

Bougouni: The lithium spodumene project gaining pace in West Africa

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Kodal Mineral's 100% owned and fully permitted Bougouni Lithium Project is positioned to move into financing and construction

Global resource markets have been exceptionally turbulent over the course of 2022. However, one metal has continued its meteoric rise – lithium. Driven by the critical need and appetite for electric vehicles (EVs), and efficient battery storage, lithium prices continue to extend gains as supply concerns regain market focus. In September 2022, we saw lithium carbonate prices of \$71,315/t in China (a new record), and lithium hydroxide prices are again nearing April 2002's all-time high levels.

Demand remains strong for electric vehicles, with China's Passenger Car Association expecting EV sales to double 2021's total of six million vehicles. Statements such as these have prompted supply concerns amongst producers, with SQM, one of the largest producers globally, predicting a 'very tight market' going forward.

Whilst some commentators have recently asserted that these price rises are unsustainable in the long term, it remains widely accepted that demand is going to continue to increase rapidly over the next decade, and new sources of supply may not materialise within this critical timeframe. While a

market like copper typically grows by 2-4% a year, providing producers and developers with a degree of confidence as to the demand fundamentals, lithium analysts are anticipating annual demand growth of more than 20% between 2021 and 2025.

Taking advantage of the growing lithium demand

Bernard Aylward, CEO of Kodal Minerals, explained that this market dynamic "presents late-stage developers and pre-production companies such as Kodal with a unique advantage, with the ability and agility to rapidly move projects through the construction phase and into production in order to fulfil this potential supply deficit."

Indeed, the backdrop of the lithium market over recent months has provided a significant tailwind, supporting Kodal's commercial and financing discussions. Kodal is now reviewing and discussing potential opportunities for collaboration with third parties, including major mining groups, to support the development of its flagship Bougouni Project, providing Kodal with multiple routes through which to capitalise on the inherent value of this top 15 asset.



Major producers, such as ASX listed Pilbara Minerals Limited, reported record sales prices for 5.5% Li₂O spodumene concentrate of \$6,350/t FOB in June, and later of \$6,988/t FOB in September, demonstrating that appetite for concentrate feedstock available to converters is experiencing particular market tightness. When compared with Kodal's initial selling price input of \$680/t SC6 reported in the feasibility study published in 2020, it is apparent just how far the industry has moved on over the past 24 months.

Market progression for Kodal Minerals

Due to the shift in market conditions over the past two years, Kodal set out to update its feasibility study and presented the revised numbers in June. This report confirmed the robust development metrics at Bougouni, including:

- NPV7% of \$760m (\$567m post-tax) compared to \$293m (\$201m post tax) in the original feasibility study
- Life of mine (8.5 years) revenue exceeding \$2,145,000,000 based on an average sell price of \$1,060 per tonne (FOB basis);
- C¹ cash costs of \$362 per tonne of 6% Li₂O spodumene concentrate ('SC6'), and costs of

\$474 per tonne including transportation and other selling costs; and

- Total SC6 production of 2,024,000 tonnes with an annual average production of 238,000 tonnes.

The capital cost of the project increased by approximately 20% to \$154m, reflecting increased raw material and fuel costs. However, a separate study to assess the capital development cost, including a review of the process plant, has been undertaken by Yantai Jinpeng Mining Machinery Co. Ltd and this indicates an estimated 20% capital cost saving for the process plant and associated facilities compared to the feasibility study update figures. As Kodal continues its commercial and financing discussions, the final route to production will be established and is now focused on taking the necessary steps to lay the technical and commercial foundations of the project, together with the mandatory permitting obligations, to pushing forward into financing and construction.

Summarising the report, Aylward explained: "What is clear, and what was highlighted to great effect in the updated feasibility study report, was that the window of opportunity to get Bougouni into production, to help alleviate the critical lithium shortfall expected over the coming years, is almost upon us."

In fact, recent market conditions have further enhanced Bougouni's already robust economic fundamentals. June 2022's updated feasibility study highlighted an Internal Rate of Return (IRR) of 91% and a payback period of only eight months. With life-of-mine revenue anticipated to be in excess of \$2.14bn, nearly 50% more than Kodal's original feasibility study estimate, Aylward reports that "conversations with potential partners have intensified with a view to reaching the optimum route for delivery in as short timeframe as practicable."

Rapid development

One route that would enable initial rapid development of Bougouni would be through a dense media separation (DMS) processing plant – a faster and lower capital cost alternative to a flotation plant – that will provide an opportunity for Kodal to take advantage of the near-term high price environment in the lithium market. Kodal recently outlined a proposal for a DMS plant, with a capital development cost for the plant and all associated infrastructure, and commencement of mining, estimated at \$65m. This would generate an estimated NPV7% of approximately \$557m and, based on full equity funding, a short payback of just two months from commencement of operations.

Aylward explained: "The DMS plant scenario



provides Kodal with a fast-track option towards achieving our goal of becoming the first operational lithium mine in Mali. At much reduced capital and operating costs, and an expected construction timeline of around 12 months, the DMS development option provides Kodal with a near-term solution to take full advantage of the continuing buoyant lithium market.”

With this in mind, Kodal’s management and on-site technical team in Mali is resolute in its objective to assemble the requisite components to support Bougouni’s successful transition into production, including technical delivery, permitting approvals, environmental, social and governance (ESG) frameworks and commercial commitments.

Kodal is already well advanced in this regard. The company was granted an environmental permit over Bougouni in November 2019 and a large-scale mining licence was awarded in November 2021 to the company’s Mali subsidiary company, Future Minerals SARL. The mining licence is valid for an initial 12-year term and is renewable in ten-year blocks until all resources are mined. The mining licence is granted under the 2019 Mining Code and extends over 97.2 square kilometres covering the proposed open-pit mining and processing operation at Bougouni.

Technical site visits have been conducted during 2022 to advance the Bougouni Project further towards construction readiness. These site visits included a detailed Light Detection and Ranging (LiDAR) survey to provide topographical information to assist in the final planning of the processing plant and associated infrastructure.

Addressing the local impact of mining operations

In parallel with technical work, the Kodal team has been active with community engagement, consultation, and evaluation of the impact of the proposed mining sites.

Aylward explained that this process is “a key component of Kodal’s continuing engagement with the Bougouni community and is fundamental to the company achieving the development of its mining operation; ensuring that it enjoys the support of and returns benefits to these communities.”

Close collaboration with commercial partners

Kodal also continues to work closely with its strategic investor and potential off-take partner, Suay Chin International Pte Ltd, which is indirectly controlled by Zhejiang Kanglongda Special Protection Technology Co., Ltd, a Shanghai Stock Exchange listed company. In March 2017, Kodal agreed an off-take term sheet which contemplated

that the parties would negotiate an extended off-take agreement for between 80% and 100% of the spodumene product produced at Bougouni for a period of three years. Whilst a formal agreement has not been entered into, Suay Chin retains the first right of refusal for a period of three years from first production of product from Bougouni, whereby Kodal may not enter into any agreement with a third party to sell more than 20% of future production from the project without having first offered to sell the production to Suay Chin on the terms offered by the third party. Kodal’s management team continue to work closely with their partners at Suay Chin with a view to establishing and executing the optimal route to production at Bougouni.

Kodal’s additional projects

Whilst working on its priority objectives at Bougouni, Kodal is also advancing a portfolio of gold projects in West Africa. Work has centred primarily on the Fatou Gold project in Mali, and the Nielle Gold project in Cote d’Ivoire – both discoveries which the company believe have significant resource potential. Earlier stage but no less exciting is the Dabakala Gold project in Cote d’Ivoire, where geochemical sampling has confirmed the continuity of high-grade gold anomalism extending for over 11km and surface width of up to 3km.

Aylward, who cut his teeth in the West African gold exploration industry, said that he is “confident that our gold portfolio has the potential to yield new large gold deposits, and I look forward to reporting on what the next field season delivers.”

With near-term production on offer at Bougouni, and multiple high-value gold exploration assets to build long-term capital growth, Aylward is enthusiastic about 2023, saying “the stars are aligning for Kodal and I whole-heartedly believe that 2023 will prove to be transformational for our business.”



Bernard Aylward
Chief Executive Officer
Kodal Minerals plc

