



CMG successfully completes Scoping Study for Flagship Lindfield Vanadium Project

Key Highlights

- **CMG completes a successful Scoping Study to develop a vanadium mine at its flagship Lindfield Vanadium Project in Julia Creek, QLD.**
- **The Lindfield Vanadium Project has both the practical and financial attributes to develop a successful 4 million tonne per annum ROM vanadium mine producing vanadium pentoxide with a molybdenum trioxide by-product.**
- **Mine life of >25 years, IRR of 18.1% (post tax) and a positive NPV of \$778 million.**
- **High Purity Alumina has also been identified as a potential additional product which could provide further significant financial upside for the project.**
- **Site and regional infrastructure and utilities are available to support the development of the vanadium mine.**

Critical Minerals Group Limited (**ASX:CMG**, “**Critical Minerals Group**”, “**CMG**” or the “**Company**”) is pleased to announce that it has successfully completed the Scoping Study for its flagship Lindfield Vanadium Project. The Scoping Study (**the Study**) findings are extremely encouraging and indicate that both the practical and financial attributes exist to develop a successful vanadium mine with a molybdenum trioxide by-product. High Purity Alumina (HPA) has not been included in the financial analysis however, it is present in substantial quantities that produce a 4N grade HPA, which would significantly increase the project returns subject to further analysis of the market.

What was evaluated

Wave Engineering were engaged by CMG to carry out a Class 5 (+/-35-50% accuracy) scoping study of the Lindfield Vanadium Project. The scope of work included undertaking concept level engineering of a new mine together with associated site infrastructure and process operations to produce a 98.5% pure vanadium pentoxide (V_2O_5) product with the potential to produce 99.99% (4N) pure HPA product and molybdenum trioxide (MoO_3).

The Study produced a project plan and financial model based on industry standard information showing the financial returns over the life of the mine using a base case 4 Mtpa ROM ore feed.



The Study included the site-based infrastructure (buildings, roads, water, power, dams, and other associated site infrastructure) and the vanadium processing plant, including beneficiation of Run of Mine (ROM) ore through the production of vanadium pentoxide product and production of molybdenum trioxide as an additional product. Stantec (Lava Blue) were engaged separately to provide an evaluation on the potential standalone HPA plant of 4,000 tonnes per year production capacity utilising raffinate bleed from the Vanadium SX plant as feed for the HPA plant.

The Study also included a pit optimisation and mining report prepared by The Measured Group and a high-level environmental project description and report prepared by Epic Environmental outlining environment and permitting advice.

A metallurgical test work program was undertaken by CMG to develop a detailed understanding of the nature of the ore and to establish the design parameters for the process plant, scoping level design and subsequent capital and operating cost estimates for the project.

Key findings of the Scoping Study

Mining / Geology

The Scoping Study evaluated a range of ROM production levels from 2 Mtpa to 6 Mtpa with 4 Mtpa selected as the optimal production level to assess. Early processing test work results highlighted that the TLB-A seam (upper seam) should be included in the resource mine plan and schedule due to its concentrate grade achieved. The mining schedule includes only TLB-A and TLB-B (mid seam) and indicates a long mine life of greater than 25 years at 4 Mtpa. Total production of vanadium pentoxide is up to an average of 11,000 tonnes per annum with 550 tonnes per annum of molybdenum trioxide as a by-product.

Metallurgical testing

Metallurgical testing of the vanadium has been undertaken on each of the process flowsheet steps and proves an economically viable beneficiation process that warrants undertaking pilot plant testing. The results indicated successful concentrate upgrades of 1.5% and 1.7% for upper and mid seam respectively and were used in the refinement of the mine plan and schedule. Metallurgical testing and evaluation of each of the seams within the orebody have identified the economic viability of the upper seam in the mining sequence. CMG will carry out further evaluation regarding the inclusion of the upper seam in the next Mineral Resource Estimate update. The metallurgical work identified potential for molybdenum build up to economically viable levels in the waste stream and as such this justified the inclusion of molybdenum in the process flow sheet.

A series of processing test programs were carried out to evaluate the production of HPA. The test work identified that using the Lava Blue technology, the Lindfield orebody could produce a 4N quality HPA product.

Economics

The financial analysis was carried out on a range of ROM production and mining schedules and indicated that the financial returns improved as ROM production levels increased,



however capital costs also increased. The financial analysis was carried out on the 4 Mtpa ROM option that produced vanadium pentoxide and molybdenum trioxide. The results indicated a viable vanadium mine, which would generate an after-tax IRR of 18% and a positive NPV of AUD 778 million. (USD\$9.5 / lb V_2O_5 and FX of \$0.68).

The capital estimate included the site infrastructure and processing facility for vanadium and molybdenum for a 4 Mtpa ROM production capacity. The direct capital costs were estimated at AUD 402 million (not including indirect costs, EPCM, owners' costs and contingency), and this would enable production of approximately 11,000 tonnes of vanadium pentoxide and 550 tonnes of molybdenum. The study highlighted that opportunities could be investigated with further engineering to reduce the overall capital cost.

Infrastructure

An evaluation of the site and regional infrastructure and utilities identified that the power and water requirements would be satisfied. Water requirements would be met through existing water bores and regional water harvesting, whilst power would be sourced from a combination of offsite grid supply and on-site generation, and gas from off-site supply. The site would require non-process infrastructure to support the operation including buildings, dams, workshops, water treatment plants, fuel facilities, accommodation, laboratory and other minor assets. A tailings storage facility would also be required in order to manage and treat the waste streams from the processing plant.

Commenting on the results, Critical Minerals Group Managing Director, Scott Winter, said:

"We are extremely excited to announce that the Lindfield Vanadium project has been assessed as a financially viable mining project. With an IRR of 18.1% and a positive NPV of \$778 mil from the vanadium pentoxide and molybdenum trioxide products streams, this is a terrific result and one that underpins the next phase of study and test-work. CMG has been focussed on assessing the resource to identify the potential for the various viable product streams and the results show that vanadium pentoxide, high purity alumina and molybdenum trioxide are all profitable. The economic analysis has only included the vanadium and molybdenum product streams but when the market opportunity arises we see the HPA as significant upside to the returns.

"The study has been a success in developing and refining our process flow sheet to the point of achieving concentrate and recovery grades that warrant the next phase of pilot plant testing. Furthermore the testing has identified a potentially significant upside in the overall resource with the positive beneficiation results achieved in the processing of the upper seam. An assessment of the site-based development infrastructure has estimated the direct cost capital at AUD 402 mil (not including indirect costs, EPCM, owner's costs and contingency), with opportunities for reductions in capital as further detailed engineering is progressed.

"We are also encouraged by the availability and accessibility of utilities including power, water and gas that will be required to support the project. These will be provided through a



combination of existing infrastructure, new regional infrastructure and planned on-site facilities.

The study has highlighted to CMG that the strategy to progress with the development of a vanadium pentoxide operation will generate significant returns for shareholders and bring ongoing benefits to local stakeholders in the Julia Creek region. It has also identified where the areas of risk and opportunity exist so that we can focus on further improving the project.

This announcement was approved for release by the board.

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About Critical Minerals Group Limited

Critical Minerals Group Limited (**ASX:CMG**, “**CMG**” or the “**Company**”) is an exploration company with the principle focus of developing critical minerals projects. CMG was formed to identify, secure, acquire and develop critical mineral resource tenements in proven regions in Australia.

CMG is building its position in the vanadium market, holding a tenement in north-west Queensland near the town of Julia Creek which is its flagship project known as the Lindfield Vanadium Project. CMG also holds applications for projects at Figtree Creek and Lorena Surrounds, both exciting greenfield copper-gold projects that support CMG’s focus on critical mineral opportunities.

CMG is founded on the outlook of the global energy disruption and the transition that is currently underway and the chance to grasp the opportunities arising from the substantial changes in the world around us. The rising standard of living of a growing global population is likely to continue to drive demand for critical minerals for years to come, particularly during the phase of decarbonisation and electrification. The world will need to find a way to meet this growing demand for such minerals, and CMG is well-positioned to meet this new economy mineral demand as the world turns towards a more renewable future.

Competent Person Statements

The information in this announcement that relates to the mineral resource estimates for the Company’s Lindfield Vanadium Project was first reported by the Company in its Prospectus. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Prospectus, and in the case of estimates of mineral resources, that all material assumptions and technical parameters underpinning the estimates in the Prospectus continue to apply and have not materially changed.



Forward-Looking Statement

This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning planned exploration program and other statements that are not historical facts. When used in this document, the words such as “could”, “plan”, “estimate”, “expect”, “intend”, “may”, “potential”, “should” and similar expressions are forward-looking statements. Although the Company believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.