

# James Bay Lithium Project Feasibility Study & Maiden Ore Reserve

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BRISBANE, Dec. 21, 2021 - [Allkem Ltd.](#) (ASX |TSX: AKE) ("Allkem" or the "Company") advises the release of the Feasibility Study and Maiden Ore Reserve for its wholly owned James Bay Lithium Project ("James Bay" or the "Project") located in Quebec, Canada.

## HIGHLIGHTS

- Feasibility Study confirms a sustainable, high value hard rock lithium operation utilising renewable hydropower
- Material ~2.5x increase in Net Present Value ("NPV") from the Preliminary Economic Assessment ("PEA") released in March 2021
- Construction planned to commence in Q3 CY2022 with commissioning in the first quarter of CY24, subject to receipt of necessary environmental and other approvals
- Strategically located in proximity to high-growth electric vehicle markets in North America and Europe

## Project Details

- Mineral Resource of 40.3Mt at 1.4% Li<sub>2</sub>O and Maiden Ore Reserve of 37.2Mt at 1.3% Li<sub>2</sub>O provides a long life, low cost spodumene operation
- Average annual production of 321ktpa of spodumene concentrate with a 19 year mine life
- Shallow, near-surface mineralisation ideal for open cut mining with a low life-of-mine ("LOM") strip ratio of 3.5: 1
- 2mtpa process plant designed to produce up to 6% Li<sub>2</sub>O spodumene concentrate
- Very similar process design and flowsheet to that already successfully employed at Mt Cattlin
- Low-cost, sustainable source of hydropower to provide approximately 45% of site power needs
- Strong relationships with the Cree Nation of Eastmain, Cree Nation Government and all stakeholders

## Project Financials

- Capital cost estimate of USD285.8 million on the optimised mine plan, flowsheet and schedule
- Cash operating costs (FOB Montreal) of USD333 per tonne of 5.6% Li<sub>2</sub>O concentrate
- Pre-tax NPV of USD1.42 billion at an 8% discount rate and post-tax NPV of USD823 million
- Pre-tax Internal Rate of Return ("IRR") of 45.8% and pre-tax payback period of 2.4 years
- Post-tax Internal Rate of Return ("IRR") of 35.2% and post-tax payback period of 2.9 years

## Project Execution

- Basic engineering has commenced alongside the procurement process for key equipment, temporary installations, contracts and preparation of construction permits
- Completion of the feasibility study and report prepared in compliance with National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* ("NI 43-101") allows the Impact and Benefit Agreement ("IBA") negotiations and Environmental and Social Impact Assessment ("ESIA") approvals to be continued and completed
- Further carbon studies and initiatives underway to align the project to Allkem's target of transitioning to net-zero emissions by 2035
- Downstream studies continue, examining options for value adding from the conversion of James Bay's spodumene concentrate

Managing Director and Chief Executive Officer, Martin Perez de Solay commented *"The Feasibility Study results clearly demonstrate the exceptional value that will be generated for all stakeholders through the development of this project. It will utilise clean hydro-power to provide lithium into the EV and other low carbon industries. Supply chain and logistics emissions can be minimised by supplying*

*into the rapidly expanding markets in North America and Europe."*

## PROJECT BACKGROUND

The Project is located in northern Qu?bec, approximately 130 km east of James Bay and the Cree Nation of Eastmain. The Company is proposing to develop a spodumene mine located adjacent to the Billy Diamond Highway (formerly the James Bay Highway) which provides access to key infrastructure in the region.

G Mining Services Inc. ("GMS") was engaged by the Company to produce the Feasibility Study and technical report in accordance with NI43-101. GMS is a specialised mining consultancy based in Canada with wide experience in developing mineral projects.

Qu?bec, Canada

Qu?bec is a highly attractive investment destination for lithium production due to its supportive resource development sector, access to skilled labour and its proximity to the emerging European and North American electric vehicle markets. Canada also has free trade agreements with the United States and the European Union.

The province provides a viable source of low-cost, low-carbon power with its electricity production sector having one of the lowest carbon footprints in the world. The electricity produced is derived from sources that are more than 99.8% renewable, mainly hydropower.

The Qu?bec Government is also committed to reducing its carbon emissions and building accessibility and availability of battery metals to fuel the development of a green economy. Its '2030 Plan for a Green Economy' targets a 37.5% reduction in carbon emissions compared to 1990 levels and outlines a framework for the electrification of transportation. The Government has also released a 'Plan for the Development of Critical and Strategic Minerals (2020-2025)' which includes lithium and details commitments to share financial risk, as well as infrastructure improvements for projects in northern Qu?bec.

## GEOLOGY & MINERALISATION

The Project is in the northeastern part of the Superior Province and lies within the Lower Eastmain Group of the Eastmain greenstone belt. This area predominantly consists of amphibolite grade mafic to felsic metavolcanic rocks, metasedimentary rocks and minor gabbroic intrusions.

The pegmatites delineated on the property to date are oriented in a generally parallel direction to each other and are separated by barren host rock of sedimentary origin (metamorphosed to amphibolite facies). They form irregular dikes attaining up to 60 m in width and over 200 m in length. The pegmatites crosscut the regional foliation at a high angle, striking to the south-southwest and dipping moderately to the west-northwest, with a true thickness that is wider than what is currently mined at Mt Cattlin.

Spodumene mineralisation at James Bay is coarse grained, high grade and outcrops along strike, supporting excellent recoveries, low strip ratio and open cut mining. No significant deleterious lithium mineralisation has been identified to date.

## RESOURCE & RESERVE ESTIMATE

The Mineral Resource and Ore Reserve estimates set out below have been prepared in accordance with the 2012 Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC) and the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines (2019).

Mineral Resource Estimate

The Mineral Resource Statement presented herein represents the second mineral resource evaluation prepared for the Project, and remains unchanged since the release of the PEA in March 2021

The mineral resource model was released on December 4, 2017 by [Galaxy Resources Ltd.](#), and considered 102 core boreholes drilled by Lithium One Inc during the period of 2008 to 2009, 53 channel samples collected by Lithium One in 2009 and 2010, and 157 core boreholes drilled in 2017.

The resource estimation work has been certified by Mr. James Purchase, P. Geo of GMS, an independent Qualified Person as defined in NI 43-101 and a Competent Person under JORC (for the purpose of this news release, a Qualified Person under NI 43-101 and a Competent Person under JORC will be collectively referred to herein as a "Competent Person"). Comprehensive verification of all data pertaining to the Mineral Resource Estimate released in 2017 has been undertaken, and a site visit to the project was conducted in June 2021. This estimate displayed in Table 1 below remains current, given that only minor geotechnical and metallurgical drilling has been performed since 2017, which has had no material effect on the estimate.

*Table 1: James Bay Mineral Resource Estimate - (effective date November 23<sup>rd</sup>, 2017, restated in December 2021 by GMS)*

Category	Tonnage Mt	Grade % Li <sub>2</sub> O	Contained Metal ('000) t Li <sub>2</sub> O
Indicated	40.30	1.40	564.2
Total	40.30	1.40	564.2

Note: The Mineral Resource Estimate is reported at a cut-off grade of 0.62% Li<sub>2</sub>O inside a conceptual pit shell optimised using spodumene concentrate price of USD 950/t containing 6.0% Li<sub>2</sub>O, metallurgical and process recovery of 70%, overall mining and processing costs of USD 55/t milled and overall pit slope of 50 degrees. All figures are rounded to reflect the relative accuracy of the estimates. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

#### Ore Reserve Estimate

The Mineral Reserve of 37.2Mt at an average grade of 1.3% Li<sub>2</sub>O was prepared by GMS and demonstrates Probable Ore Reserves are economic for concentrate production (Table 2).

*Table 2: James Bay Ore Reserve - December 2021*

Category	Ore tonnage (k dmt)	Lithium grade (%Li <sub>2</sub> O)
Proven	0	0
Probable	37,207	1.30
Proven + Probable	37,207	1.30

#### Notes:

1. Effective date of the estimate is December 2021;
2. Mineral Reserves are estimated using the following long-term metal prices (Li<sub>2</sub>O Conc = USD 950/t Li<sub>2</sub>O at 6.0%);
3. A minimum mining width of 5m was used;
4. Cut-off grade of 0.62% Li<sub>2</sub>O;
5. Bulk density of ore is variable, outlined in the geological block model and average 2.7 g/t;
6. The average strip ratio is 3.54:1;
7. The average mining dilution factor is 3.0% at 0.38% Li<sub>2</sub>O.

Details of data collection and resource and reserve estimation techniques, methodology and material assumptions are provided in the JORC Table 1 checklist set out in Annexure B.

## MINING AND PROCESSING

### Mining

Mine engineering was performed by GMS and a summary of the key physicals are displayed in Table 3

below.

*Table 3: Summary of Life of Mine Physicals for an estimated 18.8 year mine life*

Key Physicals	UoM	Feasibility Study
Mined material grade (after mining dilution)	%	1.30
Strip ratio	X : 1	3.54
Spodumene Concentrate Produced (total after transport losses)	<i>kdm</i> t	6,026
Spodumene Concentrate Produced (annual average)	<i>kt</i>	321
Recovery	%	70.1
Spodumene Concentrate Grade	% $Li_2O$	5.6

The pegmatite deposit will be mined by conventional open pit methods. All material will require drilling and blasting and will be removed using mining excavators and haul trucks.

The preliminary pit design extends approximately 2km NW/SE along the strike of the pegmatite mineralisation and has an average width of 500m. The design is divided into three pits with depths of 160m, 170m and 260m.

Mining is scheduled to achieve low waste stripping in the initial years with a gradual increase later in the mine life. The average strip ratio for the LOM plan is 3.54:1.

Waste rock will be hauled to multiple Waste Rock and Tailings Storage Facilities ("WRTSF") and run of mine ("ROM") feed material will be hauled to the ROM pad, located to the northeast of the pits.

The preliminary mine plan / LOM schedule and shows the mine plan tonnages by year with pre-strip activities commencing two years prior (Y1 and Y2) to first production (Y3). Mining covers 18.8 years of production with 126.1 Mt of waste rock, 5.6 Mt of overburden and 37.2 Mt of ROM feed material for a total of 168.9 Mt of material mined.

In the pre-production period, the ROM material generated will be stockpiled for processing during production years. Site preparation including tree clearing, grubbing and peat/topsoil removal will occur during the Project construction phase.

Surface mining equipment requirements are based on mining 10m benches. Conventional excavator and truck fleet will be sized to meet the planned tonnage requirements to feed the concentrator at 2Mtpa. Haul trucks are required to transport tailings from the plant to the proposed waste rock and dry stacked tailings stockpile areas.

## Processing

Process Plant engineering was performed by Wave International ("Wave"), an Australian-based engineering company with global development experience.

The process design is based on an annual throughput of 2Mt of ore to produce a final product grade of 6.0%  $Li_2O$ , with operational flexibility to increase recovery by reducing concentrate grade to 5.6%  $Li_2O$ . The selected process is similar to that currently utilised at the Company's Mt Cattlin mining operation in Australia which incorporates a similar flowsheet based on crushing and dense medium separation ("DMS").

Processing involves a conventional three-stage crushing circuit, followed by a DMS plant. Similar to Mt Cattlin, crystal sizes are coarse and therefore grinding and flotation methods are not necessary, contributing to low operating costs. Other sub processes include:

- Dewatering and dry stack tailings disposal system (combined with waste rock disposal);
- water, air and ancillary services; and

- spodumene concentrate stockpile and dispatch system.

The ROM ore will be fed to a three-stage crushing plant consisting of a primary jaw crusher, a secondary crusher and tertiary crusher. Prior to feeding the DMS cyclones, the material will be mixed with a ferrosilicon slurry, which acts as a densifying medium to enhance the gravity separation of the spodumene.

The primary coarse product from the DMS will report to the secondary coarse DMS cyclones where the process is repeated to achieve the target concentrate grade. The other DMS streams will be dewatered over a series of screens and conveyed to either the tailings loadout facility or secondary fine DMS for re-processing, eventually reporting to the final product. After processing, the concentrate is conveyed to the product stockpile from where it is loaded on to road trucks and transported to end users.

For recovery enhancement, the oversize material from the secondary floats screen is re-crushed using a rolls crusher. After removal of the ultra-fines material, which is sent to the tailing treatment area, the oversize is processed through the re-crush DMS plant which follows the same process as the primary and secondary DMS circuits.

### Final Product Grade

Metallurgical test work was conducted by SGS Canada Inc. and Nagrom to determine optimal plant operating recoveries. For a final spodumene concentrate grading 5.6% Li<sub>2</sub>O, modelling indicates that a recovery of 71.2% in the early years and 66.5% in later operating years is a reasonable assumption.

Supply side tightness in raw materials is projected to continue for the medium to long term and in line with this market demand, project economics are based on the production and sale of a 5.6% Li<sub>2</sub>O final product grade. This product grade yields higher recoveries and revenues associated with higher concentrate production. Metallurgical modelling predicts a 6% improvement in recovery, an 18% increase in final product tonnage and a 12% increase in revenue under forecast spodumene concentrate prices, under this operating regime.

James Bay will produce an average of 321ktpa of spodumene concentrate for 18.8 years and retains ultimate flexibility to produce final product grade consistent with market and customer demand. Allkem's final product specification will ultimately be determined in consultation with its customers.

### INFRASTRUCTURE

Waste Rock and Tailings Storage facility engineering was performed by Golder Associated Ltd. ("Golder") and site infrastructure engineering was performed by GMS.

#### Mine Infrastructure

The site infrastructure will include:

- ROM pad and stockpile
- Crushed ore covered stockpile
- Four Waste Rock Tailings Storage Facilities
- Overburden and peat storage area ("OPSF")
- Two Water Management Ponds and Plant Water Management Pond
- Contact water ditches and non-contact diversion water ditches
- Fine and coarse tailing warehouse
- Spodumene concentrate warehouse
- Emulsion and explosive storage

The ROM stockpile and spodumene concentrate warehouse will be located adjacent to the process plant. All storage areas were selected to minimise their environmental impact. A surface drainage network will be built to divert non-contact water from the ROM pad and stockpile, WRTSF, OPSF stockpiles and process plant.

The same strategy will be used to manage the surface water run-off (contact) for all disturbed land.

### Supporting Infrastructure & Logistics

The following infrastructure facilities are planned for the Project:

- 69 kV Main-substation
- Administrative and laboratory buildings
- Accommodation camp
- Workshop and reagent buildings
- Storage and communication facilities
- Distribution facility for heating
- Water and sewage treatment plants

James Bay is well serviced by key infrastructure in the region, including Hydro-Québec power which provides a low-cost, clean energy source for the site and process plant. The process plant and supporting infrastructure will predominantly be powered by Hydro-Québec's 69 kV overhead distribution system. The 69 kV distribution line is relayed through Hydro-Québec's Muskeg substation and ultimately fed by the Némiscau substation located roughly 100 km southwest of the Project site. An overhead distribution line extension will be built to the plant substation from the 69 kV line (L-614) located 10km south of the Project site. The 69 kV power supply is limited by a capacity of 8 MVA due to the sensitivity of the network and distance from the substation.

The Project is also accessible all year-round via the paved Billy Diamond Highway which allows oversized haul trucking to and from site, including the town of Matagami, located 382km south of the Project. Matagami is connected to a major railway, the Canadian National Railway network, allowing future production to be railed to various locations in North America or any port along the Saint-Lawrence River for international shipment.

The Eastmain airport is located 130 km from site and will be used to transport staff and contractors from major centres in southern Québec. Discussions are underway with Transport Canada about necessary upgrades required to create more regular aerial services to support future operations. Fuel and accommodation are also available at the "Relais Routier Km 381" Truck Stop, a sizeable facility, located adjacent to the Project site.

The Québec Government and the Cree Nation signed a Grand Alliance agreement for collaborative, long-term, economic development in the James Bay region. The Grand Alliance plans to invest heavily in infrastructure, including railways and roads, providing future transport and logistic opportunities. Allkem continues to work with various stakeholders including the Cree Nation to understand how elements of the Grand Alliance can potentially be integrated into the Project.

## FINANCIAL PERFORMANCE

### Capital and Operating Costs

GMS completed the capital and operating costs, incorporating engineering undertaken by other contributors.

The total initial project development capital expenditure ("CAPEX") is estimated to be USD285.8 million. The CAPEX has been prepared to reflect optimised site layouts, mine scheduling, plant and equipment design, supply and installation. The estimate is detailed in Table 4 and includes processing, mine equipment purchases, infrastructure, contingency and other direct and indirect costs. Deferred CAPEX is also required during operations for additional equipment purchases, a truck shop bay addition, and mine civil works.

Operating costs ("OPEX") are estimated to be USD333 per tonne of concentrate (FOB Montreal). OPEX includes mining, processing, general and administrative services, concentrate transportation and royalties as detailed in Table 4.

*Table 4: Capital Cost Estimates and Operating Cost Estimate*

Capital Costs	USD M	%	Operating Costs	USD / tonne
<b>Direct Costs</b>				
Mine Fleet	27.1	9.4	Mining	101.9
Processing	65.9	23.1	Processing	61.4
Civil Works	25.3	8.9	Administration & Other	64.2
On site infrastructure	32.4	11.3	Transport & Port	87.9
Power Supply & Distribution	31.4	11.0	Royalties	17.4
Offsite Infrastructure	2.0	0.7	Total OPEX (FOB Montreal)	332.8
Total Direct CAPEX	184.1	64.4		
<b>Indirect Costs</b>				
EPCM Services	16.5	5.8		
Owner's cost	4.6	1.6		
Temporary Infrastructure	14.0	4.9		
Other	30.7	10.7		
Contingency	20.9	7.3		
Cost escalation reserve	15.0	5.2		
Total Indirect CAPEX	101.7	35.6		
Total CAPEX	285.8	100.0		

Since release of the PEA, Feasibility Study work undertaken has improved the accuracy of the capital and operating costs, particularly mining, processing and transport. The key findings include:

- Review and optimisation of the mine plan and material movements during the detailed mine planning and scheduling phase;
- Investigation into the automation of drilling and haulage to boost productivity;
- Ongoing discussions with Hydro-Québec to optimise delivery of power to site resulting in reduction of capital investment.

The key changes in capital expenditure from the PEA to the feasibility study are displayed in Table 5 below.

*Table 5: Capital expenditure differences from the PEA to Feasibility Study*

	USDM
Additional environmental protection systems	10
Inflation/market prices	7.5
Design change	4
Additional process equipment	7.5
Design growth	5
Savings on power contract	(8.5 )
Addition of a Reserve (Market uncertainties)	15
Total	40.5

#### Spodumene Pricing Forecast

Lithium demand has historically been driven by macro-economic growth, but the increasing use of rechargeable batteries in electrified vehicles over the last several years has been the key driver of global demand. According to Roskill (Lithium 18<sup>th</sup> Edition Update 1 - October 2021), global demand between 2015 and 2020 almost doubled, reaching 388.4 kt lithium carbonate equivalent ("LCE") with a Compound Annual Growth Rate ("CAGR") of 14.0% over the period. Adding to this growth, global lithium demand in 2021 is expected to increase by 33.8% to 519.6 kt LCE as demand for rechargeable batteries grows further.

Roskill forecasts global lithium demand to grow at 19.21% CAGR over the next decade from 520 ktpa in 2021 to over 3,000 ktpa by 2031. Lithium demand is derived from the expected build-out of the battery

production, with 2,733 GWh capacity required across all end-use applications.

Growth in lithium demand will outpace rising supply by 2025 when the mine market balance is expected to record a deficit. With additional capacity being brought on in 2023 and 2024 it is forecast that the market will return to a small surplus before entering a long-term structural deficit. Limited investments in both exploration and capacity over the last several years is likely to manifest itself from 2025 where increases in supply will be insufficient to keep up with the strong growth in demand for mineral feedstock by mineral converters. Without new supply from development of new projects, the supply deficit will continue to grow driving lithium prices upwards.

Spodumene concentrate will continue to feature as a key feedstock in the global lithium supply chain and increasing tonnages will be required to meet future demand for refined lithium. Roskill are forecasting contract prices for chemical grade spodumene concentrate to range between USD 754/t and USD 1,121/t between 2022 and 2031.

## PROJECT ECONOMICS

An economic analysis was developed using the discounted cash flow method and was based on the data and assumptions for capital and operating costs detailed in this report for mining, processing and associated infrastructure.

The basis of forecast spodumene pricing was provided by Roskill for the period 2021 to 2031, with a longer term price of USD1,121 used from 2031 onwards for 6% Li<sub>2</sub>O.

The evaluation was undertaken on a 100% equity basis. The key assumptions and results of the economic evaluation are listed in Table 6 and Table 7 below.

*Table 6: Key assumptions utilised in the project economics*

Assumption	Units	Feasibility Study
Annual Spodumene Concentrate Production <sup>1</sup>	kt	321
Commercial Production Estimate	Years	18.75
Discount Rate	%	8
Royalty	%	1.5
CAPEX	USDM	285.8
OPEX	USD/ tonne	332.8
Average Selling Price <sup>2</sup>	USD/ tonne	1,001
Exchange rate	USD:CAD	1.33

<sup>1</sup> Final product grade of 5.6% Li<sub>2</sub>O

<sup>2</sup> Based on spodumene price forecast provided from Roskill adjusted for 5.6% grade

*Table 7: Summary of Financials over the estimated Life of Mine*

Financial Summary	Units	Feasibility Study
NPV (Pre-tax)	USDM	1,419.9
NPV (Post-tax)	USDM	823.0
IRR (Pre-tax)	%	45.8
IRR (Post-tax)	%	35.2
Payback Period (Pre-tax)	Years	2.4
Payback Period (Post-tax)	Years	2.9
Capital Intensity (processing)	USD / dmtpa	142.8
NPV: Development Capex (Post-tax) X: 1		2.88:1

## Sensitivity Analysis

As displayed in Table 7, the Feasibility Study demonstrates strong financial outcomes with a Pre-tax NPV<sub>8%</sub> real of USD1,419.9 million and IRR of 45.8%. The NPV of the project is most sensitive to movements in the price of spodumene and foreign exchange fluctuations, followed by operating costs and development capital costs.

## ENVIRONMENTAL AND SOCIAL IMPACTS

Environmental and Permitting work packages were performed by WSP Canada Inc., a global professional services and engineering firm with environmental expertise and significant experience in facilitating project approvals and development projects.

### Carbon Emissions Management

Allkem is committed to the transition to net zero emissions by 2035 and is progressively implementing actions across the group to achieve this target. Each project within the group will contribute to this target in a different, but site appropriate manner.

As a greenfields project, James Bay has a unique opportunity to build a low carbon operation. The location of the project will provide access to hydro power supplied by Hydro Qu?bec which delivers a significant advance in the overall decarbonisation of the project.

As James Bay has only recently been integrated into the Allkem group through the merger of Orocobre Limited and [Galaxy Resources Ltd.](#), much of the planning and project studies in this report were conducted without reference to Allkem's target.

As such, the project represented in this report will source 40-45% of total site energy needs from sustainable energy (Hydro Quebec) which will be delivered via an 8 MW connection to the Hydro Qu?bec power network and will predominantly be utilised in the processing plant, fixed infrastructure and selected mobile equipment.

Future studies will focus on opportunities to increase the proportion of sustainable energy available to the project which will further reduce operational carbon emissions. The primary area to be investigated will be the supply of additional hydro power which may allow the potential conversion of the mining fleet and all site facilities away from fossil fuels. Allkem will work with project partners to identify and develop further emissions reduction opportunities within the project supply chain mostly around the availability of battery-power mobile equipment capable to operate in cold weather conditions. Additional studies are also planned to be conducted to replace petroleum hydrocarbons used for heating during cold winter with renewable sources.

Allkem will also engage with the Qu?bec government which has demonstrated a strong commitment for renewable energy with the "2030 Plan for a Green Economy". The goals of this plan are aligned with Allkem's commitment to net zero via the replacement of fossil fuels in transport, buildings and industrial activity. The Qu?bec government has also committed to develop and consolidate energy networks through the territory, particularly for critical and strategic mineral developments.

### Regulations and Permitting

An Environmental and Social Impact Assessment ("ESIA") was submitted to the federal and provincial authorities in October 2018 and was updated and submitted in July 2021 to reflect changes to the project presented in the PEA. As part of the technical review of the ESIA, the Company addressed information requests and clarifications received from the authorities.

Following ESIA approval from regulators which the Company anticipates receiving within a reasonable timeframe, additional ancillary construction and operation permits from provincial authorities will be required prior to construction. Preparation of these permits commenced in October 2021.

## Community Engagement

The Cree Nation community of Eastmain located 130km east of the Project site is the nearest major community to the site. The Company has a strong working relationship with the Cree Nation of Eastmain and conducts regular and meaningful engagement and consultation with the Cree Nation.

On 18 March 2019, a Preliminary Development Agreement ("PDA") was signed with the Cree Nation of Eastmain, Grand Council of the Cree and Cree Nation Government. The PDA will be replaced by an Impact Benefit Agreement ("IBA") before construction is initiated.

Further engagement with the Cree Nation Government and stakeholders, including the communities of Waskaganish and Waswanipi, continue in relation to project updates.

The project will create approximately 250 full-time positions in the Eeyou Istchee/James Bay region.

## EXECUTION STRATEGY

James Bay expects to commence construction in Q3 CY2022 with commissioning expected in the first quarter of CY24. To achieve these milestones, key focus areas for CY22 include:

- Further engineering activities to finalise design, equipment and plant configurations;
- Procurement for equipment, temporary installations and key contracts;
- Development of sustaining initiatives for local stakeholders;
- Progression of the ESIA, IBA and regulatory approvals.

CY22 and CY23 will see completed detailed design, development of construction work packages, procurement of long lead items, pre-mining of the starter pit and construction and pre-commissioning of the plant. Additional off-site and non-process infrastructure activities will also be established during this period.

Funding is expected to be provided through one or more of the following:

- existing corporate cash;
- existing or new corporate debt or project finance facilities;
- cash flow from operations;
- strategic offtake partner(s).

For the Execution Phase, the Company will implement the project delivery strategy described below:

- All the procurement and contracting activities will be managed directly by the Project team;
- The Company will implement an integrated team approach for construction management to carry out the Project's construction activities;
- An Owner's Integrated Team organization will be put in place combining Company employees, main consultants and contractors to perform all technical / operational functions in-house and manage the required contractors to build the Project facilities.

In this approach, the contractors will be involved as early as possible with the detailed engineering and constructability development.

Downstream studies continue, examining options regarding the value adding conversion of James Bay's spodumene concentrate.

This release was authorised by Mr Martin Perez de Solay, CEO and Managing Director of Allkem Limited.

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Past performance information given in this Release is given for illustrative purposes only and should not be relied upon as (and is not) an indication of future performance.

## Forward Looking Statements

This news release contains "forward-looking information" under the provisions of applicable securities legislation. Such forward-looking information is subject to various risks and uncertainties. Forward-looking information in this news release includes, but is not limited to, statements with respect to: (i) the economics and potential returns associated with the Project; (ii) the estimation of mineral reserves and mineral resources; (iii) the technical viability of the Project; (iv) the market and future price of spodumene concentrate and other commodities; (v) the ability to work cooperatively with other stakeholders, including local community groups and all levels of government; (vi) projected employment and other social benefits resulting from the Project; and (vii) the results of the Feasibility Study, including statements about future production, mining methods, future operating and capital costs, the projected IRR, NPV, construction timelines, permit timelines and production timelines for the Project. 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 Oro [Cobre Ltd.](#) 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.

Forward-looking statements are made as of the date hereof and, subject to any continuing obligation under applicable law or relevant listing rules of the ASX/TSX, 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

The Information in this announcement that relates to Mineral Resources is based on information compiled by Mr James Purchase, a Competent Person who is a Member of L'Ordre des G?ologues du Qu?bec, a Recognised Professional Organisation included in a list posted on the ASX website from time to time. Mr Purchase is a full-time employee of G Mining Services Inc. Mr Purchase has sufficient experience that is relevant to the style of mineralisation 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". Mr Purchase consents to the inclusion in the report 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 December 2021 James Bay Ore Reserve is based on information compiled by Carl Michaud, P. Eng., a Competent Person who is a Member of L'Ordre des Ing?nieurs du Qu?bec, a Recognised Professional Organisation included in a list posted on the ASX website from time to time. Carl Michaud is a full-time employee of G Mining Services Inc. Carl Michaud has sufficient experience that is relevant to the style of mineralisation 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'. Carl Michaud consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

Technical information relating to the Company's James Bay project contained in this release is derived from, and in some instances is an extract from, the technical report entitled "Feasibility Study - James Bay Lithium Project" (Technical Report) which has been reviewed and approved by James Purchase, P. Geo (G-Mining Services Inc.) as it relates to geology, drilling, sampling, exploration, QA/QC and mineral resources: Joel Lacelle, P. Eng. (G-Mining Services Inc.); as it relates to site infrastructure and capital cost and operating cost estimate: Carl Michaud, P. Eng. (G-Mining Services Inc.); as it relates to mining methods, mining cost, financial modeling and economic analysis: Christopher Larder, Eng. (Wave International); as it relates to mineral processing and related infrastructures: Darrin Johnson, Ontario P. Eng. (Golder Associated Ltd.); as it relates to waste rock and tailings management related infrastructures: Joao Paulo Lutti, Eng. (Golder Associated Ltd); as it relates to water management infrastructures: Simon Latulippe Eng. (WSP Canada Inc.); as it relates to environmental and permitting in accordance with National Instrument 43-101 - Standards for Disclosure for Mineral Projects. The Technical Report will be filed within 45 days of this release and will be available for review under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

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