

Executive Summary

This report evaluates the economic impacts of the proposed James Bay Lithium Mine Project in Québec which is at the public consultation phase of the impact assessment process. The key findings are

- The benefits to local business may be overstated and the negative impacts need further investigation.
- The economic benefits to the Cree Nations are unclear. This may be due to the presence of a confidentiality clause in the impact benefit agreement (IBA).
- The local workforce may need to enhance its technical skills to participate in and benefit from the operational and closure phases of the project.
- The economic benefits to residents of the region may be distributed unevenly. Local, provincial, and federal government may need to devise measures to mitigate these impacts.
- The implicit costs associated with the provision of public infrastructure are not accounted for.
- Mining royalties may need to be reevaluated to allow for a more equitable distribution of profits from the project.
- The profitability of the project for the proponent may be underreported.

Background

Galaxy Lithium (Canada) Inc. (hereafter referred to as “the proponent”) is a subsidiary of Allkem Limited, an Australian mining corporation. The proponent intends to establish an open pit mine to extract high grade lithium ore (spodumene) at a site near the KM381 truck

stop on the Billy Diamond Highway, approximately 130km east of Eastmain, QC. The site falls within the administrative boundaries of the Nord-du-Québec region and is situated on the traditional lands of the Cree Nation of Eastmain. As highlighted in the project's Environmental Impact Statement [EIS] (Galaxy Lithium (Canada), Inc., 2021), global demand for lithium has increased significantly in recent years due to its use in the batteries commonly used in portable electronic devices, hybrid and battery electric vehicles, and energy storage systems (p. 2-3). This can be seen in the rising prices of lithium in global markets (Appendix 1). Lithium is on Canada's list of critical minerals (NRCan, 2021). The federal government's Critical Minerals Strategy is due to be published by the end of 2022 and the discussion paper presented for public consultation highlighted the accelerated development of associated mining projects as one of its key pillars (NRCan, 2022).

Economic Effects of the James Bay Lithium Mine Project (JBLMP)

Effect on local businesses

The proponent highlights that during the construction phase, approximately \$290m worth of purchases could be made in Québec. The EIS also highlights that the proponent intends to establish a purchasing policy that would prioritize local and regional business in its tendering process (EIS, p. 7-110). In combination, these two statements could be interpreted to imply that a significant fraction of these purchases may be sourced from James Bay businesses. In section 21 of its response to the third information request [RTIR] (Galaxy Lithium (Canada), Inc., 2022) from the Impact Assessment Agency of Canada (hereafter referred to as "the agency"), the proponent provided a breakdown of the capital costs expected to be incurred in the project's construction. A closer inspection of the individual components (RTIR, pp. 21-7 to 21-15) reveals that the purchase of heavy mining, electrical, and construction equipment

as well as administrative overheads, constitute a large proportion of these costs and are therefore, unlikely to be sourced from businesses in the James Bay community.

The proponent also highlights that the mine's annual operating expenses of \$118m would aid the development of local businesses "*such as professional services, equipment, repair services, etc.*" (EIS, p. 7-111). An analysis of the operating costs in (RTIR, pp. 21-21 to 21-30) reveals that only a small fraction of these costs falls under these categories.

It is evident that the large headline numbers for both capital and operating costs obscure the relatively smaller benefits that may ultimately accrue to businesses in the James Bay region.

The proponent also concedes that by recruiting a large number of local workers, the project may prove detrimental to local businesses' plans to recruit and retain staff (EIS, p. 7-112). Due to its proximity to the project site, the business community in Eastmain is likely to be the most severely affected.

Effect on Cree Nations' finances

The proponent highlights that the Grand Council of the Crees and Cree Nation of Eastmain will gain additional revenue (EIS, p. 7-110). However, no details are provided. An online search for the impacts and benefit agreement (IBA) signed with the Cree Nations did not reveal any information. This could be due to the use of a confidentiality clause in the document, which is a common practice in the industry (Craik et al., 2017). Due to the power imbalance between proponents and indigenous communities, these agreements may also be associated with several negative consequences for the latter (Caine and Krogman, 2010). Based on available evidence from some projects, the financial benefits to the community may be limited (Adebayo and Werker, 2021).

Effect on regional workforce

The number of jobs created by the project is unclear. It is variously described as “a maximum of 167 workers” (EIS, p. 7-107) and “between 95 and 270” (EIS, p. 7-111). The proponent mentions that workers in the region have gained valuable experience in the construction sector through Hydro-Québec’s projects in the region. This may aim them in gaining employment during the construction phase of the project. However, there is no discussion of the education and skills required for workers in various roles during the operation and closure stages of the project. This is especially important as the workforce in James Bay is limited and the educational attainment levels in the region are lower than the overall province (RTIR, p. 20-30). While the proponent mentions various initiatives to develop the workforce locally (EIS, pp. 7-112 to 7-113), the discussion is characterized by a lack of detail about the proponent’s plans to address specific problems like the high school dropout rate, the potential lack of technical skills in the local workforce, the reskilling of workers after mine closure, and the impact on local businesses as human resources in the region are diverted to the project.

Effect on equity

As discussed in the previous section, the project is expected to generate a number of stable jobs. The annual wage bill is expected to be between \$16.9m and \$19.6m (RTIR, table 21.18). Therefore, the average salary is expected to be significantly higher than regional average (EIS, p. 6-191). As many of these jobs will be filled by outside workers, it may lead to an increase in housing demand in the region. In addition, local workers at the project may not be able to source similar quantities of traditional foods as in the past which would necessitate the import of food from alternative sources. The result is likely to be inflationary pressures in

these vital sectors, the negative effects of which disproportionately affect households with lower incomes (Kakar & Daniels, 2019).

Effect on infrastructure

In its analysis of the effects on infrastructure (EIS, pp. 7-93 to 7-94), the proponent evaluated the additional traffic generated by the project only in the context of its effects on road safety and air and noise pollution. However, it is recognised that most of the structural damage to roadways is caused by heavy vehicles (Pais et al., 2019). Repairs and upgrades to the Billy Diamond Highway are expected to cost the provincial and federal governments over \$330m between 2017 and 2026 (Quinn, 2020). Therefore, the cost of the wear and tear to the roadway from the project's use of the roadway may be a substantial sum and should be quantified. This cost would also offset some of the benefits to the provincial and federal governments from mining royalties and taxes (RTIR, table 22.4).

Effect on provincial and federal government revenue

In section 22.3.4 of the RTIR, the proponent has presented the after-tax net present value (NPV) of the project as \$441m (RTIR, table 22.5). The total revenues for provincial and federal governments are projected to be significantly higher at \$654m (RTIR, table 22.4). However, the latter have not been discounted and are therefore not directly comparable to the former. As the breakdown of governments revenues for each year is not available, it is not possible to estimate their NPV. However, mathematically, this NPV must be less than \$654m.

The NPV of a business can be calculated by discounting the expected cash flows with the company's cost of capital (Damodaran, 2022a). Applying the proponent's assumed discount rate of 8% to the after-tax cash flows in figure 22.1 yields a NPV of \$597m (instead of \$441m).

It is unclear if there are non-cash costs or other variables that explain this discrepancy but are not presented in this report.

Additionally, no justification is provided for using a discount rate of 8%. Aswath Damodaran, a respected professor of corporate finance at the Stern School of Business, New York University, publishes his estimates of the cost of capital for various industries in the USA on his website (Damodaran, 2022b). His estimate for the mining sector as of January 2022 was 6.01%. Given the global nature of the mining business, the cost of capital for companies operating in similarly open economies should not be expected to diverge significantly. Using 6.01% as the discount rate instead of 8% and the cash flows indicated in figure 22.1 yields a NPV of \$792m.

In summary, a misrepresentation of the facts to mask the true profitability of the project in comparison to projected government revenues cannot be ruled out.

Comparison with similar projects

The Whabouchi Mining Project, the North American Lithium Spodumene Mine Project, and the Rose Lithium-Tantalum Project received regulatory approval to develop open pit mines to extract lithium ore within Québec in 2015, 2018, and 2021, respectively. The environmental impact statements for the first two projects have a limited discussion of the economic context and the projects' impact on the regional and provincial economies. This could be a reflection of the political and regulatory environments when these assessments were undertaken. Due to its spatial and temporal proximity, the Rose Lithium-Tantalum Project is the closest analogue to the project under review. While the discussion and analysis in its EIS (Critical Elements Corporation, 2019) are broadly similar to those of the JBLMP, it raises two unique points

1. It aims to establish a monitoring plan to analyse the residual effects (positive or negative) of the project on educational and economic attainment in the region over the life of the project (pp. 8-43).
2. It mentions that the regional economy is expected to add 4000 mining jobs over the next ten years (pp. 9-4). Given the small population of the region, the cumulative effects of these projects on the economy represent both an opportunity and a potential source of disruption which need to be addressed.

Recommendations

1. The agency should request a thorough assessment of the cumulative impacts of current and proposed mining projects on the economic landscape of the region.
2. The agency should request a more detailed financial analysis from the proponent to understand the true profitability of the project.
3. The proponent should aid the provincial and local governments in assessing the skills gap in the local workforce. Due consideration should be given to the forecast growth of the mining sector in the region. They should also monitor the evolution of the workforce over the duration of the project.
4. The proponent should provide an estimate of the implicit cost of infrastructure provided by provincial and federal governments. This cost would offset some of the mining royalties and taxes paid by the proponent. This information could also be used by the Québec Ministry of Natural Resources and Forests to evaluate the effectiveness of its mining tax regime.
5. Indigenous Services Canada should study the use of impact benefit agreements (IBAs) across Canada and provide support to indigenous communities in upcoming

negotiations to maximise the benefits accruing to them. This could help alleviate the power imbalance between proponents and indigenous communities discussed earlier in the report.

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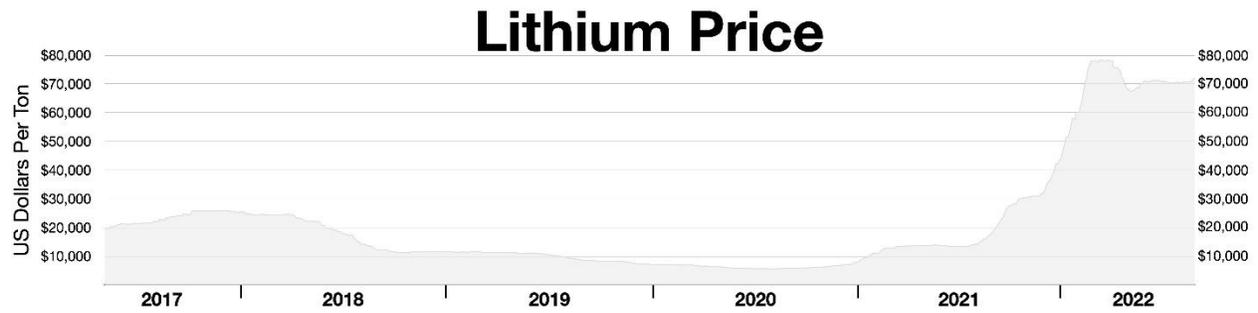
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Appendix 1

The price of battery-grade lithium carbonate traded in Shanghai. The price has been converted from Chinese Renminbi (RMB) into US Dollars (USD).



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https://upload.wikimedia.org/wikipedia/commons/6/6f/Lithium_prices.webp