olaroz, Sal de Vida, Cauchari, James Bay and Mt Cattlin operations and projects which also assists with preparation for the proposed merger with Livent Corporation (NYSE:LTHM).

The findings of these studies will be published in NI43-101 format as required by the Toronto Stock Exchange, the format required by the New York Stock Exchange under subpart 1300 of Regulation S-K of the United States Securities Act of 1933 and are summarised in individual JORC compliant ASX releases published at the date of this announcement.

KEY POINTS

Group

- Updated studies confirm the robust economics and tier one nature of the asset base, further de-risking both company growth and future production (refer to Table 1)
- Total group resources of ~40 million tonne ("Mt") (refer to Table 2) lithium carbonate equivalent ("LCE") demonstrates the world class asset base of the Allkem Group
- Highly competitive and low overall group cost of production and capital intensity of growth projects will deliver material operating cashflow under current market conditions and industry pricing forecasts
- Allkem (100% basis) plans to deliver 179,000 tonnes ("kt") of LCE production capacity by FY28 (165kt of LCE capacity on an attributable basis) up from approximately 50kt forecast for FY24
- Growth projects are planned to be fully funded from existing corporate cash, existing or new corporate debt/project finance facilities and cash flow from operations
- Potential for further multiple large-scale expansions at Olaroz, Sal da Vida, James Bay and Cauchari

James Bay

- Material increase of Mineral Resource Estimate to 110.2 Mt at 1.30% Li₂O. The deposit is open laterally and at depth with possible significant additional mineralisation to be drilled later CY23
- Capital costs have increased in-line with industry conditions, with economics remaining robust
- A larger development, supported by the increased Mineral Resource Estimate, will be evaluated by management and the technical team
- Continued evaluation of downstream opportunities in North America, which will include the potential to leverage the Bécancour site and design following the merger with Livent
- Federal approvals obtained in January 2023 and the Provincial approval process is in final stages

Mt Cattlin

- Successful ore reserve and resources replacement confirms mine life extension
- Production forecast of 210-230kt for FY24 as main parts of the orebody are accessed

Olaroz

- Finalising commissioning of stage 2 with first wet production achieved in July
- Long term operating costs for the combined Stage 1 and Stage 2 operation are estimated at US\$4,149 per tonne LCE over the life-of-mine ("LOM") considering operational synergies from the joint operation of Stage 1 and 2
- Olaroz resource increased to 22Mt LCE and when combined with the adjacent Cauchari resource provides 28Mt of LCE, underpinning potential for future increases in production within the Olaroz/Cauchari complex

Sal da Vida ("SDV")

- SDV 1 and SDV 2 capital costs have increased to US\$1,031million in-line with general industry inflation, with economics remaining robust. This cost increase incorporates the impact of engineering upgrades, Argentine inflation and new taxes on imports
- SDV 1 plans to achieve mechanical completion in H1 CY25 and first production in H2 CY25 after also incorporating engineering upgrades and experiences of other projects in the region
- Long term operating costs remain competitive at US\$4,003 per tonne LCE for SDV 1 and SDV 2, and US\$4,529 per tonne LCE for SDV 1 on a standalone basis making it a very competitive operation able to deliver high margins across a range of pricing outcomes
- Resource upgraded to 7.2 Mt LCE supports potential further production expansion
- SDV plans to provide 30kt of additional LCE production with first production targeted CY27

Cauchari

- The 2019 technical study has been updated for the 100% owned Cauchari project with production capacity of 25ktpa, operating costs at US\$4,081 per tonne LCE and first production planned in CY27
- The proposed Cauchari development plan to benefit from engineering design work and learnings at Olaroz, with a significant efficiency improvement opportunity through leveraging Olaroz infrastructure

Table 1: Allkem Group Key Metrics

Asset	Location	Production capacity conc. (^{'000}) t	Production ¹	Capacity LCE (^{'000}) t	Operating cost US\$/t D U
James Bay	Quebec, Canada	311	39	407	3
Mt Cattlin	Western Australia	220	27	850	8
Total Hard Rock		531	66	590	
			Production Capacity LCE (^{'000}) t	Operating cost US\$/t D LCE	U
Sal de Vida	Catamarca, Argentina		45	4,003	1
Olaroz	Jujuy, Argentina		42.5	4,149	-
Cauchari	Jujuy, Argentina		25	4,081	6
Total Brine			113	4,075	1
Total Allkem (LCE basis) ³			179		2

Table 2: Allkem Group Total Resources⁴

Asset	Location	Ore Tonnes (Mt)	Grade Li ₂ O (%)	Contained (^{'000}) t LCE
James Bay	Quebec, Canada	110.2	1.3	3,540
Mt Cattlin	Western Australia	12.1	1.3	390
Total Hard Rock Resource		122.3	1.3	3,930
		Brine volume (m3)	Average Li mg/l	Contained (^{'000}) t LCE
Sal de Vida	Catamarca, Argentina	1.9 x 10 ⁹	724	7,172
Olaroz	Jujuy, Argentina	6.7 x 10 ⁹	636	22,630
Cauchari	Jujuy, Argentina	2.2 x 10 ⁹	475	5,950
Total Brine Resource				35,752
Total Allkem Resource (LCE)				39,682

¹ Spodumene concentrate production amounts shown as metric tons of spodumene at a Li₂O% grade. Conversion to LCE is 0.02552 metric tons of lithium metal to 1 metric ton of spodumene concentrate at 5.5% Li₂O. Conversion to LCE is 0.02784 metric tons of lithium metal to 1 metric ton of spodumene concentrate at

6.0% Li₂O.

² NPV figures are from each project ASX release utilising Wood McKenzie pricing forecasts. Net Present Value ("NPV") for Hard Rock assets at 8% real discount rate. NPV for Brine assets at 10% real discount rate
³ Production is on 100% basis, attributable production is 165ktpa

Managing Director and Chief Executive Officer, Martin Perez de Solay commented:

"These project updates confirm the robust economics and tier one nature of our asset base, further de-risking company growth, future production and profitability. The studies which are underpinned by our significant operating and project development experience demonstrate low costs and low capital intensity that will maximise margins and shareholder returns throughout the pricing cycle. The Allkem project portfolio provides us with a solid base to enhance our vertical integration strategy and relationships downstream in the global supply chain."

JAMES BAY PROJECT SUMMARY

- Updated Feasibility Study confirms a robust, high-value hard rock lithium operation utilising renewable hydropower
- Material ~108% increase in pre-tax Net Present Value ("NPV") to US\$ 2.9 billion with a strong internal rate of return and short payback period

Project Details

- Recently announced Total Mineral Resource of 110.2 Mt at 1.30% Li₂O, including 54.3 Mt at 1.30% Li₂O in the Indicated Category, and 55.9 Mt at 1.29% Li₂O in the Inferred Category with further drilling planned to test possible extensions to mineralisation
- Ore Reserve of 37.3 Mt at 1.27% Li₂O provides a long life, low cost spodumene operation and remains in line with permitting considerations
- Average annual production of 311 ktpa of spodumene concentrate with an 18.8-year mine life
- Shallow, near-surface mineralisation ideal for open cut mining with a low LOM strip ratio of 3.6:1
- 2 Mtpa process plant design remains unchanged from 2021 feasibility study, producing a 6.0% Li₂O spodumene concentrate with operational flexibility to produce a 5.6% Li₂O spodumene concentrate
- Very similar process design and flowsheet to that already successfully employed at Mt Cattlin
- Low-cost, sustainable source of hydropower now installed to site
- Strong relationships with Cree Nation of Eastmain, Cree Nation Government and all stakeholders

⁴ Resources are presented as the sum of Measured, Indicated and Inferred Resource and are reported in line with the JORC Code (2012). The confidence categories assigned under the JORC Code are comparable to the confidence categories in the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) Definition Standards on Mineral Resources and Mineral Reserves, May 2014. The reader should be cautioned that under NI 43-101 guidelines, Inferred Mineral Resources cannot be grouped with Measured and Indicated categories and that the JORC code is considered an "accepted foreign code" as described in Part 7 of the NI 43-101 Standards of Disclosure. See individual project releases dated as per this release for further information

Project Financials

- Updated capital cost estimate ("CAPEX") of US\$381.5 million, a 34% increase since 2001 which reflects inflationary conditions
- Cash operating costs (FOB Montreal) of US\$407 per tonne of 5.6% Li₂O concentrate also reflecting some inflationary impact. This cost of production remains highly competitive and will deliver high margins across a range of pricing outcomes
- Pre-tax NPV of US\$2.9 billion at an 8% discount rate and post-tax NPV of US\$1.7 billion reflecting an increase in lithium price assumptions and market outlook
- Pre-tax Internal Rate of Return ("IRR") of 62.2% and pre-tax payback period of 1.4 years
- Post-tax Internal Rate of Return ("IRR") of 45.4% and post-tax payback period of 1.7 years

Project Execution

- Detailed engineering and procurement activities progressed at 80% supporting the updated cost estimate and bringing the project ready for approximately 19 months of construction once provincial authorisation is obtained
- Impact and Benefit Agreement discussions and Provincial Environmental and Social Impact Studies Review is in final stages
- Further carbon studies and initiatives underway to align the project to Allkem's target of net-zero emissions by 2035

OLARAZ PROJECT SUMMARY⁵

Stage 1 and 2 (42,500 lithium carbonate equivalent tonnes per annum)

Financial Metrics

- Pre-tax NPV of US\$7.01 billion at a 10% discount rate and a Post-tax NPV of US\$4.56 billion
- Long term operating costs for the combined Stage 1 and Stage 2 operation are estimated at US\$4,149 per tonne LCE over the LOM considering operational synergies from the joint operation of Stage 1 and 2 enabling high profit margins

Mineral Resource

- Total Mineral Resource Estimate of 22.63 Mt of LCE, a 10% increase from the previous estimate in March 2023 with a 52% increase in Measured Mineral Resources
- The Mineral Resource now comprises 11.54 Mt of LCE as Measured, and 3.83 Mt as Indicated for a combined 15.38 Mt of Measured & Indicated Mineral Resource. There is an additional 7.25 Mt of Inferred Resources for a total resource of 22.6Mt (Measured, Indicated and Inferred)
- The improvement in Mineral Resource categorisation results from reclassification of Indicated Mineral Resources between 200 and 650 m depth as Measured Mineral Resources in the pumping field area. This reflects the greater amount of information available from pumping performance since installation of the Stage 2 wells and the addition of Maria Victoria tenements
- Olaraz's LOM production represents ~8.5% of the Measured and Indicated Mineral Resources, further confirming the Tier 1 status of the basin, and its potential to support additional expansions

Stage 2 (25,000 lithium carbonate equivalent tonnes per annum)

The expansion achieved first wet lithium carbonate production in July 2023. Commissioning activities are ongoing and production is scheduled for H2 CY23, ramp-up is planned to take 1 year.

⁵ Reported on 100% basis, AKE share is 66.5%

SAL DA VIDA PROJECT SUMMARY

Stage 1 and 2 (45,000 lithium carbonate equivalent tonnes per annum)

Financial Metrics

- Pre-tax NPV of US\$5.51 billion at a 10% discount rate. The Post-tax NPV₁₀ is US\$3.18 billion
- Operating cost highly competitive at US\$4,003 per tonne LCE despite increases in the price of soda ash, lime and labour costs

Mineral Resource and Ore Reserve

- Total Mineral Resource Estimate of 7.17 Mt LCE, a 5% increase from the previous estimate in 2022, with a 41% increase in Measured Mineral Resources

- Total Ore Reserve Estimate of 2.49 Mt LCE supporting a 40-year project life based on Ore Reserves only, a 43% increase from the previous statement due to a revised point of reference for Ore Reserve reporting of 'brine pumped to the evaporation ponds'

Stage 1 (15,000 lithium carbonate equivalent tonnes per annum)

Financial Metrics

- Pre-tax NPV of US\$2.01 billion at a 10% discount rate
- Operating costs of US\$4,529 per tonne LCE despite increases in the price of soda ash, lime, natural gas and labour costs

Project Cost and Schedule Update

- Development CAPEX of US\$374 million which is in line with inflationary conditions
- Substantial mechanical completion, pre-commissioning and commissioning activities are planned in H1 CY25 with first production planned H2 CY25 and ramp up planned to take 1 year
- The schedule adjustment comes with an improved understanding of the execution plan, the ongoing import challenges and delays experienced in country by Allkem and its contractors and vendors as well as an improved understanding of regional productivity factors

Stage 2 (30,000 tonnes lithium carbonate equivalent per annum)

Project Cost and Schedule Update

- The prefeasibility study update confirms the Stage 2 expansion will be completed and substantially the same design basis as Stage 1 with a twofold modular replication of the Stage 1 design
- CAPEX is estimated at approximately US\$657 million with Stage 2 benefiting from Stage 1 detailed engineering, established on site infrastructure and established regional construction teams and facilities
- Stage 2 construction is anticipated to commence upon receipt of applicable permits and substantial mechanical completion of Stage 1 with Stage 2 first production approximately 2.5 - 3 years thereafter

CAUCHARI PROJECT SUMMARY

Financial Metrics

- Analysis based on 25,000 tonnes per annum production capacity updating the April 2019 study
- Pre-tax NPV of US\$2.52 billion and Post-tax NPV of US\$1.37 billion at 10% discount rate
- Operating costs of US\$4,081 per tonne LCE after increases in the price of soda ash, lime, natural gas and employment costs

Mineral Resource and Ore Reserve

- Total Mineral Resource Estimate of 5.95 Mt LCE
- Total Ore Reserve Estimate of 1.13 Mt LCE supporting a 30-year project life based on Ore Reserves only, an 11% increase from the previous statement due to a revised point of reference for Ore Reserve reporting of 'brine pumped to the evaporation ponds'

Project Cost and Schedule Update

- Development CAPEX of US\$659 million for mechanical completion
- Substantial mechanical completion, pre-commissioning and commissioning activities are planned by H1 CY27 with first production planned in H2 CY27 and ramp up planned to take 1 year

MT CATTLIN RESOURCE AND ORE RESERVE ESTIMATE

The Mt Cattlin Ore Reserve estimate is based on an updated Mineral Resource Estimate released on 17

April 2023. The Mineral Resource was updated after the completion of a major infill drilling program which successfully upgraded Inferred Mineral Resources.

Allkem has reviewed and updated the Mt Cattlin Ore Reserve (Table 3 below), incorporating infill drilling results from the 2NW deposit, depleted mined material and site stockpiles at 30 June 2023 and material to be mined after this date are presented in accordance with JORC (2012) Ore Reserve Reporting.

Table 3: Mt Cattlin Ore Reserve Update at 30 June 2023

Classification	Location	Ore Tonnes (Mt)	Grade Li ₂ O (%)	Grade Ta ₂ O ₅ (ppm)	Contained Metal ('000) t Li ₂ O	Contained
Proved	In-situ	0.2	0.9	120	1	45
Probable	In-situ	5.2	1.3	130	69	1,500
	Stockpiles	1.8	0.8	95	13	396
Total Ore Reserve		7.1	1.2	120	84	1,900

Notes: Ore Reserves mine designs were conducted on a 0.4% Li₂O cut-ff grade and Ore Reserves are reported above a marginal cut-off grade of 0.3 % Li₂O. Estimates have been rounded to a maximum of two significant figures, thus sum of columns may not equal.

Table 4: Mt Cattlin Mineral Resource Update as at 30 June 2023, depleted for mining

Classification	Location	Ore Tonnes (Mt)	Grade Li ₂ O (%)	Grade Ta ₂ O ₅ (ppm)	Contained Metal ('000) t Li ₂ O	Contained
Measured	In-situ	0.2	1.0	% 172	2	75
Indicated	In-situ	8.8	1.4	% 165	121	3,197
Inferred	In-situ	1.8	0.8	% 95	13	396
Indicated	Stockpiles	1.3	1.3	% 181	17	518
Total Mineral Resource		12.1	1.3	% 167	153	4,186

Notes: Global Insitu Mineral Resource as at 30 June, 2023. COG 0.3% lithia. Depleted for mining 1.2Mt @ 1.2% lithia January-June, 2023

Table 5: Mt Cattlin Mineral Resource Update as at 30 June 2023, depleted for mining, within a RPEEE shell USD 1,500

Classification	Location	Ore Tonnes (Mt)	Grade Li ₂ O (%)	Grade Ta ₂ O ₅ (ppm)	Contained Metal ('000) t Li ₂ O	Contained
Measured	In-situ	0.2	1.0	171	2	44
Indicated	In-situ	7.2	1.4	147	98	2,221
Inferred	In-situ	0.2	1.1	133	2	48
Indicated	Stockpiles	1.8	0.8	95	13	396
Total Mineral Resource		9.4	1.2	137	115	2,700

Notes: RPEEE optimisations were conducted on a 0.4% Li₂O cut-ff grade and are reported above a marginal cut-off grade of 0.3 % Li₂O. Estimates have been rounded to a maximum of two significant figures, thus sum of columns may not equal

Table 6: Mt Cattlin Mineral Resources Update as at 30 June 2023, depleted for mining, exclusive of Ore Reserves

Classification	Location	Ore Tonnes (Mt)	Grade Li ₂ O (%)	Grade Ta ₂ O ₅ (ppm)	Contained Metal ('000) t Li ₂ O	Contained
Measured	In-situ	0.1	1.0	179	1.0	39
Indicated	In-situ	3.2	1.4	201	44.8	1417
Inferred	In-situ	0.6	1.1	207	6.6	273
Total Mineral Resource		3.9	1.3	201	52.4	1,700

Notes: Mineral Resources, exclusive of Ore Reserves are reported above a marginal cut-off grade of 0.3 % Li₂O. Estimates have been rounded to a maximum of two significant figures, thus sum of columns may not

equal. Not constrained by the RPEEE USD1,500 shell.

RESOURCE AND ORE RESERVE CONTROLS & GOVERNANCE

Allkem continues to evolve processes to ensure that quoted Mineral Resource and Ore Reserve estimates are subject to internal controls and external review. Mineral Resource and Ore Reserves are estimated and reported in accordance with the 2012 edition of the JORC Code.

Allkem stores and collects exploration data using industry standard software that contains internal validation checks. Exploration samples from drilling have certified reference material standards introduced to the sample stream at set ratios, typically 1 per 25 samples. These are reported as necessary to the relevant Competent Persons to assess both accuracy and precision of the assay data applied to resource estimates. In resource modelling, block models are validated by checking the input drill hole composites against the block model grades by domain.

Allkem engages independent, qualified experts on a commercial fee for service basis, to undertake Mineral Resource and Ore Reserve audits. Allkem internally reconciles the resource outcomes to validate both the process and the outcome.

The Company has developed its internal systems and controls to maintain JORC compliance in all external reporting, including the preparation of all reported data by Competent Persons who are members of the Australasian Institute of Mining and Metallurgy or a 'Recognised Professional Organisation'. As set out above, the Mineral Resource and Ore Reserve statements included in this announcement were reviewed by suitably qualified Competent Persons (below) prior to their inclusion, in the form and context announced.

ENDS

This release was authorised by Mr Martin Perez de Solay, CEO and Managing Director of [Allkem Ltd.](#)

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IMPORTANT NOTICES

This investor ASX/TSX release (Release) has been prepared by [Allkem Ltd.](#) (ACN 112 589 910) (the Company or Allkem). It contains general information about the Company as at the date of this Release. The information in this Release should not be considered to be comprehensive or to comprise all of the material which a shareholder or potential investor in the Company may require in order to determine whether to deal in Shares of Allkem. The information in this Release is of a general nature only and does not purport to be complete. It should be read in conjunction with the Company's periodic and continuous disclosure announcements which are available at [allkem.co](#) and with the Australian Securities Exchange (ASX) announcements, which are available at [www.asx.com.au](#).

This Release does not take into account the financial situation, investment objectives, tax situation or particular needs of any person and nothing contained in this Release constitutes investment, legal, tax, accounting or other advice, nor does it contain all the information which would be required in a disclosure document or prospectus prepared in accordance with the requirements of the *Corporations Act 2001* (Cth) (Corporations Act). Readers or recipients of this Release should, before making any decisions in relation to their investment or potential investment in the Company, consider the appropriateness of the information having regard to their own individual investment objectives and financial situation and seek their own professional investment, legal, taxation and accounting advice appropriate to their particular circumstances.

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Forward Looking Statements

Forward-looking statements are based on current expectations and beliefs and, by their nature, are subject to a number of known and unknown risks and uncertainties that could cause the actual results, performances and achievements to differ materially from any expected future results, performances or achievements expressed or implied by such forward-looking statements, including but not limited to, the risk of further changes in government regulations, policies or legislation; the risks associated with the continued implementation of the merger between the Company and [Galaxy Resources Ltd.](#), risks that further funding may be required, but unavailable, for the ongoing development of the Company's projects; fluctuations or decreases in commodity prices; uncertainty in the estimation, economic viability, recoverability and processing of mineral resources; risks associated with development of the Company Projects; unexpected capital or operating cost increases; uncertainty of meeting anticipated program milestones at the Company's Projects; risks associated with investment in publicly listed companies, such as the Company; and risks associated with general economic conditions.

Subject to any continuing obligation under applicable law or relevant listing rules of the ASX, the Company disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements in this Release to reflect any change in expectations in relation to any forward-looking statements or any change in events, conditions or circumstances on which any such statements are based. Nothing in this Release shall under any circumstances (including by reason of this Release remaining available and not being superseded or replaced by any other Release or publication with respect to the subject matter of this Release), create an implication that there has been no change in the affairs of the Company since the date of this Release.

Competent Person Statement

Mt Cattlin

The information in this announcement that relates to Exploration Results and Mineral Resources is based on information compiled by Albert Thamm, B.Sc. (Hons), M.Sc. F.Aus.IMM (203217), a Competent Person who is a Fellow of The Australasian Institute of Mining and Metallurgy. Albert Thamm is a full-time employee of Galaxy Resources Pty. Limited. Albert Thamm has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Albert Thamm consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this announcement that relates to the 30 June 2023 Mt Cattlin Ore Reserve is based on information compiled by Daniel Donald, B. Eng. (Mining), F.Aus.IMM (210032), a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Daniel Donald is an employee working for Entech Mining Pty Ltd and has been engaged by [Alkerm Ltd.](#) to prepare the documentation for the Mt Cattlin operation on which the Ore Reserve Report (released 1 August 2023) is based, for the period ended 30 June 2023, and has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Daniel Donald consents to the inclusion in this announcement of the matters based on his

information in the form and context in which it appears.

Information in this announcement relating to Mt Cattlin scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the report titled "Mt Cattlin Ore Reserve update confirms mine life extension" dated 16 June 2023 available at www.allkem.co and www.asx.com.au. The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

James Bay

Any information in this announcement that relates to James Bay Mineral Resources & Ore Reserves is extracted from the report entitled "James Bay Lithium Project Update Confirms Strong Project Economics" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Any information in this announcement relating to James Bay scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled "James Bay Lithium Project Update Confirms Strong Project Economics" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

Sal de Vida

Any information in this announcement that relates to Sal de Vida Mineral Resources & Ore Reserves is extracted from the report entitled "Sal de Vida Update Delivers Improved Economics, Resource and Reserve" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Any information in this announcement relating to Sal de Vida scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled "Sal de Vida Update Delivers Improved Economics, Resource and Reserve" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

Cauchari

Any information in this announcement that relates to Cauchari Mineral Resources & Ore Reserves is extracted from the report entitled "Cauchari Mineral Resource and Ore Reserve Update and Project Update" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Mineral Resources and Ore Reserves estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Any information in this announcement relating to Cauchari scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX

Announcement entitled "Cauchari Mineral Resource and Ore Reserve Update and Project Update" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

Olaroz

Any information in this announcement that relates to Olaroz Mineral Resources is extracted from the report entitled "Olaroz Mineral Resource Update, and Stage 1 & 2 Operations Update " released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

Any information in this announcement relating to Olaroz scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled "Olaroz Mineral Resource Update, and Stage 1 & 2 Operations Update" released on 25 September 2023 which is available to view on www.allkem.co and www.asx.com.au. The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

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APPENDIX 1 - RESOURCES & RESERVES

James Bay

James Bay Mineral Resource Estimate - Effective date 30 June 2023

Category	Tonnage Grade		Contained lithium oxide/LCE	
	Mt	% Li ₂ O	('000) t Li ₂ O	('000) t LCE
Measured	-	-	-	-
Indicated	54.3	1.30	706	1,746
Measured + Indicated	54.3	1.30	706	1,746
Inferred	55.9	1.29	724	1,790
Total Mineral Resource	110.2	1.30	1,430	3,537

1. The Independent Competent Person, as defined by the JORC Code 2012, responsible for the preparation of this MRE is Mr. Luke Evans, P.Eng, a full-time employee of SLR. Mr. Evans is a member of L'Ordre des Ingénieurs du Québec, a Recognised Professional Organisation defined by the JORC Code 2012. The effective date of the mineral resource is the 30th June 2023 (erroneously identified as Aug. 9, 2023 in the earlier news release).
2. The Mineral Resource Estimate has been reported within a conceptual pit shell at a cut-off grade of 0.50% Li₂O
3. The Mineral Resources are Inclusive of Ore Reserves.

4. The conceptual pit shell used to constrain the MRE has been defined using a spodumene concentrate price of US\$1,500 per tonne, an exchange rate of CAD:US\$ of 1.33, a total ore-based cost of CAD33.92 per tonne, a mining cost of CAD4.82 per tonne, a concentrate transport cost of CAD86.16 per tonne, and a metallurgical recovery of 70.1%.
5. The statements of Mineral Resources conform to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code) 2012 edition.
6. Mineral Resources are not Mineral Reserves, as they do not demonstrate economic viability.
7. The Competent Persons are not aware of any problem related to the environment, permits or mining titles, or related to legal, fiscal, socio-political, commercial issues, or any other relevant factor that could have a significant impact on this MRE.
8. The number of tonnes has been rounded to the nearest 100,000 tonnes, with any discrepancies observed in the totals due to rounding effects.
9. All tonnages reported are dry metric tonnes.

James Bay Ore Reserve - Effective date 30 June 2023

Category	Tonnage Mt	Grade % Li ₂ O	Contained Metal (‘000) t Li ₂ O
Proven	-	-	-
Probable	37.3	1.27	474
Proven + Probable	37.3	1.27	474

1. The Independent Competent Person, as defined by the JORC Code 2012, responsible for the preparation of the Ore Reserve estimate is Mr. Normand Lecuyer, P.Eng., an employee of SLR. Mr. Lecuyer is a member of L'Ordre des Ingénieurs du Québec (License No. 34914), a Recognised Professional Organisation defined by the JORC Code 2012. Effective date of the estimate is June 30th, 2023.
2. Ore Reserves are estimated using the following metal prices (Li₂O Conc = US\$ 1,500/t Li₂O at 6.0% Li₂O) and an exchange rate of CAD/US\$ 1.33.
3. A minimum mining width of 5 m was used.
4. A cut-off grade of 0.62% Li₂O was used.
5. The bulk density of ore is variable, is outlined in the geological block model, and averages 2.7 g/cm³.
6. The average strip ratio is 3.6:1.
7. The average mining dilution factor is 8.7% at 0.42% Li₂O.
8. Numbers may not add due to rounding

Olaroz

Olaroz Mineral Resource Estimate at August 2023

Category	Brine volume <i>m</i> ³	Average <i>mg/l</i>
Measured	3.3 x 10 ⁹	659
Indicated	1.2 x 10 ⁹	592
Measured & Indicated	4.5 x 10 ⁹	641
Inferred	2.2 x 10 ⁹	609
Total	6.7 x 10 ⁹	636

1. The Competent Person(s) for these Mineral Resources estimate is Hydrominex Geoscience for Olaroz
2. Comparison of values may not add up due to rounding or the use of averaging methods
3. Lithium is converted to lithium carbonate (Li₂CO₃) with a conversion factor of 5.323
4. The cut-off grade used to report Olaroz Mineral Resources is 300 mg/l
5. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability, there is no certainty

Sal de Vida

Sal de Vida Mineral Resource Estimate at August 2023

Category	Brine volume	Average Li	In Situ Li	Li ₂ CO ₃ Equivalent	Li ₂ CO ₃ Variance to 2022
	<i>m³</i>	<i>mg/l</i>	<i>tonnes</i>	<i>Tonnes</i>	<i>%</i>
Measured	8.8 x 10 ⁸	752	660,595	3,516,000	41 %
Indicated	7.6 x 10 ⁸	742	564,375	3,004,000	-20 %
Measured & Indicated	1.6 x 10 ⁹	747	1,224,970	6,520,000	5 %
Inferred	2.2 x 10 ⁸	556	122,497	652,000	5 %
Total	1.9 x 10 ⁹	724	1,347,467	7,172,000	5 %

Note: Cut-off grade: 300 mg/L lithium. The reader is cautioned that Mineral Resources are not Ore Reserves and do not have demonstrated economic viability. Values are inclusive of Ore Reserve estimates, and not "in addition to".

Sal de Vida Ore Reserve Estimate at August 2023

Category	Wellfield	Time Period	Li Total Mass	Li ₂ CO ₃ Equivalent	Li ₂ CO ₃ Variance to 2022
		<i>years</i>	<i>tonnes</i>	<i>tonnes</i>	<i>%</i>
Proved	Stage I East	1-7	30,541	163,000	81 %
Proved	Stage II Expansion	3-9	53,046	282,000	57 %
Total Proved		1-9	83,587	445,000	65 %
Probable	Stage I East	8-40	146,520	780,000	53 %
Probable	Stage II Expansion	10-40	236,947	1,261,000	31 %
Total Probable		8-40	383,467	2,041,000	39 %
Total Proved and Probable		40	467,054	2,486,000	43 %

Note: Assumes 300 mg/L Li cut-off grade

Cauchari

Cauchari Mineral Resource Estimate at August 2023

Category	Brine volume	Average
	<i>m³</i>	<i>mg/l</i>
Measured	6.5 x 10 ⁸	527
Indicated	1.1 x 10 ⁹	452
Measured & Indicated	1.8 x 10 ⁹	476
Inferred	6.0 x 10 ⁸	473
Total	2.4 x 10 ⁹	475

1. The Competent Person(s) for these Mineral Resources and Ore Reserves estimate is Atacama Water
2. Comparison of values may not add up due to rounding or the use of averaging methods
3. Lithium is converted to lithium carbonate (Li₂CO₃) with a conversion factor of 5.323
4. The cut-off grade used to report Cauchari Mineral Resources is 300 mg/l
5. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability, there is no certainty

Cauchari Project Reserve Estimate at 30 June 2023

Category	Year	Brine Vol (Mm ³)	Average Lithium Grade (mg/L)	Lithium (kt)	Li ₂ CO ₃ Equivalent (kt)
Proved	1-7	76	571	43	231
Probable	8-30	347	485	169	897
Total	1-30	423	501	212	1,128

1. The Competent Person(s) for these Mineral Resources and Ore Reserves estimate is Atacama Water.
2. Comparison of values may not add up due to rounding or the use of averaging methods.
3. Lithium is converted to lithium carbonate (Li₂CO₃) with a conversion factor of 5.323.

4. The cut-off grade used to report Cauchari Ore Reserves is 300 mg/l.
5. Mineral Resources that are not Ore Reserves do not have demonstrated economic viability, there is no certainty that any or all of the Mineral Resources can be converted into Ore Reserves after application of the modifying factors.
6. The Lithium Ore Reserve Estimate represents the lithium contained in the brine produced by the wellfields as input to the evaporation ponds. Brine production initiates in Year 1 from wells located in the NW Sector. In Year 9, brine production switches across to the SE Sector of the Project.
7. Approximately 25% of M+I Mineral Resources are converted to Total Ore Reserves.
8. Potential environmental effects of pumping have not been comprehensively analysed at the PFS stage. Additional evaluation of potential environmental effects will be done as part of the next stage of evaluation.
9. Additional hydrogeological test work will be required in the next stage of evaluation to adequately verify the quantification of hydraulic parameters in the Archibarca fan area and in the Lower Sand unit as indicated by the sensitivity analysis carried out on the model results. Ore Reserves are derived from and included within the M&I Mineral Resources in the Mineral Resource.

APPENDIX 2- JORC 2012 TABLE 1 DISCLOSURE FOR MT CATTLIN

Section 1: Sampling Techniques and Data

MT CATTLIN LITHIUM PROJECT SAMPLING AND DATA

Sampling techniques

Nature and quality of sampling (e.g. cut channels, random chips, or measurement tools appropriate to the minerals under investigation, handheld XRF instruments, etc.). These examples should not be taken as a guide to sampling.

Include reference to measures taken to ensure sample representivity and measurement tools or systems used.

Aspects of the determination of mineralization that are Material to the Investor for the purposes of the ESRS (e.g. 'industry standard' work has been done this would be the case where circulation drilling was used to obtain 1 m samples from which 3 kg of material was taken for fire assay'). In other cases more explanation may be required, such as where the mineralization has inherent sampling problems. Unusual commodities or mineralizations may warrant disclosure of detailed information.

Drilling techniques

*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary etc.)
Details (e.g. core diameter, triple or standard tube, depth of diamond bits,
whether core is oriented and if so, by what method, etc.).*

Logging

*Whether core and chip samples have been geologically and geotechnically
support appropriate Mineral Resource estimation, mining studies and
Whether logging is qualitative or quantitative in nature. Core (or chip)
The total length and percentage of the relevant intersections logged*

Sub- sampling techniques and sample preparation *If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc. and whether split to quarter or to half.*
For all sample types, the nature, quality and appropriateness of the quality control procedures adopted for all sub-sampling stages to narrow down to the final sample for analysis.
Measures taken to ensure that the sampling is representative of the material from which the sample is taken. Includes field duplicate/second-half sampling.
Whether sample sizes are appropriate to the grain size of the material to be sampled.

Quality of assay data and laboratory tests

The nature, quality and appropriateness of the assaying and laboratory technique is considered partial or total.

For geophysical tools, spectrometers, handheld XRF instruments, etc. the analysis including instrument make and model, reading times, calibration, derivation, etc.

Nature of quality control procedures adopted (e.g. standards, blanks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision.

Verification of sampling and assaying

The verification of significant intersections by either independent or

The use of twinned holes.

Documentation of primary data, data entry procedures, data verification (handwritten or electronic) protocols.

Discuss any adjustment to assay data.

Section 2: Reporting of Exploration Results

Criteria

JORC Code explanation

Mineral tenement and land tenure status

- *Type, reference name/number, location and other details*
- *The security of the tenure held at the time of reporting*

Exploration done by other parties

- *Acknowledgment and appraisal of exploration*

Geology

- *Deposit type, geological setting and style of mineralization*

Drill hole Information

- *A summary of all information material to the user*
 - *easting and northing of the drill hole collar*
 - *elevation or RL (Reduced Level - elevation above sea level) of the hole*
 - *dip and azimuth of the hole*
 - *down hole length and interception depth*
 - *hole length.*

Data aggregation methods

- *In reporting Exploration Results, weighting averages shall be stated*
- *Where aggregate intercepts incorporate short sections, a representative grade should be stated*
- *The assumptions used for any reporting of metal grades shall be stated*

Relationship between mineralization widths and intercept lengths

- *These relationships are particularly important in the case of narrow mineralization where the intercept length is greater than the width of the mineralization*
- *If the geometry of the mineralization with respect to the drill hole is known, appropriate adjustments shall be made to the intercept length*
- *If it is not known and only the down hole length is available, the latter shall be reported*

Diagrams

- *Appropriate maps and sections (with scales) shall be included in Exploration Reports to illustrate the geological setting and style of mineralization*

Balanced reporting

- *Where comprehensive reporting of all Explorations*

Other substantive exploration data

- *Other exploration data, if meaningful and material*

Further work

- *The nature and scale of planned further work*
- *Diagrams clearly highlighting the areas of possible*

Section 3: Estimation and Reporting of Mineral Resources - Mt Cattlin

Criteria

JORC Code explanation

Database integrity

- *Measures taken to ensure that data has not been corrupted by, for example*
- *Data validation procedures used.*

Site visits

- *Comment on any site visits undertaken by the Competent Person and the*
- *If no site visits have been undertaken indicate why this is the case.*

Geological interpretation

- *Confidence in (or conversely, the uncertainty of) the geological interpretation.*
- *Nature of the data used and of any assumptions made.*
- *The effect, if any, of alternative interpretations on Mineral Resource estimation.*
- *The use of geology in guiding and controlling Mineral Resource estimation.*
- *The factors affecting continuity both of grade and geology.*

Dimensions

- *The extent and variability of the Mineral Resource expressed as length (area, volume).*

- Estimation and modelling techniques*
- *The nature and appropriateness of the estimation technique(s) applied and*
 - *The availability of check estimates, previous estimates and/or mine production*
 - *The assumptions made regarding recovery of by-products.*
 - *Estimation of deleterious elements or other non-grade variables of economic importance*
 - *In the case of block model interpolation, the block size in relation to the average grain size of the ore*
 - *Any assumptions behind modelling of selective mining units.*
 - *Any assumptions about correlation between variables*
 - *Description of how the geological interpretation was used to control the resource estimation*
 - *Discussion of basis for using or not using grade cutting or capping.*
 - *The process of validation, the checking process used, the comparison of resource estimates with independent data*

- Moisture*
- *Whether the tonnages are estimated on a dry basis or with natural moisture*

- Cut-off parameters*
- *The basis of the adopted cut-off grade(s) or quality parameters applied*

Mining factors or assumptions

- *Assumptions made regarding possible mining methods, minimum mining c*

Metallurgical factors or assumptions

- *The basis for assumptions or predictions regarding metallurgical amenabi*

Environmental factors or assumptions

- *Assumptions made regarding possible waste and process residue disposa*

Bulk density

- *Whether assumed or determined. If assumed, the basis for the assumption*
- *The bulk density for bulk material must have been measured by methods*
- *Discuss assumptions for bulk density estimates used in the evaluation pro*

Classification

- *The basis for the classification of the Mineral Resources into varying confi*
- *Whether appropriate account has been taken of all relevant factors (i.e. re*
- *Whether the result appropriately reflects the Competent Person's view of t*

Audits or reviews

- *The results of any audits or reviews of Mineral Resource estimates.*

*Discussion of relative accuracy/
confidence*

- *Where appropriate a statement of the relative accuracy and confidence level*
- *The statement should specify whether it relates to global or local estimates*
- *These statements of relative accuracy and confidence of the estimate should*

Section 4: Ore Reserves

Criteria

JORC Code explanation

Mineral Resource estimate for conversion to Ore Reserves

Description of the Mineral Resource estimate used as a basis for

Site visits

Clear statement as to whether the Mineral Resources are reported as Ore Reserves.

Comment on any site visits undertaken by the Competent Person. If no site visits have been undertaken indicate why this is the case.

Study status

The type and level of study undertaken to enable Mineral Resources to be reported as Ore Reserves. The Code requires that a study to at least Pre-Feasibility Study level be undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been conducted on a scale that is technically achievable and economically viable, and the results of such studies considered.

Cut-off parameters

The basis of the cut-off grade(s) or quality parameters applied to the Mineral Resource estimate.

The method and assumptions used as reported in the Pre-Mineral Resource to an Ore Reserve (i.e., either by application of preliminary or detailed design).

The choice, nature and appropriateness of the selected mining methods, including associated design issues such as pre-strip, access

Mining factors or assumptions

The assumptions made regarding geotechnical parameters and pre-production drilling.

The major assumptions made, and Mineral Resource model (where appropriate).

The mining dilution factors used.

	<p>The mining recovery factors used.</p> <p>Any minimum mining widths used.</p> <p>The manner in which Inferred Mineral Resources are utilised and the expected outcome to their inclusion.</p> <p>The infrastructure requirements of the selected mining method.</p> <p>The metallurgical process proposed and the appropriateness of the process.</p> <p>Whether the metallurgical process is well-tested technology.</p>
Metallurgical factors or assumptions	<p>The nature, amount and representativeness of metallurgical test work and metallurgical domaining applied and the corresponding metallurgical recovery factors.</p> <p>Any assumptions or allowances made for deleterious elements.</p> <p>The existence of any bulk sample or pilot scale test work and whether it is considered representative of the orebody as a whole.</p> <p>For minerals that are defined by a specification, has the orebody the appropriate mineralogy to meet the specifications?</p>
Environmental	<p>The status of studies of potential environmental impacts of the proposed project, waste rock characterisation and the consideration of potential environmental impacts, where applicable, the status of approvals for process residues.</p>
Infrastructure	<p>The existence of appropriate infrastructure: availability of land, water, electricity, transportation (particularly for bulk commodities), labour, and whether the infrastructure can be provided, or accessed.</p>

Costs

The derivation of, or assumptions made, regarding project

The methodology used to estimate operating costs.

Allowances made for the content of deleterious elements.

The source of exchange rates used in the study.

Derivation of transportation charges.

The basis for forecasting or source of treatment and refining specification, etc.

The allowances made for royalties payable, both Governm

Revenue factors

The derivation of, or assumptions made regarding revenue price(s) exchange rates, transportation and treatment char

The derivation of assumptions made of metal or commodity co-products.

The demand, supply and stock situation for the particular commodity to affect supply and demand into the future.

Market assessment

A customer and competitor analysis along with the identification of market trends.

Price and volume forecasts and the basis for these forecasts.

For industrial minerals the customer specification, testing and contract terms.

The inputs to the economic analysis to produce the net present value and the confidence of these economic inputs including estimated inflation.

Economic

NPV ranges and sensitivity to variations in the significant parameters.

Social

The status of agreements with key stakeholders and matters

To the extent relevant, the impact of the following on the probability of the Ore Reserves:

Any identified material naturally occurring risks.

Other

The status of material legal agreements and marketing arrangements

The status of governmental agreements and approvals critical to the tenement status, and government and statutory approvals. Highlight all necessary Government approvals that will be received within the next 12 months or Feasibility study. Highlight and discuss the materiality of any third party on which extraction of the reserve is contingent.

Classification

The basis for the classification of the Ore Reserves into various categories

Whether the result appropriately reflects the Competent Person's opinion

The proportion of Probable Ore Reserves that have been confirmed

Audits or reviews

The results of any audits or reviews of Ore Reserve estimates

Where appropriate a statement of the relative accuracy and confidence should be included, using an approach or procedure deemed appropriate by the reporting entity. This may include the use of statistical or geostatistical procedures to quantify the relative accuracy and confidence, or confidence limits, or, if such an approach is not deemed appropriate, a statement of the factors which could affect the relative accuracy and confidence of the estimate.

Discussion of relative accuracy/ confidence

The statement should specify whether it relates to global or local estimates, and the tonnages, which should be relevant to technical and economic assumptions made and the procedures used.

Accuracy and confidence discussions should extend to specific areas of uncertainty that may have a material impact on Ore Reserve viability, or on the overall uncertainty at the current study stage.

It is recognised that this may not be possible or appropriate in some circumstances. In such cases, the relative accuracy and confidence of the estimate should be stated.

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